E-COMMERCE & WEB DESIGNING

B.Com (CA)., Semester -II

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FOREWORD

Since its establishment in 1976, Acharya Nagarjuna University has been forging ahead in the path of progress and dynamism, offering a variety of courses and research contributions. I am extremely happy that by gaining 'A' grade from the NAAC in the year 2016, Acharya Nagarjuna University is offering educational opportunities at the UG, PG levels apart from research degrees to students from over 443 affiliated colleges spread over the two districts of Guntur and Prakasam.

The University has also started the Centre for Distance Education in 2003-04 with the aim of taking higher education to the door step of all the sectors of the society. The centre will be a great help to those who cannot join in colleges, those who cannot afford the exorbitant fees as regular students, and even to housewives desirous of pursuing higher studies. Acharya Nagarjuna University has started offering B.A., and B.Com courses at the Degree level and M.A., M.Com., M.Sc., M.B.A., and L.L.M., courses at the PG level from the academic year 2003-2004 onwards.

To facilitate easier understanding by students studying through the distance mode, these self-instruction materials have been prepared by eminent and experienced teachers. The lessons have been drafted with great care and expertise in the stipulated time by these teachers. Constructive ideas and scholarly suggestions are welcome from students and teachers involved respectively. Such ideas will be incorporated for the greater efficacy of this distance mode of education. For clarification of doubts and feedback, weekly classes and contact classes will be arranged at the UG and PG levels respectively.

It is my aim that students getting higher education through the Centre for Distance Education should improve their qualification, have better employment opportunities and in turn be part of country's progress. It is my fond desire that in the years to come, the Centre for Distance Education will go from strength to strength in the form of new courses and by catering to larger number of people. My congratulations to all the Directors, Academic Coordinators, Editors and Lesson- writers of the Centre who have helped in these endeavours.

Prof. P. Raja Sekhar
Vice-Chancellor (FAC)
Acharya Nagarjuna University

ACHARYA NAGARJUNA UNIVERSITY-GUNTUR

Structure of B.Com (Computer Applications) Programme under Revised CBCS

Semester-wise Syllabus under CBCS (w.e.f. 2020-21 Admitted Batch)

I Year B Com (CA), Semester- II

Discipline: COMPUTER APPLICATIONS

209BCO21-COURSE 2C: E-COMMERCE & WEB DESIGNING

Unit I: Introduction:

Introduction to Internet: Internet Terminology – History of the Internet – Advantages& disadvantages of Internet – How internet works

Electronic Commerce: Definition, types, advantages and disadvantages, E-Commerce transaction on World Wide Web. Electronic Market-Online shopping, Three models of Electronic Market - E-Business.

Unit-II: E-payment System

Models and methods of e–payments (Debit Card, Credit Card, Smart Cards, e-money), Digital Signatures (Procedure, Working And Legal Position), Payment Gateways, Online Banking (Meaning, Concepts, Importance), Risks Involved in e-payments.

Unit-III: On-line Business Transactions:

Meaning, Purpose, Advantages and Disadvantages of Transacting Online, E-Commerce Applications in Various Industries Like (Banking, Insurance, Payment of Bills), Benefits, Problems and Features, Online Services (Financial, Travel and Career), Online Learning, Online Shopping (Amazon, Flipkart, etc.)

Unit-IV: Website Designing

Introduction to HTML: Basic HTML – HTML document structure – HTML tags – Basefont tag – title tag – body tag – Horizontal Rule Tag - Text formatting tags – Character tags, **HTML Lists :** Ordered List , Unordered List & Definition List – Using colors – Using Images

Unit V: Website Designing:

Hyperlinks: Textual links, Graphical links, types of document links, anchor tag **HTML Tables** – table creations tags, Nested Tables, **Frames:** Frame introduction - frame creation tags – Nested Frames.

References:

(1) E-commerce and E-Business , Himalaya publishers
(2) E-Commerce by Kenneth C Laudon, PEARSON INDIA
(3) Web Design: Introductory with MindTap Jennifer T Campbell, Cengage India
(4) HTML & WEB DESIGN:TIPS& TECHNIQUES JAMSA, KRIS, McGraw Hill
(5) Fundamentals Of Web Development by Randy Connolly, Ricardo Hoar, Pearson
(6) HTML & CSS: COMPLETE REFERENCE POWELL,THOMAS, McGrawHill

Online Resources:

http://www.kartrocket.com
http://www.e-commerceceo.com
http://www.fastspring.com
https://teamtreehouse.com/tracks/web-design

RECOMMENDED CO-CURRICULAR ACTIVITIES:

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

MEASURABLE

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity)
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams)
4. Field studies (individual observations and recordings as per syllabus content and related areas (Individual or team activity)
5. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity)

GENERAL

Group Discussion
Visit to Software Technology parks / industries

RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Coding exercises,
4. Practical assignments and laboratory reports,

5. Observation of practical skills,
6. Individual and group project reports,
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations,
10. Peers and self-assessment, outputs form individual and collaborative work

1. Creation of simple web page using formatting tags
2. Creation of lists and
3. Creation of web page with text tags
4. Creation of tables with attributes
5. Creation of hyperlinks
6. Creation of hyperlinks and including images
7. Creation of forms
8. Creation of framesets

E-COMMERCE & WEB DESIGNING

CONTENTS

LESSON-1

INTRODUCTION TO INTERNET

OBJECTIVES

After studying this lesson, you must be able to understand the

- Concept of Internet
- History of Internet
- Advantages and disadvantages of Internet
- How do you get connected to the net?
- How does intranet differ from internet?

1.1 INTRODUCTION

Internet is the world's largest computer network. The word internet was coined from the word "Interconnection and Network". The internet is a network of computers across the globe, linked through various means. Hence, it is "Inter-network" of hundreds of connecting networks made up of different types of computers all the world that can share information amongst themselves. Internet can be accesses via a computer, mobile telephone, PDA, games machine, digital TV, etc. The Internet access service can be provided through a fixed (wired) or mobile network: analogue dial-up modem via standard telephone line, ISDN(Integrated Service Digital Network), DSL(Digital Subscriber Line) or ADSL, Cable modem, High speed leased lines, Fiber, Power line, Satellite Broadband network, WiMAX, Fixed CDMA, Mobile broadband network (3G, e.g., UMTS) via a handset or card, Integrated SIM card in a computer, or USB modem.

The Internet has quickly become a global communication system, offering new ways to reach other people and vast new sources of information. Don't be overwhelmed by the rapid advance of technology. The phone lines and computers are merely the tools of the networked world that make new forms of human communication possible. These new ways to communicate are supported by a variety of simple tools for using the Internet. One aspect of the Internet, the World Wide Web, is becoming one of the most popular forms of this new communications medium.

Nobody owns or controls the Internet or the World Wide Web, although millions of individuals and organizations control their own piece of it. The Internet does have some governing bodies that propose standards and specifications and help plan for the future

including the Internet Society and the World Wide Web Consortium and the U.S. Internet Council.

Individuals or organizations who just want to browse the Internet, send e-mail or use other basic facilities will need only a computer, modem, communications software and a simple way of accessing the Internet. The faster the computer and modem, the better, especially if you want to use the most sophisticated graphics and the animation capabilities of the World Wide Web. However, even older, slower computers can make use of most of the Internet's information and communications resources. It doesn't have to cost much to become an accomplished network user. Even those who want to create a World Wide Web presence will find many affordable options, although ambitious Web sites will require more sophisticated equipment and services.

The explosive growth of the Internet and the World Wide Web has created an environment where users have many choices and few restrictions. The sheer number of resources can be overwhelming, but there are a number of aids for navigating the Internet that can help you find the information you need.

1.2 WHATISINTERNET?

Small net work to Internet

Two or more computers connected together with the capability of exchanging information is called as Network. The networks that usually take the form of a small office network are called as *Local Area Network (LAN)*. The networks that cover acity or some other large physical distance can be called *Metropolitan Area Network (MAN)* or, more generally, *Wide Area Network(WAN)*.

The most obvious advantage of building networks includes

- Communication(for example, e-mail)
- Information sharing(for example, data base access)
- Resource sharing(for example, networked printers)

Typically, networks are created in the hope of saving money and increasing efficiency. Buying a laser printer for every computer in a large office, for example, would be cost prohibitive. A single laser printer shared across a network can save money and improve productivity. Moving beyond a small office network to a large network, things get more complicated. Suppose a company has two LANs, one on the first floor of the building and one on the second that need to be joined together. This can be done by drilling a

hole in the floor, setting up some network equipment, and wiring the two networks. There sulting combination of networks has a special name–an *internetwork*, or *Internet* in short. A diagram of an internetwork is shown in Figure 1.1

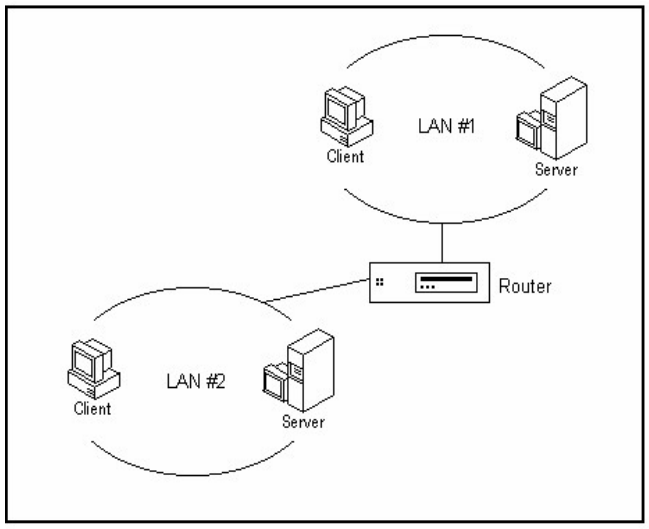


Figure1.1 An internetwork.

An *internetwork*, or *Internet* is a collection of two or more distinct networks joined together, typically using a router, to form a larger "network of networks."

A router is a system that runs software to manage the exchange of information between two different networks.

Though the network that contains two or more distinct networks can be called as Internet, this name (Internet) is given to the worldwide collection of networks. The Internet is similar to the international telephone system -no one owns or controls the whole thing, but it is connected in a way that makes it work like one big network.

Network of Networks can also form an Intranet. Unlike Internet, which is a global network, Intranet is a private network. But it uses the Internet communication standards and tools to provide information to the restricted users. For example, a company may setup a Web site that is accessible only to its employees who are geographically separated.

1.3 HISTORYOFINTERNET

The Internet grew out of an earlier U.S. Department of Defense project, the ARPANET (Advanced Research Projects Agency Network) that was put into place in1969 as a pioneering project to test packet-switching networks. Packet switching is

a technique for transmitting packets of information through multiple linked networks.ARPANETprovidedlinksbetweenresearchersandremotecomputercenters.

In1983, the military communication portion of ARPANET was split off into MILNET (Military Network), although cross- communication was still possible. ARPANET was officially dismantled in1990. Its successor, Internet, continues to grow.

1.4 HOWTHEWEBWORKS

Hypertext Transfer Protocol (HTTP) is a fast and efficient communication protocol that controls many different operations that take place between the Web browser client and the server. HTTP uses the Transmission Control Protocol (TCP) to transport all of its control and data messages from one computer to another.

Web pages are typically grouped at a Web site, where the main page is referred to as the homepage. The user navigates by mouse clicking on hyperlinks displayed as text, buttons, or images. These hyperlinks reference other information. When you click a hyperlink, you jump to another part of the same page, a new page at the same Website, or to another Website. You might also execute a program, display a picture, or download a file. All of this hyper linking is done with Hyper Text Markup Language, which works in concert with HTTP.

To connect with a Web site, you type the Uniform Resource Locator (URL) for the site into the Address field of a Web browser. Here is an example of the URL that retrieves the Microsoft Home Page. http://www.microsoft.com. When you type this request, the Web browser first gets the IP address of www.microsoft.com from a Domain Name System (DNS) server, and then connects with the target server. The server responds to the client and transfers this HTML-coded document to your Web browser. Your Web browser then translates and displays the HTML information.

1.5 ADVANTAGES AND DISADVANTAGES OFINTERNET:

Advantages of Internet

1. **E-mail:** E-mail is now an essential communication tools in business. With e-mail you can send and receive instant electronic messages, which work like writing letters. Your messages are delivered instantly to people anywhere in the world, unlike traditional

mail that takes a lot of time. Email is free, fast and very cheap when compared to telephone, fax and postal services.

2. **24 hours a day- 7 days a week**: Internet is available, 24x7daysforusage.
3. **Information:** Information is probably the biggest advantage internet is offering. There is a huge amount of information available on the internet for just about every subject, ranging from government law and services, trade fairs and conferences, market information, new ideas and technical support. You can almost find any type of data on almost any kind of subject that you are looking for by using search engines like Google, yahoo, msn, etc.
4. **Online Chat:** You can access many 'chat rooms' on the web that can be used to meet new people, make new friends, as well as to stay in touch with old friends. You can chatin MSN and yahoo websites.
5. **Services:** Many services are provided on the internet like net banking, job searching, purchasing tickets, hotel reservations, guidance services on array of topics engulfing every aspect of life.
6. **Communities:** Communities of all types have sprung upon the internet. It's a great way to meet up with people of similar interest and discuss common issues.
7. **E-commerce:** Along with getting information on the Internet, you can also shop online. There are many online stores and sites that can be used to look for products as well as buy them using your credit card. You do not need to leave your house and can do all your shopping from the convenience of your home. It has got a real amazing and wide range of products from household needs, electronics to entertainment.
8. **Entertainment:** Internet provides facility to access wide range of Audio/Video songs, plays films. Many of which can be downloaded. One such popular website is You Tube.
9. **Software Downloads:** You can freely download innumerable, software's like utilities, games, music, videos, movies, etc. from the Internet.

Disadvantages of Internet

1. **Theft of Personal information:** Electronic messages sent over the Internet can be easily snooped and tracked, revealing who is talking to whom and what they are talking about. If you use the Internet, your personal information such as your name, address, credit card, bank details and other information can be accessed by unauthorized persons. If you use a credit card or internet banking for online shopping, then your

details can also be 'stolen'.

2. **Negative effects on family communication:** It is generally observed that due to more time spent on Internet, there is a decrease in communication and feeling of togetherness among the family members.

3. **Internet addiction:** There is some controversy over whether it is possible to actually be addicted to the Internet or not. Some researchers claim that it is simply people trying to escape their problems in an online world.

4. **Children using the Internet** has become a big concern. Most parents do not realize the dangers involved when their children log onto the Internet. When children talk to others online, they do not realize they could actually be talking to a harmful person. Moreover, pornography is also a very serious issue concerning the Internet, especially when it comes to young children. There are thousands of pornographic sites on the Internet that can be easily found and can be a detriment to letting children use the Internet.

5. **Virus threat:** Today, not only are humans getting viruses, but computers are also. Computers are mainly getting these viruses from the Internet. Virus is a program which disrupts the normal functioning of your computer systems. Computers attached to internet are more prone to virus attacks and they can end up into crashing your whole hard disk.

6. **Spamming:** It is often viewed as the act of sending unsolicited email. This multiple or vast emailing is often compared to mass junk mailings. It needlessly obstructs the entire system. Most spam is commercial advertising, often for dubious products, get-rich-quick schemes, or quasi-legal services. Spam costs the sender very little to send most of the costs are paid for by the recipient or the carriers rather than by the sender

1.6 INTRANET

An Intranet is private network accessible only to an organizations staff. Generally, a wide range of information and services from the organization's internal IT systems are available that would not be available to the public from the Internet. A company-wide intranet can constitute an important focal point of internal communication and collaboration, and provide a single starting point to access internal and external resources. In its simplest form an intranet is established with the technologies for local Area Networks (LANs) and Wide Area Networks(WANs). Intranet began to appear in a range of larger organizations from 1994.

INTERNET VS. INTRANET

INTERNET

It is a worldwide system which has the following characteristics:

- Internet is a world-wide/ global system of interconnected computer networks.
- Internet uses the standard Internet Protocol (TCP/IP)
- Every computer in internet is identified by a unique IP address.
- IP Address is unique set of numbers (such as 110.22.33.114) which identifies a computer's location.
- A special computer DNS(Domain Name Server) is used to give name to the IP Address so that user can locate a computer by a name.
- For example, a DNS server will resolve a name http:/ www.tutorialspoint.com to a particular IP address to uniquely identify the computer on which this website is hosted.
- Internet is accessible to every user all over the world.

INTRANET

- Intranet is system in which multiple PCs are connected to each other.
- PCs in intranet are not available to the world outside the intranet.
- Usually, each company or organization has their own Intranet network and members/employees of that company can access the computers in their intranet.
- Each computer in Intranet is also identified by an IP Address which is unique among the computers in that network.

QUESTIONS FOR DISCUSSION

1. What is an Internet?
2. What is Intranet?
3. Discuss the differences between Internet and Intranet.
4. How an internet works?
5. Discuss the advantages and disadvantages of internet.
6. Write about the history of an internet.

LESSON-2

INTRODUCTION TO E- COMMERCE& BUSINESS MODELS

OBJECTIVES

After studying this lesson, you must be able to understand the

1. Concept of e-commerce
2. Various definitions of e-commerce
3. History of e-commerce
4. Models or types of e-commerce
5. Advantages and disadvantages of e-commerce

2.1 INTRODUCTION TO E-COMMERCE

E-Commerce is a latest technology related with commerce and computer. Commerce is the exchange or transformation or buying and selling of entities (goods or commodities) on a very large-scale involving transportation from one place to another. E-Commerce is the process of doing business online. Or we can say that E-commerce is to conduct business using the IT (Information technology, i.e., Computer technology and electronic communication) it is the buying and selling of items or goods or services on the Web using electronic communication and digital information processing technology EDI or Electronic Data Interchange is an early form of e-commerce Its high cost, use of proprietary standards etc. hampered the spread of e-commerce.

E-commerce is the process of doing business electronic. It changes the entire business scenario due to the powerful innovation of Internet, which is spreading fast through the world. The power of Internet as a global access was felt with the introduction of the World Wide Web (WWW) in 1994. This global network makes global relations with the companies made easier It is predicted that, in the near future the digital economy will overtake the traditional economy of all developed countries. E-commerce is a composite of technologies process and business strategies that foster the instant exchange of information within between organization. E-commerce strengthens relationship with buyers make it easier to attract se customer, improves customer responsiveness and open new markets on a global scale. E-commerce is the application of various communication technologies to provide the automated exchange of business information with internal and external customer, suppliers and financial institutions

The emergence of the Internet throughout the world has been contributing such a variety medium in doing business as well as people lifestyle. In fact. Internet is the essential prerequisite for the existence of E-commerce. E-Commerce has emerged as a result of Internet revolution. Electronic commerce is related to doing business electronically. UnderE-Commerce environment, the business transactions take place via telecommunications networks, especially the Internet. It is the buying and selling of products, services, and information via computer networks including the Internet. The explosion of E-commerce has revolutionised the life of customers as they can even easily buy products or services like magazines and movie tickets via Internet.

Definitions

"The word commerce is the basic concept for electronic commerce, pertaining to buying and selling of goods while commercial' denotes business practice and activities intended to make profits. Electronic commerce, like any other business, deals with the exchange of money for soft or hard goods and services".

E-commerce is described as a "fusion of telecommunications and computing technology to

buyers and sellers, facilitated by an interactive and pervasive electronic medium."

-E. Turban and others

Kalakota and Whintons in 1997 defined the term E-commerce from different perspectives. These perspectives are:

1. Communication
2. Business Process
3. Service
4. Online

Communication Perspective: According to this perspective, E-commerce is the delivery of information, product/services or payments over tele-communication channels, computer networks or any other electronic mode of communication.

Business Process Perspective: This says that E-commerce is the application of

technology towards the automation of business transactions and work flow.

Service Perspective: E-commerce is defining as a tool that addresses the desire of firms, consumers and management to cut service cost while improving the quality of goods/services and increasing the speed of service delivery.

Online Perspective: E-commerce provides the capability of buying and selling products and information on the internet and other online services.

Electronic commerce has been re-defined by the dynamics of the Internet and traditional e-commerce is rapidly moving to the Internet.

"With the advent of the Internet, the term e-commerce began to include:

- Electronic trading of physical goods and of intangibles such as information.
- All the steps involved in trade, such as on-line marketing, ordering payment and support for delivery.

2.2 BUSINESS MODELS OR TYPES OFE-COMMERCE:

E-Commerce is a much wider subject than selling online. It is of the view that e-commerce covers any form of transaction where technology has played a part. There are also many different types of e-commerce, with differing relationships existing with each. Some of the important models of e-commerce are as follows:

The various e-commerce models are discussed below:

1. BUSINESS-TO-BUSINESS(B2B)
2. BUSINESS-TO-CONSUMER(B2C)
3. CONSUMER-TO-BUSINESS(C2B)
4. CONSUMER-TO-CONSUMER(C2C)
5. BUSINESS-TO-GOVERNMENT(B2G)
6. GOVERNMENT-TO-BUSINESS(G2B)
7. GOVERNMENT-TO-GOVERNMENT(G2G)
8. GOVERNMENT-TO-CITIZEN(G2C)
9. CONSUMER-TO-GOVERNMENT(C2G)
10. BUSINESS-TO-PEER NETWORKS(B2P)
11. CONSUMER-TO-PEER NETWORKS(C2P)
12. GOVERNMENT-TO-PEER NETWORKS(G2P)
13. PEER-TO-PEER NETWORKS(P2P)
14. PEER NETWORK-TO-CONSUMER(P2C)
15. PERR NETWEORK-TO-GOVERNMENT(P2G)

16. PEER NETWEORK-TO-BUSINESS(P2B)

BUSINESS-TO-BUSINESS(B2B)

Business to Business is the major and valuable model of ecommerce. B To B e-commerce is conducted between two separate businesses and has been in effect for many years. E-commerce plays an important role in enhancing and transforming relationships between and among business. B2B (business - to - business) is also known as e-biz, is the exchange of products, services, or information between businesses rather than between businesses and consumers. Although early interest cantered on the growth of retailing on the Internet (sometimes called e-tailing), forecasts are that B2B revenue will far exceed business to consumers [B2C] revenue in the near future. B2B (business-to- business)is a kind of e-commerce, which refers to a company selling or buying from other companies. One company communicates with other companies through electronic Medias. Some of these transactions include sending and receiving orders, invoice and shopping orders. It was an attractive alternative to the current process of printing, mailing various business documents.

Website following B2B business model sells its product to an intermediate buyer who then sells the product to the final customer. As an example, a wholesaler places an order from a company's website and after receiving the consignment, sells the end product to final customer who comes to buy the product at wholesaler's retail outlet.

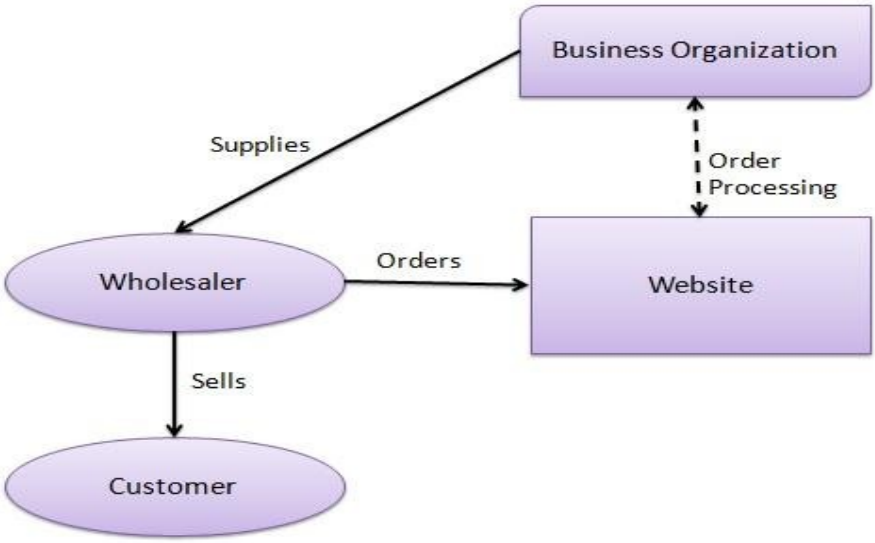


Fig 2.1: BUSINESS-TO-BUSINESS MODEL

Example: Let us look at the same example of www.amazon.com. www.amazon.com is an online bookstore that sells books form various publishers including Wrox, O'Reilly,

Premier Press, and so on. In this case, the publishers have the option of either developing their own site or displaying their books on the Amazon site (www.amazon.com), or both. The publishers mainly choose to display their books on www.amazon.com at it gives them a larger audience. Now, to do this, the publishers need to transact with Amazon, involving business houses on both the ends, is the B2B model.

BUSINESS-TO-CONSUMER(B2C)

Business to Consumer [B2C] e-commerce consists of the sale of products or services from a business to the general public. Products can be anything from clothing to flowers and the products can also be intangible products such as online banking, stock trading, and airline reservations. Sellers that use B2C business model can increase their benefits by eliminating the middlemen. This is called disintermediation because businesses sell products directly to consumers without using traditional retail channels. Business-to Consumer [B2C] is basically a concept of online marketing and distributing of products and services over the internet. It is a natural progression for many retailers or marketer who sells directly to the consumer. The general idea is, if you could reach more customers, service them better, make more sales while spending less to do it that would the formula of success for implementing a B2C e-commerce infrastructure. A business firm can also establish relations with customers through electronic media. For this, the company has to design a web site and place it on the internet. On the web site, the company can publish all details about the product and services and that benefits customers to place orders for these goods from the web site. To maintain customers always with company's web site, the company must update the information on the web regularly. Consumers always demand greater convenience and lower prices. Electronic commerce provides consumers with convenient shopping methods. In B2C model, business Website is a place where all transactions take place between a business organization and consumer directly.

In B2C Model, a consumer goes to the website, selects a catalogue, orders the catalogue and an email is sent to business organization. After receiving the order, goods would be dispatched to the customer.

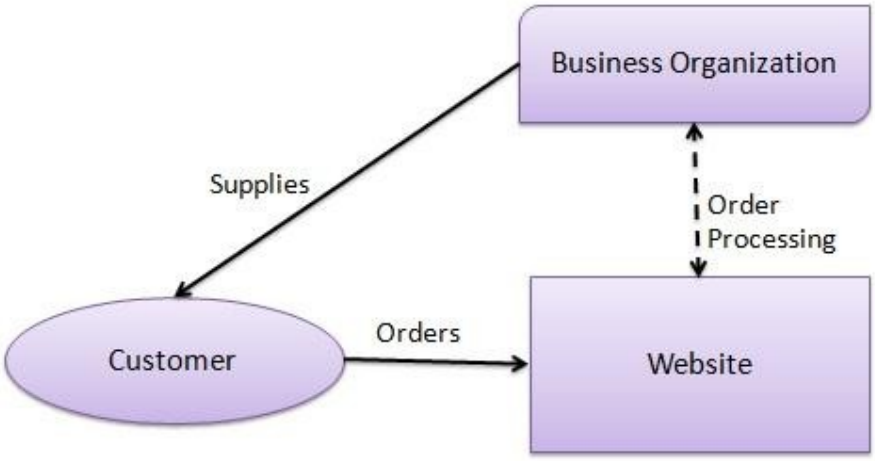


FIG 2.2: BUSINESS-TO-CONSUMER (B2C) MODEL

Example: Consider a hypothetical example in which a transaction is conducted between a business organization and a consumer. A business house, LMN Department Store, display and sells arrange of products on their Web site, www.lmn.com. The details information of all their products is contained in the huge catalogues maintained by LMN Department Stores. Now, a consumer, William Ward, wants to buy a gift for his wife. He therefore, logs on to the site of LMN Department Stores and selects a gift from the catalogue. He also gets the detailed information about the gift such as, the price, availability, discounts, and so on from their catalogue Finally, when he decides to buy the gift, he places an order for the gift on their Web site. To place an order, he needs to specify his personal and credit card information on www.lmn.com. This information is then validated by LMN Department Store and stored in their database. On verification of the information the order is processed. Therefore, as you can see, the B2C model involves transactions between a consumer a done or more business organizations.

CONSUMER-TO-BUSINESS(C2B)

Consumer-to-business (C2B) is an electronic commerce business model in which consumers (individuals) offer products and services to companies and the companies pay them This business model is a complete reversal of traditional business model where companies offer goods and services to consumers (business-to-consumer = B2C). We can see this example in blogs or internet forums where the author offers a link back to an online business facilitating the purchase of some product (like a book on Amazon com), and the author might receive affiliate revenue from a successful sale. This kind of economic

relationship is qualified as an inverted business type. The advent of the C2B scheme is due to major changes: Connecting a large group of people to a bidirectional network has made this sort of commercial relationship possible. The large traditional media outlets are one direction relationship whereas the internet is bidirectional one. Decreased cost of technology: Individuals now have access to technologies that were once only available to large companies (digital printing and acquisition technology, high performance computer, powerful software) In this model, a consumer approaches website showing multiple business organizations for a particular service Consumer place an estimate of amount he/she wants to spend for a particular service. For example, comparison interest rates of personal loan/ car loan provided by various banks via website Business organization who fulfils the consumer's requirement within specified budget approaches the customer and provides its services.

The C2B model involves a transaction that is conducted between a consumer and a business organization. It is similar to the B2C model; however, the difference is that in this case the consumer is the seller and the business organization is the buyer. In this kind of a transaction, the consumers decide the price of a particular product rather than the supplier. This category includes individuals who sell products and services to organizations. For example, www.monster.com is a Web site on which a consumer can post his bio-data for the services he can offer. Any business organization that is interested in deploying the services of the consumer can contact him and then employ him, if suitable.

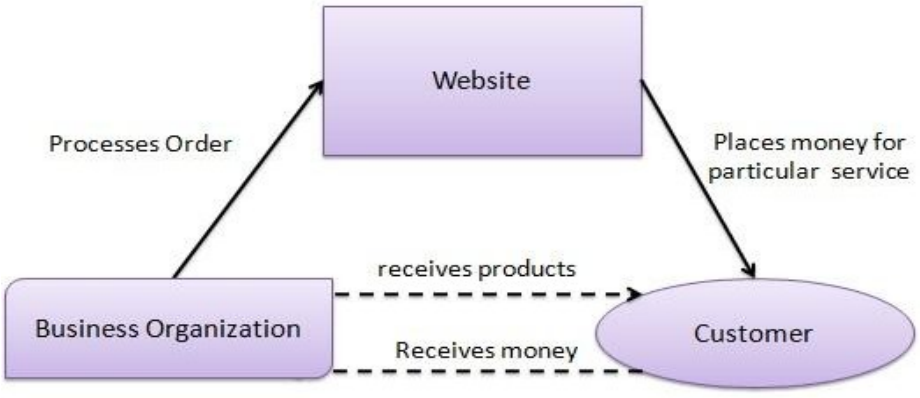


FIG 2.3: CONSUMER-TO-BUSINESS(C2B) MODEL

Example: A classic example of this would be individuals selling their services to businesses. Let us now look at the previous figure with respect to eBay. When a customer plans to sell his products to other customers on the Web site of eBay, he first needs to interact

with an eBay site, which in this case acts as a facilitator of the overall transaction. Then, the seller can host his product on www.ebay.com, which in turn charges him for this. Any buyer can now browse the site of eBay to search for the product he interested in. If the buyer comes across such a product, he places an order for the same on the Web site of eBay. eBay now purchase the product from the seller and then, sells it to the buyer. In this way, though the transaction is between two customers, an organization acts as an interface between the two organizations.

CONSUMER-TO-CONSUMER(C2C)

Consumer-to-consumer (C2C) (or citizen-to-citizen) electronic commerce involves the electronically facilitated transactions between consumers through some third party. A common example is the online auction, in which a consumer posts an item for sale and other consumers bid to purchase it, the third party generally charges a flat fee or commission. The sites are only intermediaries. just there to match consumers. They do not have to check quality of the products being offered Consumer-to-consumer (C2C) marketing is the creation of a product or service with the specific promotional strategy being for consumers to share that product or service with others as brand advocates based on the value of the product. The investment into concepting and developing a top-of-the-line product or service that consumers are actively looking for is equitable to a Business-to-consumer (B2C) pre-launch product awareness marketing spend. This type of e-commerce is expected to increase in the future because it cuts out the costs of using another company. An example cited in Management Information Systems, is for someone having a garage sale to promote their sale via advertising transmitted to the GPS units of cars in the area. This would potentially reach a larger audience than just posting signs around the neighbourhood. In the economic downturn which commenced in 2008 C2C commerce levels increased dramatically online. In this category consumers interact directly with other consumers. They exchange information such as:

1. Expert knowledge where one person asks a question about anything and gets an e mail reply from the community of other individuals, as in the case of the New York Times-affiliated abuzz.com website.

2. Opinions about companies and products, for example epinions.com. There is also an exchange of goods between people both with consumer auction sites such as e bay

and with more novel bartering sites such as swapitshop.com, where individuals swap goods with each other without the exchange of money.

Website following C2C business model helps consumer to sell their assets like residential property, cars, motorcycles etc. or rent a room by publishing their information on the website. Website may or may not charge the consumer for its services. Another consumer may opt to buy the product of the first customer by viewing the post/advertisement on the website. The C2C model involves transaction between consumers. Here, a consumer sells directly to another consumer. eBay and www.bazee.com are common examples of online auction Web sites that provide a consumer to advertise and sell their products online to another consumer. However, it is essential that both the seller and the buyer must register with the auction site. While the seller needs to pay a fixed fee to the online auction house to sell their products, the buyer can bid without paying any fee. The site brings the buyer and seller together to conduct deals.

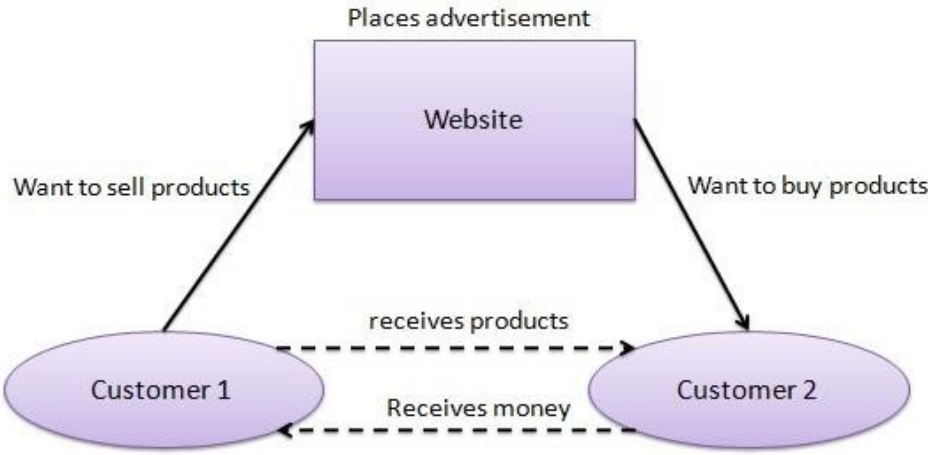


FIG 2.4: CONSUMER-TO-CONSUMER(C2C) MODEL

Example: Let us now look at the previous figure with respect to eBay. When a customer plans to sell his products to other customers on the Web site of eBay, he first needs to interact with an eBay site, which in this case acts as a facilitator of the overall transaction. Then, the seller can host his product on www.ebay.com, which in turn charges him for this. Any buyer can now browse the site of eBay to search for the product he interested in. If the buyer comes across such a product, he places an order for the same on the Web site of eBay. eBay now purchase the product from the seller and then, sells it to the buyer. In this way,

though the transaction is between two customers, an organization acts as an interface between the two organizations.

BUSINESS-TO-GOVERNMENT (B2G)

B2G refers to the supply of goods and services for online government procurement. This is a huge market which mainly covers everything from office supplies to military B2G websites offer lower costs and greater choice to the administration, and make government tendered offers more accessible to companies. B2G is a derivative of B2B marketing often referred to as a market definition of public sector marketing which encompasses marketing products and services to various government levels including-federal, state and local- through integrated marketing communications techniques using as strategic public relations, branding, advertising, and web-based communications.

A website offering Business-to- Government services could provide businesses with the following.

1. A single place to locate applications and tax forms for one or more levels of government (city, state or local)
2. To provide the ability to send in filled out forms and payment
3. To update corporate information
4. To request answers to specific questions

In other words, Business-to-government (B2G) is a derivative of B2B marketing and often referred to as a market definition of "public sector marketing" which encompasses marketing products and services to various government levels - including federal, state and local-through integrated marketing communications techniques such as strategic public relations, branding, marcom, advertising, and web-based communications. B2G networks provide a platform for businesses to bid on government opportunities which are presented as solicitations in the form of RFPs in a reverse auction fashion. Public sector organizations (P50's) post tenders in the form of RFP's, RFI's, RFQ's, Sources Sought, etc. and suppliers respond to them. Government agencies typically have pre-negotiated standing contracts vetting the vendors/suppliers and their products and services for set prices. These can be state, local or federal contracts and some may be grandfathered in by other entities (i.e., California's MAS Multiple Award Schedule will recognize the federal government contract holder's prices on a GSA General Services Administration Schedule). There are multiple

social platforms dedicated to this vertical market and they have risen in popularity with the onset of the ARRA/Stimulus Program and increased government funds available to commercial entities for both grants and contracts.B2G model is a variant of B2B model. Such websites are used by government to trade and exchange information with various business organizations. Such websites are accredited by the government and provide a medium to businesses to submit application forms to the government.

Example: For example, similar to an individual consumer, business houses can also pay their taxes on the Internet

GOVERNMENT-TO-BUSINESS (G2B)

The exchange of information, services and products between government agencies and business organisations. Government sites now enable the exchange between government and business of:

1. Information, guidance and advice for business on international trading, sources of funding and support (ukishelp), facilities (e.g., www.dti. org.uk).
2. A database of laws, regulations and government policy for industry sectors.
3. On-line application and submission of official forms (such as company and value added tax).
4. On-line payment facilities.

This improves accuracy, increases speed and reduces costs, so businesses are given financial incentives to use electronic-form submission and payment facilities. Government uses B2G model website to approach business organizations. Such websites support auctions, enders and application submission functionalities.

Example: For example, the government plans to build a fly over. For this, the government requests for tenders from various contractors. Government can do this over the Internet by using G2B model.

GOVERNMENT-TO-GOVERNMENT (G2G)

Government-to-Government transactions within countries linking local governments together and also international governments, especially within the European Union, which is in the early stages of developing coordinated strategies to link up different national systems.

In other words, Government-to-Government (abbreviated G2G) is the online non-commercial interaction between Government organisations, departments, and authorities and other Government organisations, departments, and authorities. Its use is common in the UK. along with G2C, the online non-commercial interaction of local and central Government and private individuals, and G2B the online non-commercial interaction of local and central Government and the commercial business sector.

G2G systems generally come in one of two types:

1. **Internal facing** - joining up a single Governments departments, agencies, organisations and authorities - examples include the integration aspect of the Government Gateway, and the UK NHS Connecting for Health Data SPINE.
2. **External facing** - joining up multiple Governments IS systems - an example would include the integration aspect of the Schengen Information System (SIS), developed to meet the requirements of the Schengen Agreement.

Example: This model involves transactions between 2 governments. For example, if the American government wants to by oil from the Arabian government, the transaction involved are categorized in the G2G model.

GOVERNMENT - TO - CITIZEN (G2C)

Government-to-Citizen (abbreviated G2C) is the communication link between a government and private individuals or residents. Such G2C communication most often refers to that which takes place through Information and Communication Technologies (ICTs), but can also include direct mail and media campaigns. G2C can take place at the federal, state, and local levels. G2C stands in contrast to G2B, or Government-to-Business networks. One such Federal G2C network is USA.gov: the United States' official web portal, though there are many other examples from governments around the world Government uses G2C model website to approach citizen in general. Such websites support auctions of vehicles, machinery or any other material. Such website also provides services like registration for birth, marriage or death certificates. Main objectives of G2C website are to reduce average time for fulfilling people requests for various government services.

Example: In this model, the government transacts with an individual consumer. For example, a government can enforce laws pertaining to tax payments on individual consumers over the Internet by using the G2C model.

CONSUMER TO GOVERNMENT (C2G)

Example: In this model, an individual consumer interacts with the government. For example, a consumer can pay his income tax or house tax online. The transactions involved in this case are C2G transactions.

BUSINESS-TO-PEER NETWORKS (B2P)

This would be the provision of hardware, or other services to the peer networks. An example here would be Napster who provided the software and facilities to enable peer networking.

CONSUMER-TO-GOVERNMENT (C2G)

Examples where consumers provide services to government have yet to be implemented.

CONSUMER-TO-PEER NETWORKS (C2P)

This is exactly part of what peer-to-peer networking is and so is a slightly redundant distinction since consumers offer their computing facilities once they are on the peer network.

GOVERNMENT-TO-PEER NETWORK (G2P)

As yet there is no real example of this type of e-commerce.

PEER-TO-PEER NETWORK (P2P)

This is the communications model in which each party has the same capabilities and either party can initiate a communication session. In recent usage, peer-to-peer has come to describe applications in which users can use the Internet to exchange files with each other directly or through a mediating server. In other words, Peer-to-peer (P2P) computing or networking is a distributed application architecture that partitions asks or workloads between peers. Peers are equally privileged, equipotent participants in the application. They are said to form a peer-to-peer network of nodes. Peers make a portion of their resources, such as processing power, disk storage or network bandwidth, directly available to other network participants, without the need for central coordination by servers or stable hosts. Peers are both suppliers and consumers of resources, in contrast to the traditional client-server model where only servers supply, and clients consume. The peer-to-peer application structure was popularized by file sharing systems like Napster. The concept has inspired new structures and philosophies in many areas of human interaction. Peer-to-peer networking is not restricted to

technology, but covers also social processes with a peer-to-peer dynamic. In such context, social peer-to-peer processes are currently emerging throughout society.

PEER NETWORK-TO-CONSUMER (P2C)

This is in effect peer-to-peer networking, offering services to consumers who are an integral part of the peer network.

PEER NETWORK-TO-GOVERNMENT (P2G)

This has not yet been used, but if it was, it would be used in a similar capacity to the P-to- B model only with the government as the party accepting the transaction.

PEER NETWORK-TO-BUSINESS (P2B)

Peer-to-peer networking provides resources to business. For example, using peer network resources such as the spare processing capacity of individual machines on the network to solve mathematical problems or intensive and repetitive DNA analyses which requires very high-capacity processing power. This framework can be used by organisations to segment their customers and distinguish the different needs, requirements, business processes, products and services that are needed for each.

2.3 ADVANTAGES OF E-COMMERCE

Some of the key strengths of using the Internet for business include the following:

1. **24 X 7 operation:** Round-the clock operation is an expensive proposition in the 'brick-and-motor' world, while it is natural in the 'click-and-conquer' world.
2. **Global reach:** The net being inherently global, reaching global customers is relatively easy on the net compared to the world of bricks.
3. **Cost of acquiring, serving and retaining customers:** It is relatively cheaper to acquire new customers over the net. Through innovative tools of 'push technology', it is also possible to retain customers' loyalty with minimal investments.
4. **An extended enterprise is easy to build:** In today's world every enterprise is part of the 'connected economy'; as such, you need to extend your enterprise all the way to your suppliers and business partners like distributors, retailers and ultimately your end-customers. The internet provided an effective (often less expensive) way to extend your enterprise beyond the narrow confines of your own organization. Tools like enterprise resource planning (ERP), supply chain management (SCM) and customer relationship management (CRM), can easily be deployed over the internet, permitting amazing

efficiency in time needed to market, customer loyalty, on-time delivery and eventually profitability.

5. **Disintermediation:** Using the Internet, one can directly approach the customers and suppliers, cutting down on the number of levels and in the process, cutting down the costs.
6. **Improved customer service to your clients:** It results in higher satisfaction and more sales.
7. **Power to provide the 'best of both the worlds':** It benefits the traditional business side-by-side with the Internet tools.
8. **A technology-based customer interface:** Customer interface in the electronic environment is a 'screen-to-face' interaction. This includes PC-based monitors, ATM machines, PDAs, or other electronic devices such as the DoCopMo iMode in Japan and the Nokia 7100 in Europe. Operationally, these types of interfaces place an enormous responsibility on the organization to capture and represent the customer experience because there is often no opportunity for direct human intervention during the encounter. If the interface is designed correctly, the customer will have no need for a simultaneously or follow-up phone conversation. Thus, the 'screen-to-customer' interface has the potential to both increase sales and decrease costs. In fact, a number of innovators are entering the e-commerce markets with solutions that reintroduce humans into the process, such as the service representatives available on demand for Web users at www.liveperson.com. When the interface does not work. Not only is the revenue lost but the organization also incurs the technology costs. Thus, a poorly designed customer interface has both negative revenue and cost implications.
9. **The customer controls the interaction:** At most websites, the customer is in control during screen-to-face interaction, in that the Web largely employs a self-service model for managing commerce or community-based interaction. The customer controls the search process, the time spent on various sites, the degree of price/product comparison, the people with whom he or she comes in contact, and the decision to buy.
10. **Knowledge of customer behaviour:** While the customer controls the interaction, the firm has unprecedented access to observe and track individual consumer behaviour. Companies, through a third-party measurement firm such as Vividence and Accrue, can track a host of behaviours on websites visited, length of stays on a site, page views on a site, contents of wish lists and shopping carts, purchases, dollar amounts of purchases, repeat purchase behaviour, conversion rates of visitors who have in contrast with

tracking consumer attitudes, knowledge or behavioural intentions, is not possible in the brick-and- motor world.

2.4 DISADVANTAGES OF E-COMMERCE

The perceived disadvantages of e-commerce include sometimes limited customer service, consumers not being able to see or touch a product prior to purchase and the wait time for product shipping.

High Setting up Costs:

The start-up costs of the e-commerce portal are very high. The setup of the hardware and the software, the training cost of employees, the constant maintenance and upkeep are all quite expensive.

Risk of failure:

Although it may seem like a sure thing, the e-commerce industry has a high risk of failure. Many companies riding the dot-com wave of the 2000s have failed miserably. The high risk of failure remains even today.

Limited customer service:

If a customer has a question or issue in a physical store, he or she can see a clerk, cashier or store manager for help. In an e-commerce store, customer service may be limited.

The site may only provide support during certain hours of the day, or a call to a customer service phone number may keep the customer on hold.

Not being able to touch or see:

While images on a webpage can provide a good sense about a product, it's different from experiencing it "directly," such as playing music on speakers, assessing the picture quality of a television or trying on a shirt or dress.

E-commerce can lead consumers to receive products that differ from their expectations, which leads to returns. In some scenarios, the customer bears the burden for the cost of shipping the returned item to the retailer.

Wait time:

If a customer sees an item that he or she likes in a store, the customer pays for it and then goes home with it. With e-commerce, there is a wait time for the product to be shipped to the customer's address. Although shipping windows are decreasing as next day delivery is now quite common, it's not instantaneous.

Security:

Skilled hackers can create authentic-looking websites that claim to sell well-known products. Instead, the site sends customers forfeit or imitation versions of those products or, simply collects customers' credit card information.

Legitimate e-commerce sites also carry risk, especially when customers store their credit card information with the retailer to make future purchases easier. If the retailer's site is hacked, hackers may come into the possession of customers' credit card information.

In addition to technology and software issues, many businesses face cultural and legal obstacles in conducting e-commerce. Some consumers are still somewhat fearful of sending their credit card numbers over the Internet. Other consumers are simply resistant to change and are uncomfortable viewing merchandise on a computer screen rather than in person. The legal environment in which e-commerce is conducted is full of unclear and conflicting laws. In many cases, government regulators have not kept up with the trends in technologies.

QUESTIONS FOR DISCUSSION

1. Define e-commerce.
2. What do you mean by business model?
3. Explain B2B model.
4. Discuss different types or models of e-commerce with examples.
5. Write about the advantages and disadvantages of e-commerce.

Lesson-3

WORLD WIDE WEB (WWW)

OBJECTIVES:

After reading this chapter, you will be able to know the:

1. Components of World Wide Web.
2. History of World Wide Web.

3.1 WORLD WIDE WED (WWW)

"The world wide web has really been quite spectacular and not something I would have Predicted" **-Jon Postel**

The WWW is such an immensely popular Internet facility that for many users, it has become synonymous with the Internet. Developed in 1992 at the European Laboratory for Particle Physics at Cern, Switzerland, the WWW links users to Internet sites. The basic unit of WWW communication is the page, similar to this printed page. Within a Web page are "links" on which users can click and be automatically connected to related pages at the same or other Internet Websites. With its ease of use and its multimedia ability to transmit text, graphics, audio, and video to retrieve detailed information from anywhere in the world in seconds, the WWW has quickly become the interface of choice for Internet users. The World Wide Web is a system that makes exchange of data on the Internet easy and efficient.

3.2 COMPONENTS OF WWW (WORLD WIDE WEB)

It consists of two basic components:

1. **The Web Server:** a computer and software ("server" can refer to either) that stores and distributes data to other computers throughout the Internet that request the information.
2. **The Web Browser:** software running on an individual's ("client") computer that request information from the Web server and displays it in a manner of directed in the data file itself.

To use the Web, an individual needs a computer with Web browser software and modem installed. After the Web browser is launched (started), the computer is directed to dial an Internet service provider (with which an account has been arranged). The browser is then given the address of a Web "site" where a Web server will respond by sending a "page" of

information. This "page" may have text of various sizes and styles, with pictures and other graphics intermixed. Certain pictures and text will have special highlights or underlines. These special highlights indicate that further information is available. All the individual needs to do is to move the mouse indicator over the highlighted item and click, and the remote Web server will respond with the appropriate information.

More than text and picture can be offered

- Movies and animation
- Moving graphics
- Sound files and real-time sound
- Database and catalogues
- Programs that run directly on your computer
- Opportunities to send information to the owner of the Web site.

The World Wide Web is perhaps the most influential vehicle of information distribution since the invention of the television. The recent boom in the number of Web sites on the Internet attest to this fact. As more and more people gain access to the Web through online services or directly by way of a local Internet Service Provider (ISP), many organizations will focus more on using the Web to keep their customers informed of new products, carry out business transactions, and provide customer service.

3.3 HISTORY OF WORLD WIDE WEB

Until the early 1980s, what is now called the Internet was a relatively small network called ARPA net. This small network was mainly used as a research tool for about 15 years. After the Internet was created many universities and government organizations got connected to it to exchange and distribute information. Although at first the Internet was used exclusively for educational purposes, commercial organizations realized the potential of the Internet and connected to it, as well. The Web was created to address information distribution problems on the Internet. Until the creation of the Web, almost all information distribution was accomplished through email, FTP, Archie, and Gopher. Email (electronic mail) became widely used for exchanging information between various groups of people as well as individuals. FTP (File Transfer Protocol) was used to transfer files from one computer to another. Archie was used to locate various files on the Internet. Due to its very nature, before long information was scattered all over the Internet. Therefore, unless you knew where information you needed was located, you had no way of searching for it. This became a major

problem when someone had to navigate the Internet in search of information. Because a well-organized information infrastructure was missing, the Internet could not be used to its full potential. As a solution to this problem, Gopher was invented at the University of Michigan. Gopher is a database of information that is organized by using a hierarchical menu interface. Gopher was designed to narrow a user's search from general information to very specific information by offering the user selections of topics from various layers of menus. To extend the amount of information that can be provided, Gopher proved to be a more efficient way of locating and distributing information, its capabilities were limited. Mainly, information distributed by way of Gopher was virtually limited to plain text, and access to information at various locations was not very well organized. Furthermore, Internet information technologies that we being used around that time were plugged with limitations, such as the following:

- Platform dependence
- Lack of standards
- Incapability of richly formatting content
- Limited virtually to plain text
- Cryptic user interface
- Lack of security
- Familiarity with UNIX often required
- Incapability of being extended to accommodate new technologies

Due to these and other limitations, a new platform independent method had to be invented to distribute information on the Internet. This issue was addressed at the European Particle Physics Laboratory CERN (Conseil European pour la Recherche Nuclear) in

Geneva, Switzerland, when Hyper Text Mark-up Language (HTML) was created. HTML was derived from a document formatting language called Standard Generalized Mark-up Language(SGML). HTML was designed to be a document markup language that's easy to learn, use, and transmit over the Internet. HTML is simpler to use and easier to learn than SGML. To transmit HTML documents on the Internet, a TCP/IP (Transport Control Protocol/Internet Protocol) based protocol was invented. This protocol became known as Hyper Text Transport Protocol (HTTP).The World Wide Web was born with the creation of HTTP and HTML. The Web addresses many of the limitations listed earlier by providing content providers with powerful medium to distribute information. Web servers speak HTTP

to transmit HTML files, and Web browsers use HTTP to retrieve HTML files. Web browsers display various objects, both static and interactive (such as text, images, and java applets), upon retrieving them from Web servers.

With the unification of text, graphics, video, sound, and interactive applications, the World Wide Web has become an exciting medium of information interchange compared to Gopher. Thanks to the World Wide Web, someone looking for information is finally able to browse various information sources and easily travel from one source to another by following various hyperlinks. Hyperlinks are objects that refer to Uniform Resource Locators (URLs) of Web pages. When a user clicks on a hyperlink, he or she is transferred to the Web page to which the hyperlink is linked. URLs can be thought of as addresses of Web pages. Every Web page has one or more URLs associated with it. With the help of special applications and browsers, the World Wide Web has quickly become a vehicle for text and multimedia distribution on the Internet. The World Wide Web gained much of its popularity after Mosaic (Web browser) was released in 1993 by the National Centre for Supercomputing Applications (NCSA))

QUESTIONS FOR DISCUSSION

1. Discuss the concept of World Wide Web in detail.
2. Explain the components of World Wide Web elaborately.

Lesson-4

E-BUSINESS& ONLINE SHOPPING

OBJECTIVES

After reading this chapter, you will be able to know the

1. What is e-business?
2. Emergence of the term e-business.
3. History of e-business.
4. Concept of Online shopping.
5. Advantages and Disadvantages of online shopping.

4.1INTRODUCTION

E-Business (e-Business), or Electronic Business, is the administration of conducting business via the Internet. This would include the buying and selling of goods and services, along with providing technical or customer support through the Internet. e-Business is a term often used in conjunction with e-commerce, but includes services in addition to the sale of goods. E-business is the application of information and communication technologies (ICT) in support of all the activities of business. Commerce constitutes the exchange of products and services between businesses, groups and individuals and can be seen as one of the essential activities of any business. Electronic commerce focuses on the use of ICT to enable the external activities and relationships of the business with individuals, groups and other businesses or e business refers to business with help of internet i.e., doing business with the help of internet network.

4.2 WHAT IS E-BUSINESS?

E-Business is the term used to describe the information systems and applications that support and drive business processes, most often using web technologies. E-Business allow companies to link their internal and external processes more efficiently and effectively, and work more closely with suppliers and partners to better satisfy the needs and expectations of their customers, leading to improvements in overall business performance. While a website one of the most common implementations, e-Business is much more than just a web presence. There is a vast array of internet technologies all designed to help businesses work

smarter not harder Think about collaboration tools, mobile and wireless technology Customer Relationship Management and social media to name a few.

Three primary processes are enhanced in e-business:

1. **Production processes**, which include procurement, ordering and replenishment of stocks; processing of payments, electronic links with suppliers, and production control processes, among others;

2. **Customer-focused processes**, which include promotional and marketing efforts, selling over the Internet, processing of customers' purchase orders and payments, and customer support, among others, and

3.**Internal management processes**, which include employee services, training, internal information-sharing, video-conferencing, and recruiting electronic applications enhance information flow between production and sales forces to improve sales force productivity Workgroup communications and electronic publishing of internal business information are likewise made more efficient.

DEFINITION OF E-BUSINESS

"Electronic business is the practice of selling goods and services and carrying on other business activities by computer, especially over the Internet".

"A company that use the Internet to carry out its business activities or to sell its products or services".

4.3 EMERGENCE OF THE TERM E-BUSINESS

In 1997, IBM marketing, with its agency Ogilvy & Mather began to use its foundation in IT solutions and expertise to market itself as a leader of conducting business on the Internet through the term "e-business." Then CEO Louis V Gerstner, Jr. was prepared to invest $1 billion to market this new brand. After conducting worldwide market research, in October 1997, IBM began with an eight-page piece in the Wall Street Journal that would introduce the concept of "e-business and advertise IBM's expertise in this new field IBM decided not to trademark the term "e-business" in the hopes that other companies would use the term and create an entire new industry. However, this proved to be too successful and by 2000, to differentiate itself, IBM launched a $300 million campaign about its "e-business infrastructure" capabilities.

4.4 HISTORY OF E-BUSINESS

With the advent of the World Wide Web (WWW), or the "web." traditional business organizations that had relied on catalogue sales had a new sales vector. Other businesses found that the web was a good place to put customer service information, such as manuals and drivers, as well as a place to help create a consistent corporate image. As the web developed, a number of Internet-based businesses developed, including companies like eBay and Amazon, and web-based information repositories like EHow.

- **Early use of the Web for Business**

Business began using websites for marketing shortly after graphical-based web design became available in the early 1990s. Most of these websites served to provide visitors basic information about a company's products and services, and included contact information, such as phone numbers and email addresses, to assist consumers in contacting a company for services. The move from providing simple business information to soliciting business via the web occurred almost as soon as marketing departments realized that company websites were available to millions of people. Online sales began in 1994 with the ability to encrypt credit card data.

- **Early Online Sales**

With the advent of the Secured Socket Layer (SSL), developed by Netscape in 1994, websites developed the ability to encrypt sessions, thus making credit card transactions over the Internet safer. With an encrypted connection between a company's server and a client computer, credit numbers could be masked so they could not be intercepted by a third party, thus making theft of card information less likely. This security led to an increased number of businesses offering products for sale via the web.

- **Birth of Modern Web Sales**

Developments in server technology, including the ability to build websites fromproduct databases, resulted in creation of large Internet-only businesses like eBay and Amazon. In previous product-sales websites, each product had to be manually posted on a web page. With database-driven sites, companies could use web-page templates to display tens of thousands of products on-the-fly. As the number of available products increased, so did traffic and sales on these websites.

- **Payment System Advances**

Early SSL implementations were good, but many people still did not trust them to secure credit card payment information. In addition, it was too expensive to process micropayments -payments of less than a dollar -- through traditional credit card systems. As a result, a number of micropayment sites came and went. One has remained and has done very well because of its ability to transfer money from a variety of funding sources, including credit cards and bank accounts, without revealing the payer's credit card information to the merchant. That company is PayPal. PayPal has enabled credit card processing by many small businesses that would otherwise not be eligible for a traditional credit card merchant account.

- **Dot-Com Bubble of 2001**

Problems with customer confidence began in the late 1990s. Notable denial of service (DOS) attacks on prominent websites made customers worry that their credit card data might not be safe. Throughout this period, online businesses received large capital investments via Initial Public Offerings (IPOs), and saw their stock selling at prices far above the actual value of their companies. Many companies had good ideas but poor business plans, and speculators bid up the prices of stocks in Internet companies. The initial blows came as some on-line companies began reporting large losses and investors began examining the viability of online business plans. Fearful investors started to sell their stocks, causing the overinflated stock prices to plummet below their actual value. A number of well-known companies closed, such as eToys. Many other companies that lacked solid business plans failed between 2001 and 2002.

- **The Current State of E-Business**

Currently, e-business ranges from simple sites providing corporate information to sites offering goods and services for sale online. Innovative uses for new voice and video communication technologies include online language tutoring. Large commercial information repositories are growing and use of the Internet for research is now common. Online sales from web-based storefronts continue to grow. Sales of digital information, in the form of eBooks and digital music files, are more recent offerings by e-businesses like Apple. Amazon, and Barnes & Noble.

4.5 ONLINE SHOPPING

Online shopping is a form of electronic commerce which allows consumers to directly buy goods or services from a seller over the Internet using a web browser. Consumers find a product of interest by visiting the website of the retailer directly or by searching among alternative vendors using a shopping search engine, which displays the same product's availability and pricing at different e-retailers. As of 2016, customers can shop online using a range of different computers and devices, including desktop computers, laptops, tablet computers and smart phones.

An online shop evokes the physical analogy of buying products or services at a regular "bricks-and-mortar" retailer or shopping centre; the process is called business-to consumer (B2C) online shopping. When an online store is set up to enable businesses to buy from another businesses, the process is called business-to-business (B2B) online shopping. A typical online store enables the customer to browse the firm's range of products and services, view photos or images of the products, along with information about the product specifications, features and prices.

Online stores typically enable shoppers to use "search" features to find specific models, brands or items. Online customers must have access to the Internet and a valid meth payment in order to complete a transaction, such as a credit card, an Interact-enabled debit card, or a service such as PayPal. For physical products (e.g., paperback books orclothes) e-tailer ships the products to the customer, for digital products, such as digital files of songs or software, the e-tailer typically sends the file to the customer over the Internet. The largest of these online retailing corporations are Alibaba, Amazon.com, and eBay

4.6 ADVANTAGES AND DISADVANTAGES OF ONLINE SHOPPING

Online shopping has become a popular shopping method ever since the internet has declared a takeover There are many individuals that are looking for other amazing alternatives shopping and online shipping is just the fix for that. There are many advantages of online shopping, this is the reason why online stores are a booming business today shopping includes buying clothes, gadgets, shoes, appliances, or even daily groceries. below are several online shopping advantages and these are the following.

ADVANTAGES OF ONLINE SHOPPING

1. **Save Time:** Do you have the specific list that you want to buy? With just a couple of click of the mouse, you can purchase your shopping orders and instantly move to other important things, which can save time.
2. **Save Fuel:** The market of fuel industries battles from increasing and decreasing its cost every now and again, but no matter how much the cost of fuel is? it does not affect your shopping errands. One of the advantages of shopping online is that there is no need for vehicles, so no purchase of fuel necessary.
3. **Save Energy:** It is tiresome to shop from one location and transfer to another location. What is worse that there are no available stocks for the merchandise you want to buy. In online shopping you do not need to waste your precious energy when buying.
4. **Comparison of Prices:**The advanced innovation of search engine allows you to easily check prices and compare with just a few clicks. It is very straightforward to conduct price comparisons from one online shopping website to another. This gives you the freedom to determine which online store offers the most affordable item you are going to buy.
5. **24/7 Availability:** Online shopping stores are open round the clock of 24/7, 7 days a week and 365 days. I rare to find any conventional retail stores that are open 24/7. The availability of online give you the freedom to shop at your own pace and convenience.
6. **Hate Waiting in Lines:**When buying items online, there are no long lines you have to endure, just to buy your merchandise. The idea of shopping online is cutting down those bad habits of standing in a long line and just waiting. Every online store is designed with unique individual ordering features to purchase the item.
7. **Easy to Search Merchandise one wants to buy:**You are able to look for specific merchandise that includes model number, style, size and colour that you want to purchase. In addition, it is easy to determine whether the products are available or out of stock.

DISADVANTAGES OF ONLINE SHOPPING

If there are advantages, most likely there will be disadvantages. Despite the success of purchasing through online shopping stores, there are still some disadvantages that most people complain about.

These include:

1. **Personally check the Item**

   If you are one of those shoppers who want to touch, see, and test the product personally, at online shopping, you are not able to do so. Online stores are only showing product description and photos of the merchandise, which can be a disadvantage for many online shoppers.

2. **Diminished Instant Satisfaction**

   Unlike buying at retail stores, you are able to use the product instantly after you buy it, which can be satisfying. However, online shopping requires patience to wait for the item to arrive at your door step about 2 to 3 days or even longer depending on the location you've ordered it from.

   Online shopping is continuously becoming more popular and improving every single day. Knowing the advantages of online shopping and its disadvantages is additional knowledge for a lot of online shoppers that are useful before shopping online.

QUESTIONS FOR DISCUSSION

1. Explain the term “e-business”
2. Discuss the role of e-business in the current scenario.
3. Discuss the emergence of e-business in the present scenario.
4. What type of challenges a business has to face around e-business?
5. Explain the term “online shopping”.
6. What do you understand with online shopping? What are its advantages and disadvantages?
7. Discuss the importance of online shopping in the current scenario.

Lesson-5

ELECTRONIC MARKETS& MODELS OF ELECTRONIC MARKETS

OBJECTIVES:

After reading this chapter, you will be able to know the:

1. Meaning of electronic markets
2. Electronic market models

5.1 INTRODUCTION

Electronic markets are the foundation of electronic commerce. They potentially integrate advertising, product ordering, delivery of digitizable products, and payment systems. An electronic marketplace (or electronic market system) is an inter organizational information system that allows the participating buyers and sellers to exchange information about prices and product offerings. The firm operating the system is referred to as the intermediary, which may be a market participant - a buyer or seller, an independent third party, or a multi-firm consortium E-markets provide an electronic, or on-line, method to facilitate transactions between buyers and sellers that potentially provide support for all of the steps in the entire order fulfilment process.

Electronic markets are markets connected through modern communications networks and powered by high-speed computers. In an electronic marketplace, buyers and sellers do not have to be in the same physical location in order to interact. A classic example of electronic markets is the Nasdaq stock market. Nasdaq was launched in the 1970s, long before the widespread use of the Internet, and it does not have an exchange floor. Essentially. Nasdaq is a huge electronic network connecting investors, brokers, and dealers, allowing various parties to exchange information and buy and sell securities. With the explosive development of the Internet, electronic markets will play a more important role in people's everyday lives. The World Wide Web has become the universal interface for electronic markets. People can use the web to access various electronic markets virtually from anywhere at any time. Ordinary investors can use the Internet to conduct online trading through online brokerage firms, and customers can bid for various products at online auction houses such as eBay.

5.2 NEW AVENUES

Electronic markets have had an impact that reaches far beyond the financial world. Entrepreneurs have created new markets to better match buyers and sellers, and they have

also introduced innovative products for trading. Two examples, eBay and the catastrophe reinsure insurance market, illustrate such recent developments.

1. eBay

eBay is the world's leading online person-to-person auction market. Individual buyers and sellers can register at eBay and exchange products and services. Founded in 1995, eBay had more than 29 million registered users in 2001, and many businesses use eBay to sell their products as well. eBay has created a worldwide central marketplace that lists millions of items such as computers, antiques, coins, and furniture. Such a large-scale market has never existed before, and without the Internet, it would have been impossible to create such a market.

Although there are several other auction sites on the Internet, eBay is by far the most successful. Since the beginning, eBay tried to be the dominant player in the online ma environment. It has taken full advantage of the network effect in electronic markets. With market because it is the place where sellers will find the most buyers and buyers will find most sellers. The network effect is simple: more buyers and sellers will attract even more buyers and sellers to the same market. By providing a central marketplace, eBay has lowered the costs of trading for millions of buyers and sellers.

2. Catastrophe Insurance

Another successful online offering is the catastrophe insurance market, showing how electronic markets can bring innovative products for trading and fundamentally change the way existing companies do businesses. Risk and insurance are integral parts of modern-day life Insurance companies provide protection against loss in value of human capital, physical as property, and financial assets. However, almost any insurance company is limited in the amount of insurance it can write on any one risk. The law of averages makes it safer to ensure a large number of small risks than to insure a few large risks. For example, a catastrophe big as Hurricane Andrew, which devastated Florida in 1992, can easily bankrupt an insurance company. Therefore, insurance companies have to seek ways to reduce large risks.

A catastrophe insurance market tries to share risks between insurance companies and other institutions. Risk is the product that is traded in a catastrophe market. The process to convert risks to tradable products is called securitization, which transforms illiquid assets into liquid financial securities in a financial market. Securitizing insurance risk enables institutions and individuals who are not in the insurance business to participate in the insurance market.

Currently, the products that are openly traded include Cat (catastrophe) bonds and Cat options. The Catastrophe Risk Exchange (CATEX) is a New Jersey-based electronic market that allows property and casualty insurers, reinsurers, and brokers to swap or trade risk exposure to natural disasters. Developed in reaction to events such as Hurricane Andrew and the Northridge Earthquake, the exchange is designed to allow insurers to protect themselves against severe losses by geographically distributing risk and diversifying across different perils through an electronic marketplace. Trading operations on CATEX started in 1996. In 1998 CATEX was launched over the Internet. Meanwhile, CATEX began evolving from the initial swap exchange to a more complete insurance market, which supported the reinsurance transactions of marine, energy, and political risk.

ELECTRONIC MARKET AND ITS MODELS

This can be viewed as a direct parallel of the familiar shop, store or emporium. It is a virtual trading area, where deals are struck on a computer screen over a network. The shop front is usually a set of web pages, the shelves equate to the catalogues where products are stored and displayed warehouse is the server. There is an electronic analogue of all the items you would find in a conventional market, the perils of fraud and shady hands go hand in hand with all the glitz and glamour. There are mechanisms to make sure that people are who they say they are, that cash change hands as it should, and that goods are delivered. These mechanisms are becoming increasingly sophisticated and can be complex and expensive to display. This means establishing a clear business model one that fits the way in which you intend to operate and which meets your trading objectives. Straight forward internet shopping is the most familiar form of e-business.

MODEL-1 BROKER MODEL

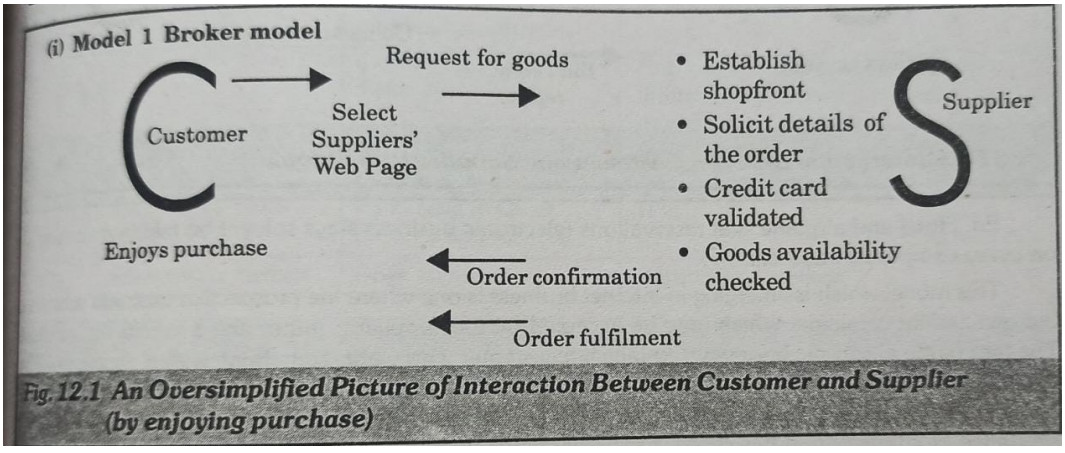


Fig. 12.1 An Oversimplified Picture of Interaction Between Customer and Supplier (by enjoying purchase)

The interactions with a bank to validate the customer's credit card and possibly with subcontractors to arrange for the delivery of goods are complex. Other than presentation and marketing which are done elsewhere at Amazon.com, the picture is a simple one that the supplier doesn't really have to add very much. This may be a simple extension of existing channels to the market.

MODEL-2 CUSTOMISATION MODEL

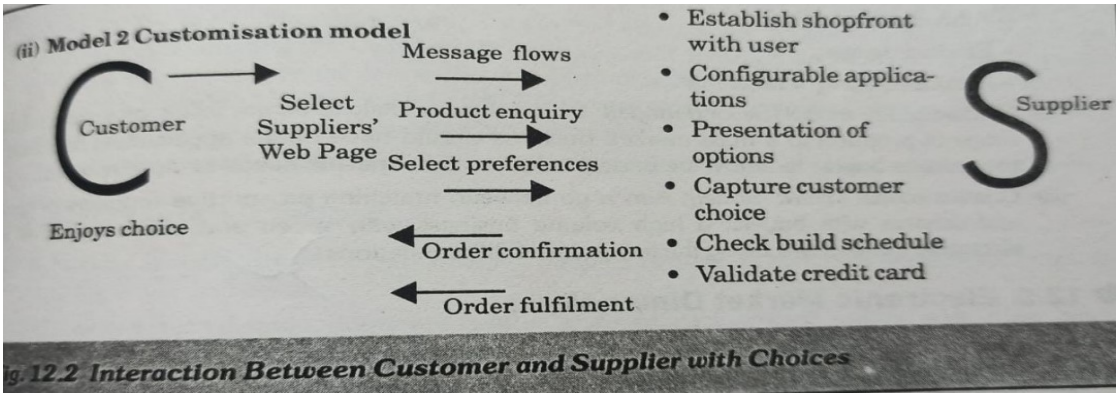


Fig. 12.2 Interaction Between Customer and Supplier with Choices

If the supplier has some measure of control over the product being sold - either the ability to configure. It or complete governance of production, then the sequence of interactions between the customer and supplier would be as above.

MODEL-3 CONTACT MODEL

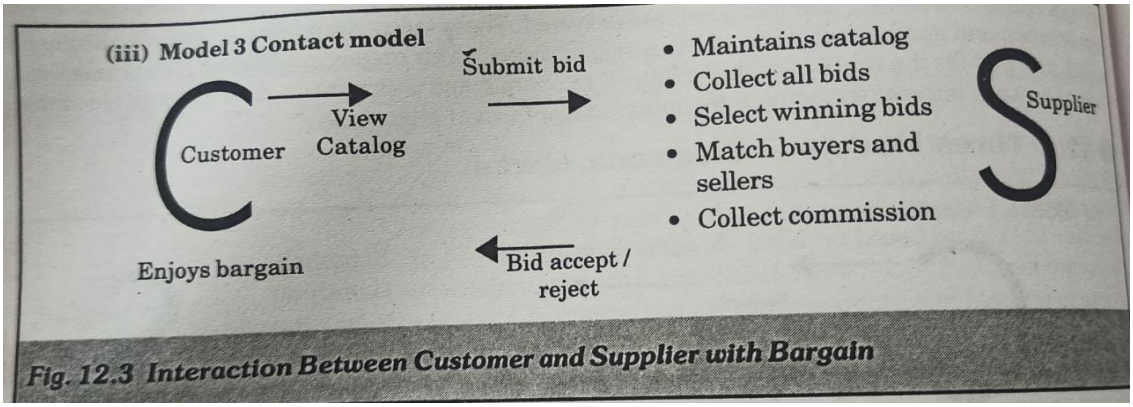


Fig. 12.3 Interaction Between Customer and Supplier with Bargain

E.g., Hotel and airplane seat reservations (electronic business stays solvent by taking commission on every completed transaction).

This model which is emerging in Internet business is one where the prospective business submits a bid against the catalogue which may be accepted by the supplier - rather like a sealed bid auction The aim of the electronic business is to match a customer who wants

something with a supplier willing to sell it for a price that has been bid. As against the first model, nothing is changed about the product being sold. The idea is to provide with a mean of shifting their product for an optimum price. The sequence of interaction in this case is as shown in the above figure.

The three models are as described below:

(i) Broker model (First model): Electronic business may not have tangible presence. Its aim is to market a predetermined set of goods and services. A good business is distinguished by the following key features:

- Attractive packaging

- Efficient delivery

- Accurate payment handling

(ii) Customisation model (Second model): Object is more likely to be the selling of a customisable range of products to a mass market. Business should have online applications that enable prospective buyers to adjust the basic product to their specific needs and preferences.

(iii) Contact model (Third model): Aim is gone between matching prospective suppliers of goods and services with buyers; a high-volume business with speed and efficiency of all the electronic transactions being the key point of differentiations.

QUESTIONS FOR DISCUSSION

1. What do you mean by electronic markets?
2. How the electronic markets play the role in the development of a country?
3. Explain the different models of electronic markets.
4. Discuss the new avenues of electronic markets.

Lesson-6

INTRODUCTIONTO ELECTRONIC PAYMENT SYSTEM

OBJECTIVES

After studying this lesson, you must be able to understand the

- Concept of Electronic Payment System
- Importance of Electronic Payment System
- Participants in Electronic Payment System.
- Problems in Traditional Payment System
- Factors contributing towards Electronic Payment System

6.1 INTRODUCTION

Improving Commerce can bring prosperity into all segments of society. Computers and internet revolution has radically changed the business world to a large extent. Earlier almost all the business transactions were finalised through cash payment/cheque payments... There was physical exchange of cash or cheque or Demand Draft etc for finalising a business transaction, say for purchasing something. E-Commerce involves trading using the latest electronic equipment and software between the sellers and the buyers. IT revolution has led to development of new forms of payment using the latest technology.

With the rapid growth of Information and Communication Technology (ICT), E-commerce is now acting as a means of carrying out business transactions. E-commerce is the most recent step in the evolution of business transactions as it replaces or augments the swapping of money or goods with the exchange of payment, financial service kiosks, biometric payments, electronic payments networks etc. and as technology develops, the range of devices and processes to transact electronically continues to increases while the percentage of cash and cheque transactions continue to decrease. One of the key aspects of E-Commerce is payments. Electronic Payment is a financial exchange that takes place online between buyers and sellers. There are different methods to pay electronically. The content of this exchange is usually some form of digital financial instrument such as encrypted credit card numbers, electronic cheque or digital cash that is backed by a bank or an intermediary, or by a legal tender. In India, E-

commerce is now thought to hold the promise of a new commercial revolution. Electronic payment system contributes towards overall economic development.

DEFINITION:

"Electronic payment system may be defined as a form of financial exchange that takes place between the buyer and seller facilitated by means of electronic communication"**-Vassiliou**

6.2 PARTICIPANTS IN AN ONLINE ELECTRONIC PAYMENT TRANSACTION

The major participants in an online electronic payment transaction include the following:

1. **Customer:** Customer in an e-commerce may be the holder of a payment card such as credit card or debit card from an issuer
2. **Issuer:** The issuer means a financial institution such as bank that provides the customer with a payment card The issuer is responsible for the card holder's debt payment.
3. **Merchant:** The person or organizations that sell goods or services to the cardholder via a website is the merchant. The merchant that accepts payment cards must have an Interne Merchant account with the acquirer.
4. **Acquirer:** It is a financial institution that establishes an account with the merchant and processes payment card authorizations and payments. The acquirer provides authorization to the merchant that given card account is active and that the proposed purchase doesn't exceed the customer's credit limit. The acquirer also provides electronic transfer of payments to the merchant's account, and is then reimbursed by the issuer via the transfer of electronic fun over a payment network.
5. **Processor:** The Processor is a large data centre that processes credit card transactions and settles funds to merchants, connected to the merchant on behalf of an acquirer via a payment gateway.

6.3 PROBLEMS IN TRADIONAL PAYMENT SYSTEMS

In the earlier days, conventional cash were most popular because they were the only payment types available. However, with time, banks came into existence and the society underwent a financial revolution. Thereafter various modes like cheques, drafts and bill of exchange etc. came into use. But all these modes of the conventional payment and settlement

process act as a bottleneck in the fast-moving electronic commerce environment. There are also many problems with the traditional payment systems that are leading to its fade out.

Some of them are enumerated below:

1. **Lack of Convenience:** Traditional payment systems require the consumer to either send paper cheques by snail-mail or require him/her to physically come over and sign papers before performing a transaction. This may lead to annoying circumstances sometimes.
2. **Lack of Security:** This is because the consumer has to send all confidential data on a paper, which is not encrypted, that too by post where it may be read by anyone.
3. **Lack of Coverage:** When we talk in terms of current businesses, they span many countries or states. These business houses need faster transactions everywhere. This is not possible without the bank having branch near all of the companies' offices. This statement is self-explanatory.
4. **Lack of Eligibility:** Not all potential buyers may have a bank account.
5. **Lack of support for micro-transactions:** Many transactions done on the Internet are of very low cost though they involve data flow between two entities in two countries. The same if done on paper may not be feasible at all.

6.4 FACTORS CONTRIBUTING TOWARDS ELECTRONIC PAYMENT SYSTEMS

The following are the major factors that have led the financial institutions to make use of electronic payments are:

1. **Decreasing technology cost:** The technology used in the networks is decreasing day by day, which is evident from the fact that computers are now not very much costly and Internet use is becoming economical almost everywhere in the world.
2. **Reduced operational and processing cost:** Due to reduced technology cost the processing cost of various commerce activities becomes very less. A very simple reason to prove this is the fact that in electronic transactions we save both paper and time.
3. **Increasing E-Commerce:** The above two factors have led many institutions to go online and many others are following them.

QUESTIONS FOR DISCUSSION

1. Discuss the importance of Electronic Payment System.
2. Discuss the problems in Traditional Payment System.
3. Write about the factors contributing Electronic Payment Systems.
4. Name the parties involved in online Electronic Payment System

Lesson-7

TYPES OF ELECTRONIC PAYMENT SYSTEMS

OBJECTIVES

After studying this lesson, you must be able to understand the

- Features of Credit Cards
- Basic steps of Credit Card payment
- Types of Credit Card payments
- Types of Smart Cards
- Concept of Debit Cards
- Concept of E-Cash

7.1 INTRODUCTION

Internet is growing at an extremely fast pace. The ease of use, efficiency and quickness, search engines and international presence of Internet has been drawing millions of users towards it. As the number of Internet sales increases, more and more merchants are showing an interest in reaching customers through the Web. With the exploding E-Commerce market, the E-Commerce software needs to process the transactions efficiently, more securely and with lesser communication delays. Payment is the most vital aspect of a trade. Payment processing involves a development of complex, secure software for transferring financial data between the buyer, seller and the banking network. The payment information contains private financial data that should be transferred using the most secure methodologies. There are various methods to implement electronic payment processing.

E-Commerce has revolutionised the business world. Electronic payment is an integral part of electronic commerce. Electronic Payment system is a financial exchange that takes place online between buyers and sellers. The content of this exchange is usually some form of digital financial instrument that is backed by a bank or an intermediary, or by a legal tender. Secure electronic funds transfer and positive user transaction experiences are crucial to the success of E-Commerce. Businesses that offer domestic and international products and services must ensure that the online payments will be received securely and that the transactions are valid. There are different methods to pay electronically. These can be through Credit Cards, Electronic Checks, Electronic Cash, Debit Cards, or Charge Cards, e-wallets, smart cards, micropayments and electronic bill presentment and payment etc. Many

companies offer products, software and services that enable monetary transactions on the Web.

While customers pay for goods/services by cash or through cheques in conventional business, online buyers may use one of the following Electronic Payment System to pay for products/services purchased online:

A. CREDIT CARDS
B. DEBIT CARDS
C. SMART CARDS
D. E-CASH
E. E-CHEQUES
F. ELECTRONIC FUND TRANSFER

7.2 CREDIT CARDS

Credit cards are payment cards issued by a bank against a special purpose account associated with some form of instalment-based re-payment scheme or revolving credit. This is also known as "Pay Later" method of payment. Diners Club introduced the first credit card Master followed by American Express in 1966. Major players are Visa International and MasterCard. A credit card is a card where every card swipe means that the card user h borrowed money from the credit card company. In such a case, the company bears the expenditure on the behalf of the card users, and the total sum is repaid to the firm through y monthly bill. The charge of providing this service is recovered from the cardholders. Various other costs like late fees, fines and membership fees are also levied varying from the company to company. Credit cards are one of the most popular tools for electronic Payment transactions. Credit cards are issued based on the customer's income level, credit history, and total wealth. The customer uses these cards to buy goods and services or get cash from the participating financial institutions. The customer is supposed to pay his or her debts during the payment period; otherwise, interest will accumulate. Banks offer incentives to attract customers to open an account and get credit cards. They are widely issued to and used by a broad range of customers.

To accept a credit card for payment, the establishment has to open a merchant account with our bank. A merchant account allows sellers to accept and process credit card transactions. In these transactions, the card number and transaction details are processed with no identification of the buyer. To implement the payments over the internet, the web

merchant needs some form of secure and encrypted line using the Secure sockets Layer [SSL) that is standard on Netscape and Microsoft browsers. The merchant server needs an encryption key for the purpose.

FEATURES OF CREDIT CARD SYSTEM:

The following are the main features of credit card system as a whole:

1. **Architecture:** Credit Card Processing System makes heavy use of the underlying banking infrastructure to authorize and settle payment. The modern banking infrastructure is more efficient and faster Electronic Credit Card Processing is like having a front-end with the latest technology for a back-end that was not originally designed for it. Credit Card Transactions always happen in two steps - authorize and capture. Credit Cards can be used for making both low or high value payments.
2. **Security:** Credit Card Payment Methods adopts SET protocol as the standard for secure payment transactions. Credit Cards also have AVS and CVV2 for verification and authorization. This adds security to credit card processing.
3. **Cost:** Credit Card Transactions involve an overhead in terms of on-line authorization and batch settlement needed from acquiring institutions. The rates vary among different acquiring institutions. Higher costs mean a smaller number of small business merchants opting for credit card processing and hence lesser consumers utilizing this facility. This beats the objective of electronic payment types.
4. **Scalability:** The current architecture for Credit Cards has been demonstrated to be scalable.
5. **Flexibility:** Credit Card Systems have demonstrated ability to accommodate new types of cards and to handle ever-changing protocols. The SET protocol used by Credit Card Processing is very open-ended making it more flexible.
6. **Performance:** Credit Card Processing System requires on-line authorizations. The number of credit card transactions are consistently increasing. The delays associated with on line authorizations needed for each transaction have been reduced to a large extent...
7. **User Base:** The popularity of credit cards is mainly because of the usage of known banking institutions. People are more confident of dealing with large bank names instead of trying to jump into a new software needed for other types of electronic payment systems.

8. **Ease of Use:** Credit Card payment can be done without the need of sophisticated software at the consumer site. Credit card numbers can also be just told over the phone to make a payment happen. Almost no training is needed for customers to make payments using credit cards.

BASIC STEPS OF AN CREDIT CARD PAYMENT

The basic steps of an online payment transaction include the following:

- The customer places an order online by selecting items from the merchant's website and sending the merchant a list. The merchant often replies with an order summary of the items, their price, a total, and an order number.
- The customer places an order along with their credit card information and sends it to the business. The payment information is usually encrypted by an SSL pipeline set up between the customer's web browser and the merchant's web server SSL certificate.
- The merchant confirms the order and supplies the goods or services to the customer. The business sends the consumer an invoice, their certificate and their bank's certificate.
- The business then generates an authorization request for customer's credit card and sends it to their bank.
- The business's bank then sends the authorization request to the acquirer. The acquirer sends an acknowledgement back to the business's bank after receiving an acknowledgement from the customer's Bank.
- Once the consumer's bank authorizes payment, the business's bank sends an acknowledgement back to the business with an authorization number.

ENTITIES IN CONVENTIONAL CREDIT CARD PROCESSING SYSTEM

There are four main partners in a Credit Card transaction.

- Card Issuer
- Financial Network
- Acquirer
- Card Holder Merchant

The Issuing Bank is the bank that maintains the account of the buyer and issues a Credit Card to the buyer. The issuing bank also sets a limit on the number of purchases that can be made using the card and the percentage of interest on the unpaid portion of the bill.

The cardholder is also known as the buyer in the transaction. The cardholder initiates a transaction. The merchant is the seller of goods and services. The merchant maintains an account with a bank or a financial institution known as the acquirer. Acquiring institutions contracts with merchants to enable them to accept credit card transactions and charges a certain percentage of fees for the transaction.

CREDIT CARD PAYMENT PROCESS

A Credit Card Payment is a twostep process

1. Authorization: Authorization is a process in which the merchant verifies the cardholder's identification and credit limit. The merchant sends the credit card information like the card number, expiration date, and amount to the acquirer The acquirer will forward the card details to the issuing bank via the existing financial network The credit card issuer will either return an approval, decline or referral for the authorization request. If the transaction was approved, then the merchant can deliver the goods purchased to the buyer. A transaction can be declined for various reasons like unavailable credit, bad credit history, wrong address, etc. In this case, the seller has the rights to reject service to the buyer A referral response from the card-issuing bank implies that the response needs more information and normally the acquirer calls the card issuer to resolve the issue.

2. **Capture/Settlement:** Capture/Settlement is the process of actual transfer of funds from the cardholder's account to the merchant's account as per the regulations imposed for Internet Commerce, a merchant cannot charge the buyer's credit card until the goods have actually been delivered. Hence the transaction has to happen in two steps. The second step collects the money for the merchant after the goods have been delivered. The merchant initiates a capture in batch mode. The transaction details of the card will be captured and the sale amount will be credited to the merchant's deposit account through the acquiring financial institution and posted to the cardholder's credit card account. There are two types of capture. called terminal capture and host capture in terminal capture, the authorized transactions are stored in the merchant's software in the host capture method, the authorized transactions are stored at the acquiring financial institutions or third-party processor's host computer

Most credit cards, such as Visa, Mastercard@ and American Express, have features that enable secure online and offline payments. To accept credit-card payments, a merchant must have a merchant account with a bank Traditional merchant accounts accept only point-of sale (POS) transactions, that is, transactions that occur when customers present credit cards

at stores However, the growth of e-commerce has resulted in the establishment of specialized Internet merchant accounts that handle online credit-card transactions. These consist of card not-present (CNP) transactions. For example, when users make credit-card purchases through the Internet, they can provide the card numbers and expiration dates, but the merchant does not see the actual cards involved in the transactions. A merchant account can be established through either a bank or a third-party service.

TYPES OF CREDIT CARD PAYMENTS

- **Payments Using Plain Credit Card Details**: The easiest method of credit card payment is the exchange of unencrypted credit cards over a public network such as telephone lines or the Internet. The low level of security inherent in the design of the Internet makes this method problematic (any hacker can read a credit card number, and there are programs that scan the Internet traffic for credit card numbers and send the numbers to their programmers).
- **Payments Using Encrypted Credit Card Details**: Even if credit card details are encrypted before they are sent over the Internet, there are still certain factors to consider before sending them out. One such factor is the cost of a credit card transaction itself, which might prohibit low-value payments (micro payments).
- **Payments Using Third-Party Verification**: One solution to security and verification problems is the introduction of a third party to collect and approve payments from one client to another.

SECURITY TECHNIQUES IN CREDIT CARD PROCESSING SYSTEM

Credit card processing software must incorporate highest levels of security The following are the main security techniques in credit card processing system:

1. **Address Verification Service (AVS):** The main concern of the average consumer seems to be confidentiality about credit card numbers exchanged on the Internet AVS compares the billing address of the credit card number supplied by the merchant with the billing address stored in the card issuing bank's database. The AVS code returned indicates the level of match that occurred. Merchants using AVS need to pay an additional transaction fee for the address verification service provided for each consumer transaction. This will increase the financial burden on small merchants.
2. **Card Verification Value 2 (CVV2) / Card Identification (CID):** An important new security feature for card-not-present transactions- Card Verification Value 2, or

CVV2 now appears on the back of most Visa cards in the signature section after the credit card account number. American Express also has come out with a similar 3 digit called CID This three-digit number helps validate that the customer is in possession of a genuine and legitimate card. It is very useful in minimising fraud, reducing fraud-related charge backs. and improving profitability. Currently the credit card processing application software is being enhanced to include the CVV number.

BENEFITS OF CREDIT CARDS

The following are the major benefits of credit cards:

- Credit cards are the convenient method of making online payment. Credit cards work around the globe regardless of the location of country of the issuing bank. They also handle multiple currencies through a series of clearing houses.
- The credit card holders can purchase goods and services either without making immediate payment. Payment to the merchant's will be made by the customer's Bank.
- It also contains a validity period and other important particulars. Customers prefer credit cards over debit cards for large online purchases. Credit cards are the most preferred mode of payment globally.

LIMITATIONS OF CREDIT CARDS:

- Credit cards are not suitable for very small or very large payments. It is not cost justified to use a credit card for small payments. Also, due to security issues, these cards have a limit and cannot be used for excessively large transactions.
- Although credit cards are a popular form of online payment, many people resist online credit-card transactions because of security concerns. Customers fear credit- card fraud by merchants and third parties.

There is remarkable growth in credit card spending in India. According to a recent estimate, credit card spending is rising upwards of 30 per cent annually. In April 2013, Axis Bank saw a value transaction of $31.77 million on ATMs and of $5.845 mn on Point of Sales (POS) terminals. In April 2014, on ATM it had shot up to $88.8 mn and on POS to $10,340 mn. In combined value, a jump of 77 per cent. The idea at banks now seems to be on increasing the spending per card than increasing the number of cards. The rise in e commerce has led to an increased usage of plastic money. The rise in online transactions across sectors has encouraged more people to come online and transact. Internet users now understand the convenience in making online payments. Banks have started providing offers to attract

consumers. Not only the credit card spending but even the credit limits for consumers which have been going up. According to a Worldline India report, an entity in payments and transactional services, in 2014, IN the number of credit cards in the market, HDFC Bank leads with a 27 per cent share, followed by ICICI Bank at 17 per cent and SBI Cards at 15 per cent.

CREDIT CARDS ESPECIALLY MEANT FOR TRANSACTIONS ON E-COMMERCE WEBSITES

The first phase of the e-commerce revolution a few years earlier had seen the emergence of major entities such as Flipkart, Snapdeal, Shop clues etc. which either offered services or products Whereas the past one year belonged to companies providing payment gateways Now the focus has been shifted on providing solutions to make online payments simpler and lessen cash on delivery Recently, SBI Cards launched a credit card especially meant for transactions on e-commerce websites. It is called Simply Click SBI Card The idea is to cash on the emergence of payments gateways as the next big thing in e-commerce. To boost usage of the product, it has entered into a partnership with seven of India's biggest e commerce entities Amazon India. BookMyShow, Cleartrip, FabFurnish, Foodpanda, Lenskart and Ola. This card is a "first of its kind credit card", with reward points for online transactions. The card offers reward points to the tune of 5x on all online transactions. If done on partner sites, the reward points would be to the tune of 10x. SBI Card has been focusing on online shopping across diverse categories. The card will reward loyal customers by offering them up to $4,000 worth of vouchers if they spend $2 lakh annually via the online medium for possessing a cand, there is a one-time fee of $499. The holders of the cand will get an Amazon e gift welcome voucher worth $500 and will also get a reversal of the renewal fee on crossing annual spending of $1 lakh.

7.3 SMART CARDS

Smart cards are also called stored value cards, chip card, or integrated circuit card Smart Card use magnetic stripe technology or integrated circuit chips to store customer-specific information, including electronic money. A smart card is about the size of a credit card, made of a plastic with an embedded microprocessor chip that holds important financial and personal information. The microprocessor chip is loaded with the relevant information and periodically recharged. In addition to these pieces of information, systems have been developed to store cash onto the chip. The money on the card is saved in an encrypted form

and is protected by a password to ensure the security of the smart card solution. In order to pay via smart card, it is necessary to introduce the card into a hardware terminal. The device requires a special key from the issuing bank to start a money transfer in either direction. Smart cards can be disposable or rechargeable. A popular example of a disposable smart card is the one issued by telephone companies. After using the pre-specified amount, the card can be discarded. Smart cards have been extensively used in the telecommunications industry for years. Smart Cards require a special chip to be present on the card Their needs to be hardware card readers, hardware balance readers for the card, and also on the merchant side hardware smart card processing equipment. Hence these payment types have lower on-going expenses. But they do have a higher installation expense since some special hardware is needed to process them. The cards can be used to purchase goods or services, store information, control access to accounts, and perform many other functions. These cards can even have multiple applications operating at the same time. Various keyboards include smart card slots that can be read like bank credit cards. IBM. Microsoft. Schlumberger and Bull are among the major players in smart card development and utilization.

Smart card technology conforms to international standards and is available in a variety of forms. These cards can be used to purchase goods and services Smart cards are very useful to merchants and consumers to settle the transaction between them. A multiple application card can support services like health care travel and financial data access. A smart card is periodically recharged. The money on the card is saved in an encrypted form and is protected by a password to ensure the security of the smart card solution. Smart cards can be disposable or rechargeable. A popular example of a disposable smart card is the one issued by telephone companies After using the pre-specified amount, the card can be discarded. Smart-car technology can be used to hold information on health care transportation, identification retail, loyalty programs and banking, to name a few. The microprocessor chip can process different types of information, and therefore various industries use them in different way Due to their multipurpose functions, their popularity is also on the rise.

ADVANTAGES OF SMART CARDS

Smart cards offer clear benefits to both merchants and consumers. The following are advantages:

- Smart Cards reduce cash-handling expenses and losses caused by fraud, expedite customer transactions at the checkout counter, and enhance consumer convenience and safety.
- Governments may consider stored value cards as an efficient option for dispersing government entitlements. Other private sector institutions market stored value products to transit riders, university students, telephone customers, vending customers, and retail customers.
- The application focus of smart cards is narrow and they build upon existing infrastructure such as: credit, debit, and ATM cards: funds clearing and settlement mechanisms; regional and national ATM/POS networks; and retail, corporate, and government customer relationships.
- Smart-card technology can be used to hold information on health care, transportation, identification, retail, loyalty programs and banking, to name a few. Smart card enables information for different purposes to be stored in one location. The microprocessor chip can process different types of information, and therefore, various industries use them in different ways. Due to their multipurpose function their popularity is also on the rise
- A smart card can be programmed for different applications. Some cards contain programming and data to support multiple applications, and some can be updated with new applications after they are issued.

CATEGORIES OF SMART CARD

Smart cards are broadly classified into two groups.

- **Contact:** This type of smart card must be inserted into a special card reader to be read and updated A contact smart card contains a microprocessor chip that makes contact with electrical connectors to transfer the data.
- **Contact-less:** This type of smart card can be read from short distance using radio frequency. A contact-less smart card also contains a microprocessor chip and an antenna that allows data to be transmitted to a special card reader without any physical contact This type of smart card is useful for people who are moving in vehicles or on foot. They are used extensively in European countries for collecting payment for highway tolls, train fares, parking, bus fares, and admission fees to movies, theatres, plays, and so forth. Smart cards can accommodate a variety of

applications that allow the customer to make purchases from a credit account, debit account, or stored value on the card.

TYPES OF SMART CARDS

Smart cards are broadly classified into two groups:

1. **Contact Smart Card:** This type of smart card must be inserted into a special card reader to be read and updated. A contact smart card contains a microprocessor chip that makes contact with electrical connectors to transfer the data.
2. **Contact-less Smart Card:** This type of smart card can be read from a short distance Using radio frequency. A contact-less smart card also contains a microprocessor chip and an antenna that allows data to be transmitted to a special card reader without any physical contact. This type of smart card useful for people who are moving in vehicles They are used extensively in various advanced countries for collecting payment for highway tolls, train fares, parking, bus fares, and admission fees to movies, theatres, plays, and so forth.

BENEFITS OF SMART CARDS

The following are the major benefits of smart cards:

- Smart cards provide the benefit of portability and have the ability to store data. Intelligent chips mounted on the card give the user a unique identification and access to information. These are very convenient to use, offers flexibility, control and low transaction cost.
- Transactions done with the help of these cards are easier and safer than other available options. They are easier to carry than bulky paper notes and are safer, as they have a unique identification number or PIN (Personal Identification Number) code. The internal security programs on the cards allow access only to the user Even unauthorized access is prevented by a lock function.
- Smart cards save time and energy when used for transactions. Building security in schools and financial organizations are monitored with the help of smart cards, which give access to the user. This way an electronic record can be maintained of the transactions, with tracking also being possible. Security is one of the biggest benefits that these cards offer.

- The health industry uses smart cards to store the extensive health data of an individual on these small chips. These small chips, in turn, can relay that information to insurance companies or medical professionals. These health cards are extensively used as EMRS-Electronic Medical Records-and have benefited a large number of the population in emergencies.
- These cards are not only storage devices, but can also process information. These may be used to communicate with other computing devices. For example, the point-of-sale machine used by a check-out clerk can process information from the customer's card and complete the transaction.
- Smart cards store credit-card numbers, personal contact information, and so on. Each smart card is used in combination with a personal identification number (PIN). This application provides two levels of security by requiring the user to both possess a smart card and know the corresponding PIN to access the information stored on the card.
- Smart cards can accommodate a variety of applications that allow the customer to make purchases from a credit account, debit account, or stored value on the card. These cards can even have multiple applications operating at the same time.
- Smart cards cannot be easily duplicated That is why, these are having an international use. These are helpful in managing expenditures more effectively. reduce the paper work and ability to access multiple services.
- Some smart cards will delete or corrupt stored data if malicious attempts at tampering with the card occur. In addition, smart cards can require users to enter passwords, thus offering a higher level of security than credit cards. Information maintained on smart cards can be designated as "read only" or as "no access." The cards can also be enhanced with additional security features, such as encryption and photo identification.

LIMITATIONS OF SMART CARDS

The following are the main limitations of smart cards:

- Smart cards suffer from the lack of universal standards for their design and utilization.
- Electronic cash can be misused if the smart card is stolen, and there is little that can be done to safeguard the consumer Cyber criminals know how to steal from unsuspecting individuals, who have little knowledge of safeguarding electronic data. The

anonymity offered by electronic transaction plays a negative role when being misused.

- As the data is stored on an EEPROM it can be manipulated, accidentally or intentionally, with a surge of electricity or magnetic energy. The sensitivity of the microchip makes it an easy target for alteration or manipulation.
- The chip is embedded in a plastic card, and this affects the durability of the smart card. These cards, especially credit and debit cards, are generally carried around in wallets that makes them prone to cracks and tears. Damaged cards are more of a liability for the provider and user than stolen cards.

7.4 DEBIT CARDS

It is a popular method of making payment. Banks issue debit cards to their customers who have maintained an account in the balance with sufficient credit balance. Each time the customer makes a purchase, an equal amount of the purchase is debited in his account. The transaction works much like a credit card transaction. When a person swipes a debit card, it acts exactly like a bank check or even direct cash. The amount gets transferred (deducted) from your bank account to the vendor from whom you have made a purchase. It can be generally attached to a bank savings account. The basic thing is that an individual has been spending his hard-earned money through the card, instead of giving out a check or direct cash. It is not a prepaid card or a charge card, where the financial institutions levy massive fees for the transactions. However, in certain cases, the bank may have a policy of charging some nominal sum of money to cover up processing charges on an annual basis. A customer uses card to the seller for the purchase. The merchant read the card through a transaction terminal and the customer enters his personal identification number. Then the terminal route the transaction through the ATM networks back to the customer's bank for authorization against customer's deposit account. The funds, are approved, are transferred from the customer's bank to the seller’s bank.

DEBIT CARDS AND ELECTRONIC BENEFITS TRANSFER

Debit cards are being used extensively for electronic benefits transfer (EBT). Electronic benefits transfer uses debit cards for the electronic delivery of benefits to individuals who otherwise may not have bank accounts. In an EBT system, recipients access their benefits in the same way that consumers use debit cards to access their bank accounts electronically: the card is inserted into or swiped through a card reader and the cardholder must enter a PIN

associated with that card. The benefit recipient can then access his or her benefits to make a purchase or obtain cash.

BENEFITS OF ELECTRONIC BENEFIT TRANSFER

The following are the major benefits of Electronic Benefit Transfer:

- EBT is less costly. EBT systems are designed to provide no-cost or low-cost access methods.
- EBT is more convenient than paper methods. In EBT, benefits are stored electronically, and can be used only when needed and in the amounts required.
- EBT is convenient and makes complicated procedures faster and easier. It is convenient for the government.

7.5 E-CASH

Cash payment is the earliest and the most popular form of payment. Cash is attractive mainly because of guaranteed payment to the merchants, without overhead of transaction charges. David Chaum who is called the "father of digital cash" first proposed the concept of electronic cash. Electronic cash offers added convenience and costs involved for banks and merchants are greatly reduced. Consumers need no longer fiddle for exact change in certain circumstances or burdened down by carrying coins or cash. Electronic Cash Payment System attempts to imitate the conventional cash payment. E-Cash is an electronic medium for making payments. Electronic money is also known as e-currency, e-money, electronic cash, electronic currency, digital money, digital cash or digital currency. Similar to regular cash, e-cash enables transactions between customers without the need for banks or other third parties. When used, e-cash is transferred directly and immediately to the participating merchants and vending machines. Typically, this involves the use of computer networks, the internet and digital stored value system. They attempt to maintain anonymity and at the same time provide security. This combines computerized convenience with security and privacy that improve upon paper cash.

QUESTIONS FOR DISCUSSION

1. Discuss the various risks involved in Electronic Payment System.
2. Write a short note on e-payment system.
3. What is Smart Card? What are the advantages and disadvantages of a Smart Card?
4. Briefly explain the various electronic payment systems.

5. Discuss the concept of e-cash.
6. Discuss the benefits of Smart Cards.
7. Write about different types of Smart Cards.

LESSON-8

DIGITAL SIGNATURE

OBJECTIVES

After studying this lesson, you must be able to understand the

- Concept of Digital Signature
- Legal position of Digital Signature
- Signatures and Law
- How Digital Signature technology works?
- Risks involved in e-payment
- Payment Gateways
- Concept on Online Banking

8.1 INTRODUCTION TO DIGITAL SIGNATURE

Digital signatures provide information regarding the sender of an electronic document. The technology has assumed huge importance recently, with the realization that it may be the remedy to one of the major barriers to growth of electronic commerce: ***fear of lack of security.*** Digital signatures provide data integrity, thereby allowing the data to remain in the same state in which it was transmitted. The identity of the sender can also be authenticated by third parties.

The most widely used type of cryptography is public key cryptography, where the sender is assigned two keys one public, one private. The original message is encrypted using the public key while the recipient of the message requires the private key to decrypt the message. The recipient can then determine whether the data has been altered. However, although this system guarantees the integrity of the message, it does not guarantee the identity of the sender (public key owner). In order to remedy this, a Certificate Authority is required.

In Figure 8.1, Ravi (the sender) uses his private key to compute the digital signature. In order to compute the digital signature, a one-way hashing algorithm may be used to first calculate a message digest, as is done by RSA. The message digest is an efficient way to represent the message, as well as being a unique number that can only be calculated from the contents of the message. The sender's private key is used at this point to encrypt the message digest. The encrypted message digest is what is commonly called a digital signature.

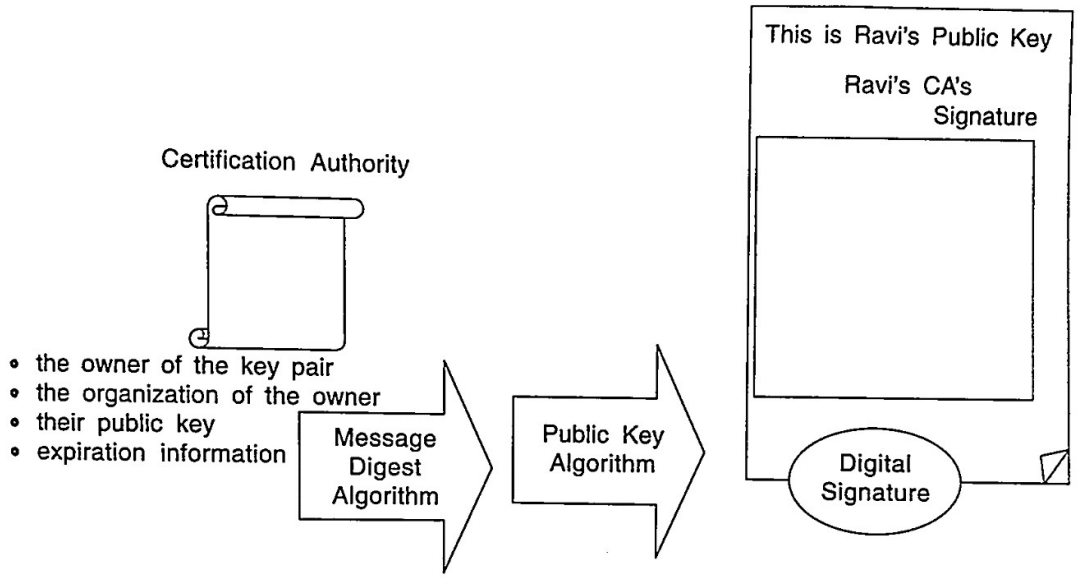


Fig. 8.1 Digital Signature Process

A certification authority (CA) performs the task of managing key pairs, while the verification of the person or entity bound to that key pair is initially ascertained at the time of application by the registration authority. A certificate is issued by a CA and links an individual or entity to its public key, and in some cases to its private key. Certification authorities can offer different grades of certificates, depending upon the type of initial identification provided by the individual.

From an information security viewpoint, these simple "electronic signatures" are distinct from the "digital signatures" and in the technical literature, although "digital signature" is sometimes used to mean any form of computer-based signature. These guidelines use "digital signature" only as it is used in information security terminology, as to mean the result of applying the technical processes.

8.2 LEGAL POSITION OF DIGITAL SIGNATURES

Although the digital signature technology has been available for some time, it has only recently become feasible to use digital signatures to authenticate a document. This breakthrough has made digital signatures one of the most important areas of development within electronic commerce. It is important because the technology and the law governing it must develop in a way that promotes or at the very least does not inhibit the growth of electronic commerce. A substantial amount of legislation regulating the use of digital signatures and their legal status has been enacted. So far, this has been enacted on a state-by-

state basis, resulting in those countries taking contrasting legal positions. International law on digital signatures has yet to be formulated.

Developments are also taking place at a global level. Bodies such as the Internet Engineering Task Force (IETF), the International Organization for Standardization (ISO), and W3C are currently working on standardization of digital signatures. The OECD has issued Guidelines for Cryptology Policy, which includes a guide for states on the creation of legislation governing the use of digital signatures. UNCITRAL has also released draft legislation on electronic commerce, including guidelines for digital signatures.

8.3 SIGNATURES AND THE LAW

A signature is not a part of the substance of a transaction, but rather its representation or form. Signing writings serve the following general purposes:

Evidence

A signature authenticates the writing by identifying the signee with the signed document. When the signer makes a mark in a distinctive manner, the writing becomes attributable to the signer.

Legality

The act of signing a document calls to the signer's attention, the legal significance of the signer's act, and thereby helps prevent "inconsiderate" engagements.

Approval

In certain contexts, defined by law or custom, a signature expresses the signer's approval or authorization of the writing, or the signer's claim that it has legal validity.

Efficiency and Logistics

A signature on a written document often imparts a sense of clarity and finality to the transaction, and may lessen the subsequent need to inquire beyond the face of a document. Negotiable instruments, for example, rely upon formal requirements, including a signature. for their ability to change hands with case, rapidity, and minimal interruption.

Authenticity

The formal requirements for legal transactions, including the need for signatures, vary in different legal systems, and also vary with the passage of time. There is also variance in

the legal consequences of failure to cast the transaction in a required form. The statute of frauds of the common law tradition, for example, does not render a transaction invalid for lack of a "writing signed by the party to be charged", but rather makes it unenforceable in the court. a distinction which has caused the practical application of the statute to be greatly limited in case law.

During this century, most legal systems have reduced the formal requirements, or at least have minimized the consequences of failure to satisfy formal requirements. Nevertheless, sound practice still calls for transactions to be formalized in a manner which assures the parties of their validity and enforceability. In current practice, formalization usually involves documenting the transaction on paper and signing or authenticating the paper. Traditional methods however, are undergoing fundamental change. Documents continue to be written on paper, but sometimes merely to satisfy the need for a legally recognized form. In many instances, the information exchanged to affect a transaction never takes paper form. Computer based information can also be utilized differently than its paper counterpart. For example, computers can "read" digital information, and transform the information or take programmable actions based on the information. Information stored bits rather than as atoms of ink and paper can travel near the speed of light, may be duplicated without limit and with insignificant cost. Although the basic nature of transactions has not changed, the law has only begun to adapt to advances in technology. The legal and business communities must develop rules and practices which use new technology, to achieve and surpass the effects traditionally achieved from paper forms.

To achieve the basic purposes of signatures outlined thus, a signature must have the following attributes:

Signer authentication. A signature should indicate who signed a document, a message or a record, and should be difficult for another person to produce without authorization.

Document authentication. A signature should identify what is signed, making it impracticable to falsify or alter either the signed matter or the signature without detection.
Signer authentication and document authentication are tools used to exclude impersonators and forgers, and are essential ingredients of what is often called a "non-repudiation service" in the terminology of information security profession. A non-repudiation service provides assurance of the origin or delivery of data in order to protect the sender against false denial

Perspective by the recipient that the data has been received, or to protect the recipient against false denial by the sender that the data has been sent. Thus, a non-repudiation service provides evidence to prevent a person from unilaterally modifying or terminating legal obligations arising out of a transaction effected by computer-based means.

Optimally, a signature and its creation, and its verification processes should provide the greatest possible assurance to both the signer's as well as the document's authenticity with least possible expenditure.

Affirmation

The affixing of the signature should be an affirmative act, which serves the ceremonial and approval functions of a signature and establishes the sense of having legally consummated a transaction.

Digital signature technology generally surpasses paper technology in all these attributes. To understand why, one must first understand how digital signature technology works.

8.4 HOW DIGITAL SIGNATURE TECHNOLOGY WORKS?

Digital signatures are created and verified by cryptography. Digital signatures use public key cryptography, which employs an algorithm using two different but mathematically related "keys": one for creating a digital signature or transforming data into a seemingly unintelligible form, and another key for verifying a digital signature or returning the message to its original form. Computer equipment and software utilizing two such keys are often collectively termed an "asymmetric crypto system".

The complementary keys of an asymmetric crypto system for digital signatures are arbitrarily termed private key, which is known only to the signer and used to create the digital signature, and the public key, which is ordinarily more widely known and is used by a relying party to verify the digital signature. If many people need to verify the signer's digital signatures, the public key must be available or distributed to all of them, perhaps by publication in an online repository or directory, where it is easily accessible. Although the keys of the pair are mathematically related, if the asymmetric crypto system has been designed and implemented securely it is "computationally infeasible" to derive the private key from the knowledge of the public key. Thus, although many people may know the public key of a given signer and use it to verify that signer's signatures, they cannot discover that

signer's private key and use it to forge digital signatures. This is sometimes referred to as the principle of "irreversibility".

Another fundamental process, termed hash function, is used in both creating and verifying a digital signature. A hash function is an algorithm which creates a digital representation or "fingerprint" in the form of a "hash value" or "hash result" of a standard length which is usually much smaller than the message but nevertheless substantially unique to it. Any change to the message invariably produces a different hash result when the same hash function is used. In the case of a secure hash function, sometimes termed as a "one-way hash function", it is computationally infeasible to derive the original message from the knowledge of its hash value. Hash functions therefore enable the software to create digital signatures to operate on smaller and predictable amounts of data, while still providing robust evidentiary correlation to the original message content, thereby efficiently providing assurance that there has been no modification of the message since it was digitally signed. Thus, the use of digital signatures usually involves two processes one performed by the signer, and the other by the receiver of the digital signature. They can be discussed as follows:

Digital Signature Creation

This uses a hash result derived from and unique to both the signed message and a given private key. For the hash result to be secure, there must be only a negotiable possibility that the same digital signature could be created by a combination of any other message and a private key.

Digital Signature Verification

This is the process of checking the digital signature by reference to the original message and the given public key, thereby determining whether the digital signature was created for that same message using the private key corresponding to the referenced public key. To sign a document or any other item of information, the signer first delimits precisely the borders of what is to be signed. The delimited information to be signed is termed "message" in these guidelines. Then a hash function in the signer's software computes a hash result unique (for all practical purposes) to the message. The signer's software then transforms the hash result into a digital signature using the signer's private key. The resulting digital signature is thus unique to both the message and the private key used to create it.

Typically, a digital signature (a digitally signed hash result of the message) is attached to its message and stored or transmitted with its message. However, may also be sent or stored as separate data element, so long as it maintains a reliable association with its message. Since a digital signature is unique to its message, it is useless if it is wholly disassociated from its message. Verification of a digital signature is accomplished by computing a new hash result of the original message by means of the same hash function used to create the digital signature. Then, using the public key and the new hash result, the verifier checks: (i) whether the digital signature was created using the corresponding private key, and (ii) whether the newly computed hash result matches the original hash result which was transformed into the digital signature during the signing process. The verification software will confirm the digital signature as "verified" if: (i) the signer's private key was used to digitally sign the message, which is known to be the case if the signer's public key was used to verify the signature because the signer's public key will verify only a digital signature created with the signer's private key, and (ii) the message was unaltered, which is known to be the case if the hash result computed by the verifier is identical to the hash result extracted from the digital signature during the verification process. Various asymmetric cryptosystems create and verify digital signatures using different algorithms and procedures, but share this overall operational pattern. The processes of creating a digital signature and verifying it, accomplish the essential effects desired of a signature for many legal purposes:

Signer Authentication

If a public and a private key pair is associated with an identified signer, the digital signature attributes the message to the signer. The digital signature cannot be forged, unless the signer loses control of the private key (a "compromise" of the private key), such as by divulging it or losing the media or device in which it is contained.

Message Authentication

The digital signature also identifies the signed message, typically with far greater certainty and precision than paper signatures. Verification reveals any tampering, since the comparison of the hash results (one made at signing and the other made at verifying) shows whether the message is the same as when signed.

Affirmative act

Creating a digital signature requires the signer to use the signer's private key. This act can perform the "ceremonial" function of alerting the signer to the fact that the signer is consummating a transaction with legal consequences.

Assurance

The processes of creating and verifying a digital signature provide a high level of assurance that the digital signature is genuinely the signers. As with the case of modern Electronic Data Interchange (EDI), the creation and verification processes are capable of complete automation (sometimes referred to as machinable), with human interaction required only in exceptional cases. Compared to paper methods such as checking specimen signature cards methods so tedious and laborious that they are rarely used in practice digital signatures yield a high degree of assurance without adding greatly to the resources required for processing.

The processes used for digital signatures have undergone thorough technological peer review for over a decade. Digital signatures have been accepted in several national and international standards developed in cooperation with, and accepted by many corporations. banks, and government agencies. The likelihood of a malfunction or a security problem in a digital signature cryptosystem designed and implemented as prescribed by the industry standards is extremely remote and is far less than the risk of undetected forgery or alteration on paper or of using other less secure electronic signature techniques.

QUESTIONS FOR DISCUSSION

1. Discuss the concept of Digital Signature
2. Explain Digital Signature process in detail.
3. How digital signature technology works?
4. Discuss the legal protection of Digital Signature.

Lesson-9

RISK & E-PAYMENT SYSTEMS, PAYMENT GATEWAYS & ONLINE BANKING

OBJECTIVES

After studying this lesson, you must be able to understand the

- Risks involved in e-payment
- Payment Gateways
- Concept on Online Banking

9.1 RISK & E-PAYMENT SYSTEMS

In Figure 8.2. the risks of e-commerce model are shown. There are three major risks:

1. Data Protection -The abuse of data related to users
2. Data Reliability-The authentication of parties involved
3. Taxation-Issues related to tax.

Related to the above main issues is the type of legal framework in which this model works. Fraud, financial misdemeanors, and tax avoidance are not found just in electronic commerce, but e-commerce presents new ways to commit old crimes. Electronic commerce is difficult to regulate for two main reasons:

1. The scope of electronic commerce, and the technology involved changes rapidly. Traditionally, the formulation of the law has been an evolutionary process, adapting to suit the needs of society. Where electronic commerce is concerned, the pace of change is and has been too great for this process to take place. This result in a situation where there is a choice of either applying current legislation or enhancing new legislation specifically formulated to meet the challenge of electronic commerce.
2. The very nature of the technology involved means that it is transnational. This leads to problems as to which legal system has jurisdiction over e-commerce transactions.

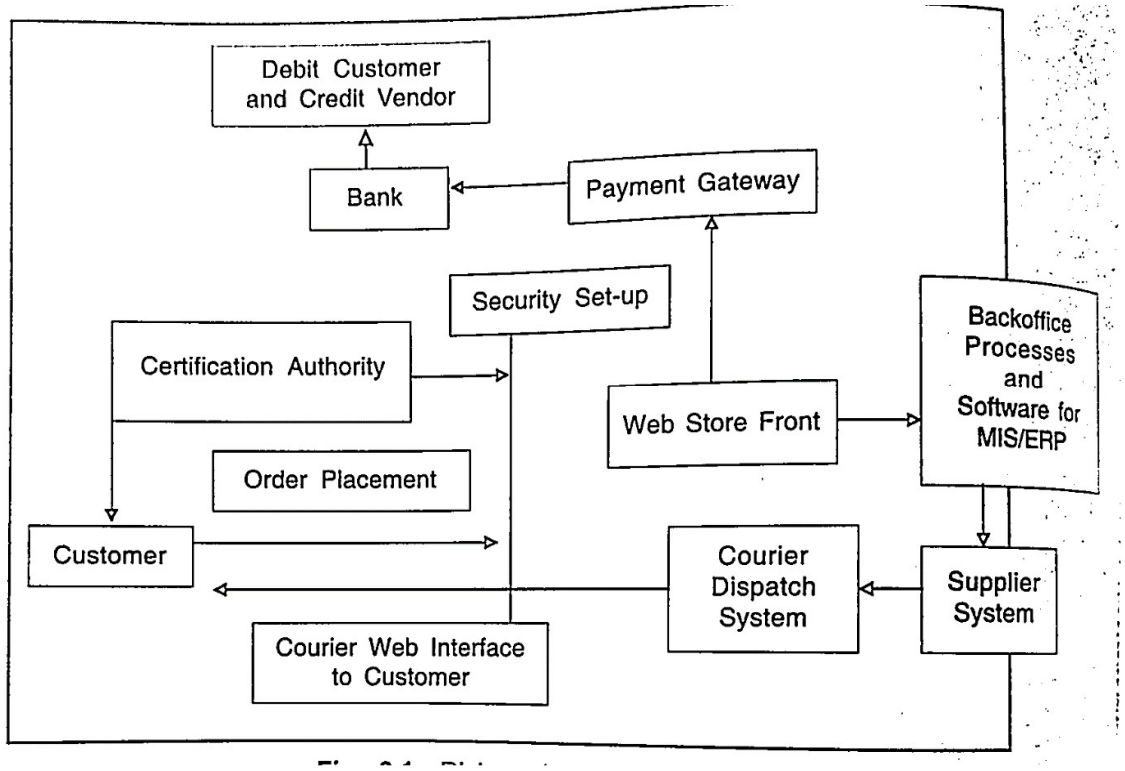


Fig 8.2 Risk and e-payment systems

Data Protection

Although the number of businesses on the Internet has grown, many of these organizations are simply maintaining a Web presence by providing information about themselves and their products, and have not yet undertaken Internet-based transactions. This inertia is probably due to concern about the security of transactions and user authorization. Technologies concerned with authorization include firewalls, password access, smart cards, and biometrics fingerprinting However, in order to provide secure electronic transactions (SET), encryption technologies are used. Encryption technologies, which are supported by the appropriate legal mechanisms. have the potential to allow global electronic commerce to develop.

One essential challenge of e-commerce is risk management. Operation of e-payment systems incurs three major risks: fraud or mistake, privacy issues, and credit risk. Preventing mistakes might require improvements in the legal framework. Dealing with privacy and fraud issues requires improvements in the security framework. Curtailing credit risk requires devising procedures to constrict or moderate credit and reduce float in the market.

Risks from Mistake and Disputes: Consumer Protection

Virtually, all e-payment systems need some ability to keep automatic records, for obvious reasons. From a technical standpoint, this is not a problem for electronic systems. Credit and debit cards have them, and even the paper-based cheque creates an automatic record. Once information has been captured electronically. is easy and inexpensive to keep (it might) even cost more to throw it away than to keep it). For example, in many transaction processing systems, old or blocked accounts are never purged and old transaction histories can be kept forever on magnetic tape.

Given the intangible nature of electronic transactions and dispute resolution relying solely on records, a general law of payment dynamics and banking technology might be that no data need ever be discarded. The record feature is an after-the-fact transcription of what happened, created without any explicit effort by the transaction parties. Features of these automatic records include: (i) permanent storage, (ii) accessibility and traceability. (ii) a payment system database, and (iv) data transfer to payment maker, bank, or monetary authorities.

The need for record keeping for purposes of risk management conflicts with the transaction anonymity of cash. One can say that anonymity exists today only because cash is a very old concept, invented long before the computer and networks gave us the ability to track everything. Although a segment of the payment-making public always desires transaction anonymity, many believe that anonymity runs counter to the public welfare because too many taxes, smuggling, and/or money laundering possibilities exist. The anonymity issue raisesthe question: can e-payments be done without an automatic record feature?

Many recent payment systems seem to be ambivalent on this point. For instance, the Mondex electronic purse touts' equivalence with cash, but its electronic wallets are designed to hold automatic records of the card's last twenty transactions with a built-in statement. Obviously, the card-reading terminals, machines, or telephones could maintain records of all transactions. With these records, the balance on any smart card could be reconstructed after the fact, thus allowing additional protection against loss or theft. This would certainly add some value versus cash.

Managing Information Privacy

The e-payment system must ensure and maintain privacy. Every time one purchases goods using a credit card, subscribes to a magazine, or accesses a server, that information goes into the database. Furthermore, all these records can be linked so that they constitute in effect, a single dossier. This dossier would reflect what items were bought, and where and when. Thisviolates the unspoken law of doing business, that privacy of customers should be protected as much as possible.

Managing Credit Risk

Credit or systemic risk is a major concern in net settlement systems, because a bank's failure to settle its net position could lead to a chain reaction of bank failures. The digital central bank must develop policies to deal with this possibility. Various alternatives exist, each with advantages and disadvantages. A digital central bank guarantee on settlement removes the Perspective insolvency test from the system because banks will more readily assume credit risks from other banks.

Without such guarantees, the development of clearing and settlement systems and money markets may be impeded. A middle road is also possible; for example, setting controls on bank exposures (bilateral or multilateral) and requiring collateral. If the central bank does not guarantee settlement, it must define, at least internally, the conditions and terms for extending liquidity to banks in connection with settlement.

9.2 PAYMENT GATEWAY

Payment Gateway is an online **payment** processing technology which helps businesses to accept credit cards and electronic checks. In other words, payment gateways are “Man-in-the-middle” which are located between e-commerce platforms and clients.

A payment gateway allows you to:

- Make and take payments quickly and easily.
- Keep your customer's data (information) and money secure.
- Gain trust of your customers, so they are willing to hand over their money.

MOST POPULAR PAYMENT GATEWAY PROVIDERS

Following is the list of the most widely used and popular payment getaway providers along with a brief history about them.

- **PAYPAL** − You can find all the terms and conditions of their business model on their URL – https://www.paypal.com/. PayPal is one of the longest established and probably the best-known service for transferring money online.
- **Amazon Payments** − The URL of this immensely popular payment getaway provider is – https://payments.amazon.com/. It was created in 2007, Amazon Payments provides your customers with the same checkout experience they get on Amazon.com
- **Stripe** − The URL of this payment getaway is – https://stripe.com/. No monthly fees, no extra charges for different cards and different payment methods, also for different currencies. Stripe also offers a great API (Application Program Interface) as well.
- **Authorize Net** − The URL for this popular payment getaway provider is https://www.authorize.net/. It is among the most powerful and well-known payment gateways. It is well-supported by e-commerce WordPress plugins.
- **2Checkout** − The URL for this payment getaway provider is – https://www.2checkout.com/. 2checkout is one of the most simple and affordable credit card gateways.

9.3 CONCEPT OF ONLINE BANKING

Internet banking, also known as online banking or e-bankingor Net Banking is a facility offered by banks and financial institutions that allow customers to use banking services over the internet. Customers need not visit their bank's branch office to avail each and every small service. Not all account holders get access to internet banking. If you would like to use internet banking services, you must register for the facility while opening the account or later. You have to use the registered customer ID and password to log into your internet banking account

IMPORTANCE OF ONLINE BANKING:

Online Banking provides many advantages for banks and customers. Online Banking has made life much easier and banking much faster for both customers and banks.

Main advantages are as follows:

- It saves time spent in banks
- It provides ways for international banking.
- It provides banking throughout the year 24/7 days from any place have internet access.
- It provides well-organized cash management for internet optimization
- It provides convenience in terms of capital, labour, time all the resources needed to make a transaction.
- Taking advantage of integrated banking services, banks may compete in new markets, can get new customers and grow their market share.
- It provides some security and privacy to customers, by using state-of-the-art encryption and security technologies.

QUESTIONS FOR DISCUSSION

1. Discuss the risks involved in e-payment system
2. What is online Banking? Discuss the importance of Online Banking
3. What are Payment Gateways? Name any three payment gateway providers.

UNIT – III: ONLINE BUSINESS TRANSACTIONS

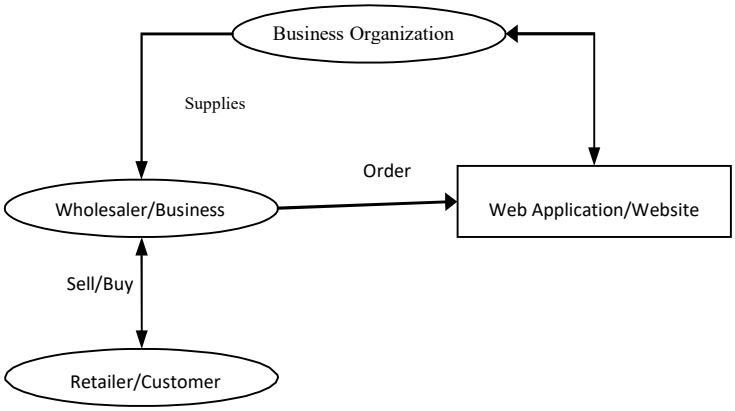
Online business transaction:

E-Commerce is a means of electronic transformation and digital information processing technology in business transactions to generate, convert, and redefine relationships for value creation among the organizations, and between organizations and individuals. E-commerce basically defines buying or selling of products over the internet. E-Commerce implies transactions over networks like internet and public computer networks. It has a vital role in business organizations in delivering complete and effective product information and services to achieve business goal.

This mechanism is widely used in organization for easy management of products and services by using web based applications to implement business operations like logistics, payments, inventory management, etc. and to have greater impact on their intended consumers. It also facilitates the automation of business related information, products and services between organizations and persons. Also E-commerce can provide 24*7 business operations over traditional commerce, wherein it is not possible. The security of information is another important issue in the entire course of ecommerce transaction Lifecycle, without it, theft of essential details may be happening and any such important information may be altered. For a secure E-commerce transaction major parameters are confidentiality, integrity and availability together known as the CIA(classic Info Sectriad-confidentiality, integrity and availability-are inter changeably referred to in the literature as security attributes, properties, security goals, fundamental aspects, information criteria, critical information characteristics and basic building blocks) triad. The following are the categories of E-commerce, which are generally accepted by the business community and further, It needs to be secured:

1. Business-to-Business(B2B)
2. Business-to-Consumer(B2C)
3. Consumer-to-Consumer(C2C)

Business-to-Business(B2B)

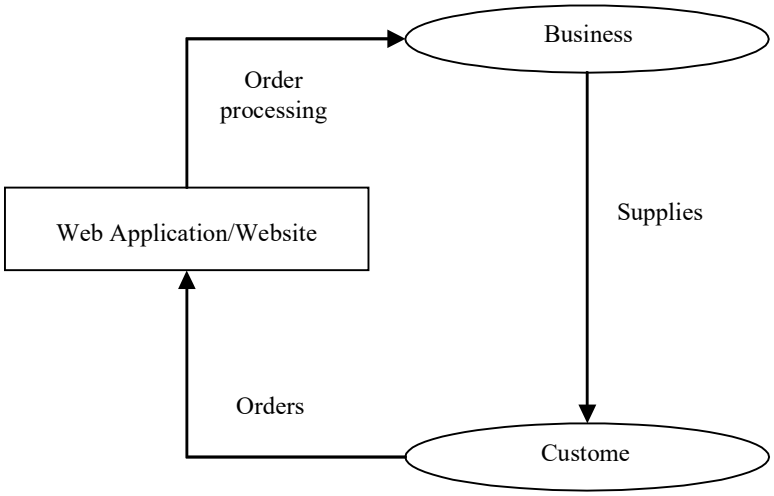


Business-to-Business (B2B) e-commerce is in which businesses' center of attention is on selling to other businesses. Web application follows a B2B type of E-commerce where selling of a product is done to an interim buyer who then sells the product to the last customer. As an illustration, a wholesaler/business organization places an order from a

company's website and after getting the shipment, sells the product to last customer who come to buy the product.

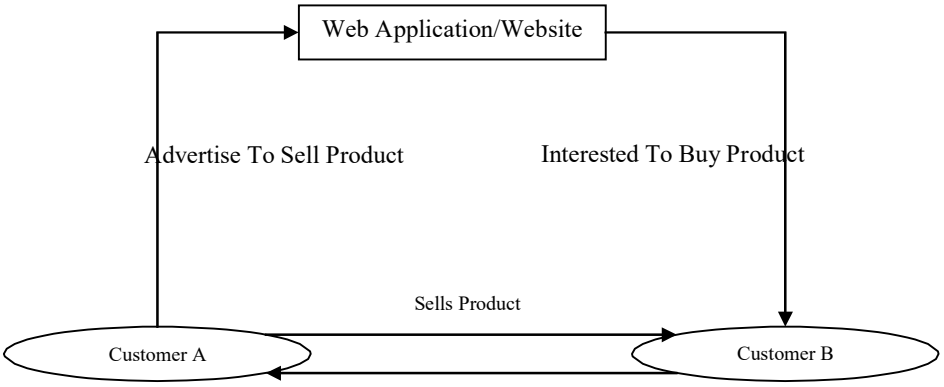
Business-to-Consumer(B2C)

Business-to-Consumer (B2C) e-commerce is the most common type of E-commerce transaction, wherein a business organization tends to sell products/services directly to the end individual/group of customers via a web interface/website or by using other electronic communication network like a mobile phone. As shown in the figure a customer places an order through a website of a business organization, the business organization in return process the order and supply product to the customer.



Consumer-to-Consumer(B2C)

Consumer-to-Consumer (C2C) e-commerce is the fastest growing type of E-commerce, here business organization acts as a mediator body between buyer and seller, whose key role is to provide a platform (website) to advertise products and interested buyer may buy the product from the seller through direct mutual communication. As shown in the figure Customer A advertise product on a website, and the interested buyer Customer B communicates with A from the given information listed on the website. Finally Customer A sells Product to customer B and receives the payment from B.



Advantages and Dis advantages of transacting online:

Advantages of transacting online:

- Easy and best solution for online shoppers.
- These systems are most efficient and have excellent response times.
- Very easy to use; as simple as fill a form and the rest will be taken care of by the web and database servers.
- Online banking is completely based on online transaction processing systems.
- Credit cards are also well-handled by these systems.
- You can access anything on the web and choose to buy it because all financial transactions methods are supported by these systems.

Disadvantages of transacting online:

- At times, there occur millions and millions of requests at a time which gets difficult to handle.
- During purchases even if the servers hang for few seconds a large number of transactions get affected, in turn affecting the organizations' reputation.
- Databases store all user data and account information, if these servers are hacked, it could lead to financial and personal problems (thefts).
- In the case of hardware failures of the online transaction processing systems, visitors of the website get in trouble and their online transactions get affected.
- Electricity problem is another issue, i.e., if there is a shortage in electric supply additional backup facilities like generators and related hardware, is a must.
- Online transaction processing involves a lot of staff working in groups to maintain inventory.
- These online transaction systems impose processing costs on the buyers and sellers as well.
- These systems do not have efficient methods of transferring products to buyers by themselves. That's where the e-commerce websites come in.
- The fundamental of operation of online transaction systems is atomicity. Atomicity ensures that if any step fails in the process of the transaction, the entire transaction must fail, due to which the same steps have to be repeated again and again while filling forms which causes dissatisfaction among buyers.

Ecommerce applications in various industries:

Applications of E-Commerce:

The applications of E-commerce are used in various business areas such as retail and wholesale and manufacturing. The most common E-commerce applications are as follows:

1. E-Banking
2. Retail and wholesale

3. Finance
4. Manufacturing
5. Online Auction
6. Online marketing and purchasing
7. Online publishing
8. Online booking (ticket, seat. etc)

Applications of E-Commerce in Banking

Here are some of the most important current applications of e-commerce in banking.

1. Electronic billing

Electronic billing is one of the biggest benefits that e-commerce has brought to both consumers and businesses. Banks now offer the ability to automatically pay your bills through their website or on their app. Companies can send out electronic invoices to their customers and receive payment automatically instead of waiting for and cashing a physical check. The connection between the ability for banks to send and receive payment digitally and the rise of e-commerce as a primary driver of sales and revenue in many businesses is not a coincidence; it would be nearly impossible to effectively have one without the other.

2. ID verification

Banks can and should take identification very seriously. The job of a credible financial institution is to ensure that the person spending is the person who should have access to the funds in the account. This has become harder the more technology has advanced. But technology has also helped drive innovation in the ability to confirm the identity and other credentials so that customers can conduct their e-commerce transaction more securely, without the possibility of data being stolen or leaked this identification process is not just a protection for the customer, but also for the retailer or vendor. It's the responsibility of all stakeholders – banks and e-commerce retailers alike – to uphold ID verification and customer information security standards.

3. Mobile payments

Mobile commerce, or m-commerce, is an important part of e-commerce. Mobile focused commerce has become a new normal for many people who are now able to buy everything from a dog sitter to a plane ticket from their phone. A smart phone has become another important e-commerce tool, however -a digital wallet. Customers can now pay for many of their in-person purchases with a smart phone app, whether it's a bank-backed credit card app or an app like Apple Pay which keeps payment options for customers' various financial sources together in one place for easy payment. While mobile payments are more often used to describe in-person digital transactions, they are definitely born out of the application of e-commerce in banking endeavors.

4. Digital-only banking

E-commerce has enabled app payments and transactions, leading the way for reeducation in physical brick and mortar banks. While many large banks with an e-commerce presence do still have in-person presences in certain communities, many banks have opened as online-only operations, such as Ally. Mortgage brokers have joined the only online finance trend as well. Having users interact with their banking primarily through an app is in line with how consumers interact with many other parts of their daily lives, from paying for coffee to ordering groceries to set doctor's appointments and more. Online-only banks can also offer a better banking experience by often being able to give customers a better interest rate on savings accounts or loans because of the money the bank itself was able to save by not having to pay overhead costs like rent, etc.

5. B2B innovation

The e-commerce experience has changed the way B2B buyers anticipate buying and selling experiences to go. This has largely been due to the implication of e-commerce in banking in B2C spheres. E-commerce has enabled banks to offer faster account opening, digital invoice payment, and other conveniences that B2C buyers have long enjoyed. B2B buyers have experienced these features in their non-business life and are making demands in the marketplace that their B2B experience is more consistent and matches the rest of modern life. E-commerce and banking, then, have a responsibility to continue to elevate the customer experience.

6. International commerce

E-commerce has made it easier for people to bank internationally or pay for goods and services from another country without having to work around banking regulations or exchange rates. Third-party vendors like PayPal work as a go-between for e-commerce retailers and financial organizations and banks.

E-commerce has created a lot of opportunities for banking and the applications of e-commerce in banking continue to grow, with both retailers and finance organizations working to create a better customer experience through technology that will help businesses from both industries grow revenue and strengthen their brand.

Retail and wholesale:

E-commerce has a number of applications in retail and wholesale. E-retailing or on-line retailing is the selling of goods from Business-to-Consumer through electronic stores that are designed using the electronic catalog and shopping cart model. Cybermall is a single Website that offers different products and services at one Internet location. It attracts the customer and the seller into one virtual space through a Web browser.

Finance:

Financial companies are using E-commerce to a large extent. Customers can check the balances of their savings and loan accounts, transfer money to their other account and pay their bill through on-line banking or E-banking. Another application of E-commerce is on-line stock trading. Many Websites provide access to news, charts, information about company profile and analyst rating on the stocks.

Manufacturing:

E-commerce is also used in the supply chain operations of a company. Some companies form an electronic exchange by providing together buy and sell goods, trade market information and run back office information such as inventory control. This speeds up the flow of raw material and finished goods among the members of the business community. Various issues related to the strategic and competitive issues limit the implementation of the business models. Companies may not trust their competitors and may fear that they will lose trade secrets if they participate in mass electronic exchanges.

Auctions:

Customer-to-Customer E-commerce is direct selling of goods and services among customers. It also includes electronic auctions that involve bidding. Bidding is a special type of auction that allows prospective buyers to bid for an item. For example, airline companies give the customer an opportunity to quote the price for a seat on a specific route on the specified date and time.

Online marketing and purchasing

Data collection about customer behavior, preferences, needs and buying patterns is possible through Web and E-commerce. This helps marketing activities such as price fixation, negotiation, product feature enhancement and relationship with the customer.

Online publishing:

Electronic publishing (also referred to as e-publishing or digital publishing) includes the digital publication of e-books, digital magazines, and the development of digital libraries and catalogs

Online booking (ticket, seat.etc)

An **Internet booking engine** (IBE) is an application which helps the travel and tourism industry support reservation through the Internet. It helps consumers to book flights, hotels, holiday packages, insurance and other services online. This is a much needed application for the aviation industry as it has become one of the fastest growing sales channels.

Benefits, Problems and Features

Benefits:

- Low labor costs since online payments are usually automatic, they have lower labor costs than manual payment methods, such as cheque, money order, cash and EFTPOS.
- Convenience for online sales online payment methods allow conveniently selling goods and services online.
- Automatic Online payments can be automatic, which can be convenient for you and your customers.
- Fast transaction speed online transactions quickly provide feedback to you and your customers.

- Low risk of theft after processing delays, online payments generally go straight into your bank account, so they have a low risk of theft.

Problems and Features:

Social media management:

Chances are you do not have your social media strategy figured out. Social media is still so young, that businesses are much more likely to have failed on social media than succeeded. This includes brands of all sizes - from the mom and pop shops to global brands with billions of dollars and seemingly unlimited manpower.

Deming famously observed that most problems in business can be traced back to process. In my observations working with clients, I'm more likely to see a flawed process for managing social than a flawed content strategy. Granted, I don't often see great content strategies either, but it's even more rare to see a great process. Given the choice, you'd rather have a content problem than a process problem. Content and strategy are relatively easy to fix. Incorporating a disciplined process for execution, measurement, and accountability is much more difficult.

To overcome the inherent challenges running a successful social media campaign, start with process, then input strategy.

Getting value from SEO (Search Engine Optimization):

From the **changing algorithms** to the **lack of keyword data**, it's become harder to get results and even harder to see results. Not a fun combination. The biggest losers were the companies that relied on these search engine rankings for the majority of their online revenue. Once the rankings disappeared, the revenue stopped.

Even if you don't find yourself in recovery mode, trying to break through the competition without the availability of effective low-cost solutions has many questioning the value of SEO. And rightfully so! Simply put, the cost of input has increased while the expected output has decreased. That's a dangerous trend.

Reset expectations:

Ultimately, we want to know how much revenue can be attributed back to your search engine visibility. That hasn't changed, but how you make that connection isn't as transparent. You have to be smarter and willing to dig deeper into your data.

What do I mean by that?

DO NOT rely heavily on rankings as a barometer of progress. The personalization of search results based on your specific location and your search history can significantly alter what one person sees compared to the person 10 miles away.

DO use the **multi-attribution report** to see how many assisted conversions are a result of organic site visitors.

DO NOT create pages and pages of weak content simply to attract search engine traffic. Even if you're successful at increasing traffic volume, no one will want to stay on your site after they've read your content. Remember: **Grade A quality or bust**.

DO create a consumer-centric culture that makes people want to come back and recommend you to their friends and colleagues (more on consumer-centric approach below).

Multi – Devices Usage:

As a data-driven agency, one of our biggest challenges is how to track the visitor experience across multiple devices over the course of the consumer buying cycle. I **wrote about this** a couple months back, but here's a quick refresher:

Potential customer is on their couch with their iPhone. They see your product in their Face book news feed. They click through to your site, take a look, and then move on, that same potential customer is now on their iPad researching products like yours. They can't remember your brand, but while searching for your type of product, you come up in a Google search result, along with your competitors. They have a look around and compare prices and features, but still don't buy.

Potential customer is on their desktop computer with their credit card in hand. Having seen your website a couple times already, the consumer remembers your web address and goes to it directly. They add the item to their cart and successfully purchase.

How can you possibly trace that sale back to its origin (which should be split between Facebook and Google)? According to your analytics, Facebook and Google both sent you a visitor that didn't convert. If that happens several dozen times, the conversion rate on these channels starts to take a major hit, leading you to question the value of those channels.

But remember, those channels played an **integral** part in leading up to the purchase.

There are no easy solutions, but being aware of this behavior is the first step to making smarter decisions with the data available, even if it doesn't tell the whole story.

Optimization the mobile Experience:

For years you've been hearing about the mobile revolution. As former Google CEO Eric Schmidt put it, "the trend has been mobile was winning. It's now won."

I've watched client's mobile traffic go from 5% to 30% in the last couple years. With this shift in traffic comes drops in conversion rates, less time spent on site, and higher bounce rates.

A responsive website, which reformats your site content based on the users' screen size, is a step towards an improved mobile experience. But if that's all you do to cater to your mobile audience, you're missing the boat. Mobile users have less patience, are seeking different answers, and can be at a different stages in the buying cycle. The mobile user is different and it's up to you to find out how and why. Only then can you adjust your messaging and presentation to suit the mobile user.

Competing with the nose:

As businesses continue to build out their online presence, consumers are provided with more and more choices. The streets have become crowded and everyone wants a piece of the action. Staying on the front end of the curve and rising above the noise is harder than ever.

An emerging consumer-centric strategy is known as **Utility Marketing**, whereby you intersect the consumer at the point of a non-commercial need, become a part of their life, and remain with them when they're ultimately ready to buy. Here's an example:

As someone with wi-fi enabled devices throughout my house, I like to see the different connection speeds I can achieve from different rooms. This helps me test my Wi-Fi strength for devices like an Apple TV or Nest. Similarly, I'd like to know if my cellular connection speed is strong enough to tether my laptop to my iPhone during a client meeting.

Online services:

Here are the main types of online services for you to consider:

1. Banking

Banking includes handing deposits into checking and savings accounts, as well as lending money to customers. About 10% of the money deposited into banks must stay on hand, as dictated by the Federal Deposit Insurance Corporation's (FDIC) reserve requirement. The other 90% is available for loans. Some of the interest the bank earns from these loans is given to the customers who have deposited money into the bank.

2. Advisory

This branch of financial services helps both people and organizations with a variety of tasks. Financial advisors can help with due diligence on investments, provide valuation services for businesses, aid in real estate endeavours, and more. In each case, advisors help to guide people in the right direction when making financial decisions.

3. Wealth Management

This type of financial service helps people to save money intelligently, and receive a return on their investment when possible. If you have a 401K program through your employer, that is one type of wealth management.

4. Mutual Funds

Mutual funds institutions offer a type of investment that multiple parties share in. These investments are managed by a professional, not the investors themselves. The buy-in for a mutual fund is not quite as large as some traditional investments in bonds, the stock market, or the like, so they are a popular option for people who are a little hesitant with their finances. The investments are also diversified, which helps to mitigate risk.

5. Insurance

This is one of the most common areas of financial services. Most people have some understanding of insurance; it is a system that you pay into monthly or annually which acts as a safety net and covers costs of some large expenditures which are often unforeseen. There are many kinds of insurance: health, auto, home, renters, and life insurance, just to name a few.

Online Learning:

Online learning is when you take courses online instead of in a physical classroom. If your schedule makes it hard to attend classes, if you prefer studying at your own pace or if

you live far from campus, online learning might be for you.

With online learning, you can:

- Earn a certificate or diploma without setting foot in a physical classroom
- Work full-time while you study
- Set your own schedule: study in the early morning, on your lunch break, or even in the middle of the night
- Interact with students from across Canada and around the world
- Get a quality education from the University of Victoria without leaving your home community.

Online Shopping

Online shopping is becoming increasingly popular for variety of reasons. There are certainly outside factors such as increasing gas prices, difficulty in getting to traditional stores and hassles often associated with shopping malls and other traditional stores to contribute to the increased interest in online shopping.

Consumers can get full information about the product with its reviews being passed by the existing users. If one wants to buy a product he/she is no longer limited to asking the friends and families because there are many products reviews on the web which gives opinions of the existing users of the product.

Online shopping sites contain wide variety of goods both high quality and mild quality keeping in mind the level of people.

THE DOs AND DONTs IN ONLINE SHOPPING:

If people want to be as savvy online shoppers, enjoy in finding great deals and avoid becoming a victim of cybercrime, customers want to follow a few basic Do's and Don'ts when buying from websites.

DOs:

- Before giving the credit card information, enough time must be taken to research the website. Contact the seller if this is the customer's first purchase. Most reputable sellers will have a toll-free customer service phone number.

  If site had only an email address and no phone number, start an email or instant message dialogue with the people running the site before buying anything from them.

- Pay by credit card or an online payment service. Online Payment service offer some protection as well. For extra degree of protection, credit card is the best.

- Buy from a website that has encryption. "Encryption is a key to secure Internet purchases. It is a feature that automatically codes the customer's personal data when it is entered".

- ♦ Check the website policies before placing the order. Read the website's return policy and other terms and conditions, as well as the site's privacy policy, before ordering anything.

- ♦ Use comprehensive computer security software. Make sure the customers have up –to – date, Comprehensive security software such as, MCA fee Internet security or MCA fee Total protection before doing anything with online shopping. This will greatly reduce the risk of contracting virus and will help to avoid theft on dangerous websites.

- ♦ Check the credit card statements, make sure that the customer charged the proper amount, and that no extras were added to their bill.

DON'TS:

- Do not buy from spammers. If the customer gets an e-mail inviting them to buy something like "Discounted Rolex Watches" two things must be considered.

i. Spam

ii. Possible scam.

The most spammers will steal the credit card or financial information and use it fraudulently. If purchases are made from spammers, the customer will never get what they have ordered. It is a risky deal.

- Do not pay by a debit card, cash or wire transfer. When the customer pay with debit cards, the money comes directly out of the customers amount. Getting the cash back can be difficult, if it not possible. When the people pay by cash or use a wire transfer, the money goes directly to the sellers account. So there is no recourse if something goes wrong.

- Do not buy from a websites unless it is certified for safety. People need to feel confident that when people make an online purchase, personal and financial information will not be compromised.

- Do not buy from a websites with which people are not totally comfortable.

- Do not forget to inspect the new purchase as soon as it arrives. If the customer finds a problem, notify the seller as soon as possible.

UNIT – IV: WEBSITE DESIGNING

Introduction to HTML: Basic HTML – HTML document structure – HTML tags – Basefont tag – title tag – body tag – horizontal rule tag – text formatting tags – character tags, HTML Lists: Ordered list, unordered list & Definition List – using colors – using images.

HTML

HTML stands for **H**yper**t**ext **M**arkup **L**anguage, and it is the most widely used language to write Web Pages.

- **Hypertext** refers to the way in which Web pages (HTML documents) are linked together. Thus, the link available on a webpage is called Hypertext.
- As its name suggests, HTML is a **Markup Language** which means you use HTML to simply "mark-up" a text document with tags that tell a Web browser how to structure it to display.

Originally, HTML was developed with the intent of defining the structure of documents like headings, paragraphs, lists, and so forth to facilitate the sharing of scientific information between researchers.

Now, HTML is being widely used to format web pages with the help of different tags available in HTML language.

HTML is a MUST for students and working professionals to become a great Software Engineer specially when they are working in Web Development Domain. I will list down some of the key advantages of learning HTML:

- **Create Web site** - You can create a website or customize an existing web template if you know HTML well.
- **Become a web designer** - If you want to start a carrer as a professional web designer, HTML and CSS designing is a must skill.
- **Understand web** - If you want to optimize your website, to boost its speed and performance, it is good to know HTML to yield best results.
- **Learn other languages** - Once you understands the basic of HTML then other related technologies like javascript, php, or angular are become easier to understand.

Hello World using HTML.

Just to give you a little excitement about HTML, I'm going to give you a small conventional **HTML Hello World** program, You can try it using Demo link.

```
<!DOCTYPE html>
<html>
<head>
<title>This is document title</title>
</head>
<body>
<h1>This is a heading</h1>
<p>Hello World!</p>
</body>
```

</html>

Applications of HTML

As mentioned before, HTML is one of the most widely used language over the web. I'm going to list few of them here:

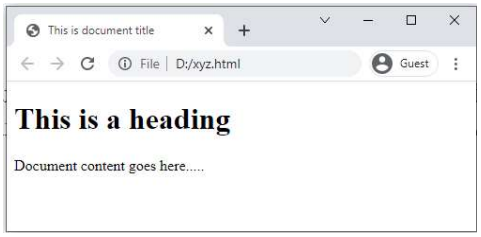
- **Web pages development** - HTML is used to create pages which are rendered over the web. Almost every page of web is having html tags in it to render its details in browser.
- **Internet Navigation** - HTML provides tags which are used to navigate from one page to another and is heavily used in internet navigation.
- **Responsive UI** - HTML pages now-a-days works well on all platform, mobile, tabs, desktop or laptops owing to responsive design strategy.
-
- **Offline support** HTML pages once loaded can be made available offline on the machine without any need of internet.
- **Game development**- HTML5 has native support for rich experience and is now useful in gaming developent arena as well.

Basic HTML Document

In its simplest form, following is an example of an HTML document:

```
<!DOCTYPE html>
<html>
<head>
<title>This is document title</title>
</head>
<body>
<h1>This is a heading</h1>
<p>Document content goes here.....</p>
</body>
</html>
```

This will produce the following result:



HTML Tags

As told earlier, HTML is a markup language and makes use of various tags to format the content. These tags are enclosed within angle braces **<Tag Name>**. Except few tags, most of the tags have their corresponding closing tags. For example, **<html>**has its closing tag**</html>**and **<body>**tag has its closing tag **</body>**tag etc.

Above example of HTML document uses the following tags: **Tag**	**Description**
<!DOCTYPE...>	This tag defines the document type and HTML version.
<html>	This tag encloses the complete HTML document and mainly comprises of document header which is represented by <head>...</head> and document body which is represented by <body>...</body> tags.
<head>	This tag represents the document's header which can keep other HTML tags like <title>, <link> etc.
<title>	The <title> tag is used inside the <head> tag to mention the document title.
<body>	This tag represents the document's body which keeps other HTML tags like <h1>, , <p> etc.
<h1>	This tag represents the heading.
<p>	This tag represents a paragraph.

To learn HTML, you will need to study various tags and understand how they behave, while formatting a textual document. Learning HTML is simple as users have to learn the usage of different tags in order to format the text or images to make a beautiful webpage.

World Wide Web Consortium (W3C) recommends to use lowercase tags starting from HTML 4.

HTML Document Structure

A typical HTML document will have the following structure:

Document declaration tag

<html>

<head>

Document header related tags

</head>

<body>

Document body related tags

</body>

</html>

We will study all the header and body tags in subsequent chapters, but for now let's see what is document declaration tag.

The <!DOCTYPE> Declaration

The <!DOCTYPE> declaration tag is used by the web browser to understand the version of the HTML used in the document. Current version of HTML is 5 and it makes use of the following declaration:

<!DOCTYPE html>

There are many other declaration types which can be used in HTML document depending on what version of HTML is being used. We will see more details on this while discussing <!DOCTYPE...> tag along with other HTML tags.

HTML – BASIC TAGS

Heading Tags

Any document starts with a heading. You can use different sizes for your headings. HTML also has six levels of headings, which use the elements **<h1>, <h2>, <h3>, <h4>, <h5>, and <h6>**. While displaying any heading, browser adds one line before and one line after that heading.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Heading Example</title>
</head>
<body>
<h1>This is heading 1</h1>
<h2>This is heading 2</h2>
<h3>This is heading 3</h3>
<h4>This is heading 4</h4>
<h5>This is heading 5</h5>
<h6>This is heading 6</h6>
</body>
</html>
```

This will produce the following result:

This is heading 1

This is heading 2

This is heading 3

This is heading 4

This is heading 5

This is heading 6

Paragraph Tag

The ** **tag offers a way to structure your text into different paragraphs. Each paragraph of text should go in between an opening and a closing tag as shown below in the example:

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Paragraph Example</title>
</head>
<body>
<p>Here is a first paragraph of text.</p>
<p>Here is a second paragraph of text.</p>
<p>Here is a third paragraph of text.</p>
</body>
</html>
```

This will produce the following result:

Here is a first paragraph of text.

Here is a second paragraph of text.

Here is a third paragraph of text.

Line Break Tag

Whenever you use the **
element, anything following it starts from the next line. This tag is an example of an **empty element, where you do not need opening and closing tags, as there is nothing to go in between them.

The
 tag has a space between the characters **br** and the forward slash. If you omit this space, older browsers will have trouble rendering the line break, while if you miss the forward slash character and just use
 it is not valid in XHTML.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Line Break Example</title>
</head>
<body>
<p>Hello<br />
You delivered your assignment on time.<br />
Thanks<br />
Mahnaz</p>
</body>
</html>
```

This will produce the following result:

Hello You delivered your assignment on time. Thanks Mahnaz

Centring Content

You can use ** **tag to put any content in the center of the page or any table cell.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Centring Content Example</title>
</head>
<body>
<p>This text is not in the center.</p>
<center>
<p>This text is in the center.</p>
</center>
</body>
</html>
```

This will produce the following result:

This text is not in the center.

This text is in the center.

Horizontal Lines (horizontal rule tag)

Horizontal lines are used to visually break-up sections of a document. The **<hr>**tag creates a line from the current position in the document to the right margin and breaks the line accordingly.

For example, you may want to give a line between two paragraphs as in the given example below:

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Horizontal Line Example</title>
</head>
<body>
<p>This is paragraph one and should be on top</p>
<hr />
<p>This is paragraph two and should be at bottom</p>
</body>
</html>
```

This will produce the following result:

This is paragraph one and should be on top

This is paragraph two and should be at bottom

Again **<hr />**tag is an example of the **empty** element, where you do not need opening and closing tags, as there is nothing to go in between them.

The **<hr />**element has a space between the characters **hr** and the forward slash. If you omit this space, older browsers will have trouble rendering the horizontal line, while if you miss the forward slash character and just use **<hr>**it is not valid in XHTML

Preserve Formatting

Sometimes, you want your text to follow the exact format of how it is written in the HTML document. In these cases, you can use the preformatted tag **<pre>**.

Any text between the opening **<pre>**tag and the closing **</pre>**tag will preserve the formatting of the source document.

Example

```
<!DOCTYPE html>
```

```
<html>
<head>
<title>Preserve Formatting Example</title>
</head>
<body>
<pre>
function test Function (strText ){
alert (str Text)
}
</pre>
</body>
</html>
```

This will produce the following result:

```
function testFunction( strText ){
alert (strText)
}
```

Try using the same code without keeping it inside **<pre>...</pre>**tags

Non-breaking Spaces

Suppose you want to use the phrase "12 Angry Men." Here, you would not want a browser to split the "12, Angry" and "Men" across two lines:

An example of this technique appears in the movie "12 Angry Men."

In cases, where you do not want the client browser to break text, you should use a nonbreaking space entity ** ** instead of a normal space. For example, when coding the "12 Angry Men" in a paragraph, you should use something similar to the following code:

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Nonbreaking Spaces Example</title>
</head>
<body>
<p>An example of this technique appears in the movie "12 Angry Men."</p>
</body>
</html>
```

HTML – ELEMENTS

An **HTML element** is defined by a starting tag. If the element contains other content, it ends with a closing tag, where the element name is preceded by a forward slash as shown below with few tags:

Start Tag	Content	End Tag
	This is paragraph content.	
<h1>	This is heading content.	</h1>
	This is division content.	

So here ** .... **is an HTML element, **<h1>...</h1>**is another HTML element. There are some HTML elements which don't need to be closed, such as **<img.../>**, **<hr />**and **
elements. These are known as **void elements.

HTML documents consists of a tree of these elements and they specify how HTML documents should be built, and what kind of content should be placed in what part of an HTML document.

HTML Tag vs. Element

An HTML element is defined by a *starting tag*. If the element contains other content, it ends with a *closing tag*.

For example, ** **is starting tag of a paragraph and ** **is closing tag of the same paragraph but ** This is paragraph **is a paragraph element.

Nested HTML Elements

It is very much allowed to keep one HTML element inside another HTML element:

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Nested Elements Example</title>
</head>
<body>
<h1>This is <i>italic</i> heading</h1>
<p>This is <u>underlined</u> paragraph</p>
</body>
</html>
```

This will display the following result:

This is *italic* heading

This is underlined paragraph

HTML – ATTRIBUTES

We have seen few HTML tags and their usage like heading tags **<h1>, <h2>,** paragraph tag **<p>**and other tags. We used them so far in their simplest form, but most of the HTML tags can also have attributes, which are extra bits of information.

An attribute is used to define the characteristics of an HTML element and is placed inside the element's opening tag. All attributes are made up of two parts: a **name** and a **value**:

- The **name** is the property you want to set. For example, the paragraph **<p>**element in the example carries an attribute whose name is **align**, which you can use to indicate the alignment of paragraph on the page.
- The **value** is what you want the value of the property to be set and always put within quotations. The below example shows three possible values of align attribute: **left, center** and **right**.

Attribute names and attribute values are case-insensitive. However, the World Wide Web Consortium (W3C) recommends lowercase attributes/attribute values in their HTML 4 recommendation.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Align Attribute Example</title>
</head>
<body>
<p align="left">This is left aligned</p>
<p align="center">This is center aligned</p>
<p align="right">This is right aligned</p>
</body>
</html>
```

This will display the following result:

This is left aligned

This is center aligned

Core Attributes

The four core attributes that can be used on the majority of HTML elements (although not all) are:

- Id
- Title
- Class
- Style

The Id Attribute

The **id** attribute of an HTML tag can be used to uniquely identify any element within an HTML page. There are two primary reasons that you might want to use an id attribute on an element:

- If an element carries an id attribute as a unique identifier, it is possible to identify just that element and its content.
- If you have two elements of the same name within a Web page (or style sheet), you can use the id attribute to distinguish between elements that have the same name.

We will discuss style sheet in separate tutorial. For now, let's use the id attribute to distinguish between two paragraph elements as shown below.

Example

```
<p id="html">This para explains what is HTML</p>

<p id="css">This para explains what is Cascading Style Sheet</p>
```

The title Attribute

The **title** attribute gives a suggested title for the element. They syntax for the **title** attribute is similar as explained for **id** attribute:

The behavior of this attribute will depend upon the element that carries it, although it is often displayed as a tooltip when cursor comes over the element or while the element is loading.

Example

```
<!DOCTYPE html>

<html>

<head>

<title>The title Attribute Example</title>

</head>

<body>

<h3 title="Hello HTML!">Titled Heading Tag Example</h3>

</body>

</html>
```

This will produce the following result:

Titled Heading Tag Example

Now try to bring your cursor over "Titled Heading Tag Example" and you will see that whatever title you used in your code is coming out as a tooltip of the cursor.

The class Attribute

The **class** attribute is used to associate an element with a style sheet, and specifies the class of element. You will learn more about the use of the class attribute when you will learn Cascading Style Sheet (CSS). So for now you can avoid it.

The value of the attribute may also be a space-separated list of class names. For example:

```
class="className1 className2 className3"
```

The style Attribute

The style attribute allows you to specify Cascading Style Sheet (CSS) rules within the element.

```
<!DOCTYPE html>
<html>
<head>
<title>The style Attribute</title>
</head>
<body>
<p style="font-family:arial; color:#FF0000;">Some text...</p>
</body>
</html>
```

This will produce the following result:

Some text...

At this point of time, we are not learning CSS, so just let's proceed without bothering much about CSS. Here, you need to understand what are HTML attributes and how they can be used while formatting content.

Internationalization Attributes

There are three internationalization attributes, which are available for most (although not all) XHTML elements.

- dir
- lang
- xml:lang

The dir Attribute

The **dir** attribute allows you to indicate to the browser about the direction in which the text should flow. The dir attribute can take one of two values, as you can see in the table that follows: **Value**	**Meaning**
ltr	Left to right (the default value)
rtl	Right to left (for languages such as Hebrew or Arabic that are read right to left)

This is how IE 5 renders right-to-left directed text.

When *dir* attribute is used within the <html> tag, it determines how text will be presented within the entire document. When used within another tag, it controls the text's direction for just the content of that tag.

The lang Attribute

The **lang** attribute allows you to indicate the main language used in a document, but this attribute was kept in HTML only for backwards compatibility with earlier versions of HTML. This attribute has been replaced by the **xml:lang** attribute in new XHTML documents.

The values of the *lang* attribute are ISO-639 standard two-character language codes. Check **HTML Language Codes: ISO 639** for a complete list of language codes.

Example

<!DOCTYPE html>

<html lang="en">

<head>

<title>English Language Page</title>

</head>

<body>

This page is using English Language

</body>

</html>

Character Tags

common physical character tags		
Tag	**Description**	**Renders as**
<b>	bold	displays text as bold
<big>	big	displays text in a big font
<i>	italics	displays text as italic
<s> or <strike> *	strike	displays text with a line through it
<small>	small	displays text in a small font
<sub>	subscript	displays the text as subscript — text that displays below the baseline of the text
<sup>	superscript	displays the text as superscript — text that has baseline above the baseline of the rest of the text
<tt>	teletype	displays the text with fixed-width font
<u>	underline	underlines the text

HTML – FORMATTING (text formatting tags)

If you use a word processor, you must be familiar with the ability to make text bold, italicized, or underlined; these are just three of the ten options available to indicate how text can appear in HTML and XHTML.

Bold Text

Anything that appears within **...**element, is displayed in bold as shown below:

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Bold Text Example</title>
</head>
<body>
<p>The following word uses a <b>bold</b> typeface.</p>
</body>
</html>
```

This will produce the following result:

The following word uses a **bold** typeface.

Italic Text

Anything that appears within **...**element is displayed in italicized as shown below:

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Italic Text Example</title>
</head>
<body>
<p>The following word uses a <i>italicized</i> typeface.</p>
</body>
</html>
```

This will produce the following result:

The following word uses an *italicized* typeface.

Underlined Text

Anything that appears within **<u>...</u>**element, is displayed with underline as shown below:

Example

```
<!DOCTYPE html>
<html>
<head>
```

```
<title>Underlined Text Example</title>
</head>
<body>
<p>The following word uses a <u>underlined</u> typeface.</p>
</body>
</html>
```

This will produce the following result:

The following word uses an underlined typeface.

Strike Text

Anything that appears within **<strike>...</strike>**element is displayed with strikethrough, which is a thin line through the text as shown below:

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Strike Text Example</title>
</head>
<body>
<p>The following word uses a <strike>strikethrough</strike> typeface.</p>
</body>
</html>
```

This will produce the following result:

The following word uses a ~~strikethrough~~ typeface.

Monospaced Font (character tags)

The content of a **<tt>...</tt>**element is written in monospaced font. Most of the fonts are known as variable-width fonts because different letters are of different widths (for example, the letter 'm' is wider than the letter 'i'). In a monospaced font, however, each letter has the same width.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Monospaced Font Example</title>
</head>
<body>
<p>The following word uses a <tt>monospaced</tt> typeface.</p>
```

```
</body>
</html>
```

This will produce the following result:

The following word uses a monospaced typeface.

Superscript Text

The content of a **^{...}**element is written in superscript; the font size used is the same size as the characters surrounding it but is displayed half a character's height above the other characters.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Superscript Text Example</title>
</head>
<body>
<p>The following word uses a <sup>superscript</sup> typeface.</p>
</body>
</html>
```

This will produce the following result:

The following word uses a superscript typeface.

Subscript Text

The content of a **_{...}**element is written in subscript; the font size used is the same as the characters surrounding it, but is displayed half a character's height beneath the other characters.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Subscript Text Example</title>
</head>
<body>
<p>The following word uses a <sub>subscript</sub> typeface.</p>
</body>
</html>
```

This will produce the following result:

The following word uses a subscript typeface.

Inserted Text

Anything that appears within **<ins>...</ins>**element is displayed as inserted text.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Inserted Text Example</title>
</head>
<body>
<p>I want to drink <del>cola</del><ins>wine</ins></p>
</body>
</html>
```

This will produce the following result:

I want to drink ~~cola~~ wine

Deleted Text

Anything that appears within **~~...~~**element, is displayed as deleted text.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Deleted Text Example</title>
</head>
<body>
<p>I want to drink <del>cola</del><ins>wine</ins></p>
</body>
</html>
```

This will produce the following result:

I want to drink ~~cola~~ wine

Larger Text

The content of the **<big>...</big>**element is displayed one font size larger than the rest of the text surrounding it as shown below:

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Larger Text Example</title>
</head>
<body>
<p>The following word uses a <big>big</big> typeface.</p>
</body>
</html>
```

This will produce the following result:

The following word uses a **big** typeface.

Smaller Text

The content of the **<small>...</small>**element is displayed one font size smaller than the rest of the text surrounding it as shown below:

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Smaller Text Example</title>
</head>
<body>
<p>The following word uses a <small>small</small> typeface.</p>
</body>
</html>
```

This will produce the following result:

The following word uses a small typeface.

Grouping Content

The ** **and ****elements allow you to group together several elements to create sections or subsections of a page.

For example, you might want to put all of the footnotes on a page within a element to indicate that all of the elements within that element relate to the footnotes. You might then attach a style to this element so that they appear using a special set of style rules.

Example

```
<!DOCTYPE html>
```

```
<html>
<head>
<title>Div Tag Example</title>
</head>
<body>
<div id="menu" align="middle" >
<a href="/index.htm">HOME</a> |
<a href="/about/contact_us.htm">CONTACT</a> |
<a href="/about/index.htm">ABOUT</a>
</div>
<div id="content" align="left" bgcolor="white">
<h5>Content Articles</h5>
<p>Actual content goes here.....</p>
</div>
</body>
</html>
```

This will produce the following result:

HOME | CONTACT | ABOUT

CONTENT ARTICLES

Actual content goes here.....

The element, on the other hand, can be used to group inline elements only. So, if you have a part of a sentence or paragraph which you want to group together, you could use the element as follows

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Span Tag Example</title>
</head>
<body>
<p>This is the example of <span style="color:green">span tag</span> and the <span style="color:red">div tag</span> alongwith CSS</p>
</body>
</html>
```

This will produce the following result:

This is the example of span tag and the div tag along with CSS

These tags are commonly used with CSS to allow you to attach a style to a section of a page.

HTML – Lists

HTML offers web authors three ways for specifying lists of information. All lists must contain one or more list elements. Lists may contain −

- **<ul>** − An unordered list. This will list items using plain bullets.
- **<ol>** − An ordered list. This will use different schemes of numbers to list your items.
- **<dl>** − A definition list. This arranges your items in the same way as they are arranged in a dictionary.

HTML Unordered Lists

An unordered list is a collection of related items that have no special order or sequence. This list is created by using HTML **<ul>** tag. Each item in the list is marked with a bullet.

Example

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Unordered List</title>
</head>

<body>
<ul>
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ul>
</body>

</html>
```

This will produce the following result –

- Beetroot
- Ginger
- Potato
- Radish

The type Attribute

You can use **type** attribute for <ul> tag to specify the type of bullet you like. By default, it is a disc. Following are the possible options −

```
<ul type = "square">
<ul type = "disc">
<ul type = "circle">
```

Example

Following is an example where we used <ul type = "square">

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Unordered List</title>
</head>

<body>
<ultype="square">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ul>
</body>

</html>
```

This will produce the following result –

- Beetroot
- Ginger
- Potato
- Radish

Example

Following is an example where we used <ul type = "disc"> −

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Unordered List</title>
</head>

<body>
<ultype="disc">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ul>
</body>

</html>
```

This will produce the following result –

- Beetroot
- Ginger
- Potato
- Radish

Example

Following is an example where we used <ul type = "circle"> −

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Unordered List</title>
</head>

<body>
<ultype="circle">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ul>
</body>

</html>
```

This will produce the following result –

- Beetroot
- Ginger
- Potato
- Radish

HTML Ordered Lists

If you are required to put your items in a numbered list instead of bulleted, then HTML ordered list will be used. This list is created by using **<ol>** tag. The numbering starts at one and is incremented by one for each successive ordered list element tagged with <li>.

Example

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Ordered List</title>
</head>

<body>
```

```
<ol>
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ol>
</body>

</html>
```

This will produce the following result –

1. Beetroot
2. Ginger
3. Potato
4. Radish

The type Attribute

You can use **type** attribute for <ol> tag to specify the type of numbering you like. By default, it is a number. Following are the possible options −

```
<ol type = "1"> - Default-Case Numerals.
<ol type = "I"> - Upper-Case Numerals.
<ol type = "i"> - Lower-Case Numerals.
<ol type = "A"> - Upper-Case Letters.
<ol type = "a"> - Lower-Case Letters.
```

Example

Following is an example where we used <ol type = "1">

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Ordered List</title>
</head>

<body>
<oltype="1">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ol>
</body>

</html>
```

This will produce the following result –

1. Beetroot
2. Ginger
3. Potato
4. Radish

Example

Following is an example where we used <ol type = "I">

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Ordered List</title>
</head>

<body>
<oltype="I">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ol>
</body>

</html>
```

This will produce the following result –

I. Beetroot
II. Ginger
III. Potato
IV. Radish

Example

Following is an example where we used <ol type = "i">

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Ordered List</title>
</head>

<body>
<oltype="i">
<li>Beetroot</li>
<li>Ginger</li>
```

```
<li>Potato</li>
<li>Radish</li>
</ol>
</body>

</html>
```

This will produce the following result –

i. Beetroot
ii. Ginger
iii. Potato
iv. Radish

Example

Following is an example where we used <ol type = "A" >

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Ordered List</title>
</head>

<body>
<oltype="A">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ol>
</body>

</html>
```

This will produce the following result –

A. Beetroot
B. Ginger
C. Potato
D. Radish

Example

Following is an example where we used <ol type = "a">

```
<!DOCTYPE html>
<html>

<head>
```

```
<title>HTML Ordered List</title>
</head>

<body>
<oltype="a">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ol>
</body>

</html>
```

This will produce the following result –

a. Beetroot
b. Ginger
c. Potato
d. Radish

The start Attribute

You can use **start** attribute for <ol> tag to specify the starting point of numbering you need. Following are the possible options −

```
<ol type = "1" start = "4">    - Numerals starts with 4.
<ol type = "I" start = "4">    - Numerals starts with IV.
<ol type = "i" start = "4">    - Numerals starts with iv.
<ol type = "a" start = "4">    - Letters starts with d.
<ol type = "A" start = "4">    - Letters starts with D.
```

Example

Following is an example where we used <ol type = "i" start = "4" >

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Ordered List</title>
</head>

<body>
<oltype="i"start="4">
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ol>
</body>
```

```
</html>
```

This will produce the following result –

iv. Beetroot
v. Ginger
vi. Potato
vii. Radish

HTML Definition Lists

HTML and XHTML supports a list style which is called **definition lists** where entries are listed like in a dictionary or encyclopedia. The definition list is the ideal way to present a glossary, list of terms, or other name/value list.

Definition List makes use of following three tags.

- <dl> − Defines the start of the list
- <dt> − A term
- <dd> − Term definition
- </dl> − Defines the end of the list

Example

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Definition List</title>
</head>

<body>
<dl>
<dt><b>HTML</b></dt>
<dd>This stands for Hyper Text Markup Language</dd>
<dt><b>HTTP</b></dt>
<dd>This stands for Hyper Text Transfer Protocol</dd>
</dl>
</body>

</html>
```

This will produce the following result −

HTML
This stands for Hyper Text Markup Language
HTTP
This stands for Hyper Text Transfer Protocol

Colors are very important to give a good look and feel to your website. You can specify colors on page level using <body> tag or you can set colors for individual tags using **bgcolor** attribute.

The <body> tag has following attributes which can be used to set different colors −

- **bgcolor** − sets a color for the background of the page.
- **text** − sets a color for the body text.
- **alink** − sets a color for active links or selected links.
- **link** − sets a color for linked text.
- **vlink** − sets a color for *visited links* − that is, for linked text that you have already clicked on.

HTML Color Coding Methods

There are following three different methods to set colors in your web page −

- **Color names** − You can specify color names directly like green, blue or red.
- **Hex codes** − A six-digit code representing the amount of red, green, and blue that makes up the color.
- **Color decimal or percentage values** − This value is specified using the rgb( ) property.

Now we will see these coloring schemes one by one.

HTML Colors - Color Names

You can specify direct a color name to set text or background color. W3C has listed 16 basic color names that will validate with an HTML validator but there are over 200 different color names supported by major browsers.

Note − Check a complete list of HTML Color Name.

W3C Standard 16 Colors

Here is the list of W3C Standard 16 Colors names and it is recommended to use them.

	Black		Gray		Silver		White
	Yellow		Lime		Aqua		Fuchsia
	Red		Green		Blue		Purple
	Maroon		Olive		Navy		Teal

Example

Here are the examples to set background of an HTML tag by color name −

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Colors by Name</title>
</head>

<bodytext="blue"bgcolor="green">
<p>Use different color names for for body and table and see the result.</p>

<tablebgcolor="black">
<tr>
<td>
<fontcolor="white">This text will appear white on black background.</font>
</td>
</tr>
</table>
</body>

</html>
```

HTML Colors - Hex Codes

A hexadecimal is a 6 digit representation of a color. The first two digits(RR) represent a red value, the next two are a green value(GG), and the last are the blue value(BB).

A hexadecimal value can be taken from any graphics software like Adobe Photoshop, Paintshop Pro or MS Paint.

Each hexadecimal code will be preceded by a pound or hash sign #. Following is a list of few colors using hexadecimal notation.

Color	Color HEX
	#000000
	#FF0000
	#00FF00
	#0000FF
	#FFFF00

	#00FFFF
	#FF00FF
	#C0C0C0
	#FFFFFF

Example

Here are the examples to set background of an HTML tag by color code in hexadecimal −

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Colors by Hex</title>
</head>

<bodytext="#0000FF"bgcolor="#00FF00">
<p>Use different color hexa for for body and table and see the result.</p>

<tablebgcolor="#000000">
<tr>
<td>
<fontcolor="#FFFFFF">This text will appear white on black background.</font>
</td>
</tr>
</table>
</body>

</html>
```

HTML Colors - RGB Values

This color value is specified using the **rgb( )** property. This property takes three values, one each for red, green, and blue. The value can be an integer between 0 and 255 or a percentage.

Note − All the browsers does not support rgb() property of color so it is recommended not to use it.

Following is a list to show few colors using RGB values.

Color	Color RGB

	rgb(0,0,0)
	rgb(255,0,0)
	rgb(0,255,0)
	rgb(0,0,255)
	rgb(255,255,0)
	rgb(0,255,255)
	rgb(255,0,255)
	rgb(192,192,192)
	rgb(255,255,255)

Example

Here are the examples to set background of an HTML tag by color code using rgb() values −

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Colors by RGB code</title>
</head>

<bodytext="rgb(0,0,255)"bgcolor="rgb(0,255,0)">
<p>Use different color code for for body and table and see the result.</p>

<tablebgcolor="rgb(0,0,0)">
<tr>
<td>
<fontcolor="rgb(255,255,255)">This text will appear white on black background.</font>
</td>
</tr>
</table>
</body>
```

</html>

Browser Safe Colors

Here is the list of 216 colors which are supposed to be safest and computer independent colors. These colors very from hexa code 000000 to FFFFFF and they will be supported by all the computers having 256 color palette.

000000	000033	000066	000099	0000CC	0000FF
003300	003333	003366	003399	0033CC	0033FF
006600	006633	006666	006699	0066CC	0066FF
009900	009933	009966	009999	0099CC	0099FF
00CC00	00CC33	00CC66	00CC99	00CCCC	00CCFF
00FF00	00FF33	00FF66	00FF99	00FFCC	00FFFF
330000	330033	330066	330099	3300CC	3300FF
333300	333333	333366	333399	3333CC	3333FF
336600	336633	336666	336699	3366CC	3366FF
339900	339933	339966	339999	3399CC	3399FF
33CC00	33CC33	33CC66	33CC99	33CCCC	33CCFF
33FF00	33FF33	33FF66	33FF99	33FFCC	33FFFF
660000	660033	660066	660099	6600CC	6600FF

663300	663333	663366	663399	6633CC	6633FF
666600	666633	666666	666699	6666CC	6666FF
669900	669933	669966	669999	6699CC	6699FF
66CC00	66CC33	66CC66	66CC99	66CCCC	66CCFF
66FF00	66FF33	66FF66	66FF99	66FFCC	66FFFF
990000	990033	990066	990099	9900CC	9900FF
993300	993333	993366	993399	9933CC	9933FF
996600	996633	996666	996699	9966CC	9966FF
999900	999933	999966	999999	9999CC	9999FF
99CC00	99CC33	99CC66	99CC99	99CCCC	99CCFF
99FF00	99FF33	99FF66	99FF99	99FFCC	99FFFF
CC0000	CC0033	CC0066	CC0099	CC00CC	CC00FF
CC3300	CC3333	CC3366	CC3399	CC33CC	CC33FF
CC6600	CC6633	CC6666	CC6699	CC66CC	CC66FF
CC9900	CC9933	CC9966	CC9999	CC99CC	CC99FF
CCCC00	CCCC33	CCCC66	CCCC99	CCCCCC	CCCCFF

CCFF00	CCFF33	CCFF66	CCFF99	CCFFCC	CCFFFF
FF0000	FF0033	FF0066	FF0099	FF00CC	FF00FF
FF3300	FF3333	FF3366	FF3399	FF33CC	FF33FF
FF6600	FF6633	FF6666	FF6699	FF66CC	FF66FF
FF9900	FF9933	FF9966	FF9999	FF99CC	FF99FF
FFCC00	FFCC33	FFCC66	FFCC99	FFCCCC	FFCCFF
FFFF00	FFFF33	FFFF66	FFFF99	FFFFCC	FFFFFF

HTML - Images

Images are very important to beautify as well as to depict many complex concepts in simple way on your web page. This tutorial will take you through simple steps to use images in your web pages.

Insert Image

You can insert any image in your web page by using **<img>** tag. Following is the simple syntax to use this tag.

The <img> tag is an empty tag, which means that, it can contain only list of attributes and it has no closing tag.

Example

To try following example, let's keep our HTML file test.htm and image file test.png in the same directory −

```
<!DOCTYPE html>
<html>

<head>
<title>Using Image in Webpage</title>
</head>

<body>
<p>Simple Image Insert</p>
<imgsrc="/html/images/test.png"alt="Test Image"/>
```

```
</body>

</html>
```

This will produce the following result −

You can use PNG, JPEG or GIF image file based on your comfort but make sure you specify correct image file name in **src** attribute. Image name is always case sensitive.

The **alt** attribute is a mandatory attribute which specifies an alternate text for an image, if the image cannot be displayed.

Set Image Location

Usually we keep all the images in a separate directory. So let's keep HTML file test.htm in our home directory and create a subdirectory **images** inside the home directory where we will keep our image test.png.

Example

Assuming our image location is "image/test.png", try the following example −

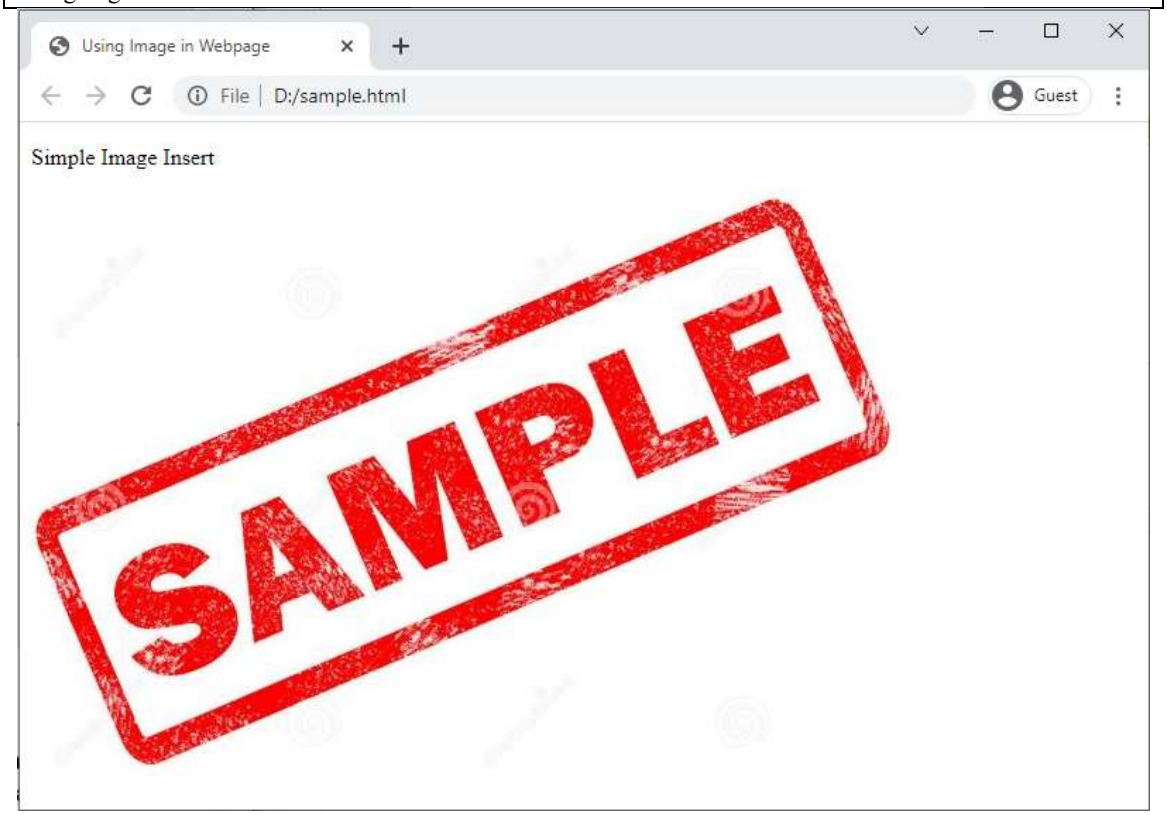
```
<!DOCTYPE html>
<html>

<head>
<title>Using Image in Webpage</title>
</head>

<body>
<p>Simple Image Insert</p>
<imgsrc="/html/images/test.png"alt="Test Image"/>
</body>

</html>
```

This will produce the following result −



Set Image Width/Height

You can set image width and height based on your requirement using **width** and **height** attributes. You can specify width and height of the image in terms of either pixels or percentage of its actual size.

Example

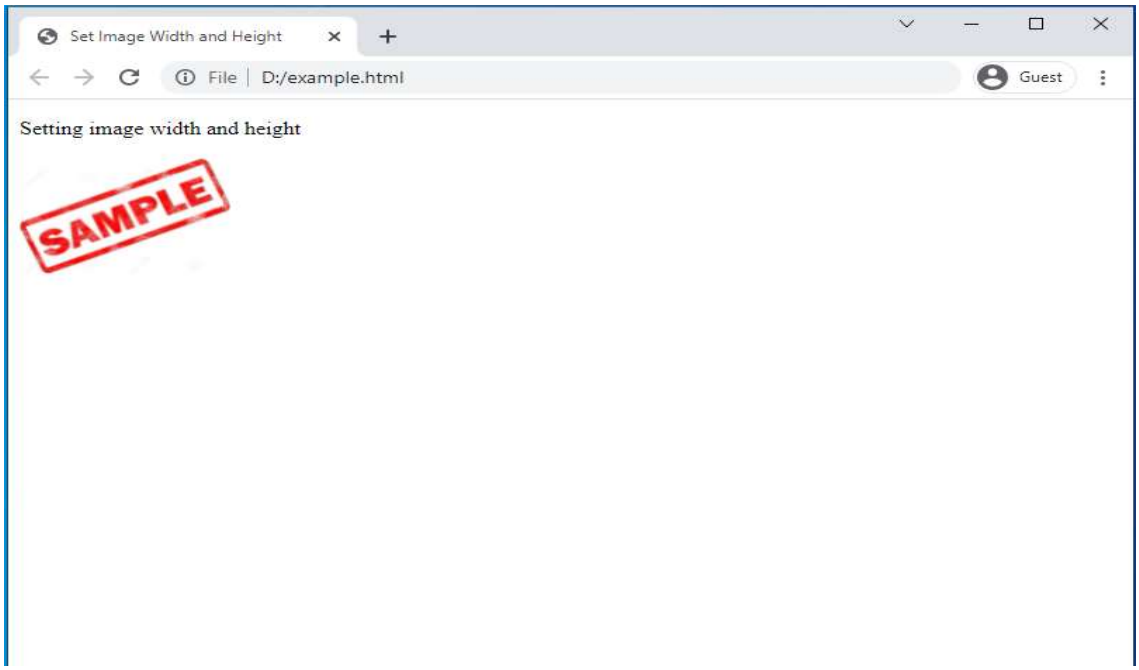
```
<!DOCTYPE html>
<html>

<head>
<title>Set Image Width and Height</title>
</head>

<body>
<p>Setting image width and height</p>
<imgsrc="/html/images/test.png"alt="Test Image"width="150"height="100"/>
</body>

</html>
```

This will produce the following result –



Set Image Border

By default, image will have a border around it, you can specify border thickness in terms of pixels using border attribute. A thickness of 0 means, no border around the picture.

Example

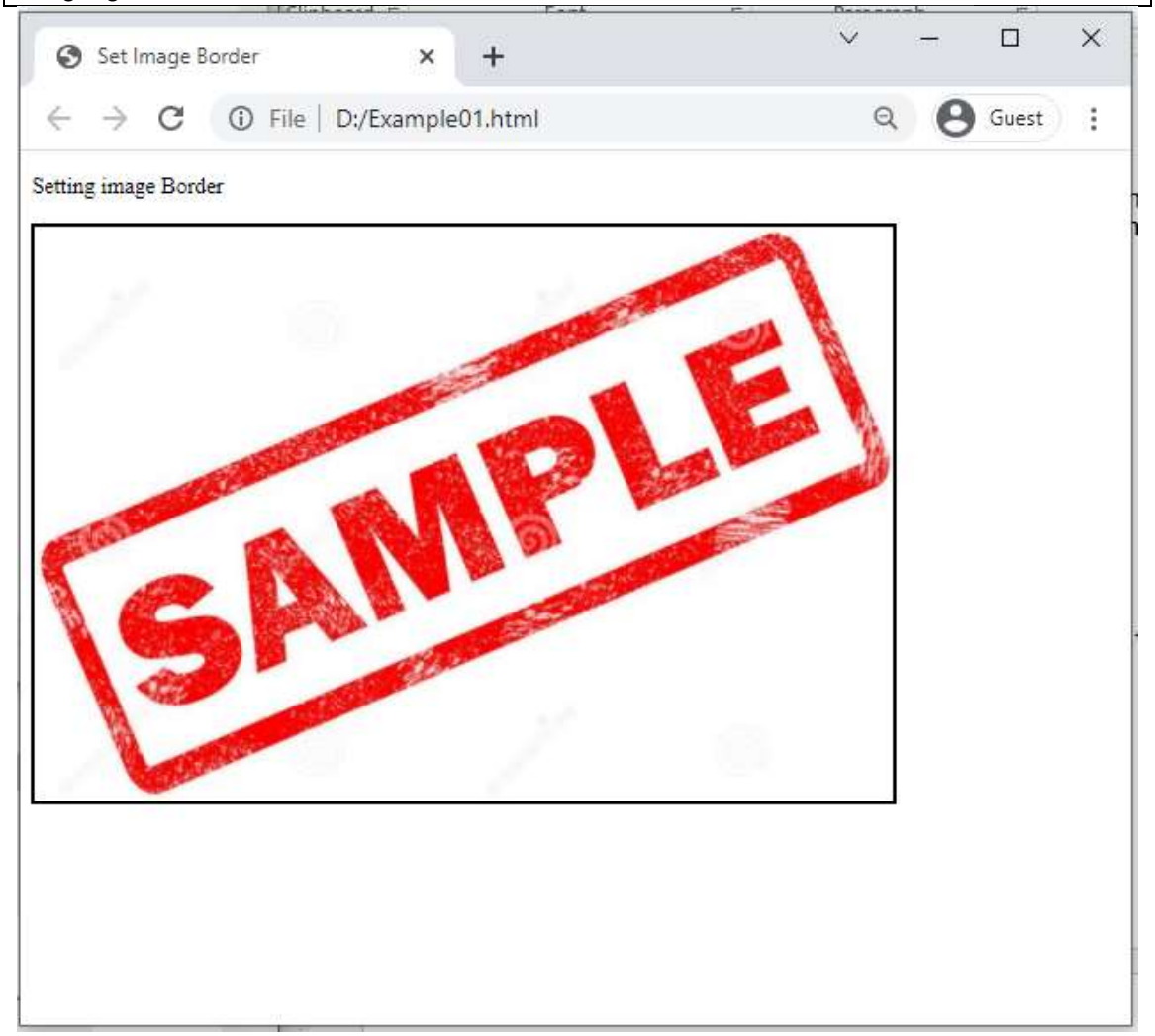
```
<!DOCTYPE html>
<html>

<head>
<title>Set Image Border</title>
</head>

<body>
<p>Setting image Border</p>
<imgsrc="/html/images/test.png"alt="Test Image"border="3"/>
</body>

</html>
```

This will produce the following result −



Set Image Alignment

By default, image will align at the left side of the page, but you can use **align** attribute to set it in the center or right.

Example

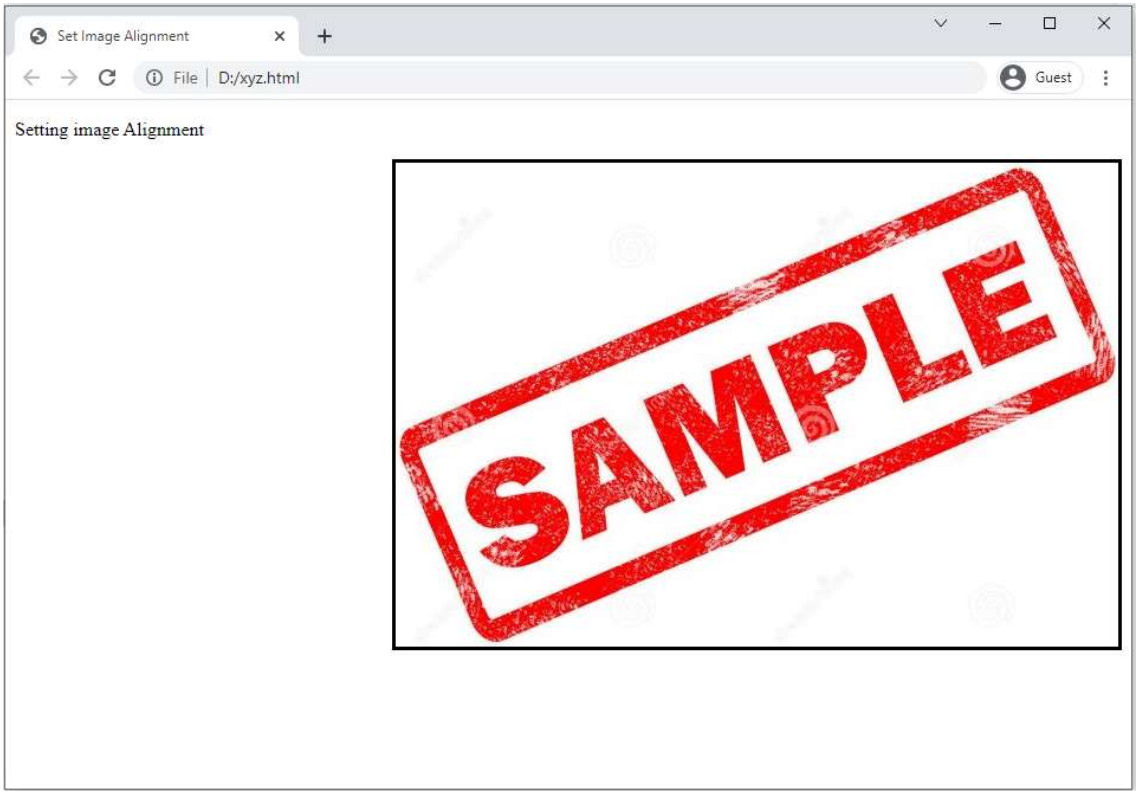
```
<!DOCTYPE html>
<html>

<head>
<title>Set Image Alignment</title>
</head>

<body>
<p>Setting image Alignment</p>
<imgsrc="/html/images/test.png"alt="Test Image"border="3"align="right"/>
</body>

</html>
```

This will produce the following result −


Set Image Alignment
File | D:/xyz.html
Guest
Setting image Alignment
SAMPLE

UNIT – V: WEBSITE DESIGNING

Hyperlinks: Textual links, Graphical links, type of document links, anchor tags. HTML Tables, table creations tags, nested tables. Frames: Frame introduction – Frame tags – nested Frames.

HTML - Text Links

A webpage can contain various links that take you directly to other pages and even specific parts of a given page. These links are known as hyperlinks.

Hyperlinks allow visitors to navigate between Web sites by clicking on words, phrases, and images. Thus you can create hyperlinks using text or images available on a webpage.

Linking Documents

A link is specified using HTML tag <a>. This tag is called **anchor tag** and anything between the opening <a> tag and the closing tag becomes part of the link and a user can click that part to reach to the linked document. Following is the simple syntax to use <a> tag.

Link Text

Example

Let's try following example which links http://www.tutorialsnow.com at your page −

```
<!DOCTYPE html>
<html>

<head>
<title>Hyperlink Example</title>
</head>

<body>
<p>Click following link</p>
<ahref="https://www.google.com"target="_self">Search Engine</a>
</body>

</html>
```

This will produce the following result, where you can click on the link generated to reach to the home page of Tutorials Point (in this example).

Click following link

Search Engine

The target Attribute

We have used **target** attribute in our previous example. This attribute is used to specify the location where linked document is opened. Following are the possible options –

Sr.No	Option & Description
1	**_blank** Opens the linked document in a new window or tab.
2	**_self** Opens the linked document in the same frame.
3	**_parent** Opens the linked document in the parent frame.
4	**_top** Opens the linked document in the full body of the window.
5	**targetframe** Opens the linked document in a named *targetframe*.

Example

Try following example to understand basic difference in few options given for target attribute.

```
<!DOCTYPE html>
<html>

<head>
<title>Hyperlink Example</title>
<basehref="https://www.tutorialsnow.com/">
</head>

<body>
<p>Click any of the following links</p>
<ahref="/html/index.htm"target="_blank">Opens in New</a> |
<ahref="/html/index.htm"target="_self">Opens in Self</a> |
<ahref="/html/index.htm"target="_parent">Opens in Parent</a> |
<ahref="/html/index.htm"target="_top">Opens in Body</a>
</body>

</html>
```

This will produce the following result, where you can click on different links to understand the difference between various options given for target attribute.

Use of Base Path

When you link HTML documents related to the same website, it is not required to give a complete URL for every link. You can get rid of it if you use **<base>** tag in your HTML

document header. This tag is used to give a base path for all the links. So your browser will concatenate given relative path to this base path and will make a complete URL.

Example

Following example makes use of <base> tag to specify base URL and later we can use relative path to all the links instead of giving complete URL for every link.

```
<!DOCTYPE html>
<html>

<head>
<title>Hyperlink Example</title>
<basehref="https://www.tutorialsnow.com/">
</head>

<body>
<p>Click following link</p>
<ahref="/html/index.htm"target="_blank">HTML Tutorial</a>
</body>

</html>
```

This will produce the following result, where you can click on the link generated **HTML Tutorial** to reach to the HTML tutorial.

Now given URL <a href = "/html/index.htm" is being considered as <ahref = "http://www.tutorialsnow.com/html/index.htm"

Linking to a Page Section

You can create a link to a particular section of a given webpage by using **name** attribute. This is a two-step process.

Note − The *name* attribute deprecated in HTML5. Do not use this attribute. Use *id* and *title* attribute instead.

First create a link to the place where you want to reach with-in a webpage and name it using <a...> tag as follows −

```
<h1>HTML Text Links <a name = "top"></a></h1>
```

Second step is to create a hyperlink to link the document and place where you want to reach −

```
<a href = "/html/html_text_links.htm#top">Go to the Top</a>
```

This will produce following link, where you can click on the link generated **Go to the Top** to reach to the top of the HTML Text Link tutorial.

Go to the Top

Setting Link Colors

You can set colors of your links, active links and visited links using **link**, **alink** and **vlink** attributes of <body> tag.

Example

Save the following in test.htm and open it in any web browser to see how **link**, **alink** and **vlink** attributes work.

```
<!DOCTYPE html>
<html>

<head>
<title>Hyperlink Example</title>
<basehref="https://www.tutorialsnow.com/">
</head>

<bodyalink="#54A250"link="#040404"vlink="#F40633">
<p>Click following link</p>
<ahref="/html/index.htm"target="_blank">HTML Tutorial</a>
</body>

</html>
```

This will produce the following result. Just check color of the link before clicking on it, next check its color when you activate it and when the link has been visited.

Click following link

HTML Tutorial

Download Links

You can create text link to make your PDF, or DOC or ZIP files downloadable. This is very simple; you just need to give complete URL of the downloadable file as follows −

```
<!DOCTYPE html>
<html>

<head>
<title>Hyperlink Example</title>
</head>

<body>
<ahref="https://www.tutorialsnow.com/page.pdf">Download PDF File</a>
</body>

</html>
```

This will produce following link and will be used to download a file.

Download PDF File

File Download Dialog Box

Sometimes it is desired that you want to give an option where a user will click a link and it will pop up a "File Download" box to the user instead of displaying actual content. This is very easy and can be achieved using an HTTP header in your HTTP response.

For example, if you want make a **Filename** file downloadable from a given link then its syntax will be as follows.

```
#!/usr/bin/perl

# Additional HTTP Header
print "Content-Type:application/octet-stream; name = \"FileName\"\r\n";
print "Content-Disposition:attachment; filename = \"FileName\"\r\n\n";

# Open the target file and list down its content as follows
open( FILE, "<FileName" );

while(read(FILE, $buffer, 100)){
   print("$buffer");
}
```

Note − For more detail on PERL CGI programs, go through tutorial PERL and CGI.

HTML - Tables

The HTML tables allow web authors to arrange data like text, images, links, other tables, etc. into rows and columns of cells.

The HTML tables are created using the **<table>** tag in which the **<tr>** tag is used to create table rows and **<td>** tag is used to create data cells. The elements under <td> are regular and left aligned by default

Example

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Tables</title>
</head>

<body>
<tableborder="1">
<tr>
<td>Row 1, Column 1</td>
<td>Row 1, Column 2</td>
</tr>

<tr>
<td>Row 2, Column 1</td>
```

```
<td>Row 2, Column 2</td>
</tr>
</table>

</body>
</html>
```

This will produce the following result –

Row 1, Column 1	Row 1, Column 2
Row 2, Column 1	Row 2, Column 2

Here, the **border** is an attribute of <table> tag and it is used to put a border across all the cells. If you do not need a border, then you can use border = "0".

Table Heading

Table heading can be defined using **<th>** tag. This tag will be put to replace <td> tag, which is used to represent actual data cell. Normally you will put your top row as table heading as shown below, otherwise you can use <th> element in any row. Headings, which are defined in <th> tag are centered and bold by default.

Example

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Table Header</title>
</head>

<body>
<tableborder="1">
<tr>
<th>Name</th>
<th>Salary</th>
</tr>
<tr>
<td>Ramesh Raman</td>
<td>5000</td>
</tr>

<tr>
<td>Shabbir Hussein</td>
<td>7000</td>
</tr>
</table>
</body>

</html>
```

This will produce the following result –

Name	Salary
Ramesh Raman	5000
Shabbir Hussein	7000

Cellpadding and Cellspacing Attributes

There are two attributes called *cellpadding* and *cellspacing* which you will use to adjust the white space in your table cells. The cellspacing attribute defines space between table cells, while cellpadding represents the distance between cell borders and the content within a cell.

Example

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Table Cellpadding</title>
</head>

<body>
<tableborder="1"cellpadding="5"cellspacing="5">
<tr>
<th>Name</th>
<th>Salary</th>
</tr>
<tr>
<td>Ramesh Raman</td>
<td>5000</td>
</tr>
<tr>
<td>Shabbir Hussein</td>
<td>7000</td>
</tr>
</table>
</body>

</html>
```

This will produce the following result –

Name	Salary
Ramesh Raman	5000
Shabbir Hussein	7000

Colspan and Rowspan Attributes

You will use **colspan** attribute if you want to merge two or more columns into a single column. Similar way you will use **rowspan** if you want to merge two or more rows.

Example

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Table Colspan/Rowspan</title>
</head>

<body>
<tableborder="1">
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
<tr>
<tdrowspan="2">Row 1 Cell 1</td>
<td>Row 1 Cell 2</td>
<td>Row 1 Cell 3</td>
</tr>
<tr>
<td>Row 2 Cell 2</td>
<td>Row 2 Cell 3</td>
</tr>
<tr>
<tdcolspan="3">Row 3 Cell 1</td>
</tr>
</table>
</body>

</html>
```

This will produce the following result –

Column 1	Column 2	Column 3
Row 1 Cell 1	Row 1 Cell 2	Row 1 Cell 3
	Row 2 Cell 2	Row 2 Cell 3
Row 3 Cell 1		

Tables Backgrounds

You can set table background using one of the following two ways −

- **bgcolor** attribute − You can set background color for whole table or just for one cell.

- **background** attribute − You can set background image for whole table or just for one cell.

You can also set border color also using **bordercolor** attribute.

Note − The *bgcolor*, *background*, and *bordercolor* attributes deprecated in HTML5. Do not use these attributes.

Example

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Table Background</title>
</head>

<body>
<tableborder="1"bordercolor="green"bgcolor="yellow">
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
<tr>
<tdrowspan="2">Row 1 Cell 1</td>
<td>Row 1 Cell 2</td>
<td>Row 1 Cell 3</td>
</tr>
<tr>
<td>Row 2 Cell 2</td>
<td>Row 2 Cell 3</td>
</tr>
<tr>
<tdcolspan="3">Row 3 Cell 1</td>
</tr>
</table>
</body>

</html>
```

This will produce the following result –

Column 1	Column 2	Column 3
Row 1 Cell 1	Row 1 Cell 2	Row 1 Cell 3
	Row 2 Cell 2	Row 2 Cell 3
Row 3 Cell 1		

Here is an example of using **background** attribute. Here we will use an image available in /images directory.

```
<!DOCTYPE html>
```

```
<html>

<head>
<title>HTML Table Background</title>
</head>

<body>
<tableborder="1"bordercolor="green"background="/images/test.png">
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
<tr>
<tdrowspan="2">Row 1 Cell 1</td>
<td>Row 1 Cell 2</td><td>Row 1 Cell 3</td>
</tr>
<tr>
<td>Row 2 Cell 2</td>
<td>Row 2 Cell 3</td>
</tr>
<tr>
<tdcolspan="3">Row 3 Cell 1</td>
</tr>
</table>
</body>

</html>
```

This will produce the following result. Here background image did not apply to table's header.

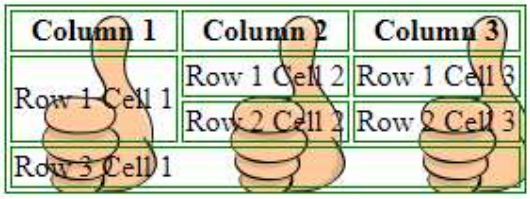


Table Height and Width

You can set a table width and height using **width** and **height** attributes. You can specify table width or height in terms of pixels or in terms of percentage of available screen area.

Example

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Table Width/Height</title>
</head>
```

```
<body>
<tableborder="1"width="400"height="150">
<tr>
<td>Row 1, Column 1</td>
<td>Row 1, Column 2</td>
</tr>

<tr>
<td>Row 2, Column 1</td>
<td>Row 2, Column 2</td>
</tr>
</table>
</body>

</html>
```

This will produce the following result –

Row 1, Column 1	Row 1, Column 2
Row 2, Column 1	Row 2, Column 2

Table Caption

The **caption** tag will serve as a title or explanation for the table and it shows up at the top of the table. This tag is deprecated in newer version of HTML/XHTML.

Example

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Table Caption</title>
</head>

<body>
<tableborder="1"width="100%">
<caption>This is the caption</caption>

<tr>
<td>row 1, column 1</td><td>row 1, columnn 2</td>
</tr>

<tr>
```

```
<td>row 2, column 1</td><td>row 2, columnn 2</td>
</tr>
</table>
</body>

</html>
```

This will produce the following result –

This is the caption

row 1, column 1	row 1, column 2
row 2, column 1	row 2, column 2

Table Header, Body, and Footer

Tables can be divided into three portions − a header, a body, and a foot. The head and foot are rather similar to headers and footers in a word-processed document that remain the same for every page, while the body is the main content holder of the table.

The three elements for separating the head, body, and foot of a table are −

- **<thead>** − to create a separate table header.
- **<tbody>** − to indicate the main body of the table.
- **<tfoot>** − to create a separate table footer.

A table may contain several <tbody> elements to indicate *different pages* or groups of data. But it is notable that <thead> and <tfoot> tags should appear before <tbody>

Example

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Table</title>
</head>

<body>
<tableborder="1"width="100%">
<thead>
<tr>
<tdcolspan="4">This is the head of the table</td>
</tr>
</thead>

<tfoot>
<tr>
<tdcolspan="4">This is the foot of the table</td>
</tr>
</tfoot>
```

```
<tbody>
<tr>
<td>Cell 1</td>
<td>Cell 2</td>
<td>Cell 3</td>
<td>Cell 4</td>
</tr>
</tbody>

</table>
</body>

</html>
```

This will produce the following result –

This is the head of the table			
Cell 1	Cell 2	Cell 3	Cell 4
This is the foot of the table			

Nested Tables

You can use one table inside another table. Not only tables you can use almost all the tags inside table data tag <td>.

Example

Following is the example of using another table and other tags inside a table cell.

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Table</title>
</head>

<body>
<tableborder="1"width="100%">

<tr>
<td>
<tableborder="1"width="100%">
<tr>
<th>Name</th>
<th>Salary</th>
</tr>
<tr>
<td>Ramesh Raman</td>
<td>5000</td>
</tr>
<tr>
```

```
<td>Shabbir Hussein</td>
<td>7000</td>
</tr>
</table>
</td>
</tr>

</table>
</body>

</html>
```

This will produce the following result −

Name	Salary
Ramesh Raman	5000
Shabbir Hussein	7000

HTML - Frames

HTML frames are used to divide your browser window into multiple sections where each section can load a separate HTML document. A collection of frames in the browser window is known as a frameset. The window is divided into frames in a similar way the tables are organized: into rows and columns.

Disadvantages of Frames

There are few drawbacks with using frames, so it's never recommended to use frames in your webpages −

- Some smaller devices cannot cope with frames often because their screen is not big enough to be divided up.
- Sometimes your page will be displayed differently on different computers due to different screen resolution.
- The browser's *back* button might not work as the user hopes.
- There are still few browsers that do not support frame technology.

Creating Frames

To use frames on a page we use <frameset> tag instead of <body> tag. The <frameset> tag defines, how to divide the window into frames. The **rows** attribute of <frameset> tag defines horizontal frames and **cols** attribute defines vertical frames. Each frame is indicated by <frame> tag and it defines which HTML document shall open into the frame.

Note − The <frame> tag deprecated in HTML5. Do not use this element.

Example

Following is the example to create three horizontal frames −

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Frames</title>
</head>

<framesetrows="10%,80%,10%">
<framename="top"src="/html/top_frame.htm"/>
<framename="main"src="/html/main_frame.htm"/>
<framename="bottom"src="/html/bottom_frame.htm"/>

<noframes>
<body>Your browser does not support frames.</body>
</noframes>

</frameset>

</html>
```

This will produce the following result –

Example

Let's put the above example as follows, here we replaced rows attribute by cols and changed their width. This will create all the three frames vertically −

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Frames</title>
</head>

<framesetcols="25%,50%,25%">
<framename="left"src="/html/top_frame.htm"/>
<framename="center"src="/html/main_frame.htm"/>
<framename="right"src="/html/bottom_frame.htm"/>

<noframes>
<body>Your browser does not support frames.</body>
</noframes>
</frameset>

</html>
```

This will produce the following result –

The <frameset> Tag Attributes

Following are important attributes of the <frameset> tag −

Sr.No	Attribute & Description
1	**cols** Specifies how many columns are contained in the frameset and the size of each column. You can specify the width of each column in one of the four ways − Absolute values in pixels. For example, to create three vertical frames, use *cols = "100, 500, 100"*. A percentage of the browser window. For example, to create three vertical frames, use *cols = "10%, 80%, 10%"*. Using a wildcard symbol. For example, to create three vertical frames, use *cols = "10%, *, 10%"*. In this case wildcard takes remainder of the window. As relative widths of the browser window. For example, to create three vertical frames, use *cols = "3*, 2*, 1*"*. This is an alternative to percentages. You can use relative widths of the browser window. Here the window is divided into sixths: the first column takes up half of the window, the second takes one third, and the third takes one sixth.

2	**rows** This attribute works just like the cols attribute and takes the same values, but it is used to specify the rows in the frameset. For example, to create two horizontal frames, use *rows = "10%, 90%"*. You can specify the height of each row in the same way as explained above for columns.
3	**border** This attribute specifies the width of the border of each frame in pixels. For example, border = "5". A value of zero means no border.
4	**frameborder** This attribute specifies whether a three-dimensional border should be displayed between frames. This attribute takes value either 1 (yes) or 0 (no). For example frameborder = "0" specifies no border.
5	**framespacing** This attribute specifies the amount of space between frames in a frameset. This can take any integer value. For example framespacing = "10" means there should be 10 pixels spacing between each frames.

The <frame> Tag Attributes

Following are the important attributes of <frame> tag −

Sr.No	Attribute & Description
1	**src** This attribute is used to give the file name that should be loaded in the frame. Its value can be any URL. For example, src = "/html/top_frame.htm" will load an HTML file available in html directory.
2	**name** This attribute allows you to give a name to a frame. It is used to indicate which frame a document should be loaded into. This is especially important when you want to create links in one frame that load pages into an another frame, in which case the second frame needs a name to identify itself as the target of the link.
3	**frameborder** This attribute specifies whether or not the borders of that frame are shown; it overrides the value given in the frameborder attribute on the <frameset> tag if one is given, and this can take values either 1 (yes) or 0 (no).
4	**marginwidth** This attribute allows you to specify the width of the space between the left and right of the frame's borders and the frame's content. The value is given in pixels. For example marginwidth = "10".
5	**marginheight** This attribute allows you to specify the height of the space between the top and

	bottom of the frame's borders and its contents. The value is given in pixels. For example marginheight = "10".
6	**noresize** By default, you can resize any frame by clicking and dragging on the borders of a frame. The noresize attribute prevents a user from being able to resize the frame. For example noresize = "noresize".
7	**scrolling** This attribute controls the appearance of the scrollbars that appear on the frame. This takes values either "yes", "no" or "auto". For example scrolling = "no" means it should not have scroll bars.
8	**longdesc** This attribute allows you to provide a link to another page containing a long description of the contents of the frame. For example longdesc = "framedescription.htm"

Browser Support for Frames

If a user is using any old browser or any browser, which does not support frames then <noframes> element should be displayed to the user.

So you must place a <body> element inside the <noframes> element because the <frameset> element is supposed to replace the <body> element, but if a browser does not understand <frameset> element then it should understand what is inside the <body> element which is contained in a <noframes> element.

You can put some nice message for your user having old browsers. For example, *Sorry!! your browser does not support frames.* as shown in the above example.

Frame's name and target attributes

One of the most popular uses of frames is to place navigation bars in one frame and then load main pages into a separate frame.

Let's see following example where a test.htm file has following code −

```
<!DOCTYPE html>
<html>

<head>
<title>HTML Target Frames</title>
</head>

<framesetcols="200, *">
<framesrc="/html/menu.htm"name="menu_page"/>
<framesrc="/html/main.htm"name="main_page"/>

<noframes>
<body>Your browser does not support frames.</body>
</noframes>
</frameset>
```

```
</html>
```

Here, we have created two columns to fill with two frames. The first frame is 200 pixels wide and will contain the navigation menu bar implemented by **menu.htm** file. The second column fills in remaining space and will contain the main part of the page and it is implemented by **main.htm** file. For all the three links available in menu bar, we have mentioned target frame as **main_page**, so whenever you click any of the links in menu bar, available link will open in main page.

Following is the content of menu.htm file

```
<!DOCTYPE html>
<html>

<bodybgcolor="#4a7d49">
<ahref="http://www.google.com"target="main_page">Google</a>
<br/>
<br/>

<ahref="http://www.microsoft.com"target="main_page">Microsoft</a>
<br/>
<br/>

<ahref="http://news.bbc.co.uk"target="main_page">BBC News</a>
</body>

</html>
```

Following is the content of main.htm file −

```
<!DOCTYPE html>
<html>

<bodybgcolor="#b5dcb3">
<h3>This is main page and content from any link will be displayed here.</h3>
<p>So now click any link and see the result.</p>
</body>

</html>
```

When we load **test.htm** file, it produces following result –

Now you can try to click links available in the left panel and see the result. The *targetattribute* can also take one of the following values −

Sr.No	Option & Description
1	**_self** Loads the page into the current frame.

2	**_blank** Loads a page into a new browser window. Opening a new window.
3	**_parent** Loads the page into the parent window, which in the case of a single frameset is the main browser window.
4	**_top** Loads the page into the browser window, replacing any current frames.
5	**targetframe** Loads the page into a named targetframe.

EXPERIMENTS LIST

1. Write an HTML code to display your education details in a tabular format.
2. Write an HTML code to display your CV on a webpage.
3. Write an HTML code to create a Homepage having three links: About Us, Our Services and Contact Us. Create separate web pages for the three links.
4. Write an HTML code to create a login form. On submitting the form, theusershouldgetnavigatedto aprofilepage.
5. Write an HTML code to create a Registration Form. On submitting the form, the user should be asked to login with this new credentials.
6. Write an HTML code to create your Institute website, Department Website and Tutorial website for specific subject.
7. WriteanHTMLcodetoillustratetheusageof thefollowing:
    - OrderedList
    - UnorderedList
    - DefinitionList
8. Write an HTML code to create a frameset having header, navigation and content sections.

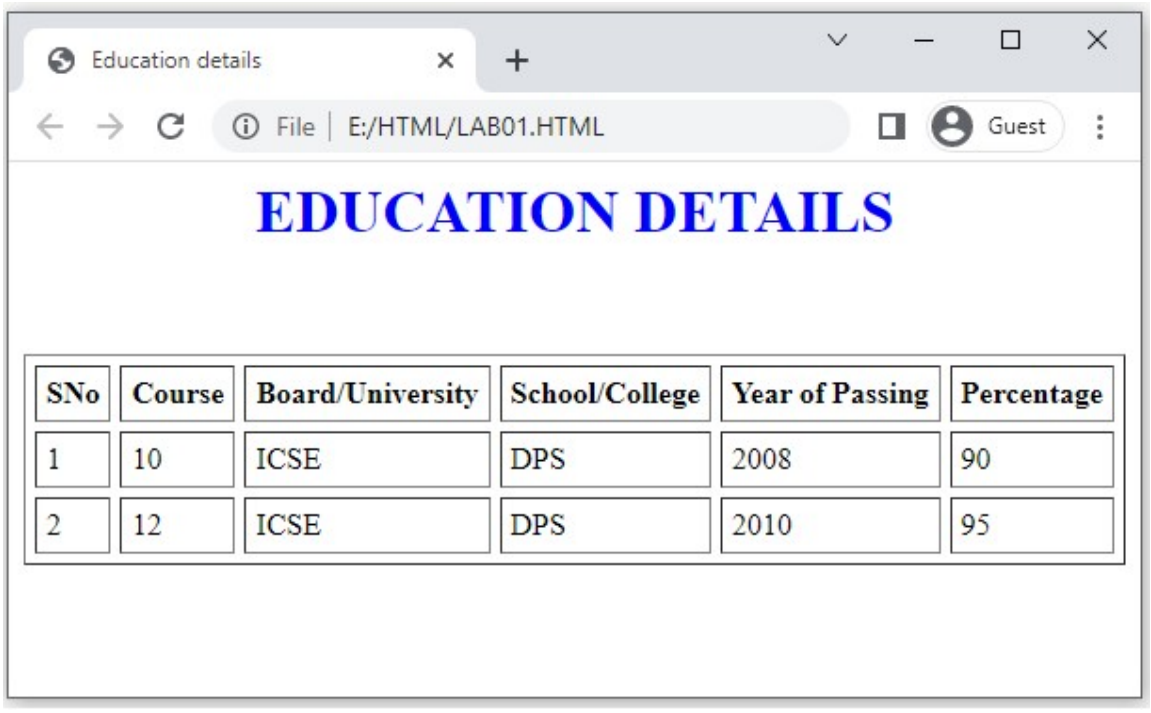
Solutions

1. WriteanHTMLcodetodisplayyoureducationdetailsinatabularformat.

```
<html>
<head>
<title>Educationdetails</title>
</head>

<body>
<h1align="center"style="color:blue">EDUCATIONDETAILS</h1><br><br>
<tableborder="1"background="gray"cellspacing="5"cellpadding="5">
<th>SNo</th>
<th>Course</th>
<th>Board/University</th>
<th>School/College</th>
<th>YearofPassing</th>
<th>Percentage</th>
<tr>
<td>1</td>
<td>10</td>
<td>ICSE</td>
<td>DPS</td>
<td>2008</td>
<td>90</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
<td>ICSE</td>
<td>DPS</td>
<td>2010</td>
<td>95</td>
</tr>
</table>
</body>
</html>
```

OUTPUT:


Education details
File | E:/HTML/LAB01.HTML
Guest
EDUCATION DETAILS
SNo
Course
Board/University
School/College
Year of Passing
Percentage
1
10
ICSE
DPS
2008
90
2
12
ICSE
DPS
2010
95

2. WriteanHTMLcodetodisplayyourCVonawebpage.

```
<html>
<head>
<title>RESUME | JOHN DOE</title>
</head>
<body>
<!-- BEGIN DIV FOR OVERALL BOX -->
<div id="resume">
<!-- THIS DIV CENTERS OUR HEADING -->
<h1>John Doe</h1>
<h2>4242 Ghila Road</h2>
<h2>Tucson, AZ 85701</h2>
<br />
<!-- END CENTERING DIV -->
</div>
<h2>Profile</h2>
<p>
Desires a resident position in the Bastyr University Acupuncture and Oriental Medicine Residency Program. Able to be effective in a practice of any size. Draw on experience with a range of patient issues, including additional work in women and children's care. Interested in health education for homeless. Strong desire to contribute to the success of a program through an ability to initiate and maintain relationships. Creative developer and presenter of educational information.
</p>
<br />
<h2>Education</h2>
<h3>Masters of Acupuncture and Oriental Medicine,
<br />
Graduating June 2003</h3>
<p>
Bastyr University, Kenmore, WA 1999
</p>
<ul>
<li>
Completing an accredited program of coursework and supervised practice in Acupuncture and Oriental Medicine. Extensive exposure to issues involving women and children.
</li>
</ul>
<h3>Research Project</h3>
<ul>
<li>
Assisted the primary investigator in a double blind, randomized controlled trail conducted at the
```

Bastyr Center for Natural Health that evaluated the effectiveness of Chinese herbs towards the control of Diabetes Mellitus in post-menopausal women. Co-authored the research report that has been submitted for publication to the Journal of Traditional Chinese Medicine.

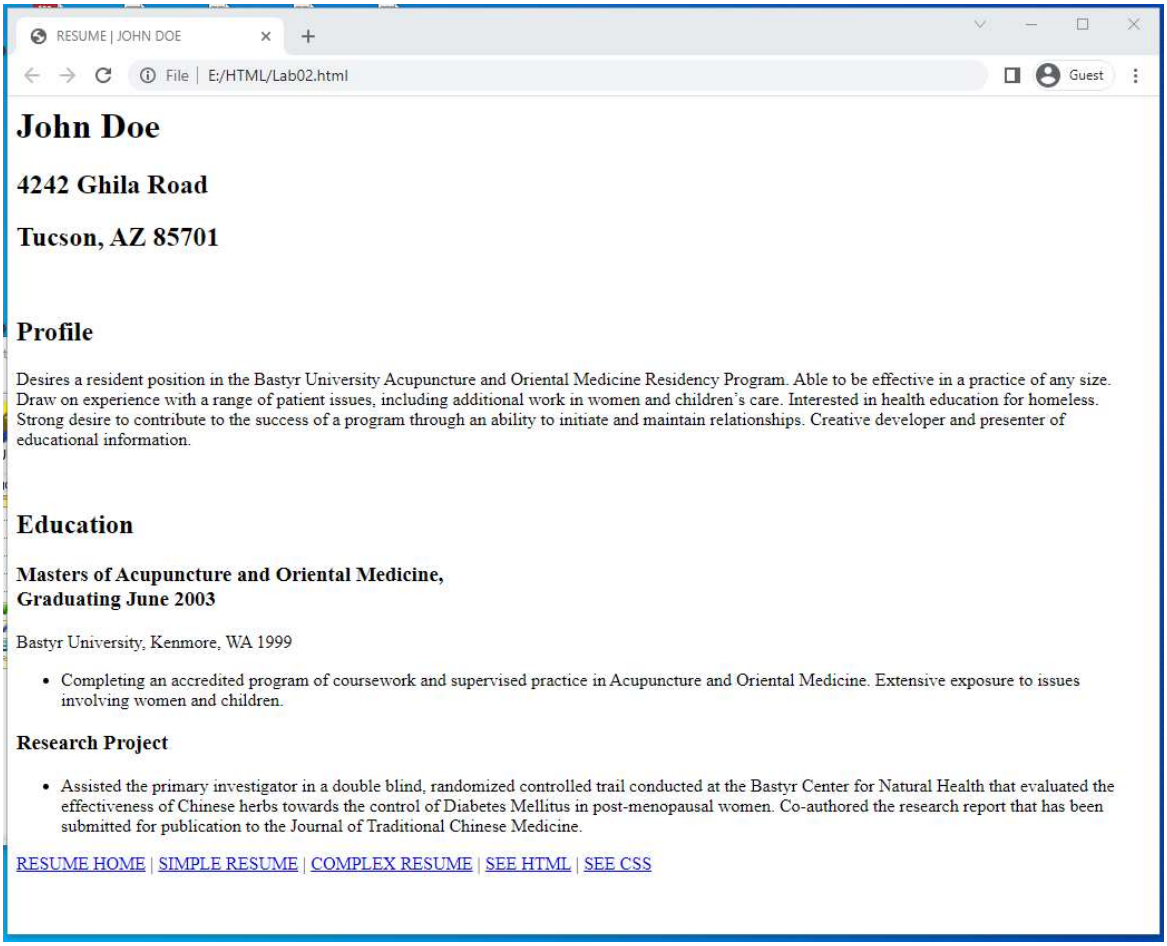
<!-- THIS DIV CENTERS OUR LINKS -->

RESUME HOME | SIMPLE RESUME | COMPLEX RESUME | SEE HTML | SEE CSS

<!-- END CENTERING LINKS -->
<!-- END DIV FOR OVERALL BOX -->

</body>
</html>

OUTPUT:


RESUME | JOHN DOE
File | E:/HTML/Lab02.html
Guest
John Doe
4242 Ghila Road
Tucson, AZ 85701
Profile
Desires a resident position in the Bastyr University Acupuncture and Oriental Medicine Residency Program. Able to be effective in a practice of any size. Draw on experience with a range of patient issues, including additional work in women and children's care. Interested in health education for homeless. Strong desire to contribute to the success of a program through an ability to initiate and maintain relationships. Creative developer and presenter of educational information.
Education
Masters of Acupuncture and Oriental Medicine,
Graduating June 2003
Bastyr University, Kenmore, WA 1999
Completing an accredited program of coursework and supervised practice in Acupuncture and Oriental Medicine. Extensive exposure to issues involving women and children.
Research Project
Assisted the primary investigator in a double blind, randomized controlled trail conducted at the Bastyr Center for Natural Health that evaluated the effectiveness of Chinese herbs towards the control of Diabetes Mellitus in post-menopausal women. Co-authored the research report that has been submitted for publication to the Journal of Traditional Chinese Medicine.
RESUME HOME | SIMPLE RESUME | COMPLEX RESUME | SEE HTML | SEE CSS

3. WriteanHTMLcodetocreateaHomepagehavingthreelinks:AboutUs, OurServicesand Contact Us.Create separate web pagesfor thethreelinks.

```
<html>
<head>
<title>Gargi's Page</title>
</head>
<body bgcolor="gray">
<font size="8">
<a href="about_us.html">ABOUT US</a>  

<a href="biography.html">OUR SERVICES</a>  
<a href="contact_us.html">CONTACT US</a></font>
</body>
</html>
```

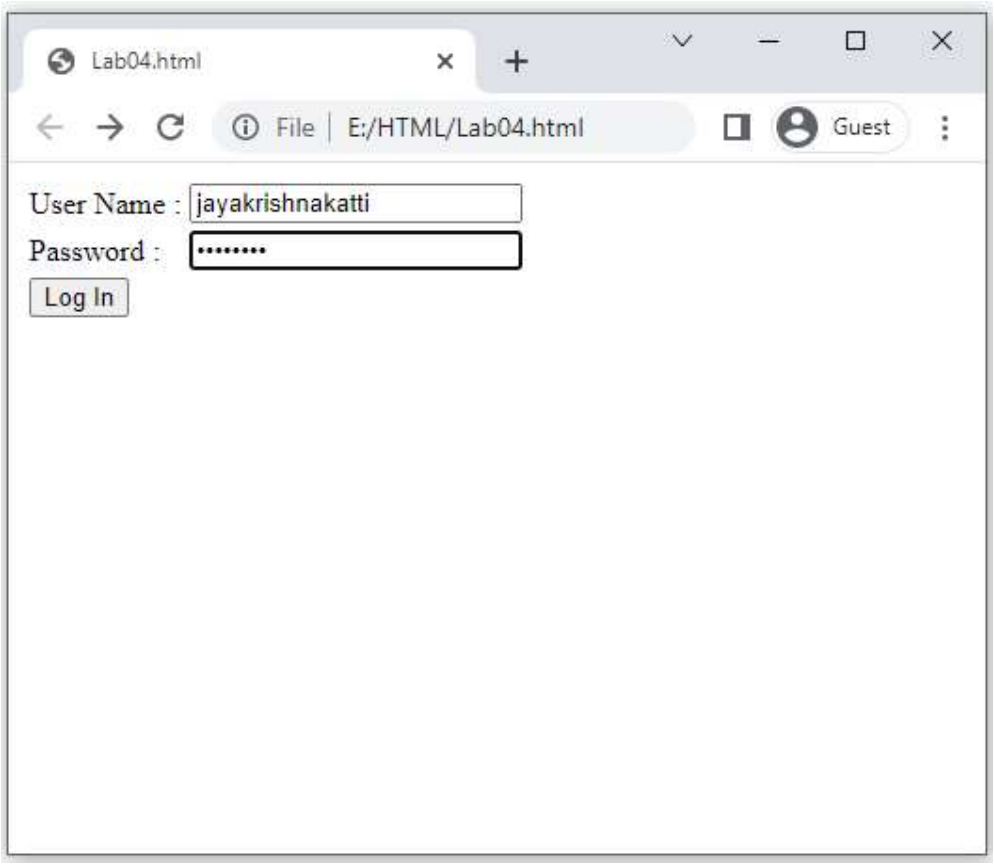
OUTPUT:


Gargi's Page
File | E:/HTML/Lab03.html
Guest
ABOUT US
OUR SERVICES
CONTACT US
file:///E:/HTML/biography.html

4. Write an HTML code to create a login form. On submitting the form, theusershouldgetnavigatedto aprofilepage.

```
<div id="login_form">
<form name="f1" method="post" action="profile.html" id="f1">
<table>
<tr>
<td class="f1_label">User Name :</td><td><input type="text" name="username" value="" />
</td>
</tr>
<tr>
<td class="f1_label">Password :</td><td><input type="password" name="password" value=""
/>
</td>
</tr>
<tr>
<td>
<input type="submit" name="login" value="Log In" style="font- size:18px; " />
</td>
</tr>
</table>
</form>
</div>
```

OUTPUT:


Lab04.html
File | E:/HTML/Lab04.html
Guest
User Name : jayakrishnakatti
Password :
Log In

5. Write an HTML code to create a Registration Form. On submitting theform,theuser shouldbeaskedtologinwiththis newcredentials.

```
<html>
<head>
<script type="text/javascript" src="validate.js"></script>
</head>
<body>
<form action="#" name="StudentRegistration" onsubmit="return(validate());">

<table cellpadding="2" width="20%" bgcolor="99FFFF" align="center" cellspacing="2">

<tr>
<td colspan=2>
<center><font size=4><b>Student Registration Form</b></font></center>
</td>
</tr>

<tr>
<td>Name</td>
<td><input type=text name=textnames id="textname" size="30"></td>
</tr>

<tr>
<td>Father Name</td>
<td><input type="text" name="fathername" id="fathername" size="30"></td>
</tr>
<tr>
<td>Postal Address</td>
<td><input type="text" name="paddress" id="paddress" size="30"></td>
</tr>

<tr>
<td>Personal Address</td>
<td><input type="text" name="personaladdress" id="personaladdress" size="30"></td>
</tr>

<tr>
<td>Sex</td>

<td><input type="radio" name="sex" value="male" size="10">Male
<input type="radio" name="sex" value="Female" size="10">Female</td>
</tr>
```

```
<tr>
<td>City</td>
<td><select name="City">
<option value="-1" selected>select..</option>
<option value="New Delhi">NEW DELHI</option>
<option value="Mumbai">MUMBAI</option>
<option value="Goa">GOA</option>
<option value="Patna">PATNA</option>
</select></td>
</tr>

<tr>
<td>Course</td>
<td><select name="Course">
<option value="-1" selected>select..</option>
<option value="B.Tech">B.TECH</option>
<option value="MCA">MCA</option>
<option value="MBA">MBA</option>
<option value="BCA">BCA</option>
</select></td>
</tr>

<tr>
<td>District</td>
<td><select name="District">
<option value="-1" selected>select..</option>
<option value="Nalanda">NALANDA</option>
<option value="UP">UP</option>
<option value="Goa">GOA</option>
<option value="Patna">PATNA</option>
</select></td>

</tr>

<tr>
<td>State</td>

<td><select Name="State">
<option value="-1" selected>select..</option>
<option value="New Delhi">NEW DELHI</option>
<option value="Mumbai">MUMBAI</option>
<option value="Goa">GOA</option>
<option value="Bihar">BIHAR</option>
```

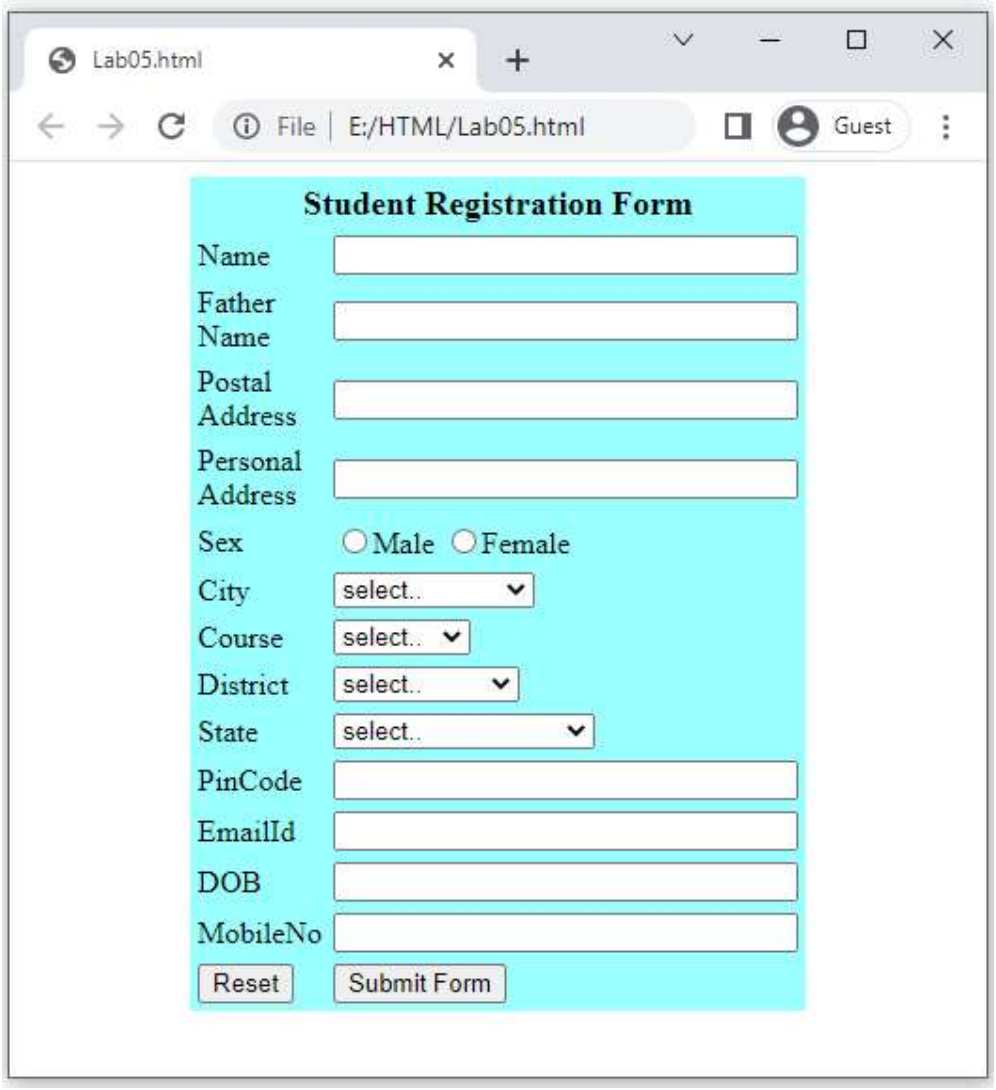
```
</select></td>
</tr>
<tr>
<td>PinCode</td>
<td><input type="text" name="pincode" id="pincode" size="30"></td>

</tr>
<tr>
<td>EmailId</td>
<td><input type="text" name="emailid" id="emailid" size="30"></td>
</tr>

<tr>
<td>DOB</td>
<td><input type="text" name="dob" id="dob" size="30"></td>
</tr>

<tr>
<td>MobileNo</td>
<td><input type="text" name="mobileno" id="mobileno" size="30"></td>
</tr>
<tr>
<td><input type="reset"></td>
<td colspan="2"><input type="submit" value="Submit Form" /></td>
</tr>
</table>
</form>
</body>
</html>
```

OUTPUT:


Lab05.html
File | E:/HTML/Lab05.html
Guest
Student Registration Form
Name
Father Name
Postal Address
Personal Address
Sex
Male
Female
City
select..
Course
select..
District
select..
State
select..
PinCode
EmailId
DOB
MobileNo
Reset
Submit Form

6. WriteanHTMLcodetocreateyourInstitutewebsite,DepartmentWebsiteandTutorialwebsitefor specificsubject.

```
<html>
<head>
<title>Institute of Engineering</title>
</head>
<body>
<ul>
<li><a href="http://my.wm.edu">myWM</a></li>
<li><a href="http://directory.wm.edu/people/">Directory</a></li>
<li><a href="http://events.wm.edu">Events</a></li>
<li><a href="/about/visiting">Visit</a></li>
<li class="last-side-tactical"><a href="/atoz" id="wm- az">W&amp;amp;M A-Z</a></li>
</ul>
</nav>
<nav id="side_top_nav">
<ul>
<li><a href="/about" id="about" title="About William &#38; Mary">About</a></li>
<li><a href="/academics" id="academics" title="InstituteAcademics">Academics</a></li>
<li><a href="/admission" id="admission" title="InstituteAdmission&#38; Aid">Admission
&#38; Aid</a></li>
<li><a href="/research" id="research" title="InstituteResearch">Research</a></li>
<li><a href="/campuslife" id="campus" title="InstituteCampus Life">Campus Life</a></li>
<li><a href="/news" id="news_events" title="InstituteNews">News</a></li>
<li><a href="http://www.tribeathletics.com/" id="athletics"
title="InstituteAthletics">Athletics</a></li>
<li><a href="http://www.wmalumni.com/" id="alumni"
title="InstituteAlumni">Alumni</a></li>
<li><a href="/giving" id="giving" title="InstituteGiving">Giving</a></li>
</ul>
</nav>
</div>
<header id="main-header"><div id="topbar"><a class="action_left icon-font" href="#"
id="menu_btn">&#xe9bd;</a><a class="mobile-header-logo" href="index.php"><img
alt="William and Mary" id="top_mark"
src="img/wm_wordmark_single_line_green.png"/></a><a class="action_right icon-font"
href="#" id="search_btn">&#xe986;</a></div>
<div id="desktop_header">

<nav id="tactical_nav">
<ul>
<li>
```

```
<a href="http://my.wm.edu">myWM</a>
</li>
<li>
<a href="http://directory.wm.edu/people/">Directory</a>
</li>
<li>
<a href="http://events.wm.edu">Events</a>
</li>
<li>
<a href="/about/visiting">Visit</a>
</li>
<li>
<a href="/atoz" id="wm-az">W&amp;amp;M A-Z</a>
</li>
</ul>
<
</nav>

<nav id="global_nav"><ul><li><a href="/about" id="about" >About</a>
</li><li><a href="/academics" id="academics" >Academics</a>
</li><li><a href="/admission" id="admission" >Admission &amp;amp; Aid</a>
</li><li><a href="/research" id="research" >Research</a>
</li><li><a href="/campuslife" id="campus" >Campus life</a>
</li><li><a href="/news" id="news_events" >News</a>
</li><li><a href="http://www.tribeathletics.com/" id="athletics">Athletics</a>
</li><li><a href="http://www.wmalumni.com/" id="alumni">Alumni</a>
</li><li><a href="/giving" id="giving" >Giving</a>

</li></ul>
</nav>

</div>
<!-- end desktop_header -->
</header>
<!-- end main_header -->

<nav class="footer_col" id="audience_links">
<a href="/alumnigateway">Alumni</a>
<a href="/currentstudents">Current Students</a>
<a href="/employers">Employers</a>
<a href="/facultystaff">Faculty &amp;amp; Staff</a>
<a href="/parentsandfamilies">Parents &amp;amp; Families</a>
<a href="/friends">Friends &amp;amp; Neighbors</a>
</nav>
```

<nav class="footer_col" id="additional_links">
Library
Careers at W&M
Policies
Emergency Information
About this Site
</nav>

<img alt="The College of William and Mary" id="footer_mark"
src="/img/wm_wordmark_single_line_white.png"/>

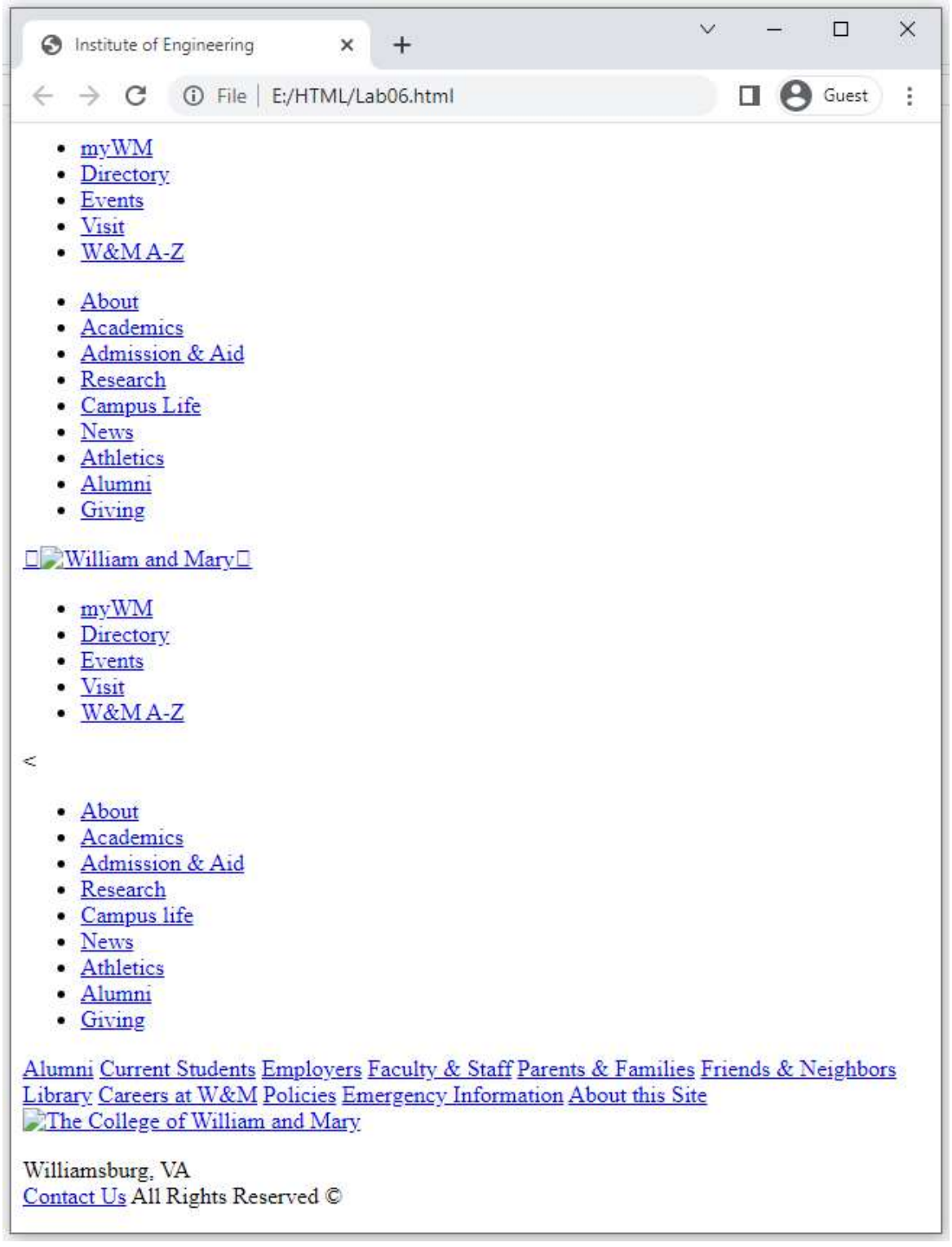
Williamsburg, VA

Contact Us All Rights Reserved ©

</footer>

</body>
</html>

OUTPUT:


Institute of Engineering
File | E:/HTML/Lab06.html
Guest
myWM
Directory
Events
Visit
W&M A-Z
About
Academics
Admission & Aid
Research
Campus Life
News
Athletics
Alumni
Giving
William and Mary
myWM
Directory
Events
Visit
W&M A-Z
<
About
Academics
Admission & Aid
Research
Campus life
News
Athletics
Alumni
Giving
Alumni Current Students Employers Faculty & Staff Parents & Families Friends & Neighbors
Library Careers at W&M Policies Emergency Information About this Site
The College of William and Mary
Williamsburg, VA
Contact Us All Rights Reserved ©

7. WriteanHTMLcodetoillustratetheusageof thefollowing:

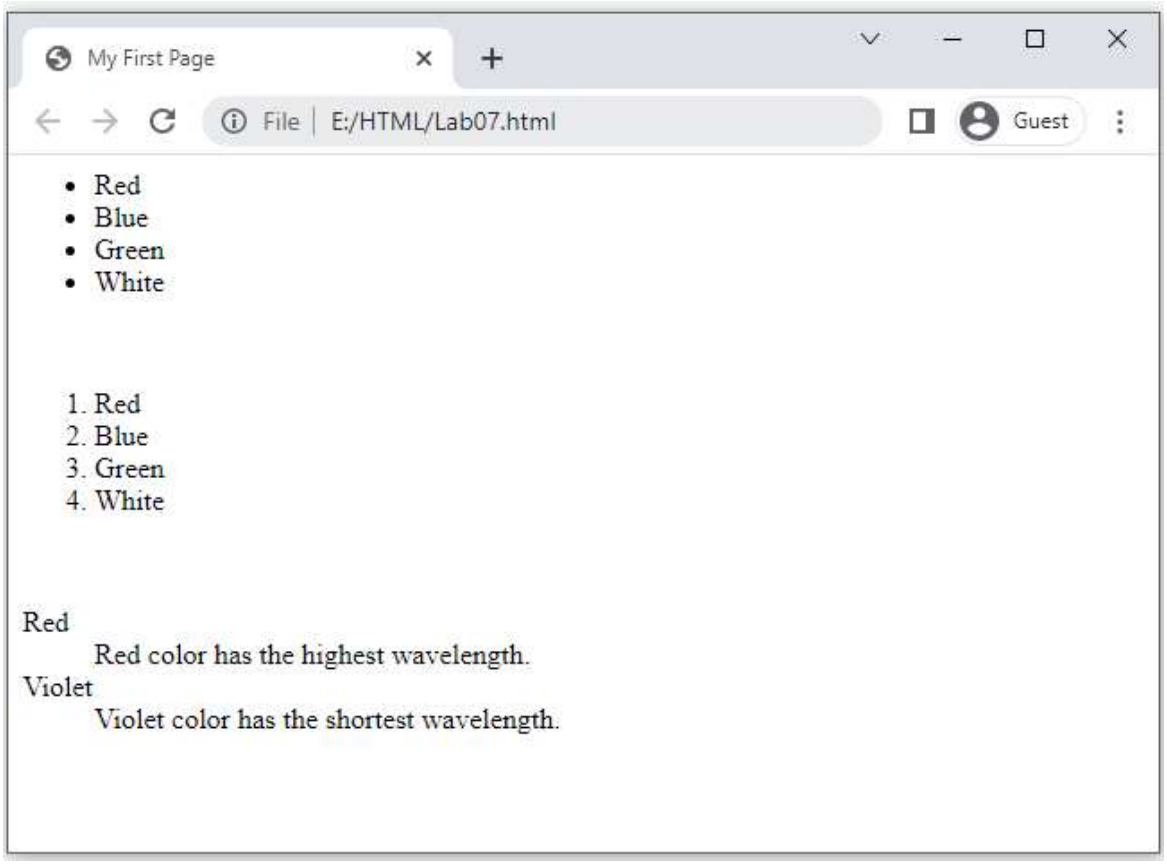
- OrderedList
- UnorderedList
- DefinitionList

```
<html>
<head>
<title> My First Page </title>
</head>
<body>
<UL type='A'>
<LI>Red
<LI>Blue
<LI>Green
<LI>White
</UL><br>

<OL type='square'>
<LI>Red
<LI>Blue
<LI>Green
<LI>White
</OL><br>

<dl>
<dt>Red</dt>
<dd>Red color has the highest wavelength.</dd>
<dt>Violet</dt>
<dd>Violet color has the shortest wavelength.</dd>
</body>
</html>
```

OUTPUT:


My First Page
File | E:/HTML/Lab07.html
Guest
Red
Blue
Green
White
1. Red
2. Blue
3. Green
4. White
Red
Red color has the highest wavelength.
Violet
Violet color has the shortest wavelength.

8. WriteanHTMLcodetocreateaframesethavingheader,navigationandcontentsections.

```
<html>
<FRAMESET Rows = "30%,*" >
<Frame Src="Lab03.html" >
<FRAMESET Cols = "25%,*">
<Frame Src="Lab06.html" >
<Frame Src="Lab05.html" >
</FRAMESET>
</FRAMESET>
</html>
```

OUTPUT:


Lab08.html
File | E:/HTML/Lab08.html
Guest
ABOUT US
OUR SERVICES
CONTACT US
myWM
Directory
Events
Visit
W&M A-Z
About
Academics
Admission & Aid
Research
Campus Life
News
Athletics
Alumni
Giving
William and Mary
myWM
Directory
Events
Visit
W&M A-Z
<
About
Academics
Admission & Aid
Research
Campus life
News
Athletics
Alumni
Giving
Alumni Current Students Employers Faculty & Staff Parents & Families Friends & Neighbors
Library Careers at W&M Policies Emergency Information About this Site
The College of William and Mary
Student Registration Form
Name
Father Name
Postal Address
Personal Address
Sex
Male
Female
City
select..
Course
select..
District
select..
State
select..
PinCode
EmailId
DOB
MobileNo
Reset
Submit Form

9. WriteanHTMLcodeto set image width and height based on your requirement using width and height attributes.

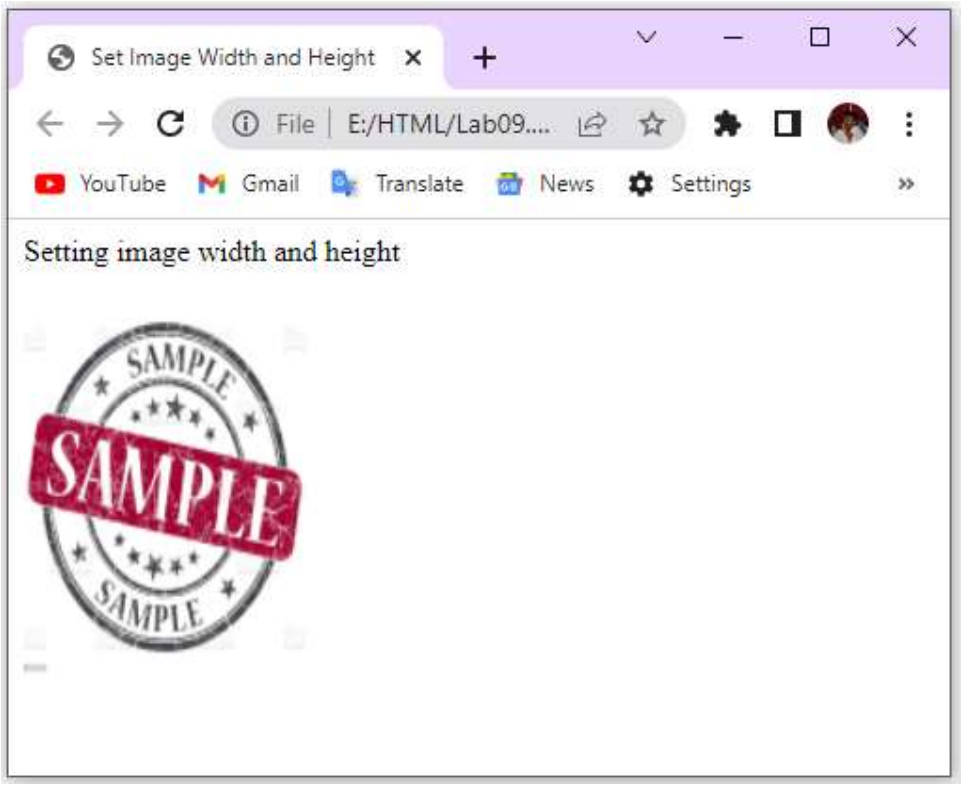
```
<html>

<head>
<title>Set Image Width and Height</title>
</head>

<body>
<p>Setting image width and height</p>
<imgsrc = "sample.jpg" alt = "Test Image" width = "150" height = "200"/>
</body>

</html>
```

OUTPUT:


Set Image Width and Height
File | E:/HTML/Lab09....
YouTube
Gmail
Translate
News
Settings
Setting image width and height
SAMPLE
SAMPLE
SAMPLE