

IMPS (Immediate Payment System) is used instantly within bank across India via mobile, internet & ATM.

- It is an inexpensive mode of fund transfer.
- Funds can be transferred via IMPS just with the mobile number of the beneficiary.

Automated Clearing House (ACH) is a computer based electronic system for processing transactions, b/w participating financial institutions.

- It may support both credit transfers & direct debits.
- It is designed to process batches of payments containing numerous transactions & charges fees low enough to encourage its use for low value payments.

Risks involved in e-payments are Fraud

Tax Evasion

Payment conflicts

Impulse buying

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Online transaction processing system (Advantages) :

- Easy & best solution for online shoppers.
- Efficient & have excellent response times.
- Very easy to use
- Credit cards are well handled by these systems.

Disadvantages:

- If database servers are hacked, it could lead to financial personal problems.
- Hardware problems
- Electricity problems
- Impose processing costs on the buyers & sellers as well.

Application areas of e-commerce in different industries:

- Online marketing & purchasing
- Retail & wholesale
- Finance
- Manufacturing
- Online auction
- E-banking
- Online publishing
- Online booking
- Online loans

Online / Internet Banking : It is a facility offered by banks & financial institutions that allow customers to use banking services over the internet.

Features : Check the account statement online

- Open a fixed deposit account.

- Pay utility bills.

- Make merchant payments.

- Transfer funds.

- Order cheque book

- Buy general insurance

- Recharge prepaid mobile / DTH.

Advantages : . Availability

- . Easy to operate

- . Convenience

- . Time efficient

- . Activity Tracking

Disadvantages : . Internet requirement

- . Transaction security

- . Difficult for beginners

- . Securing password.

Online Insurance : It is an advanced method of buying insurance policies using the internet.

- Alternative to the traditional offline mode of purchasing insurance policies.

Advantages : Comparison of features, prices, benefits offered can be done on one platform.

- One can choose from diverse range of plans.

- Deals are done directly with the company.

Disadvantages : You may not get complete knowledge of the product that you need to buy.

- Negotiations over the plan rates are also not possible.

- Companies still don't have a processing mechanism for claiming online.

Payment of utility bills Online : It is a secure electronic service that allows customers to pay bills without having to write cheques & mail them.

Advantages: Convenience

- Environmental issues
- Helps your credit score
- Less chance of identity theft
- Saves money

Disadvantages: Potential Cost

- Losing track
- Overdraft fees
- Stopping payments

Online Marketing : It is the marketing of products or services over the internet.

Components are : B-B & B-C

Advantages:

- Inexpensive
 - Companies can reach a wide audience for a small fraction of traditional advertising budgets.
- Offers a greater sense of accountability for the advertisers.

Disadvantages: - Too many skills to learn

- Too many scams on the internet.
- Intense competition.
- Takes a long time to learn many skills.

E-tailing : It is the process of selling the goods & services through electronic media, particularly the internet.

Two types:

* Pure play e-retailers

* Brick & click e-retailers

Advantages :

- Customers can save both the efforts & time
- Customers can shop anytime & from anywhere
- Huge discounts are available
- Offers easy payment terms

Disadvantages :

- Customers may not be sure of the quality of the products offered online
- Customers make the decision just by looking at the image
- Bargaining is missing in electronic retailing.

Online financial services: These are important in the e-commerce sector

- Online financial transactions have become more safe & common.
- Cyber security has become even more important due to the popular use of online payments.
- Financial service offer top payment services & receive payments instantly from customers.

Online Travel Service :

- At present, 70% of India's e-commerce market is travel related & is doing more than \$15 Billion annually.
- IRETC brought the wave of e-commerce in India by launching its first transactional website.
- Today, in a country, which now has the world's second largest number of internet users, online booking of travel plans have become more convenient now.
- The main drivers of this growth are
 - * better technology
 - * increase in internet penetration & mobile users
 - * growing credit / debit card penetration.
 - * introduction of mobile wallets.

Online Career Service: A job portal is a website dedicated for online information about recruiters as well as job seekers.

Aspects considered with respect to a job portal are

- Free or paid
- Top companies listed
- Quality service
- Easy registration
- Social media presence
- Current openings
- Training material
- Reputation
- Blog / advice page
- Mobile App

Online Auction: It is a service in which auction users or participants sell or bid for products or services via the internet.

- It is widely accepted business model for the following reasons:

- No fixed time constraint
- Flexible time limits
- No geographical limitations
- Highly intensive social interactions
- Includes a large number of sellers & bidders, which encourages a high volume online business.

Online Portal: It is a website that provides an entry point for a range of information, tools & links.

- An online portal can save a user a lot of time
- A vertical industry portal is specialized to reflect the interests & needs of the members of a particular industry

Online Learning Platforms: Nowadays, you have access to a quality education whenever & wherever you want, as long as you have access to a computer.

Advantages: - Time flexibility

- Increased access & reach
- Variety of programs & courses
- No need to travel
- Improves retention quality
- No age barrier

Disadvantages: - Not appropriate for all

- Health issues
- Lack of social interaction
- Cost
- Distraction
- Technical issues
- Requires a lot of self discipline

Online publishing: It has been around for about ten years ever since people started putting their text files on the internet in an effort to share information.

Examples: E-books

- Journal articles
- Encyclopedia articles
- E-newspaper articles
- Thesis
- Conference proceeding
- Websites
- Blogs
- Internet documents or reports
- Lecture slides & handouts from different online learning portals.

Online Entertainment: The online entertainment industry enables us to watch movies, videos, television shows, listen to music, make videos, & so much more.

- This industry continues to grow & develop with the advancements we are making in technology.
- Technology has come with cell phones & even more amazing to see what the next technological advancement brings in that industry.

Online Shopping: Business organizations use internet as a main vehicle to conduct commercial transactions.

Advantages:

- Convenience of online shopping
- No pressure shopping
- Online shopping saves time
- Comparisons
- Availability of online shop
- Online tracking
- Saves money
- More control
- No crowds
- No pressure

Disadvantages:

- Delay in delivery
- Lack of discounts in online shops
- Lack of touch & feel
- Lack of interactivity
- Lack of shopping experience
- Lack of close examination
- Frauds in online shopping

U-IV

Designing a home page:

- A home page is a webpage that serves as the starting point of website.
- It is the default webpage that loads when you visit a web address that only contains a domain name.
- The home page is located in the root directory of a website.
- There is no standard home page layout, but most home pages include a navigation bar that provides links to different sections within the website.

Structure of HTML Document:

- HTML stands for Hypertext Markup Language.
- It is used to create web pages using markup language.
- HTML support to display image files, object files such as audio, video that you embedded in HTML to create an interactive web pages.
- JavaScript used to create a dynamic user interactive web pages.

HTML document has two main parts:

Head: It contains title & meta data of a web document.

Body: It contains the information that you want to display on a web page.

- In a web page, the first tag indicates the markup language that is being used for the document.
- The `<head>` tag contains information about the webpage.
- In the `<body>` tag content appears.

`<html>`

`<head>`

`<title>` Title of the webpage `</title>`

`</head>`

`<body>`

content of the page

`</body>`

`</html>`

Anchor tag:

- `<a>` tag defines an anchor link.
- Create or set link either internally or externally.
- A link is a connection from one web resource to another.
- The most required attribute of the `<a>` tag is the `href` attribute which indicates the link's destination.

Syntax:

```
<a href = "url" name = "Internal name"
    target = { -blank, -parent, -self, -top } >
```

Test message

`<a>`

Hyperlink: It is an element in an HTML document that links to another portion of the document or to another document. Hyperlinks are four types.

- Internal links
- External links
- Mailto links
- Subdirectory links

Internal link: It is linked within the same webpage.

- link name is followed by the hash sign (#).

External link: It is linked to external webpage.

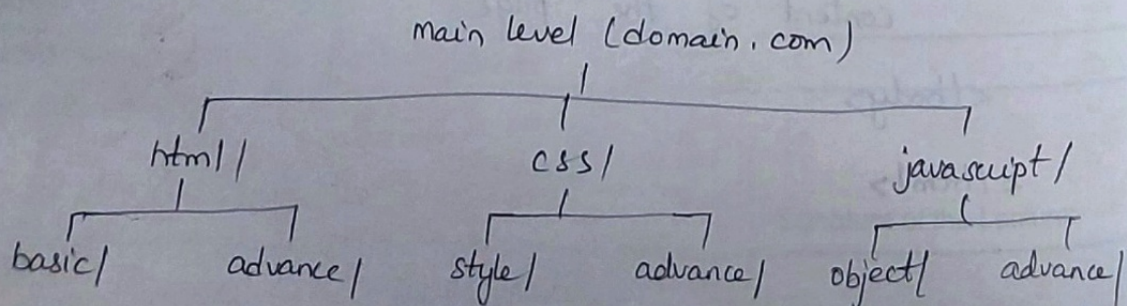
- It is great future to drive a webpage one to another & useful for surf many webpage in website.

Mailto links: It is used to create a mailto link to send an email to a specific email address.

- When we click on email link, it will open email application.

Subdirectory links: HTML directories are managed in logical hierarchical structure.

Visual File Structure:



Head & Body Section:

Head Section:

- The `<head>` element contains general information about the page, meta-information, style sheet URL & document type information.
- `<head>` tag element does not display in the body part of a web browser.
- It contains `<title>`, `<meta>`, `<link>`, `<style>`, `<script>` & `<base>`.

Body Section:

- Body section is a main content section of webpage all content that will be seen when the user loads the webpage.
- It is an important section to display webpage.

Title:

`<title>` element is used to represent the title of the HTML document.

`<meta>` is used to provide structured meta-information about the web page.

`<link>` is used to load an external style sheet into HTML document.

`<style>` is used to write CSS style to an HTML document.

`<script>` is used to define client-side JavaScript.

`<base>` specifies a base URL for all the links within a web page.

Coloured pages: Colors are very important to give a good look & feel to your website.

- By using `<body>` tag we can specify colors on page level.

`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.

`link` - sets a color for linked text.

`vlink` - sets a color for visited links.

To set colors to web page we use three different methods.

Color Names: Directly we can specify color names.

Hex Codes - A six digit code represents the amount of color.

Color decimal values - This value is specified using the `rgb()` property.

- Comments are non executable statements.
- HTML comment begins with "`<!--`" & ends with "`-->`"
- A CSS comment starts with "`/*`" & ends with "`*/`" in CSS file
- Single line comment start with `//`
- Multi line comment start with `/*` & end with `*/`

Headings:

- HTML header tag `h1` is used for specifying heading level 1.
- There are 6 levels of headings `h1` - `h6` with `h1` the most important & `h6` the least important.

Horizontal Rule:

- The `<hr>` tag in HTML stands for horizontal rule & is used to insert a horizontal rule in an HTML page to divide or separate document sections.

- `<hr>` tag is an empty tag & it does not require an end tag.

Tag attributes are: align, noshade, size, width.

Syn: `<hr align = {left, center, right}>`

noshade: noshade

size: "size in pixels"

width: "width in pixels" >

Paragraph: `<p>` tag is used to represent a paragraph text.

start tag `<p>` & end tag `</p>`

Tabs or Navigation tabs: Tabs are used to navigate to different sections of the application.

Images & pictures:

- `<img>` tag defines an image in a HTML document.
- images are linked to the HTML pages.
- `<img>` tag self closing.

Syn: `<img src = "URL" alt = "text" >`

Attributes are src, alt

Picture tag: The picture element is used for alt direction in responsive designs.

Syn: `<picture>`
`<img src = "URL" alt = "text" > </picture>`

List: HTML lists are used to present list of information in well formed & semantic way.

Types of lists:

Unordered list: Create list of items, in no particular order

Ordered list: Create list of items, in a specific order

Definition list: Create list of terms & their descriptions.

Unordered list (ul):

HTML tag specifies unordered list of items

attribute	value	description
type	disk	disk bullet
	circle	circle bullet
	square	square bullet

default value is "disk"

Ordered list (ol):

HTML tag specifies ordered list of items.

attribute	value	description
type	1	Arabic number
	a	lowercase alphabet
	A	uppercase alphabet
	i	lowercase roman numeral
	I	uppercase roman numeral

List of items (li):

HTML tag specifies items list & its attribute help to change the type of order list.

attribute	value	description
type	1	number
	a	lowercase alphabet

Definition list: It is used to create glossary list.

- starts with <dl> tag & close with </dl> tag.

- <dl> have two tag <dt> & <dd> defined inside tag.

- <dt> tag use to define definition term.

- <dd> tag use to define definition.

- Both <dt> & <dd> does not have any attributes.

Nested lists in HTML: Nested lists are used to break into several separate lists.

- To create a nested list, put the child list in the parent list, so that all elements of the child list are nested in the `<li>` element of the parent list.

Table handling in HTML:

- In HTML to split a page into different sections we use `<table>` tag.
- `<tr>` tag stands for table row, closed with `</tr>` tag. table will gain an extra row.
- `<td>` tag stands for table data, it places one cell in your table row.
- To merge two or more columns or two or more rows we use `colspan` or `rowspan` attributes.

```
<table>
  <tr>
    <td>
      Text
    </td>
  </tr>
</table>
```

`<table>` attributes:

attribute	value
align	left, right, center
width	size - px
height	size - px
bgcolor	color name
background	specified URL
border	size - px
border color	color name
cell spacing	size - px
cell padding	size - px

`<th>` attributes:

bgcolor	color name
colspan	column N
rowspan	Row N

<tr> attributes :

bgcolor colorname

Frame: It is used to split the browser window in several individual frames that can contain a separate web document

- HTML document within frame include other web pages link can be opened in the desired frame
- Generally include navigation link, header or footers, which help user to find & navigate to required information.

<frameset> tag attributes

cols Specifies the no. of columns & their width in a frameset.

rows Specifies the no. of rows & their height in a frameset.

<frame> tag attributes

frameborder

longdesc

marginheight

marginwidth

noresize

src

Nested frames: It is possible to nest a frameset within another frameset, which means you can take one row and divide it into several columns.

Forms: HTML forms use to get users information.

- User interactive
- Used to get user information & store that data into a web server.

HTML form tag:

<form> - User input

<input> - Input field data

<button> - push button

<textarea> - text area

<label> - label

<fieldset> - border to the c/p data

<legend> - caption name write into fieldset

<select> - drop down

select list box

<option> - option value

in the drop down box

U-5 Need & Concepts of Cyber Security:

- New & powerful cyber attacks are striking the internet regularly.
- Cyber criminals can steal our money or damage our reputation.
- 90% of all cyber attacks are caused by our negligence.
- We must be vigilant while making use of technology to reduce the risk of cyber threats.
- Internet gives remote access to the people who want to steal from the others.

Results of cybercrimes which lead to need for cyber security:

- Huge damage of reputational damage to the company.
- Loss of potentially sensitive business information.
- Security intrusion & breaches.
- Loss of confidential information of business.
- Reduced trust in online activities.
- Loss of money to customers.
- Harassments in the social networks.
- Loss of identity of customers.

E-Commerce Security Environment:

The e-commerce security environment consists of three layers such as new technologies, organizational policies & procedures, new laws & industry standards that empower law enforcement officials to investigate & prosecute offenders.

Dimensions of e-commerce security:

- There are six key dimensions to e-commerce security: integrity, non repudiation, authenticity, confidentiality, privacy & availability.

Integrity: It refers to the ability to ensure that information being displayed on a website, or transmitted or received over the internet, has not been altered in any way by an unauthorized party.

Non repudiation: It refers to the ability to ensure that e-commerce participants do not deny their online actions.

Authenticity: It refers to the ability to identify the identity of a person or entity with whom you are dealing on the internet.

Confidentiality: It refers to the ability to ensure that msgs & data are available only to those who are authorized to view them.

Privacy: Must establish internal policies that govern their own use of customer information, & they must protect that information from illegitimate or unauthorized use.

Availability: It refers to the ability to ensure that an e-commerce site continues to function as intended.

Security threats in e-commerce environment:

- From a technology perspective, there are three key points of vulnerability when dealing with e-commerce: the client, the server, & the communication pipeline.

Attackings methods in e-commerce environment:

- Malicious Code
- Exploit kits
- Malware
- Virus
- Worm
- Ransomware
- Trojan Horse
- Backdoor
- Bots
- Spyware
- Phishing
- Hacktivism
- Spoofing
- Spam
- Sniffer
- Data breach
- Denial of Service
- Identity Fraud

Encryption: It is the process of transforming plain text or data into cipher text that cannot be read by anyone other than the sender & the receiver.

- Encryption provide four key dimensions of security.

1. Message integrity

2. Non repudiation

3. Authentication

4. Confidentiality

Security channels of communication :

Secure Socket Layer (SSL) & Transport Layer Security (TLS)

Virtual Private Networks (VPNs) & Wireless (Wi-Fi) Networks

Protecting networks in e-commerce security environment,

- Firewalls

- Proxy Servers

- Intrusion Detection & Prevention Systems.

Protecting clients & servers in e-commerce security environment,

- Operating system security enhancements.

- Anti Virus software

Hacking: It is an attempt to exploit a computer system or a private n/w inside a computer.

Sniffing: It is the process of monitoring & capturing all the packets passing through a given network using sniffing tools.

Cyber vandalism: It is a cyber attack without any obvious rational criminal, political or ideological motive, usually defacement of a vulnerable website to display the hacker's prowess.

- It is a damage or destruction that takes place in digital form.