# Unit- I <u>Introduction and Web Development Strategies</u>

1. <u>**World Wide Web:**</u>

   The World Wide Web is a system of interlinked hypertext documents accessed via the Internet. Web is a huge collection of pages of information linked to each other around the globe.

   **History of WWW:**

   - WWW is created by **Sir Tim Berners Lee** in **1989** at **CERN** in Geneva.
   - **In 1990**, the first **text only browsers** were setup and **CERN** scientist could access hypertext files and other information at CERN. HTML was based on a subset of the standard generalized markup language (SGML). To transfer HTML document to remote sites a new protocol was devised called HTTP (Hyper Text Transfer Protocol).
   - In the fall of **1991**, conference goes around the world started hearing about the promise but sparks still were not flying.
   - In **1993**, there are only about 50 websites world wide. A browser that allowed user to take advantage of the web's graphical capabilities was developed at the **National center for Super Computing application (NCSA)**. NCSA called the **browser Mosaic**.

2. <u>**Protocols Governing Web:**</u>

   **Protocol:** A protocol is a set of rules that is used to communicate applications to each other.

   <div align="center">**OR**</div>

   A protocol is the interface required for communicating the different applications.

**Classification:**

     a. **HTTP**

     b. **TCP/IP**

     c. **FTP**

     d. **E-MAIL**

     e. **TELNET**

A. **HTTP:** HTTP is the primary protocol used to distribute information on the web.

**Initial HTTP 0.9** does not allow for **content typing** and does not have provisions for supplying **meta-information**.

**Content Typing:** To identify the type of data being transferred.

**Meta Information:** It is supplemental data, such as environment variables that identify the client's computer

Current version is **HTTP 1.0**

B. **TCP/IP**: It is a set of rules that an application can use to package its information for sending across the networks of networks.

C. **FTP**: It is used to transfer the files over networks.

D. **E-Mail:** It is a method of exchanging digital messages across the Internet or other computer networks.

E. **Telnet**: Telnet lets you remotely log into another system and browse files and directories on that remote system.

3. <u>**Website:**</u> A website is simply a collection of interlinked web pages.

   **Classification: A. Corporate Website     B. Individual website**

   **A. Corporate Website:**
   - **i.** In this, there is certain no. of persons, who develop their website for a particular organization.
   - **ii.** The corporate website are formed when group of people have common interest and objective.
   - **iii.** The purpose of this website is to convey the information of organization to all over the world.

   **B. Individual website: It** is just like profile management system. In this type of website an individual wants to develop website for h-projection, career growth etc.

4. <u>**Cyber Laws:**</u> Cyber law is a term used to describe the legal issues related to use of communication technology, particularly **"cyberspace"** i.e. Internet.

   **Indian and International Cyber Law:** Cyber Laws are formed by the government to prevent the internet crime. These crimes could be **hacking, threat on internet, denial of services etc**. Cyberspace includes **computer, computer networks, internet data, software etc.**
   - **i.** **Data Protection and Privacy Law:** This is due to the nature of the internet and amount of information that may be accessed through it, such legislation is critical to protect the fundamental rights of privacy of an individual.
   - **ii.** **Electronic and Digital Signature Law:** This is required so that uniform and standard procedures are established for **authentication of electronics records, EDI, E-Mail.**
   - **iii.** **Computer Crime Law:** due to victim of internet threats.

   **iv. Telecommunication Law**: Approve and supervise the application of fees and rates charged for telecommunication services in accordance with the provision of the applicable law.

   **v. Intellectual Property Law:** This includes **copyright law, trademark law, semiconductor law and patent law** in relation to computer hardware and software.

### IT Act 2000 (INDIA):

- E-Governance
- Authentication of E-Records
- Digital Signatures
- Controlled certifying authorities
- Penalties for damage of computer and computer system.

**5. Web Applications:**

- Simple office software (word processors, online spreadsheets, and presentation tools).
- More advanced applications such as project management, computer-aided design, video editing and point-of-sale.

**6. Writing web Projects and Target Users:**

   **A. Write a project mission statement:** Write the specific mission statement that you want to do.

   **B. Identify Objectives:**

     i. Specific

     ii. Measurable

     iii. Attainable

     iv. Realistic

     v. Time limited

**C. Identify your target users:** The matter of a website will be determined by the users whom you want to visit the site. This is totally depend upon

     i.    Market research

     ii.    Focus group

     iii.    Understanding intranet audiences

**D. Determine the scope:** By supporting documents and client's approval.

**E. Budget:**

     i.    Assumption for budgets.

     ii.    Budget categories.

     iii.    Determine hidden costs and tools.

**F. Planning issues:**

     i.    Discuss client's existing information system.

     ii.    Project team and developing infrastructure.

     iii.    Where the website will place.

**7. <u>Comparison between traditional project and web project:</u>**

| Web Projects | Traditional Projects |
|---|---|
| 1. Project managers are not always client. They could be same. | 1. They are always different. |
| 2. Often beta technologies are used for testing, often without tech support. | 2. It is not applicable in this case |
| 3. Pricing model for web projects does not exist. | 3. It do exist for traditional projects. |
| 4. Team roles are less specialized. | 4. More specialized. |
| 5. Clients are often unwilling to bear the cost of web development. | 5. Difficult of traditional projects. |
| 6. Standards for web projects do not exist. | 6. Standards for web projects exist. |
| 7. Project manager's responsibilities are very broad. | 7. Not true for these projects. |

8. **Identification of objects:**

    A. **Object identification:** All the components which are visible in website are objects or in other words, we can say that all visible components in the web browser are defined as objects. Ex. Text box, command button etc.

    B. **Web development process:**

| Strategy | → | Design and Specification | → | Produced desired result |
|---|---|---|---|---|

| Launch | ← | Register with ISP | ← | Testing and Maintenance |
|---|---|---|---|---|
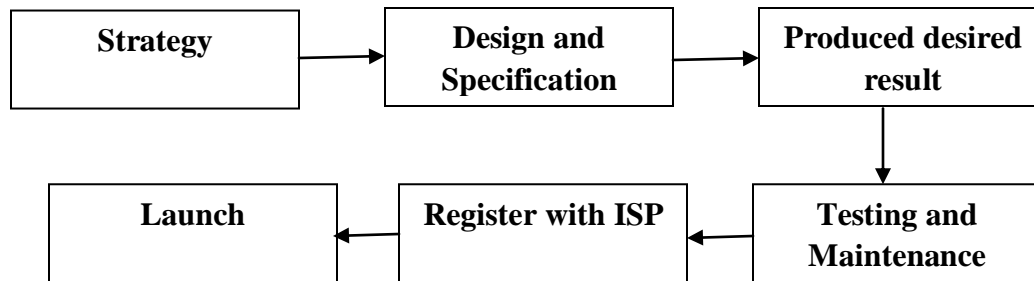
**Strategy:**

- Goals and objectives
- Team building
- Research and review
- Project proposal

**Design and Specification:**

- Developing concept
- Content planning
- Rough design
- Final design

**Produced desired Result:**

- Build prototype
- Prototype testing
- Original design
- Satisfy the clients need

**Testing and maintenance:**

- Test the code
- Maintain the web server.

**Register with ISP:**

- Register domain name
- Get web space

**Launch:**

- Connect domain name with web server
- Finally host the web accordingly.

9. **Web Team:** Web team is a group of various technical experts in a developing site from coding the page to maintain the web server.

   **Types:**

   A. **Server Side:** hired by a company to develop a website.

   B. **Client Side:** part of the company putting together the website.

   **Assessment techniques used to comprise a web team:**

   a. **Deciding roles and responsibilities:** The composition of team varies to depend on the **audience, scope and complexity level** of the web. There are key roles on each virtual project. One should always decide for **core, extended and special team members** in a web and shares responsibilities accordingly.

b. **Common Team Compositions:** It is possible to acknowledge specific type of teams and determine to be based on the kind of project, who is likely to be part of the team though these are all type of web project. As for example the team composition might be account manager, creative lead, project manager, designer etc.

c. **Putting together with right team:** It meet out the needs with low price, more effectively in reasonable time. So it is the team that fulfils the website requirements successfully.

d. **Identifying Necessary Skills:** The skill set in the base of web team. It must have in care to plan, design, build and deploy a website.

**Classification:**

| Core Team member | Extended Team Member | Special Team Member |
|---|---|---|
| **1. Project Manager:** <br> • Specify the work. <br> • Developing the project plan. <br> • Scheduling. <br> • Allocation resources. <br> • Budgeting and managing the team. <br><br> **2. Technical lead:** <br> • Managing programmers. <br> • Chooses specialized team such as security expert, database programmers. <br><br> **3. Web Production specialist:** <br> • Integrate the site using html or java script. <br><br> **4. Creative Lead:** determines creative concepts for the site and responsible for site design. <br><br> **5. Quality Assurance Lead:** for testing purpose. | **1. Account Manager:** It interacts with the client, project manager and creative lead. <br><br> **2. Programmer:** develops applications for the web projects. <br><br> **3. Network Engineer:** configuring a web server. <br><br> **4. Information architects:** It understands how to display information visually to users and how to interact with the website. <br><br> **5. Content Writer:** write contents for the website. <br><br> **6. Tester:** It tests the web project based on the team plan that QA lead writes. | **1. Security Experts:** security handling and encryption techniques. <br><br> **2. Audio, Video Engineer** <br><br> **3. 3-D Modeler** <br><br> **4. Web Cast Specialist** <br><br> **5. Media Buyer** <br><br> **6. Strategic Planner** |

10. **Planning and Process Development:**

    A. **Early planning:**

        i.     Know your audience.

        ii.    Interviewing.

        iii.   Focus group & Market Research.

        iv.   Gathering end user requirement.

    B. **Content planning:**

        i.     Get images.

        ii.    Create links.

        iii.   Audio & Video

        iv.   Shockwave & other media files.

    C. **Technical planning:**

        i.     Database.

        ii.    Shockwave movies.

        iii.   Transaction system.

        iv.   Scripts of all kinds.

    D. **Production planning:**

        i.     Market research.

        ii.    Combine the web pages

        iii.   Get complete web.

11. **Explain the following terms:**

    A. ARPANET

    B. ISP

    C. UDP

    D. Uploading of files

    E. Portal

**A. ARPANET:**

- In 1969, a project was funded by the **Advanced Research Project Agency (ARPA)**, an arm of the U.S. Department of Defence. ARPA established a packet-switching network of computers linked by **point-to-point leased lines** called **Advanced Research Project agency Network (ARPANET)** that provided a basis for early research into networking.

- The conventions developed by ARPA is specify how individual computers could communicate across that network became TCP/IP.

- As networking possibilities grew to include other types of links and devices, ARPA adapted TCP/IP to the demands of the new technology. As involvement in TCP/IP grew, the scope of ARPANET expanded until it became the backbone of an internet-work today referred to as the internet.

**B. ISP:**

- The Internet Service Provider (ISP) gives you the telephone access and software you need to connect to the internet along with some technical help.

- Many ISPs also include an electronic mail account, host customers web pages and offer services a company that do business on the Internet.

- There are aprox. 200 ISPs in India like **VSNL, MTNL, ERNET (Education and Research Community Network)** etc.

**C. UDP:**

The User Datagram Protocol (UDP) is one of the core members of the Internet Protocol Suite, the set of network protocols used for the Internet. With UDP, computer applications can send messages, in this case referred to as datagrams, to other hosts on an Internet Protocol (IP) network without requiring prior communications to set up special transmission channels or data paths.

**Packet structure:**

| bits | 0 – 15 | 16 – 31 |
|------|--------|---------|
| 0 | Source Port Number | Destination Port Number |
| 32 | Length | Checksum |
| 64 | Data | |

### D. Uploading of files:

- Uploading requires a 6 MHz. bandwidth in a range below 40 MHz. At this low frequency, home appliances can create a noisy environment that effect modulation.

- The modulation technique that is normally used is QPSK (4bit at a time). This means that a user can upload information at a rate of 12 Mbps.

- Presently the uploading rate is between 500 Kbps and 1 Mbps.

### E. Portal:

A web portal, also known as a links page, presents information from diverse sources in a unified way. Apart from the standard search engine feature, web portals offer other services such as e-mail, news, stock prices, information, databases and entertainment. Portals provide a way for enterprises to provide a consistent look and feel with access control and procedures for multiple applications and databases, which otherwise would have been different entities altogether. Examples of public web portals are AOL, iGoogle, MSNBC, Netvibes, and Yahoo.