UNIT 1:

Introduction to Web Technology:-

Introduction to the Web:

The World Wide Web, commonly known as the Web, is an interconnected system of resources and documents that are accessed over the internet. It was invented by Sir Tim Berners-Lee in 1989 and has since become an integral part of modern life, providing access to information, services, and communication on a global scale. The Web relies on various protocols and standards to function effectively.

Protocols Governing the Web:

1. **Hypertext Transfer Protocol (HTTP):**
   HTTP is the foundation of data communication on the Web. It allows web browsers to request resources (like web pages, images, videos) from web servers and receive responses.

2. **Hypertext Markup Language (HTML):**
   HTML is the standard markup language used to structure and present content on the Web. It defines the elements and layout of web pages.

1. **Cascading Style Sheets (CSS):**
2. CSS is used to control the presentation and layout of HTML elements on web pages, allowing developers to define styles like fonts, colors, and spacing.

1. **JavaScript:**
   JavaScript is a client-side scripting language that enables interactivity and dynamic content on web pages. It allows developers to create interactive elements and respond to user actions.

2. **Uniform Resource Locator (URL):**
   URLs are used to identify resources on the Web and provide the address (location) of web pages and other files.

Web Development Strategies:

3. **Responsive Web Design (RWD):**
   RWD ensures that websites adapt to various devices and screen sizes (desktops, tablets, smartphones) to provide an optimal user experience.

3. **Mobile-First Development:**
   Prioritizing the design and development of websites for mobile devices, given the increasing prevalence of mobile internet usage.

4. **Progressive Web Apps (PWAs):**
   PWAs combine the best features of websites and mobile apps, allowing users to access web apps offline and enjoy app-like experiences.

4. **Content Management Systems (CMS):** Using CMS platforms like WordPress, Joomla, or Drupal to simplify website content creation and maintenance.

5. **Application Programming Interfaces (APIs):** Leveraging APIs to connect web applications with external services and data sources, enhancing functionality and integration.

Web Applications:

Web applications are software programs that run on web servers and interact with users through web browsers. They offer dynamic, interactive, and personalized experiences for users and often require server-side processing. Examples include online banking systems, social media platforms, e-commerce websites, and productivity tools like Google Docs.

Web Project:

A web project refers to the process of planning, designing, developing, and deploying a website or web application. It involves various stages such as requirement gathering, architecture design, coding, testing, and maintenance. Proper project management ensures that the web project is completed successfully and meets its objectives.

Web Team:

A web development team consists of individuals with different roles and skills working together to create and maintain web applications and websites. Common roles in a web team include:

4. **Web Developers:**

Responsible for coding and implementing the website or web application using programming languages like HTML, CSS, JavaScript, and backend technologies.

5. **Web Designers:**
Create visual elements and layouts, ensuring the website is aesthetically appealing and user-friendly.

6. **Backend Developers:**
Handle server-side operations, databases, and business logic.

3. **Frontend Developers:**

Focus on the user interface and client-side interactions.

4. **Quality Assurance (QA) Testers:**
Test the web application for functionality, performance, and security issues.

5. **Project Managers:**
Oversee the entire web development process, coordinating tasks, and ensuring project success.

Collaboration between these roles ensures the successful development and maintenance of web projects.