

Web Technology & Development Notes

1. Interaction and Course Pack Overview

Introduction to key web technologies like HTML, CSS, JavaScript, PHP, and XML. Overview of tools, technologies, and objectives.

2. Introduction to Web Technology, Internet and WWW

Web technology helps create, maintain, and access websites using the internet. WWW is a system of interlinked hypertext documents.

3. Web Browser, Architecture of Web Browser

A browser retrieves and displays web content. Components: UI, browser engine, rendering engine, networking, JS engine, data storage.

4. Web Page, Static & Dynamic Pages, Home Page, Website

- Static: Fixed content
- Dynamic: Changes with user input/database
- Home Page: First page of a site
- Website: Collection of web pages

5. Web Servers & Clients

Servers host data and resources. Clients (browsers) request and display this data using protocols like HTTP.

6. Introduction to HTML and History

HTML (Hypertext Markup Language) structures web content. Developed by Tim Berners-Lee in 1991.

7. Structure of HTML Document, Creating & Executing HTML

HTML uses tags like `<html>`, `<head>`, `<title>`, `<body>`. Save with `.html` extension and open in browser.

8. Tags of HTML

Basic tags: `<h1>`, `<p>`, `
`, ``, `<i>`, `<hr>`, etc.

9. Tags of HTML Advanced

Semantic tags: `<article>`, `<section>`, `<aside>`, `<header>`, `<footer>`, etc.

10. Links and Image Tags

- `text` for links
- `` for images

11. Creating Lists (Ordered and Unordered)

- Ordered list: `` with ``
- Unordered list: `` with ``

12. Tables

Structure data in rows and columns using `<table>`, `<tr>`, `<td>`, `<th>`.

13. Forms and Frames Tags

- `<form>` for input
- `<input>`, `<textarea>`, `<select>` for fields
- `<iframe>` for embedding pages

14. HTML5 Form Validation

Attributes like `required`, `type="email"`, `pattern`, `min`, `max` provide validation.

15. Intro, Benefits, Versions, History, Types of CSS

CSS styles HTML. Versions: CSS1 to CSS3. Types: Inline, Internal, External.

16. CSS Syntax, Selectors (ID, Class, Tag, Attr)

Selector + declaration block. Types: `#id`, `.class`, `element`, `[attr]`.

17. CSS Comments, Colors, Backgrounds

- Comments: `/* comment */`
- Set text color: `color`, background: `background-color`

18. CSS Borders, Margins

- `border`: line around content
- `margin`: space outside border

19. CSS Padding, Height/Width

- `padding`: space inside border
- Set size: `height`, `width`

20. CSS Box Model

Explains layout: content, padding, border, margin.

21. Introduction to JavaScript and Use

JS adds interactivity to web pages, runs on the browser.

22. Variables, Scope, Numbers, Strings, Arrays

- Variables declared with `var`, `let`, `const`
- Arrays store multiple values: `let arr = [1, 2, 3];`

23. Operators, Break, Continue

- Operators: `+`, `-`, `==`, `===`, `&&`, etc.
- `break` exits loop, `continue` skips iteration

24. if-else

Used for decision-making. Syntax: `if (condition) { } else { }`

25. Loops

- `for`, `while`, `do-while` used to repeat code

26. JavaScript Functions & Objects

Functions group code: `function name() {}`. Objects: key-value pairs.

27. DOM, Hierarchy, JS Form Validation

DOM represents HTML as tree. JS accesses elements using `getElementById()`, `querySelector()`.

28. JavaScript Form Validation

Check user input before submission using JS code.

29. Introduction to PHP

PHP is server-side scripting used to create dynamic web pages.

30. Syntax, Variables, Strings, Operators, Arrays

- Start with `<?php ?>`
- Use `$var` for variables. Arrays: `array()`

31. if-else

Conditional execution using `if`, `else if`, `else`

32. Loop

`for`, `while`, `foreach` to repeat tasks

33. Switch

Handles multiple conditions: `switch(variable) { case: ... }`

34. Function

Reusable code block: `function name() {}`

35. Form: GET and POST

- `GET`: data in URL
- `POST`: hidden data

36. Session

Stores user data across pages: `session_start()`

37. Cookies

Small data stored on user's device: `setcookie()`

38. Error, Exception

Handle problems using `try`, `catch`, `throw`

39. Database Connectivity

Connect PHP to MySQL using `mysqli_connect()` or `PDO`

40. Insert and Fetch Data from DB

- Insert: `INSERT INTO table VALUES(...)`
- Fetch: `SELECT * FROM table`

41. Edit and Delete Data from DB

- Update: `UPDATE table SET column=value`
- Delete: `DELETE FROM table WHERE condition`

42. Introduction to XML

XML stores and shares data using custom tags

43. XML Display and Transforms

Display with CSS. Transform with XSLT.

44. Revision 1

Revise HTML, CSS, JS basics.

45. Revision 2

Revise PHP, DB, XML topics.
