Web Application Development (WAD) Oral Exam: FAQs with Answers (Theory + Practicals)

✨ HTML

1. **What is HTML?**
   HTML stands for HyperText Markup Language. It is used to create the structure of web pages.

2. **What are HTML elements and attributes?**
   Elements define the structure (e.g., ,), and attributes provide additional information (e.g., id, class).

3. **What is the role of , , and ?**
   <head> contains meta info, <body> contains visible content, <title> sets the tab name.

4. **What is the use of and ?**
   <div> is a block-level container; <span> is an inline container.

5. **How do you make a webpage responsive using HTML?**
   Use meta viewport tag and combine HTML with CSS and frameworks like Bootstrap.

✨ CSS

1. **What is CSS?**
   CSS (Cascading Style Sheets) defines the style and layout of web pages.

2. **Types of CSS?**
   Inline, Internal, and External CSS.

3. **Difference between class and ID selectors?**
   Class: .classname (can be reused). ID: #idname (must be unique).

4. **What is the Box Model?**
   It consists of content, padding, border, and margin.

5. **How can we make a layout responsive using CSS?**
   Use media queries, flexbox, grid, and relative units.

✨ Bootstrap

1. **What is Bootstrap?**
   A CSS framework for developing responsive and mobile-first websites.

2. **Why use Bootstrap?**
   It simplifies styling and layout with pre-designed components.

3. **What is CDN?**
   Content Delivery Network to load Bootstrap files online.

4. **Difference between container and container-fluid?**
   container has fixed width; container-fluid spans full width.

5. **What are components in Bootstrap?**
   Cards, navbars, modals, forms, grid system, etc.

✨ **JavaScript & AJAX**

1. **What is JavaScript?**
   A scripting language for creating dynamic content on websites.

2. **What is AJAX?**
   Asynchronous JavaScript and XML. It sends/receives data without reloading the page.

3. **How does AJAX work?**
   It uses XMLHttpRequest to send requests to the server in the background.

4. **What is XMLHttpRequest?**
   An object used in JavaScript to interact with servers.

5. **What are readyState values?**
   0 to 4 indicating different stages of the request (4 = done).

6. **What are common AJAX methods?**

   o **GET: Retrieve data.**

   o **POST: Send new data to the server.**

   o **PUT: Update existing data.**

   o **DELETE: Remove data from server.**

7. **What is localStorage in JavaScript?**
   It's a browser feature to store data locally as key-value pairs.

✨ **Git & GitHub**

1. **What is Git?**
   A version control system for tracking changes in code.

2. **What is GitHub?**
   A platform to host Git repositories online.

3. **Common Git commands:**

   o **git init: Initialize repository**

   o **git add: Add files to staging**

   o **git commit: Save changes**

   o **git push: Upload to GitHub**

- o **git pull: Fetch and merge from GitHub**

- o **git status: Check status**

- o **git log: View history**

- o **git branch: Manage branches**

4. **Difference between Git and GitHub?**
   Git is the tool; GitHub is the platform.

5. **How to create a repo on GitHub?**
   Use GitHub UI or CLI to make a new repository and push local code.

✨ **Node.js & Express.js**

1. **What is Node.js?**
   A runtime to execute JavaScript on the server.

2. **What is Express.js?**
   A Node.js framework for building web applications.

3. **What is middleware in Express?**
   Functions that execute during request processing.

4. **What are CRUD operations?**
   Create, Read, Update, Delete - basic database operations.

5. **How to serve static files in Express?**
   Use app.use(express.static('foldername'))

6. **Common HTTP methods in Express:**

   - o **app.get(): Handle GET request**

   - o **app.post(): Handle POST request**

   - o **app.put(): Handle update**

   - o **app.delete(): Delete resource**

7. **How to connect Express with MongoDB?**
   Use mongoose library: mongoose.connect('mongodb://localhost/dbname')

✨ **MongoDB**

1. **What is MongoDB?**
   A NoSQL database that stores data in JSON-like documents.

2. **How to connect MongoDB with Node.js?**
   Using MongoDB native driver or Mongoose.

3. **What are collections and documents?**
   Collections = tables; Documents = rows.

4. **How to perform CRUD in MongoDB?**
   Use insertOne(), find(), updateOne(), deleteOne().

✨ Angular

1. **What is Angular?**
   A frontend framework for building single-page applications (SPAs).

2. **What is Angular CLI?**
   Command-line tool to create and manage Angular projects.

3. **How to bind data in Angular?**
   Using [(ngModel)] or property binding [].

4. **What is ngModel and ngForm?**
   ngModel binds input value; ngForm is used to handle forms.

5. **How to run Angular app?**
   ng serve -o

✨ jQuery Mobile

1. **What is jQuery Mobile?**
   A framework for building mobile-friendly web apps.

2. **Why use jQuery Mobile?**
   Works on all devices and simplifies UI design.

3. **Difference from jQuery?**
   jQuery = JS library, jQuery Mobile = UI framework built on jQuery.

4. **Features?**
   Responsive layout, touch-optimized UI, cross-platform.

✨ AWS & Deployment

1. **What is AWS?**
   Amazon Web Services - a cloud platform for hosting and deploying apps.

2. **What is cloud computing?**
   Using remote servers to store and process data.

3. **How to deploy on AWS?**
   Use EC2 or Elastic Beanstalk to upload and run your app.

4. **What is EC2?**
   A virtual server provided by AWS to run web apps.

✨ Mini Project Questions

1. **Project name and domain?**
   (Your answer: E.g., E-commerce Website)

2. **Which technologies used?**
   HTML, CSS, Bootstrap, Node.js, Express, MongoDB, Angular, etc.

3. **What does your project do?**
   (Your answer: E.g., User can register, log in, view products, etc.)

4. **How is data stored?**
   In MongoDB database.

5. **How is the application hosted?**
   Hosted on AWS EC2 or Elastic Beanstalk.

Good luck with your oral exam! You've got this ✨