

Web Development Interview Questions for Freshers

1. What happens when you type a URL in your browser and press Enter?

Answer:

When you press Enter, the browser first performs a **DNS lookup** to translate the domain name into its IP address. Then it establishes a **TCP connection** (often using HTTPS with TLS encryption). The browser sends an **HTTP/HTTPS request** to the server. The server processes this request, retrieves the required files (HTML, CSS, JavaScript, images), and sends a response. Finally, the browser's **rendering engine** parses the HTML, applies CSS styles, executes JavaScript, and displays the fully rendered web page.

2. What is the difference between GET and POST requests?

Answer:

- **GET**: Appends data in the URL query string, is visible to users, and is mainly used for **retrieving data** without changing server state. Ideal for search queries or fetching resources.
 - **POST**: Sends data inside the request body, keeping it hidden from the URL. It is used for **submitting or updating data** securely, such as login forms or database updates.
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3. What is a responsive website?

Answer:

A responsive website automatically **adapts its layout, images, and fonts** to fit different screen sizes and devices (mobile, tablet, desktop). Developers use **CSS media queries, flexible grids, and fluid images** to ensure the site remains visually consistent and user-friendly on all devices.

4. What is the role of Webpack in web development?

Answer:

Webpack is a **module bundler** that processes and combines JavaScript, CSS, images, and other assets into optimized files. It supports **code splitting, tree shaking, and hot reloading**, which improves performance and reduces load times for modern web applications.

5. What is the purpose of async and defer in script tags?

Answer:

- **async**: The script loads **asynchronously** and executes immediately once downloaded, possibly before the HTML is fully parsed.
 - **defer**: The script also loads asynchronously but waits to execute **until the HTML parsing is complete**, ensuring scripts run after the DOM is ready.
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6. What is the difference between localStorage and sessionStorage?

Answer:

- **localStorage**: Stores key-value data with **no expiration**, surviving browser restarts.
 - **sessionStorage**: Stores data only for the **current session** and clears automatically when the tab is closed.
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7. What is CORS?

Answer:

CORS (**Cross-Origin Resource Sharing**) is a browser security feature that prevents unauthorized requests to a domain different from the one serving the web page. Servers must include appropriate **Access-Control-Allow-Origin** headers to permit cross-domain API access.

8. What is the difference between null and undefined in JavaScript?

Answer:

- **undefined**: A variable is declared but **not assigned** a value.
 - **null**: A variable is explicitly assigned to represent **“no value”** or **“empty.”**
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9. How do you optimize website performance?

Answer:

- **Minify** CSS and JavaScript files
 - **Compress images** (e.g., WebP format)
 - Use **lazy loading** for images and videos
 - Implement **browser caching**
 - Reduce **HTTP requests** and enable **CDN delivery** for static files
- These steps decrease page load time and improve the user experience.
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10. What is the DOM?

Answer:

The **Document Object Model (DOM)** represents the HTML document as a hierarchical tree of

nodes. JavaScript can dynamically **add, modify, or remove elements** in this tree, enabling interactive web applications.

11. What are semantic HTML elements?

Answer:

Semantic elements clearly express their **meaning and role** to both the browser and developers.

Examples include:

`<header>`, `<footer>`, `<article>`, `<section>`, and `<nav>`.

These improve **SEO, accessibility, and code readability**.

12. What are HTTP status codes?

Answer:

HTTP status codes indicate the **outcome of a request**. Common examples:

- **200 OK** – Request successful
 - **404 Not Found** – Resource missing
 - **500 Internal Server Error** – Server encountered an error
 - **401 Unauthorized** – Authentication required
 - **403 Forbidden** – Access denied
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13. What is the box model in CSS?

Answer:

The CSS box model defines how an element's space is calculated:

- **Content:** Text or image inside the element
 - **Padding:** Space between content and border
 - **Border:** Surrounds the padding
 - **Margin:** Space outside the border separating elements
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14. What are pseudo-classes in CSS?

Answer:

Pseudo-classes apply styles based on **element state or position**, without adding extra classes.

Examples:

- `:hover` – When a user hovers over an element
 - `:first-child` – First child of a parent
 - `:nth-child(n)` – Matches specific child positions
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15. How do you make a website SEO-friendly?

Answer:

- Use **semantic HTML** and meaningful headings
 - Add **meta descriptions**, **title tags**, and **alt text** for images
 - Ensure **mobile responsiveness** and **fast loading speeds**
 - Maintain a clean **URL structure** with relevant keywords
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16. What is the difference between synchronous and asynchronous in JavaScript?

Answer:

- **Synchronous**: Code runs sequentially, each line waits for the previous one.
 - **Asynchronous**: Allows long-running tasks like API calls to occur **without blocking** other code, using **callbacks**, **promises**, or **async/await**.
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17. What is a promise in JavaScript?

Answer:

A **Promise** represents the eventual completion (or failure) of an asynchronous operation. States include:

- **Pending** – Operation in progress
 - **Fulfilled** – Completed successfully
 - **Rejected** – Failed with an error
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18. What is event bubbling and capturing in JavaScript?

Answer:

- **Capturing**: The event is detected from the **top (parent)** element down to the target.
 - **Bubbling**: The event propagates from the **target element up** to its ancestors. Developers can control this flow using **event.stopPropagation()**.
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19. What is a CDN?

Answer:

A **Content Delivery Network (CDN)** is a network of geographically distributed servers that deliver static files—like images, CSS, and JavaScript—from the **server closest to the user**, reducing latency and improving website speed.

20. What tools do you use for version control?

Answer:

The most common is **Git** with hosting platforms like **GitHub, GitLab, or Bitbucket**. Git tracks code changes, supports branching/merging, and allows collaboration, making it essential for modern development teams.
