1. What are the main benefits of using CSS?

Improved control over formatting: Centralizes all styling, making site-wide changes easier.

Improved site maintainability: Formatting can be managed from a single CSS file.

Improved accessibility: Separation of content and presentation enhances support for screen readers and accessibility tools.

Improved page-download speed: HTML files are smaller since they contain less style information.

Improved output flexibility: Enables responsive design for different devices and media.

2. Compare the approach the W3C has used with CSS3 in comparison to CSS2.1.

CSS2.1: Built as a single monolithic specification, finalized in 2011 after numerous revisions.

CSS3: Developed as a collection of separate modules, allowing independent progress, features, and updates for different areas of styling.

3. What are the different parts of a CSS style rule?

Selector: Identifies which HTML elements to style.

Declaration block: Contains one or more property-value pairs.

Property: The aspect of the element to style (e.g., color).

Value: The setting for the property (e.g., red).

4. What is the difference between a relative and an absolute measure unit in CSS? Why are relative units preferred over absolute units in CSS?

Relative units: Based on the value of something else (e.g., em, %).

Absolute units: Fixed, real-world sizes (e.g., px, cm, in).

Preference: Relative units are preferred because they adapt to different devices, screen sizes, and user settings, supporting responsive design.

5. What is an element selector and a grouped element selector? Provide an example of each.

Element selector: Targets all elements of a specific type.

Example: p { color: blue; }

Grouped element selector: Targets multiple types by separating selectors with commas.

Example: p, div, aside { margin: 0; padding: 0; }

6. What are class selectors? What are id selectors? Briefly discuss why you would use one over the other.

Class selector: Targets elements with a specific class attribute, using a period (.) before the class name. Used for styling multiple elements.

Example: .highlight { color: yellow; }

ID selector: Targets a single element with a specific id attribute, using a hash (#) before the id.

Example: #main-header { font-size: 2em; }

7. What are contextual selectors? Identify the four different contextual selectors.

​Descendant​ (div p): All <p> inside <div>.

​Child​ (div > p): Direct children <p> of <div>.

​Adjacent Sibling​ (h1 + p): <p> immediately following <h1>.

​General Sibling​ (h1 ~ p): All <p> siblings after <h1>.

8. What are pseudo-class selectors? What are they commonly used for?

Pseudo-class selectors: Target elements in a specific state or relationship.

Examples: :hover, :first-child, a:visited

Common uses: Styling link states (hover, visited), targeting first/last children, active elements, etc.

9. What does cascade in CSS refer to?

Cascade: The process by which browsers resolve conflicts between multiple CSS rules. Determines which rule is ultimately applied to an element.

10. What are the three cascade principles used by browsers when style rules conflict? Briefly describe each.

Inheritance: Some properties are inherited by child elements from their parent.

Specificity: More specific selectors override less specific ones (ID > class > element).

Location (Order): If specificity is equal, the last rule defined wins (e.g., inline > external).

11. Illustrate the CSS box model. Be sure to label each of the components of the box.

​Content: Core element (text/image).

​Padding: Space around content (inside the border).

​Border: Surrounds padding/content.

​Margin: Space outside the border (between elements).

12. What is a web font stack? Why are they necessary?

Web font stack: A series of font names listed as fallback options in font-family.

Necessity: Ensures that if a preferred font is unavailable on a user's device, alternatives can be used, maintaining visual consistency.

13. What are the advantages and disadvantages of using a CSS framework? What are the different categories of CSS framework?

Advantages:

Speeds up development.

Ensures consistency and cross-browser compatibility.

Provides a collection of pre-defined styles and components.

Disadvantages:

May limit design flexibility (all sites look similar).

Learning curve to understand framework conventions.

Categories:

Grid-based frameworks: Focus on layout (e.g., early frameworks).

Comprehensive frameworks: Offer full sets of UI components, utilities, and grid systems.

14. What are CSS variables? What problem do they address?

CSS variables (custom properties): User-defined variables in CSS, created with double hyphens (e.g., --primary-color).

Problem addressed: Reduce duplication and make it easier to update repeated values (like colors, padding, etc.) across a stylesheet, improving maintainability and consistency.

****Bootstrap 5 Quiz****

1. Which class provides a responsive fixed width container?

.container (The .container class provides a responsive fixed width container in Bootstrap. It adapts to the screen size but maintains a fixed width at each breakpoint.)

1. Which contextual class is used to create an orange text color?

.text-warning（The .text-warning class is used in Bootstrap to apply an orange text color for warning messages or highlights.)

1. The Bootstrap grid system is based on how many columns?

12（The Bootstrap grid system is based on 12 columns.)

1. Which class adds zebra-stripes to a table?

.table-striped（The .table-striped class in Bootstrap adds zebra-striping to table rows for better readability.)

1. Which class shapes an image to a circle?

.rounded-circle（The .rounded-circle class in Bootstrap shapes an image into a perfect circle.)

1. Which class is used to create a big box for calling extra attention?

.jumbotron（The .jumbotron class in Bootstrap is used to create a big box for calling extra attention to content.)

1. Which class is used to create a button group?

.btn-group（The .btn-group class in Bootstrap is used to create a button group, allowing multiple buttons to be grouped together on a single line.)

1. Which button class is used to create a large button?

.btn-lg（The .btn-lg class in Bootstrap is used to create a large button.)

1. Which class is used to create a badge?

.badge（The .badge class in Bootstrap is used to create a badge.)

1. Which class is used to create a loader?

.spinner-border（The .spinner-border class in Bootstrap is used to create a loader (spinner).

1. Which class is used to create a basic pagination?

.pagination（The .pagination class in Bootstrap is used to create a basic pagination component.)

1. Which class is used to create a basic list group?

.list-group（The .list-group class in Bootstrap is used to create a basic list group.)

1. Which class adds a heading to a card?

.card-header（The .card-header class in Bootstrap is used to add a heading to a card.)

1. Which class indicates a dropdown menu?

.dropdown（The .dropdown class in Bootstrap indicates a dropdown menu.)

1. Which class is used to create a vertical navigation bar?

navbar（The .navbar class in Bootstrap is used to create a navigation bar.)

1. Which component is used to cycle through elements, like a slideshow?

Carousel（The Carousel component in Bootstrap is used to cycle through elements, such as images or content slides, like a slideshow.)

1. Which contextual class indicates a succesful or positive action?

.bg-success（The .bg-success class in Bootstrap indicates a successful or positive action.

1. Which contextual class indicates a dangerous or potentially negative action?

.bg-danger（The .bg-danger class in Bootstrap indicates a dangerous or potentially negative action.)

1. Which class indicates uppercased text?

.text-uppercase（The .text-uppercase class in Bootstrap is used to indicate uppercased text.)

1. Which attribute is used to create a tooltip?

data-bs-toggle="tooltip"（The attribute data-bs-toggle="tooltip" is used in Bootstrap to create a tooltip.)

1. A standard navigation tab is created with:

<ul class="nav nav-tabs">

The correct way to create a standard navigation tab in Bootstrap is to use a <ul> element with the classes nav and nav-tabs.

1. A standard navigation bar is created with:

<nav class="navbar navbar-default">.

1. Which class is used to style a close icon?

.btn-close is the standard Bootstrap class used to style a close (×) icon button.

1. Which class can be used to float an element to the right of the page?

.float-end is the Bootstrap class used to float an element to the right, supporting both LTR and RTL layouts.