**1. What is CSS?**

* **Answer**: CSS (Cascading Style Sheets) is a style sheet language used to describe the presentation and layout of a web page written in HTML or XML. CSS controls the style of elements such as colors, fonts, spacing, and layout, allowing for consistent design across a website.

**2. What is the difference between inline, block, and inline-block elements?**

* **Answer**:
  + **Block-level elements**: These take up the full width available, and each block starts on a new line (e.g., <div>, <h1>, <p>).
  + **Inline elements**: These only take up as much width as their content, and do not start on a new line (e.g., <span>, <a>, <strong>).
  + **Inline-block elements**: These are similar to inline elements but allow you to set width and height (e.g., <button>, <img>).

**3. What are pseudo-classes in CSS?**

* **Answer**: Pseudo-classes are used to define the special state of an element. They target elements based on their state or position in the DOM. Examples include:
  + :hover (for when the user hovers over an element),
  + :focus (for when an element is focused),
  + :nth-child() (for targeting specific children in a parent element).

**4. What is the difference between class and id selectors in CSS?**

* **Answer**:
  + **Class selector (.class-name)**: Used to target multiple elements with the same class name. It is reusable and can be applied to many elements.
  + **ID selector (#id-name)**: Used to target a specific element with a unique id. Each id should be unique in a document.

**5. What are the different ways to apply CSS to an HTML page?**

* **Answer**: CSS can be applied in three ways:
  1. **Inline CSS**: Directly within an HTML element using the style attribute (e.g., <div style="color: red;">).
  2. **Internal CSS**: Within a <style> tag inside the <head> section of the HTML document.
  3. **External CSS**: By linking an external .css file using the <link> tag (e.g., <link rel="stylesheet" href="styles.css">).

**6. What is the box model in CSS?**

* **Answer**: The CSS box model represents the structure of an HTML element. It consists of:
  1. **Content**: The actual content (text, images, etc.).
  2. **Padding**: Space between the content and the border.
  3. **Border**: Surrounds the padding (if specified).
  4. **Margin**: Outer space around the border, separating the element from other elements.

**7. What is the difference between visibility: hidden and display: none?**

* **Answer**:
  + visibility: hidden: The element is hidden but still takes up space in the layout.
  + display: none: The element is completely removed from the document layout, and it doesn’t take up any space.

**8. What is the position property in CSS and what are its values?**

* **Answer**: The position property determines how an element is positioned on the page. The values are:
  + **static**: Default position, elements flow in the document as usual.
  + **relative**: Positioned relative to its normal position.
  + **absolute**: Positioned relative to its nearest positioned ancestor.
  + **fixed**: Positioned relative to the viewport, stays fixed even when scrolling.
  + **sticky**: Acts like relative until it reaches a defined scroll position, after which it behaves like fixed.

**9. What is the difference between em, rem, and px units in CSS?**

* **Answer**:
  + **px**: Pixel, an absolute unit of measurement (1px = 1 dot on the screen).
  + **em**: A relative unit that is based on the font size of the element. If the font size of a parent is 16px, 1em is equal to 16px.
  + **rem**: Stands for "root em", relative to the font size of the root element (<html>), usually 16px by default. This provides more consistency across the page compared to em.

**10. What are media queries in CSS?**

* **Answer**: Media queries are used to apply styles based on the characteristics of the device or viewport, such as screen width, height, orientation, etc. They help in making a website responsive. Example:

css

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@media (max-width: 600px) {

body {

background-color: lightblue;

}

}

**11. What is the z-index property in CSS?**

* **Answer**: The z-index property specifies the stack order of elements. Elements with a higher z-index value will appear in front of those with a lower value. It only works on elements that have a position value other than static.

**12. What is Flexbox and how does it work?**

* **Answer**: Flexbox is a layout module that allows you to design complex layouts in a simpler and more efficient way. It works by defining a container as display: flex, then arranging child elements (flex items) within the container using properties like justify-content, align-items, and flex-direction. Flexbox adapts to the screen size and provides flexible and responsive layouts.

**13. What is CSS Grid?**

* **Answer**: CSS Grid is a two-dimensional layout system for creating web page layouts. It allows you to define both rows and columns, and place elements within these grid spaces. It is more powerful than Flexbox for complex layouts. Example:

css

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.container {

display: grid;

grid-template-columns: repeat(3, 1fr);

gap: 20px;

}

**14. What are CSS Transitions and Animations?**

* **Answer**:
  + **Transitions** allow you to change property values smoothly over a given duration when an event occurs (e.g., :hover). Example:

css

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.button:hover {

background-color: blue;

transition: background-color 0.3s ease;

}

* + **Animations** allow more complex, keyframe-based animations to be created, including multiple steps. Example:

css

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@keyframes move {

from { left: 0; }

to { left: 100px; }

}

.box {

animation: move 2s infinite;

}

**15. What is the purpose of the overflow property in CSS?**

* **Answer**: The overflow property controls what happens when content overflows the boundaries of an element. The common values are:
  + visible: Default value, content is not clipped and may be rendered outside the box.
  + hidden: Content is clipped and not visible outside the box.
  + scroll: Scrollbars are added to allow scrolling.
  + auto: Scrollbars are added only when necessary.

**16. What is the float property in CSS?**

* **Answer**: The float property is used to position an element to the left or right of its container, allowing content to flow around it. It is commonly used for images and text wrapping. After using float, you typically need to clear the float using clear property to ensure the layout remains intact.

**17. What are CSS preprocessors, and name some examples?**

* **Answer**: CSS preprocessors extend CSS by adding features like variables, mixins, and functions. Examples include:
  + **Sass** (Syntactically Awesome Stylesheets)
  + **LESS**
  + **Stylus**

**18. What is the box-sizing property in CSS?**

* **Answer**: The box-sizing property defines how the total width and height of an element are calculated. The two most common values are:
  + content-box (default): Width and height include only the content, padding and border are added outside the element’s width/height.
  + border-box: Width and height include padding and border, simplifying layout management.

**19. How do you center a block element horizontally and vertically?**

* **Answer**: There are multiple ways to center an element, depending on the layout:
  + **Using Flexbox**:

css

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.container {

display: flex;

justify-content: center;

align-items: center;

height: 100vh;

}

* + **Using Grid**:

css

Copy

.container {

display: grid;

place-items: center;

height: 100vh;

}

**20. What is the :nth-child selector in CSS?**

* **Answer**: The :nth-child() selector is used to target elements based on their position in a parent element. You can pass in a number or formula to match specific children. Example:

css

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li:nth-child(odd) {

background-color: lightgrey;

}