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Career Services Assignment 9 – API Flash Cards

Instructions: Research common interview questions online revolving around HTML, CSS, and AJAX and create 20 flash cards from the information you find. Study your flash cards regularly to better prepare for interviews. Fill out the table below with the information you put on each of your flash cards.

Front of Card	Back of Card
Briefly describe the correct usage of the following HTML5 semantic elements: Header, footer, nav, section	Header: is the introductory section of a page such as name, table of content. Footer: information appear at the bottom of the page. section: is a versatile container tag that holds the information that share a common theme. Section: it defines a section in a document such as introduction, contact info, menu, … .
Do you know any other languages that make you a better website developer?	Yes, I have experience with JavaScript, CSS, Bootstrap, Jquery, and Ajax. Using CSS, and bootstrap helped me make the websites more organized and attractive. Also, using JavaScript helps make websites more useful.
What were some of the key goals and motivations for the HTML5 specification?	HTML5 was created with the intention of taking over the roles of HTML4, XHTML, and the HTML DOM Level 2. This updated design includes more tags that enhance the organization of web pages, provides more consistent behavior across different web browsers, offers improved cross-platform support, and enables the display of multimedia content such as movies and graphics without the need for extra plug-ins. This not only simplifies the design process for developers, but also makes the end result more effective and user-friendly.
What are some of the key new features in HTML5?	HTML5 introduced several new features that have made it a popular choice for web development. Here are some of the key new features:

Career Services Assignment 9 – API Flash Cards

	1. New semantic tags: HTML5 introduced new semantic tags like header, footer, nav, article, section, etc., which help to structure web pages better and make them more accessible. 2. Audio and video support: HTML5 has native support for audio and video playback without requiring any external plugins, making it easier to include multimedia content on web pages. 3. Canvas: HTML5 introduced the \<canvas\> tag, which allows developers to create and manipulate graphics, animations, and other visual effects in real-time using JavaScript. 4. Improved forms: HTML5 introduced several new attributes and input types, such as email, date, search, range, color, and more, that make it easier to create user-friendly and accessible forms. 5. Local storage: HTML5 introduced the localStorage and sessionStorage APIs, which allow web applications to store data on the client-side, improving performance and enabling offline access to web applications. 6. Geolocation: HTML5 introduced the Geolocation API, which allows web applications to access the user's location data, enabling location-based services and applications. 7. Web workers: HTML5 introduced the concept of Web Workers, which allow developers to run scripts in the background, enabling better performance and responsiveness of web applications.

PROMINEO TECH

Career Services Assignment 9 – API Flash Cards

Give a simple implementation of the <video> tag to embed a video stored at "http://www.samplequestion.com/awesome_video.mp4". Give the user a dimension of 1280 pixels by 720 pixels. Provide the user with controls.	<video src="http://www.samplequestion.com/awesome_video.mp4″ width= "1280″ height= "720″ controls></video>
What is Ajax?	Ajax stands for Asynchronous JavaScript and XML. It is a web development technique that allows web pages to update content without requiring a full page reload. Ajax enables a web page to communicate with a web server in the background and retrieve data dynamically, typically using JavaScript and XML or JSON.

With Ajax, when a user interacts with a web page, such as clicking a button or submitting a form, the JavaScript code sends a request to the server in the background, retrieves the necessary data, and updates the web page dynamically without reloading the entire page. This provides a smoother and faster user experience, as well as reducing the amount of data that needs to be transmitted between the web server and the web browser.

Ajax is widely used in modern web development, particularly in web applications that require frequent updates of data or content, such as social media feeds, chat applications, and online games. |
| What are the different technologies used in AJAX? | AJAX is a technology that utilizes HTML, CSS, JSON, XML or XSLT, JavaScript, and APIs for asynchronous communication to create dynamic web pages. It's used by popular websites like Google, Gmail, YouTube, and Facebook. AJAX adheres to internet standards to ensure compatibility with all browsers and networks worldwide. |

PROMINEO TECH

Career Services Assignment 9 – API Flash Cards

What is a synchronous request in AJAX?	AJAX offers synchronous and asynchronous request types for the web server request, which should be configured based on the request priority. Synchronous requests wait for the server's response before continuing with script execution, making them crucial for a fast response mechanism. However, overusing synchronous requests can reduce server responsiveness, so they should be used only when necessary or inevitable.
Does Ajax work with another language?	Certainly, Java is an excellent choice for AJAX development. You can utilize Java Enterprise Edition servers to create AJAX consumer pages and handle incoming AJAX requests, manage server-side data for AJAX clients, and integrate AJAX clients with your company's resources. The JavaServer Faces component model is well-suited for defining and utilizing AJAX components.
What is an asynchronous request in AJAX?	An Asynchronous request in AJAX is when script execution can continue with the next line of code regardless of whether a response has been received from the web server after making a request. The response can be handled later once it's received. Asynchronous requests are crucial for providing a seamless user experience where the user can interact with web pages without delays, regardless of the server's response status to previous requests.
Explain what is polling in AJAX.	Polling in AJAX is a technique used to obtain data from the server continuously, typically at regular intervals, without the need for the user to initiate a request. The client-side code sends a request to the server at a set interval to check for new data or updates. If there is new data, it's returned to the client, and the client can then update the page dynamically. This technique is often used to keep information on a webpage up-to-date without the user needing to refresh the page manually. However, polling

Career Services Assignment 9 – API Flash Cards

	can lead to unnecessary traffic and slow down the server, so it's important to use it judiciously and consider other techniques like server push when appropriate.
What do you need to know to create my own Ajax Functionality?	To create your own AJAX functionality, you will need to have knowledge of JavaScript, which is a scripting language necessary for AJAX interactions. You should also plan to learn Dynamic HTML (DHTML), which is the foundation for AJAX and enables real-time interaction between the user and a webpage. This involves understanding the Document Object Model (DOM), which is an API for accessing and manipulating structured documents, and Cascading Style Sheets (CSS), which defines the presentation of a webpage. Additionally, it is important to have a basic understanding of the request/response nature of HTTP, as ignoring differences between the GET and POST methods can lead to bugs. JavaScript is used to create the XMLHttpRequest object, parse content, analyze data, and inject new content into HTML using the DOM API and modify CSS.
What is CSS?	CSS stands for Cascading Style Sheet. It's a style sheet language that determines how the elements/contents in the page are looked/shown. CSS is used to develop a consistent look and feel for all the pages.
What is the Box model in CSS? Which CSS properties are a part of it?	The box model is used to determine the height and width of the rectangular box. The CSS Box consists of Width and height (or in the absence of that, default values and the content inside), padding, borders, margin. • **Content:** Actual Content of the box where the text or image is placed.

Career Services Assignment 9 – API Flash Cards

	• **Padding:** Area surrounding the content (Space between the border and content). • **Border:** Area surrounding the padding. • **Margin:** Area surrounding the border

What are the advantages of using CSS?	CSS has several significant advantages, which include:
	
	    Separation of content and presentation: CSS allows content to be presented in different formats on various devices such as mobile or desktop, without changing the content itself.
	    Easy maintenance: With well-structured CSS, minor changes can be made to alter the website's look and feel. By modifying the style, all the web pages can be automatically updated, making global changes easier.
	    Efficient bandwidth usage: When style sheets are utilized effectively, they can be stored in the browser cache and used on multiple pages without having to re-download them.

What are the limitations of CSS?	The drawbacks of CSS are as follows:
	
	    Browser compatibility: Some style selectors may not be supported by certain browsers, and it's necessary to use the @support selector to determine which styles are supported.
	    Cross-browser issues: Certain selectors behave differently in various browsers, leading to inconsistencies in the visual presentation of the website.
	    No parent selector: CSS currently does not have the ability to select a parent tag, which can make it challenging to apply styles to specific nested elements.

How to include CSS in the webpage?	There are different ways to include a CSS in a webpage,

Career Services Assignment 9 – API Flash Cards

| | 1 - External Style Sheet: An external file linked to your HTML document: Using link tag, we can link the style sheet to the HTML page.

`<link rel="stylesheet" type="text/css" href="mystyles.css" />`

2 - Embed CSS with a style tag: A set of CSS styles included within your HTML page.

`<style type="text/css">`

`/*Add style rules here*/`

`</style>`

Add your CSS rules between the opening and closing style tags and write your CSS exactly the same way as you do in stand-alone stylesheet files.

3 - Add inline styles to HTML elements(CSS rules applied directly within an HTML tag.): Style can be added directly to the HTML element using a style tag.

`<h2 style="color:red;background:black">Inline Style</h2>`

4 - Import a stylesheet file (An external file imported into another CSS file): Another way to add CSS is by using the @import rule. This is to add a new CSS file within CSS itself.

`@import "path/to/style.css";` |
| What are the different types of Selectors in CSS? | CSS has several types of selectors that allow you to target specific HTML elements and apply styles to them. The most commonly used types of selectors in CSS are: |

Career Services Assignment 9 – API Flash Cards

	1. Element Selector: Targets all instances of a specific HTML element. For example, "p" selector targets all paragraph elements on a webpage. 2. Class Selector: Targets all HTML elements with a specific class name. For example, ".example" targets all elements with the class name "example". 3. ID Selector: Targets a specific HTML element with a unique ID attribute. For example, "#example" targets the element with the ID attribute set to "example". 4. Attribute Selector: Targets HTML elements based on specific attributes. For example, "[href]" targets all elements with a "href" attribute. 5. Pseudo-class Selector: Targets HTML elements based on their state or position, such as :hover or :nth-child(). 6. Pseudo-element Selector: Targets specific parts of an HTML element, such as the first letter or first line of a paragraph, using the ::before and ::after pseudo-elements. 7. Descendant Selector: Targets an element nested within another element. For example, "div p" targets all paragraph elements nested within a div element. 8. Child Selector: Targets only direct child elements of a parent element. For example, "div > p" targets only paragraph elements that are direct children of a div element.
What is a CSS Preprocessor? What are Sass, Less, and Stylus? Why do people use them?	A CSS preprocessor is a scripting language that extends the capabilities of CSS, providing

Career Services Assignment 9 – API Flash Cards

	additional features such as variables, functions, nesting, and more. It allows developers to write more maintainable and organized CSS code with less repetition.
	Sass, Less, and Stylus are popular CSS preprocessors that provide these extended features. Sass stands for Syntactically Awesome Style Sheets, and it uses a syntax similar to CSS with added features such as nesting and variables. Less stands for Leaner Style Sheets, and it features a simpler syntax with features such as mixins and functions. Stylus is another CSS preprocessor that uses indentation instead of curly braces to denote nesting, and it features a flexible syntax and a powerful set of features.
	People use CSS preprocessors because they make CSS code more maintainable and scalable, allowing developers to write cleaner and more organized code with less repetition. CSS preprocessors also allow developers to use variables, mixins, and other features that make it easier to create consistent and reusable styles. Additionally, CSS preprocessors can help to reduce the size of CSS files and improve website performance by optimizing and compressing the generated CSS code.
What is VH/VW (viewport height/ viewport width) in CSS?	The VH is a CSS unit that is utilized to calculate the height and width of an element in terms of percentage relative to the viewport. This unit is commonly used in responsive web design. Essentially, one VH is equivalent to 1/100 of the viewport's height. Therefore, if the browser's height is 1000 pixels, 1 VH will be equivalent to 10 pixels. Similarly, if the width

	is 1000 pixels, then 1 VW will be equivalent to 10 pixels as well.