Module 3 - frontend - css and css3

Css selectors & styling

Theory assignment

* question 1 : what is a css selector ? Provide examples of element , class , and id selectors.
* a css selector is a pattern used to select and style html elements. It tells the browser which html elements to target and apply styles to.
* examples : 1 elements selector - target all html elements of a specific type
* p {
* color: blue;
* }
* 2 .class selector - targets elements with a specific class attribute.classes are reusable and can be applied to multiple elements.
* .highlight {
* background - color: yellow ;
* }
* 3. Id selector - ids must be unique on a page .
* #main - title {
* font-size: 32px;
* }
* question 2: Explain the concept of css specificity. How do conflicts between multiple styles get resolved?
* css specificity is the system browser use to decide which css rules apply when multiple styles conflict on the same html element.it’s hierarchy that prioritises selectors , with some selector carrying more weight than others ,when conflicts occur ,the selector with the highest specificity value wins and its corresponding styles are applied.
* specificity hierarchy:
* 1.inline styles : styles defined directly within an html elements style attribute have the highest specificity
* 2.IDs : selectors using id attributes #myelement have the next highest specificity
* 3.classes ,attributes and pseudo-class:selectors using class names .myclass
* attributes selectors [type=“text”]
* pseudo -classes :hover have the same level of specificity
* 4.element and pseudo-elements: selectors targeting html elements p,h1 or pseudo -elements (::before ::after )have the lowest specificity.
* 5.universal selector : the universal selector (\*)has the lowest specificity of all
* conflict resolution: when multiple selectors target the same elements ,the browser follows these steps to resolve the conflict :
* 1.compare specificity : the browser compares the specificity values of the conflicting selectors.
* 2.apply the highest specificity :the selector with the highest specificity value wins, and its corresponding styles are applied.
* 3.cascading order : if two selection have the same specificity ,the one that appear later in the css (further down in the stylesheet or later in the casacade)takes precedence according to MDN web docs.
* question 3 : what is the difference between internal , external , and inline css? Discuss the advantages and disadvantages of each approach.
* css an be added to html in three main ways: internal , external , and inline . Each method has its own advantages and disadvantages.
* internal css :
* advantages :
* good for small websites or single - page styles.
* easier to manage than inline css
* disadvantages - still mixes content and style.
* Not reusable across multiple pages
* slower if used across many pages
* external css :
* Advantages :
* best for large websites
* styles are reusable across multiple pages.
* cleaner and separate content from design
* reduces page size and increase load speed
* disadvantage :
* requires an additional http request
* no styling if the css files fails to load
* inline css :
* advantages :
* easy to apply and test
* overrides other css easily
* disadvantages :
* not reusable
* hard maintain and update
* mixes style with content

CSS BOX MODEL

* question 1: Explain the css box model and it’s components(content, padding, border,margin).how does each affect the size of an element?
* content : the actual content of the element like text or image .the width and height properties define the size of the content box.
* padding : padding is the space between the content and the element’s border . padding increase the overall size of the element adding to the total height and width padding is transparent
* border : the border’s thinkness (specified by the border-width property) contributes to the elements
* overall size, adding to both it’s width and height .
* margin : creating space between the element and other elements, without affecting the elements

own width and height , margin is transparent

* question 2 : what is the difference between border-box and content-box box-sizing in css?which is the default?
* border-box : the width and height include content+padding+border, the content area shrinks to make room for padding and border , keeps the total; size fixed ,making layout easier .
* content-box : only content is included the width and height , padding and border are added outside of the set dimensions, total size increase with padding and border.
* the box sizing property controls the total size of an element it’s width and height is calculated in css.

CSS FLEXBOX

* question 1 : what is css flex box , and how is it useful for layout design ? explain the terms flex-container and flex-item.
* Flex box is short for the flexible box layout module.flexbox is a layout method for arranging items in rows or columns .flexbox makes it easier to design a flexible responsive layout structure ,without using float or positioning
* question 2 : describe the properties justify-content ,align-items, and flex-direction used in flexbox.
* 1-justify-content :
* flex-start -items align to the start of the main axis
* flex-end - items align to the end of the main axis
* centre - items are entered along the main axis
* space-between : equal space between items ; no space at the edges.

* 2-align-items :
* flex-start : items are positioned at the beginning of the container
* flex-end : items are positioned at the end of the container
* baseline : items are positioned at the base of the container
* 3 - flex-direction :
* row : default value .the flexible items are displayed horizontally, as a row
* row-reverse : same as row, but in reverse order
* column : the flexible items are displayed vertically, as a column
* column-reverse : same as column ,but in reverse order

Css grid

Theory assignment

* question 1: explain css grid and how it differs from flexbox .when would you use grid over flexbox?
* the basic difference between css grid layout and css flexbox layout is that flexbox was designed for layout in one dimension - either a row or a column.grid was designed for two -dimensional layout - rows, and columns at the same time .the two specifications both use css box alignment features
* question 2: describe the grid-template-columns,grid-template-rows,and grid-gap properties.provide example of how to use them.
* the css grid properties grid-template- columns, grid-template-row,and grid-gap are used to de-fine the structure of a grid layout.grid-template-columns sets the number and width of columns grid-template-rows define the number and height of rows and grid-gap adds spacing between the grid items.
* grid-template-columns example
* .grid-container{
* display:grid;
* grid-template-columns: 150px 1fr 2fr;
* }
* grid-container-rows example
* .grid-container{
* display:grid;
* grid-template-rows:50px 100px;
* }
* grid-gap:
* .grid-container{
* display:grid;
* grid-gap:10px;
* }

Responsiveweb design with media queries

Theory assignment

* question 1 : what are media queries in css and why are they important for responsive design?
* media queries in css are a powerful tool for creating responsive design allow to apply specific style based on device character like screen size ,resolution and orientation .they are ensuring web sites adapt seamlessly to various devices, providing an optimal user experience across desktops, tableland smartphones.
* what are media queries :media queries are a css technique that uses the @media rule to apply different style based on certain conditions.
* screen size : detecting the width and height of the screen.
* resolution : checking the device’s pixel density.
* orientation : determining if the device is in portrait or landscape mode.
* question 2 : write a basic media query that adjusts the font size of a webpage for screens smaller than 600px
* this query will apply the font-size : 14px style to the body element when the viewport width is 600 pixels or less.you can adjust the font-size value and target other elements as ned for your specific design

Typography and web fonts

Theory assignment

* question 1 : explain the difference between web-safe fonts and custom web fonts.whymight you use a web-safe font over a custom font?
* difference :
* web-safe fonts : definition : fonts that are pre-installed on most operating systems and devices
* example : arial ,times new roman
* custom web fonts :
* definition : fonts that are not typically installed on devices on devices and are loaded via css from an external source
* example :roboto , open sans ,google fonts
* require loading : custom fonts downloaded by the users browser ,impact page load speed
* why you use web-safe font over a custom font?
* fast load time
* better browser compatibility
* avoiding external font dependencies
* performance on low -bandwidth networks
* question 2 : what is the font-family property in css?how do you apply a custom google font to a webpage?
* the font-family property in css specifies the typeface used for text content on a webpage.it allows you to define a prioritized list of fonts for the browser to use from most to least preferred.
* how to apply : import the google font ,use the font In your css.
* add the link tag to your html ,apply the font in css with font-family