Lab 01: Client Side Programming

HTML

Questions 1

1. What does HTML stand for?
   - Hyper Text Markup Language
2. What are the two major nodes of an HTML file?
   - `head` and `body`
3. What are the steps of HTML growth?
   - From w3Schools
     - HTML - 1991
     - HTML 2.0 - 1995
     - HTML 3.2 - 1997
     - HTML 4.0.1 - 1999
     - XHTML - 2000
     - HTML5 - 2014
4. How many headings does HTML support?
   - HTML supports 6 headings `<h1>` to `<h6>`
5. What are HTML text formatting elements and how they affect a piece of text?
   - `<b>` - Bold text
   - `<strong>` - Important text
   - `<i>` - Italic text
   - `<em>` - Emphasized text
   - `<mark>` - Marked text
   - `<small>` - Small text
   - `<del>` - Deleted text
   - `<ins>` - Inserted text
   - `<sub>` - Subscript text
   - `<sup>` - Superscript text
6. How do you comment a line in HTML?
   - Enclose the comment in a comment tag
   - `<!-- this is a comment in a comment tag -->`
7. What are the main ways to define a colour in HTML?
   - By the name of the colour
     - `<h1 style="color:Tomato;">I am using a colour name</h1>`
   - By value
     - RGB
       - `<h1 style="color:rgb(255, 99, 71);">I am using an RGB value</h1>`
     - Hex
       - `<h1 style="color:#ff6347;">I am using a Hex value</h1>`
     - HSL

- - `<h1 style="color:hsl(9, 100%, 64%);">I am using an HSL value</h1>`
  - RGBA
    - `<h1 style="color:rgba(255, 99, 71, 1);">I am using an RGBA value</h1>`
  - HSLA
    - `<h1 style="color:hsla(9, 100%, 64%, 1);">I am using an HSLA value</h1>`

8. Write a piece of code that opens the following link in a new tab: w3schools.com?
   - `<a href="https://www.w3schools.com/" target="_blank">I am a link to w3schools</a>`

9. What are the tags for ordered list and unordered list?
   - Unordered list: `<ul>`
   - Ordered list: `<ol>`

10. What is the use of class attribute? What is the difference between class and id?
    - The `class` attribute is used to define a common style between elements that use that class name
    - An `id` specifies a unique identifier for an element

11. What is responsive web design?
    - Using HTML and CSS to automatically resize, hide, shrink, or enlarge a webpage to make it look good and display properly on all window sizes or devices.
    - Need to include the following metadata in every web page:
      - `<meta name="viewport" content="width=device-width, initial-scale=1.0">`

12. What is a URL?
    - A Uniform Resource Locator (URL) is used to provide an address for a resource on the web.

13. What are the main form -> input types in HTML?
    - Text Input
      - `<input type="text">`
    - Radio Button Input
      - `<input type="radio">`
    - Submit Input
      - `<input type="submit">`
    - Select Input
      - `<input type="select">`
    - Button Input
      - `<input type="button">`
    - Password Input
      - `<input type="password">`
    - Checkbox Input
      - `<input type="checkbox">`
    - Reset Input
      - `<input type="reset">`

14. What is the difference between "GET" and "POST" in HTML forms? Which one is more suitable for sending sensitive data?
    - `GET` is used by default when submitting form data. The form data of a GET request will be visible in the address field. The address field has a character limit so long requests will result in lost data.

- **POST** is used when submitting personal or sensitive information. The form data is not visible in the address field. No size limitations and can be used to transfer large amounts of data.

Questions 2

1. What does CSS stand for?
   - Cascading Style Sheets
2. What are the three ways of inserting a style sheet?
   - Inserting an external style sheet
   - Inserting an internal style sheet
     - Use the `<style>` tag inside the `<head>` section
   - Using an inline style sheet
3. What is the syntax to link to an external style sheet?
   - `<link rel="stylesheet" type="text/css" href="mystyle.css">`

Questions 3

1. List arithmetic operators in JavaScript and their descriptions

Operator	Description
+	Addition
-	Subtraction
*	Multiplication
**	Exponentiation
/	Division
%	Modulus
++	Increment
--	Decrement

2. List assignment operators in Javascript and their descriptions

Operator	Equivalent To
=	x = y
+=	x = x + y
-=	x = x - y
*=	x = x * y
/=	x = x / y
%=	x = x % y
<<=	x = x << y

Operator	Equivalent To
>>=	x = x >> y
>>>=	x = x >>> y
<<<=	x = x <<< y
&=	x = x & y
^=	x = x ^ y
	=
**=	x = x ** y

3. List comparison operators in JavaScript and their descriptions

Operator	Description
==	equal to
===	equal value and equal type
!=	not equal
!==	not equal value or not equal type
>	greater than
<	less than
>=	greater than or equal to
<=	less than or equal to
?	ternary operator

4. List logical operators in JavaScript and their description

Operator	Description
&&	logical and
||	logical or
!	logical not

5. List all the datatypes in Javascript

- string
- number
- boolean
- object
- function
- undefined

6. List conditional statements in JavaScript

   - `if`
   - `else`
   - `else if`
   - `switch`

7. List loop statements in JavaScript

   - `for`
   - `for/in`
   - `while`
   - `do/while`

8. What is the output of `typeof` function in JavaScript?

   - The datatype of a JavaScript variable or an expression

9. List HTML keyboard events and mouse events that JavaScript can handle

   - `onclick`
   - `onmouseover`
   - `onmouseout`
   - `mousedown`
   - `mouseup`
   - `mousemove`
   - `mouseenter`
   - `mouseleave`
   - `mouseout`
   - `mouseover`
   - `wheel`
   - `onkeydown`
   - `onkeyup`
   - `keypress`
   - `altkey`
   - `charcode`

10. What are the different ways of inserting JavaScript code in your HTML?

   - In the body, head, or from an external file.
   - JavaScript must be inserted using the `<script>` tag

11. What is the difference between an Array and an Object?

   - All values in JavaScript other than the primitive data types are an `Object` other than undefined objects.
   - An `Array` is a kind of `Object` that can hold more than one value of the same type in a single variable

12. What does JSON stand for?

- JavaScript Object Notation

13. What is the syntax to convert JSON text to JavaScript Object?

- ```javascript
  var obj = JSON.parse(text);
  ```

14. Create an Object in JavaScript with the following attributes and methods:

- ```javascript
  var city = {
    name      : "Calgary",
    latitude  : 51.0486,
    longitude : -114.0708,
    population: 1096833,
    area      : 825.29,
    Density   : function() {
      return this.population / this.area;
    }
  };
  ```