Module -5) HTML5

1) What are the new tags added in HTML5?

Answer: There are several new tags added in html 5 such as <video>, <iframe>, <nav>, <section>, etc..

```
<iframe src="https://www.youtube.com" title="Youtube"></iframe>
<nav>
  <a href="/html/">HTML</a> |
  <a href="/css/">CSS</a> |
  <a href="/js/">JavaScript</a> |
  <a href="/python/">Python</a>
</nav>
```

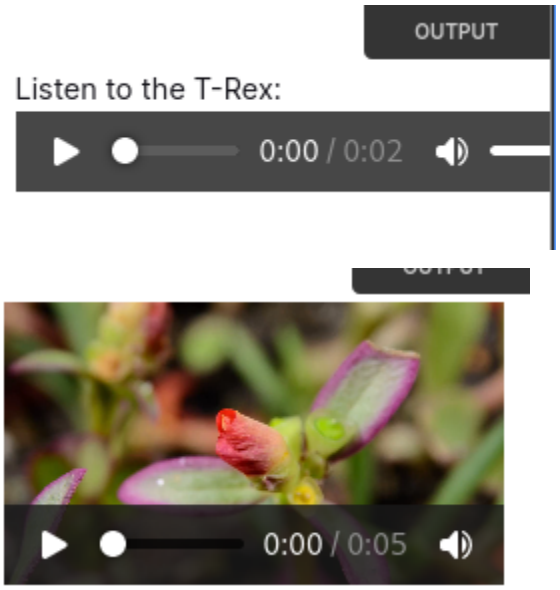
HTML | CSS | JavaScript | Python

2) How to embed audio and video in a webpage?

Answer: We can embed audio and video in web page like this.

```
<video  width = "300" height = "200" controls autoplay>
        <source src = "/html5/foo.ogg" type ="video/ogg" />
        <source src = "/html5/foo.mp4" type = "video/mp4" />
        Your browser does not support the <video> element.
     </video>
<audio controls>
  <source src="myAudio.mp3" type="audio/mpeg" />
  <source src="myAudio.ogg" type="audio/ogg" />
```

```
  <p>
    Download <a href="myAudio.mp3">MP3</a> or
    <a href="myAudio.ogg">OGG</a> audio.
  </p>
</audio>
```

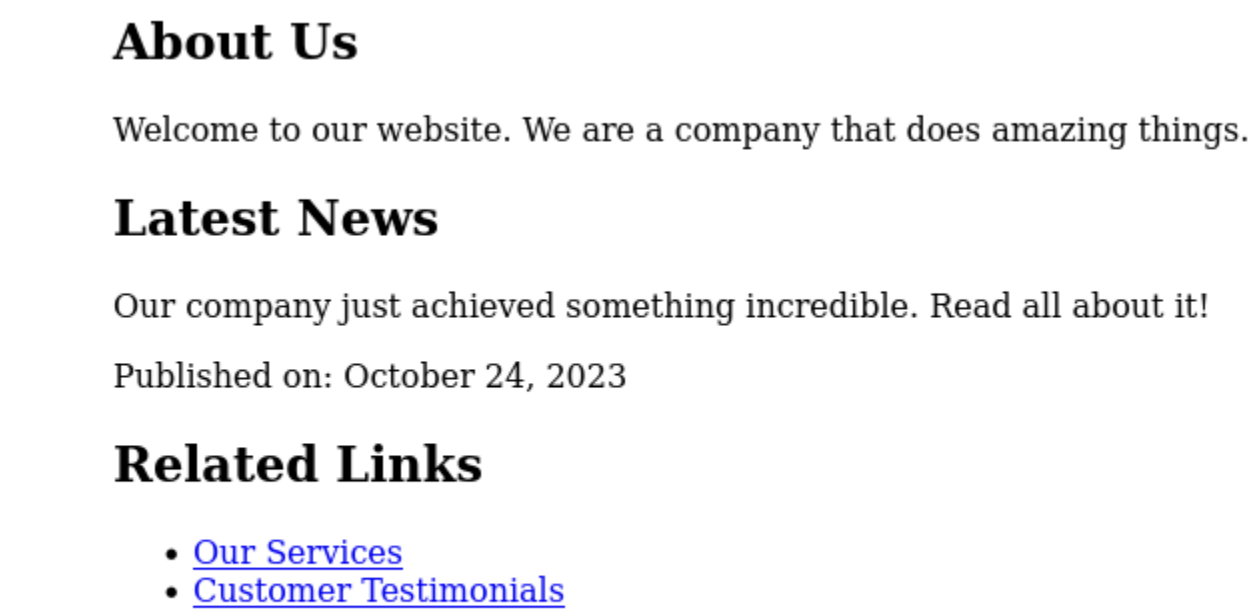


3) Semantic element in HTML5?

Answer: There are several semantic tags such as main,section, nav, article.

```
   <main>
       <section>
           <h2>About Us</h2>
           <p>Welcome to our website. We are a company that does amazing
things.</p>
       </section>

       <article>
           <h2>Latest News</h2>
           <p>Our company just achieved something incredible. Read all
about it!</p>
```

```
            <p>Published on: <time datetime="2023-10-24">October 24,
2023</time></p>
        </article>

        <aside>
            <h2>Related Links</h2>
            <ul>
                <li><a href="/services">Our Services</a></li>
                <li><a href="/testimonials">Customer Testimonials</a></li>
            </ul>
        </aside>
    </main>
```



About Us

Welcome to our website. We are a company that does amazing things.

Latest News

Our company just achieved something incredible. Read all about it!

Published on: October 24, 2023

Related Links

- Our Services
- Customer Testimonials

4) Canvas and SVG tags?
   Answer: The full form of svg is scalable vector graphics.

```
    <svg id="svgelem" height="200">
        <circle id="greencircle" cx="60"
            cy="60" r="50" fill="green" />
    </svg>
```

Output:

Module 6) JAVASCRIPT BASIC & DOM

1. What is JavaScript?

Answer: Javascript is a scripting language.

2. What is the use of isNaN function?

Answer: isNan is a function that checks whether the passed parameter is a number or a different data type, if the argument passed in is a number then it will return false otherwise true.

```
<script>
document.write(isNaN(10))
document.write("<br>")
document.write(isNaN("fasdf"))
</script>
```

false
true

3. What is negative infinity?

Answer: negative infinity is a special value that represents a numeric value that is infinitely small and negative

```
<script>
var negativeInfinity = Number.NEGATIVE_INFINITY;
document.write(negativeInfinity);

</script>
```

-Infinity

4. Which company developed JavaScript?

Answer: Netscape company developed javascript.

5. What are undeclared and undefined variables?

Answer: Undeclared variables are the variables that are not declared but used in the program. Undefined variables are the type of variables that are declared but the values are not defined.

```
<script>
   let a;
   document.write(a) // Undefined
   document.write(b) // undeclare
</script>
```

undefined

6. Write the code for adding new elements dynamically?

Answer: we can add the elements dynamically by using following code.

```
<body>
   <button id="addButton">Add Paragraph</button>
   <p id="container"></p>
</body>

<script>
 var container = document.getElementById("container"); // Get the
container element
 var addButton = document.getElementById("addButton"); // Get the button
element

 // Function to add a new paragraph element
 function addNewParagraph() {
   var newParagraph = document.createElement("p");
   newParagraph.textContent = "This is a new paragraph.";
   container.appendChild(newParagraph);
 }

 // Attach the addNewParagraph function to the button's click event
 addButton.addEventListener("click", addNewParagraph);
</script>
```

8. What is the difference between ViewState and SessionState?
Answer: ViewState is used for maintaining page-specific state on the client side, while SessionState is used for maintaining user-specific state on the server side.

9. What is === operator?
Answer: === does the strict comparison between two values, it checks both values and the data type if they are same it returns true otherwise false.

```
<script>
 document.write(10==="10")
 document.write("<br>")
 document.write(10===10)
</script>
```

false
true

10. How can the style/class of an element be changed?

Answer: We can change the style of an class/id with javascript by using style property.

```
<body>
<h1 id="one">One</h1>
<h1 id="two">two</h1>
</body>

<script>
document.getElementById("two").style.color= 'red';
</script>
```

One

two

11. How to read and write a file using JavaScript?

Answer: We can read and write file using fs library in javascript, we need to use node to interprete the js code.

```
var fs = require("fs");
console.log("Writing this into a file");

fs.writeFile("sample.txt","An example",function(err){
   if(err){
       return console.error(err)
   }
       console.log(" Finished writing ");
       console.log("Reading the data that's written");

       fs.readFile("sample.txt", function (err, data) {
         if (err) {
           return console.error(err);
         }
         console.log("Data read : " + data.toString());

       });
})
```

```
┌─[✗]─[ayush@security]─[~/tops/assignments/assignment3]
└──╼ $node read.js
Writing this into a file
 Finished writing
Reading the data that's written
Data read : An example
```

12.What are all the looping structures in JavaScript?
Answer: There are three types of loops in javascript.

a) For loop
b) While loop
c) Do while loop

```
<script>
```

```
for(var i = 0;i<3;i++){
   console.log(i)
}

let k = 0;
while (k < 3){
   console.log(k);
   k++;
}

do{
   console.log(k)
}

while(k<3)

</script>
```

13. How can you convert the string of any base to an integer in JavaScript?
Answer: By using parseInt function in js we can convert a string to any base to an integer.

```
<script>
var binaryString = "1101";
var decimalNumber = parseInt(binaryString, 2);
document.write(decimalNumber);

</script>
```


14. What is the function of the delete operator?

Answer. Delete operator is used to remove an item.

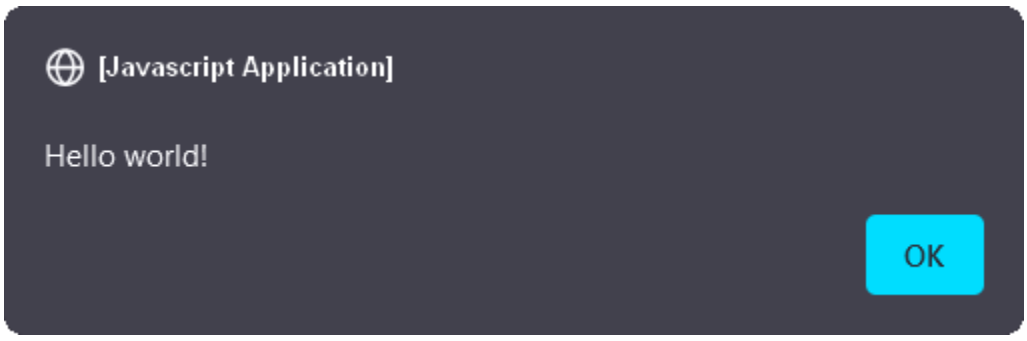
```
<script>
```

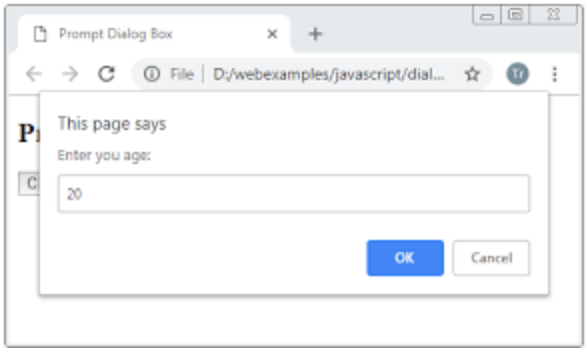
```
var numbers = [1, 2, 3, 4, 5];
delete numbers[2];
document.write(numbers);

</script>
```

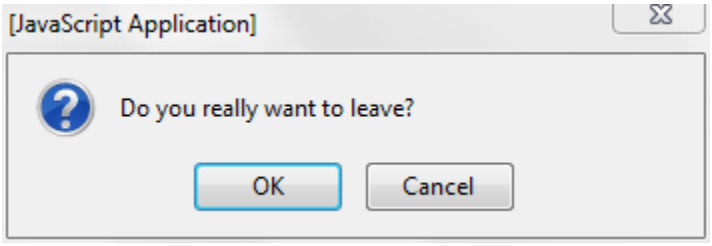
1,2,,4,5

15. What are all the types of Pop up boxes available in JavaScript?
Answer: There are three types of pop up boxes available in js, they are confirm, prompt, alert boxes.

```
<script>

prompt("Something")

alert("something")

confirm("something")
</script>
```







16. What is the use of Void (0)?

Answer: `void(0)` is used to create a `undefined` value, typically within an `href` attribute of an anchor (`<a>`) tag in HTML to create "clickable" links that don't perform any action when clicked.

```
var result = void(0);
console.log(result);
```

17. How can a page be forced to load another page in JavaScript?

Answer: We can use window.location.href to change the page.

```
<script>
window.location.href = "https://www.example.com/newpage.html";

</script>
```

18. What are the disadvantages of using innerHTML in JavaScript?

Answer: Modifying an element's `innerHTML` can be less efficient than other methods like using the DOM API to directly manipulate individual elements or properties

19. Create password field with show hide functionalities

Answer: We can use a function and an if statement to change the type of password in order to reveal the password.

```
<body>
   Password: <input type="password" value="test" id="myInput">

   <input type="checkbox" onclick="change()">Show Password
</body>

<script>
function change() {
 var x = document.getElementById("myInput");
 if (x.type === "password") {
   x.type = "text";
 } else {
   x.type = "password";
 }
}
</script>
```

20. Basic Calculator using js

Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Calculator</title>
</head>
<body>
    <div class="main">
        <h1 style="text-align: center;">Maths operations</h1>

        <table>
            <tr>
                <!-- Two inputs from user -->
                <td>Enter 1st number: </td>
                <td><input type="number" id='n1' value="0"></td>
            </tr>
            <tr>
                <td>Enter 1st number: </td>
                <td><input type="number" id='n2' value="0"></td>
            </tr>
            <tr>
                <td>
                    <!-- Onclick operations -->
                    <button onclick="operation('*')">*</button>
                    <button onclick="operation('-')">-</button>
                    <button onclick="operation('+')">+</button>
                    <button onclick="operation('/')">/</button>
                    <button onclick="operation('%')">%</button>
                </td>
                <td><h4 >Answer is <span id="ans">0</span></h4></td>
            </tr>
        </table>

    </div>
```

```
</body>
<script>
    function operation(op){
        // get values of two input with its id
       let n1 = parseInt(document.getElementById("n1").value);
       let n2 =parseInt(document.getElementById("n2").value);
       let ans = document.getElementById("ans");
        //  Identify the mathematical operations
        // If it's * then multiply to number and update the ans
       if(op === "*"){
        ans.innerHTML = n1 *n2;
       }
// If it's - then minus to number and update the ans
       else if(op === "-"){
        ans.innerHTML = n1 - n2;
       }

       // If it's + then add to number and update the ans
       else if(op === "+"){
        ans.innerHTML = n1 +n2;
       }
       // If it's / then divide number and update the ans
       else if(op === "/"){
        ans.innerHTML = n1 / n2;
       }
    //    else modulo
       else {
        ans.innerHTML = n1 % n2;
       }

    }
</script>

</html]
```

Output:

21. Marks calculator using js

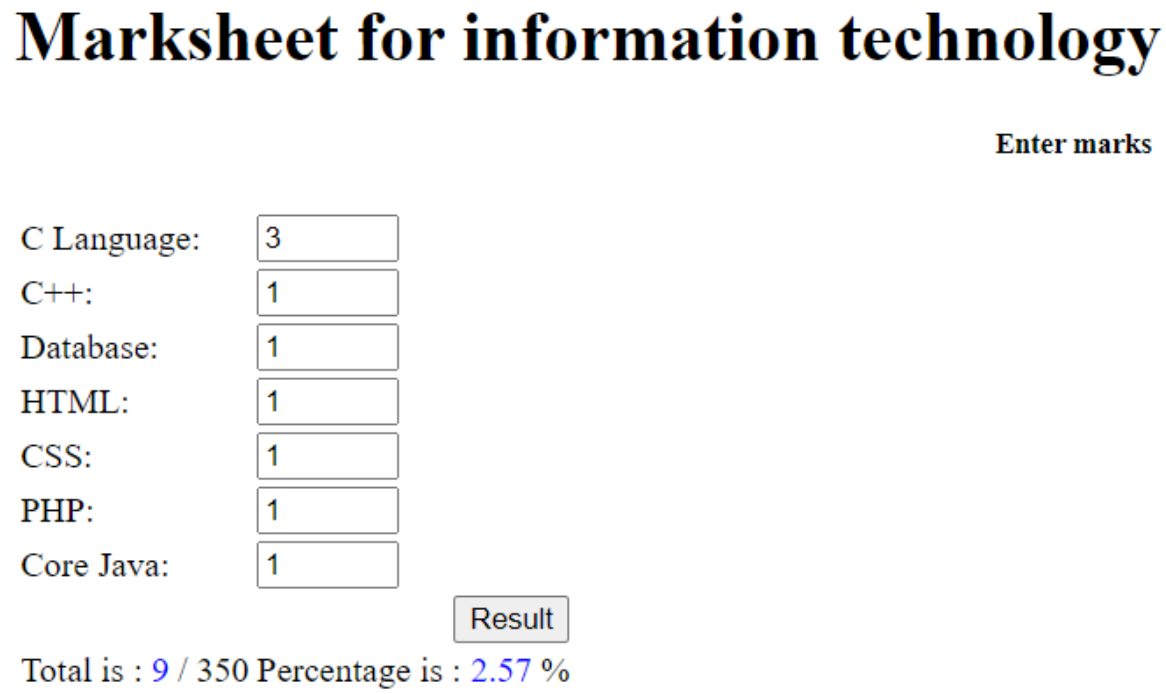
Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Marks</title>
</head>
<body>
    <div class="main">
        <h1>Marksheet for information technology</h1>
        <h5 style="text-align: center;">Enter marks</h5>

        <table>
            <!-- Using form to get all the input values -->
            <form id="f">
            <tr>
                <td>C Language: </td>
                <td><input type="number" max="50" value="0" min="0"></td>
            </tr>

            <tr>
                <td>C++: </td>
                <td><input type="number" max="50" value="0" min="0"></td>
            </tr>

            <tr>
```

```
                <td>Database: </td>
                <td><input type="number" max="50" value="0" min="0"></td>
            </tr>

            <tr>
                <td>HTML: </td>
                <td><input type="number" max="50" value="0" min="0"></td>
            </tr>

            <tr>
                <td>CSS: </td>
                <td><input type="number" max="50" value="0" min="0"></td>
            </tr>

            <tr>
                <td>PHP: </td>
                <td><input type="number" max="50" value="0" min="0"></td>
            </tr>

            <tr>
                <td>Core Java: </td>
                <td><input type="number" max="50" value="0" min="0"></td>
            </tr>
            <tr>
                <td colspan="2" align="right"><button
onclick="total()">Result</button></td>
            </tr>
            <tr>
                <!-- Output the total and percentage -->
                <td>Total is : <span id="sum" style="color:
blue;">0</span> / 350</td>
                <td>
                    Percentage is : <span id="perc" style="color:
blue;">0</span> %
                </td>
            </tr>
        </form>
        </table>
```

```
    </div>
</body>
<script>
    // Total function
    function total(){
        // prevent the page to refresh
        event.preventDefault();
        // get the form element with its id
        let fo = document.getElementById("f");
        // Initialize the sum to 0
        let sum = 0;
        // Iterate through all form properties
        for (var i = 0; i <  fo.length; i++) {
            // If the type is number them add to the existing value of the
sum
            if (fo[i].type === 'number') {
                sum += parseInt(fo[i].value) || 0;
            }
        }
        // Percentage
        let per = ((sum/ 350) * 100).toFixed(2)
        // Update the sum and percentage
        document.getElementById("sum").innerHTML = sum;
        document.getElementById("perc").innerHTML = per

    }



</script>



</html>
```

Output:



22. Image slider using JS

Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Slider</title>
    <style>
        /* background color to black */
        body{
            background-color: black;
        }
        /* centering images */
        .sliderImages{
```

```
            display: flex;
            justify-content: center;

        }
        /* setting same height and width */
        img{
            height: 400px;
            width: 800px;
        }
        /* giving padding to buttons */
        button{
            padding: 10px;
        }
        /* space around buttons */
        .controls{
            display: flex;
            justify-content: space-around;
        }
    </style>
</head>
<body>
<!-- Image -->
    <div class="sliderImages">
        <img src="1.jpg" id="one">
    </div>
    <!-- slider control buttons -->
    <div class="controls">
        <button onclick="prev()"> < </button>
        <button onclick="next()"> > </button>

    </div>
</body>

<script>
    // Keeping track with tracker
    let tracker = 1;

function next(){
    // getting id of image
    let one = document.getElementById("one")
```

```
    // Comparing the tracker and setting image src
    if(tracker == 1){

        one.src="1.jpg";
    }
    else if (tracker == 2){
        one.src="2.jpg"
    }
    else if(tracker == 3){
        one.src = "3.avif"
    }
    // Incrementing the tracker to update the image src
    tracker+=1
    // Make sure to check that it doesn't go above limits of images
    if(tracker > 4 ){
        tracker = 1;
    }
}

function prev(){
    // Same as above
    let one = document.getElementById("one")
    if(tracker == 1){

        one.src="1.jpg";
    }
    else if (tracker == 2){
        one.src="2.jpg"
    }
    else if(tracker == 3){
        one.src = "3.avif"
    }
    // Decrementing the tracker to get previous image
    tracker-=1
    // if after decrementing the tracker
    if(tracker ==0 ){
        tracker = 3;
    }
}
</script>
```

```
</html>
```

Output: