WPL - Pgm 6

main.html

```
<html>
<head>
<title>WPL PROGRAM 6</title>
<style>
body{
   margin: 0;
   padding: 25px;
   background-color: #f0f8ff;
   font-family: Arial, sans-serif;
}
h1{
   font-size: 38px;
   font-style: italic;
   text-align: center;
   color: #333;
}
h2{
   font-size: 28px;
   margin-left: 15px;
   color: #0056b3;
}
h3{
   margin-left: 35px;
}
input{
   margin-left: 40px;
   padding: 5px;
```

```
    border: 1px solid #ccc;
}
p{
    margin-left: 55px;
    color: #555;
}
button{
    margin-left: 40px;
    padding: 10px 18px;
    background-color: #007bff;
    color: white;
    border: none;
    cursor: pointer;
    border-radius: 5px;
    transition: background-color 0.3s;
}
button:hover {
    background-color: #0056b3;
}
</style>
</head>
<body>
<h1>JavaScript String and Math Functions Demonstration</h1><br>
<ol>
<li><h2>String Manipulation Methods</h2></li>
<input type="text" id="inputString" placeholder="Enter sample text (e.g., Hello
World)">
<ul>
    <li><h3>String Character at Index (charAt):</h3></li>
```

```
    <button onclick="stringCharAt()">Get Char (Index 4)</button><br>
    <p id="charat"></p>

    <li><h3>String Length Property:</h3></li>
    <button onclick="stringLength()">Get Length</button><br>
    <p id="length"></p>

    <li><h3>String Slice:</h3></li>
    <button onclick="stringSlice()">Slice (7, 13)</button><br>
    <p id="sliced1"></p>
    <p id="sliced2"></p>

    <li><h3>String Substring:</h3></li>
    <button onclick="stringSubstring()">Substring (7, 13)</button><br>
    <p id="substringed1"></p>

    <li><h3>String Replace:</h3></li>
    <button onclick="stringReplace()">Replace 'World' with
'Students'</button><br>
    <p id="original"></p>
    <p id="replace"></p>

    <li><h3>String to Uppercase:</h3></li>
    <button onclick="stringUpperCase()">To Uppercase</button><br>
    <p id="upper"></p>

    <li><h3>String Concatenation:</h3></li>
    <button onclick="stringConcat()">Concat with " Everyone"</button><br>
    <p id="concated1"></p>
```

```
    <p id="concated3"></p>
</ul>
<br><br>
<li> <h2>Mathematical Operations (Math Object)</h2></li>
<ul>
    <li><h3>Rounding and Integer Methods: </h3></li>
    <button onclick="numberConvertion()">Convert Number</button><br>
    <p id="num">Initial number used: 15.7</p>
    <ul>
        <li>Math.round() : </li>
        <p id="round"></p>
        <li>Math.ceil() : </li>
        <p id="ceil"></p>
        <li>Math.floor() : </li>
        <p id="floor"></p>
        <li>Math.trunc() : </li>
        <p id="trunc"></p>
    </ul>

    <li><h3>Math.sign(): </h3></li>
    <p>Tests for positive, negative, or zero:</p>
    <button onclick="numberSign()">Test Signs</button><br>
    <p id="sign1"></p>
    <p id="sign2"></p>
    <p id="sign3"></p>

    <li><h3>Math.pow(x, y): </h3></li>
    <p>Calculates the value of x raised to the power of y :</p>
    <button onclick="numberPow()">Calculate Power</button><br>
```

```
    <p id="power"></p>

    <li><h3>Math.sqrt(x): </h3></li>
    <p>Returns the square root of x :</p>
    <button onclick="numberSqrt()">Calculate Square Root</button><br>
    <p id="sqrt"></p>

    <li><h3>Math.abs(x): </h3></li>
    <p>Returns the absolute (positive) value of x:</p>
    <button onclick="numberAbs()">Get Absolute Value</button><br>
    <p id="absolute"></p>

    <li><h3>Math.min() and Math.max(): </h3></li>
    <button onclick="numberMinMax()">Find Min and Max</button><br>
    <p id="list">Using list: (10, 5, 50, -2, 100, 1)</p>
    <p id="min"></p>
    <p id="max"></p>

    <li><h3>Math.sin(x): </h3></li>
    <p>Returns the sine of a number:</p>
    <button onclick="numberSin()">Calculate Sine</button><br>
    <p id="sine"></p>
</ul>
</ol>

<script>
let inputElement = document.getElementById("inputString");

function stringCharAt(){
```

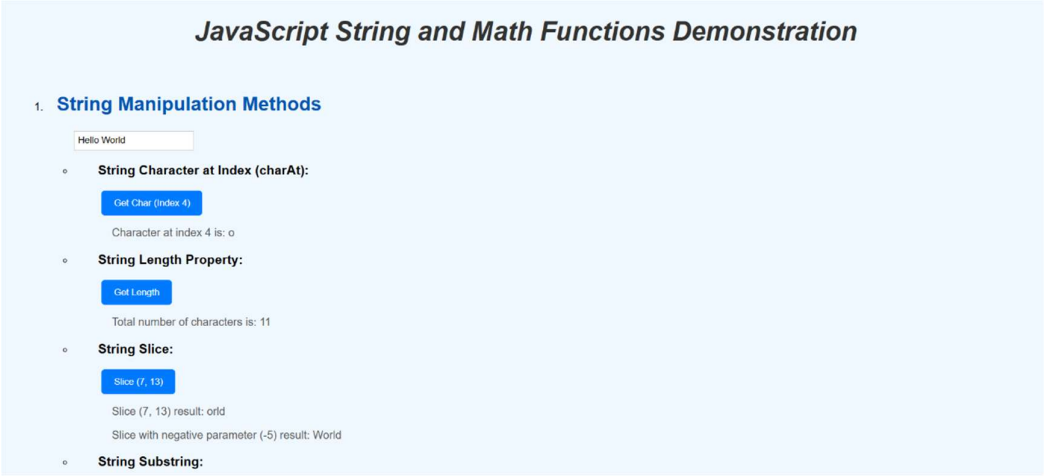
```
    let text = inputElement.value;
    let char = text.charAt(4);
    document.getElementById("charat").innerHTML = "Character at index 4 is: "+char+"";
}

function stringLength(){
    let text = inputElement.value;
    let len = text.length;
    document.getElementById("length").innerHTML = "Total number of characters is: "+len+"";
}

function stringSlice(){
    let text = inputElement.value;
    let slice1 = text.slice(7,13);
    document.getElementById("sliced1").innerHTML = "Slice (7, 13) result: "+slice1+"";
    let slice2 = text.slice(-5);
    document.getElementById("sliced2").innerHTML = "Slice with negative parameter (-5) result: "+slice2+"";
}

function stringSubstring(){
    let text = inputElement.value;
    let substring1 = text.substring(7,13);
    document.getElementById("substringed1").innerHTML = "Substring (7, 13) result: "+ substring1+"";
}

function stringReplace(){
```

```
    let text = inputElement.value;
    let newtext = text.replace("World","Students");
    document.getElementById("original").innerHTML = "Original string: "+text;
    document.getElementById("replace").innerHTML = "String after replacement:
"+newtext+"";
}

function stringUpperCase(){
    let text = inputElement.value;
    let textUp = text.toUpperCase();
    document.getElementById("upper").innerHTML = "Converted to
UPPERCASE: "+ textUp+"";
}

function stringConcat(){
    let text = inputElement.value;
    let textToAdd = " Everyone";
    let text3 = text.concat(textToAdd);
    document.getElementById("concated1").innerHTML = "Original Text: "+
text;
    document.getElementById("concated3").innerHTML = "Concatenated Result:
"+ text3+"";
}

function numberConvertion(){
    let x = 15.7;
    document.getElementById("num").innerHTML = "The Number used for
rounding is: " + x+"";
    document.getElementById("round").innerHTML = "Math.round(x) (Nearest
Integer): " + Math.round(x)+"";
```

```
    document.getElementById("ceil").innerHTML = "Math.ceil(x) (Rounds Up): "
+ Math.ceil(x)+"";

    document.getElementById("floor").innerHTML = "Math.floor(x) (Rounds
Down): " + Math.floor(x)+"";

    document.getElementById("trunc").innerHTML = "Math.trunc(x) (Integer
Part): " + Math.trunc(x)+"";

}


function numberSign(){

    document.getElementById("sign1").innerHTML = "Math.sign(12) returns: " +
Math.sign(12)+"";

    document.getElementById("sign2").innerHTML = "Math.sign(-8) returns: " +
Math.sign(-8)+"";

    document.getElementById("sign3").innerHTML = "Math.sign(0) returns: " +
Math.sign(0)+"";

}


function numberPow(){

    document.getElementById("power").innerHTML = "Math.pow(5, 3) (5 cubed)
returns: " + Math.pow(5,3)+"";

}


function numberSqrt(){

    document.getElementById("sqrt").innerHTML = "Math.sqrt(144) (Square
Root) returns: " + Math.sqrt(144)+"";

}


function numberAbs(){

    document.getElementById("absolute").innerHTML = "Math.abs(-99.3)
(Absolute Value) returns: " + Math.abs(-99.3)+"";

}
```

```
function numberMinMax(){
   let list = [10, 5, 50, -2, 100, 1];
   document.getElementById("list").innerHTML ="The List is : (10, 5, 50, -2, 100, 1)";
   document.getElementById("min").innerHTML ="Minimum in the list is: " + Math.min(...list)+"";
   document.getElementById("max").innerHTML ="Maximum in the list is: " + Math.max(...list)+"";
}

function numberSin(){
   let angle = Math.PI / 2;
   document.getElementById("sine").innerHTML = "Math.sin(Pi/2) returns: " + Math.sin(angle);}
</script>
</body>
</html>
```

Output



- **String Substring:**

  Substring (7, 13)

  Substring (7, 13) result: orld

- **String Replace:**

  Replace "World" with "Students"

  Original string: Hello World

  String after replacement: Hello Students

- **String to Uppercase:**

  To Uppercase

  Converted to UPPERCASE: HELLO WORLD

- **String Concatenation:**

  Concat with " Everyone"

  Original Text: Hello World

  Concatenated Result: Hello World Everyone

2. Mathematical Operations (Math Object)

- **Rounding and Integer Methods:**

  Convert Number

  The Number used for rounding is: 15.7

  - Math.round() :

    Math.round(x) (Nearest Integer): 16

  - Math.ceil() :

    Math.ceil(x) (Rounds Up): 16

  - Math.floor() :

    Math.floor(x) (Rounds Down): 15

  - Math.trunc() :

    Math.trunc(x) (Integer Part): 15

- **Math.sign():**

  Tests for positive, negative, or zero:

  Test Signs

  Math.sign(12) returns: 1

  Math.sign(-8) returns: -1

  Math.sign(0) returns: 0

- **Math.pow(x, y):**

  Calculates the value of x raised to the power of y :

  Calculate Power

  Math.pow(5, 3) (5 cubed) returns: 125

- **Math.sqrt(x):**

  Returns the square root of x :

  Calculate Square Root

  Math.sqrt(144) (Square Root) returns: 12

- **Math.abs(x):**

  Returns the absolute (positive) value of x:

  Get Absolute Value

  Math.abs(-99.3) (Absolute Value) returns: 99.3

- **Math.min() and Math.max():**

  Find Min and Max

  The List is : (10, 5, 50, -2, 100, 1)

  Minimum in the list is: -2

  Maximum in the list is: 100

- **Math.sin(x):**

  Returns the sine of a number:

  Calculate Sine

  Math.sin(Pi/2) returns: 1