Assignment 1

Question 1

Write the HTML code for the following Table and write some text in each cell.

Figure 1: Table 1

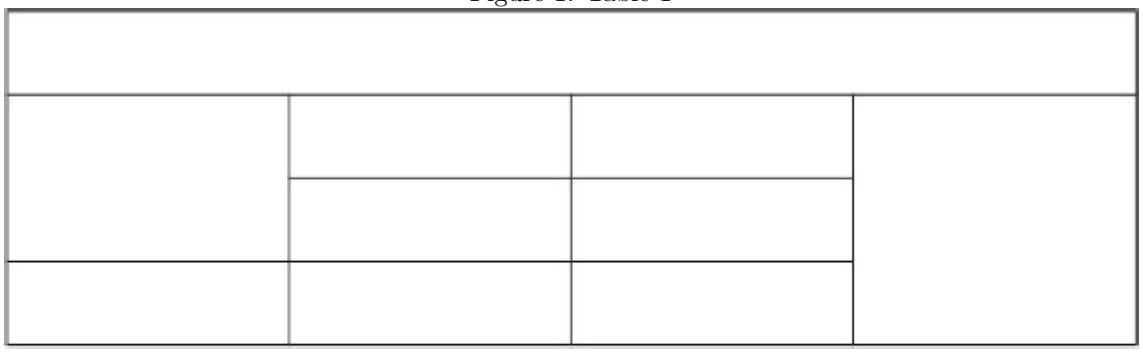
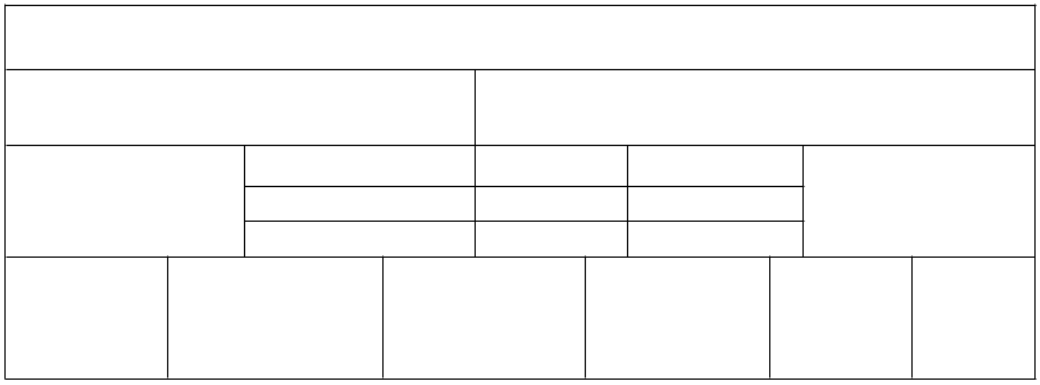


Figure 2: Table 1



Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
    <style>
        table,
        td {
            border: 1px solid black;
        }
        table{
            border-collapse: collapse;
        }
    </style>
</head>

<body>
    <table>
        <tr>
            <td colspan="4">temp</td>
        </tr>
        <tr>
            <td rowspan="2">temp</td>
            <td>temp</td>
            <td>temp</td>
            <td rowspan="3">temp</td>
        </tr>
        <tr>
            <td>temp</td>
            <td>temp</td>
        </tr>
        <tr>
            <td>temp</td>
            <td>temp</td>
            <td>temp</td>
        </tr>
    </table>
</body>

</html>
```

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <title>table2</title>
    <style>
        table,
        td {
            border: 1px solid black;
        }

        table {
            border-collapse: collapse;
        }
    </style>
</head>

<body>
    <table>
        <tr>
            <td colspan="10">temp</td>
        </tr>
        <tr>
            <td colspan="4">temp</td>
            <td colspan="6">temp</td>
        </tr>
        <tr>
            <td colspan="2" rowspan="3">temp</td>
            <td colspan="2">temp</td>
            <td colspan="2">temp</td>
            <td colspan="2">temp</td>
            <td colspan="2" rowspan="3">temp</td>
        </tr>
        <tr>
            <td colspan="2">temp</td>
            <td colspan="2">temp</td>
            <td colspan="2">temp</td>
        </tr>
        <tr>
            <td colspan="2">temp</td>
            <td colspan="2">temp</td>
            <td colspan="2">temp</td>
        </tr>
        <tr>
            <td>temp</td>
            <td colspan="2">temp</td>
            <td colspan="2">temp</td>
            <td colspan="2">temp</td>
            <td colspan="2">temp</td>
            <td>temp</td>
        </tr>
    </table>
</body>

</html>
```

Output

Figure 3: Table Preview

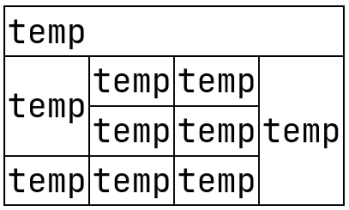
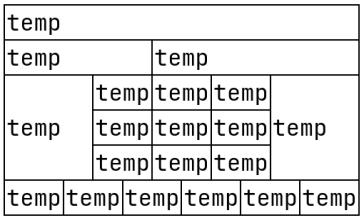


Figure 4: Table Preview



Question 2

Write the HTML code for the following Table.

Figure 5: Table 3

Specification Table with Hours and Marks

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to Internet Technology	2	4	4	0	8
II	Basics of HTML & CSS	6	0	2	6	8
III	Active Server Pages 3.0	6	4	8	0	12
IV	Server Side Coding with VBScript and XML	8	2	4	8	14
V	ASP Objects & Components	10	4	4	6	14
VI	Accessing database with ASP & ADO	10	4	4	6	14
	Total	**42**	**18**	**26**	**26**	**70**

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>marks</title>
    <style>
        table,
        td,
        th {
            border: 1px solid black;
        }
    </style>
</head>

<body>

    <table>
        <thead>
            <tr>
                <th rowspan="2">Unit No.</th>
                <th rowspan="2">Unit Title</th>
                <th rowspan="2">Teaching Hours</th>
                <th colspan="4">Distribution of Theory Marks</th>
            </tr>
            <tr>
                <td>R Level</td>
                <td>U Level</td>
                <td>A Level</td>
                <td>Total Marks</td>
            </tr>
        </thead>
        <tbody>
            <tr>
                <td align="center">I</td>
                <td>Introduction to Internet Technology</td>
                <td align="center">2</td>
                <td align="center">4</td>
                <td align="center">4</td>
                <td align="center">0</td>
                <td align="center">8</td>
            </tr>
            <tr>
                <td align="center">II</td>
                <td>Basic of HTML &amp;amp; CSS</td>
                <td align="center">6</td>
                <td align="center">0</td>
                <td align="center">2</td>
                <td align="center">6</td>
                <td align="center">8</td>
            </tr>
            <tr>
                <td align="center">III</td>
                <td>Active Server Pages</td>
```

```
                <td align="center">6</td>
                <td align="center">4</td>
                <td align="center">8</td>
                <td align="center">0</td>
                <td align="center">12</td>
            </tr>
            <tr>
                <td align="center">IV</td>
                <td>Server Side Coding with VBScript and XML</td>
                <td align="center">8</td>
                <td align="center">2</td>
                <td align="center">4</td>
                <td align="center">8</td>
                <td align="center">14</td>
            </tr>
            <tr>
                <td align="center">V</td>
                <td>ASP Object &amp;amp; Components</td>
                <td align="center">10</td>
                <td align="center">4</td>
                <td align="center">4</td>
                <td align="center">6</td>
                <td align="center">14</td>
            </tr>
            <tr>
                <td align="center">VI</td>
                <td>Accessing database with ASP &amp;amp; ADO</td>
                <td align="center">10</td>
                <td align="center">4</td>
                <td align="center">4</td>
                <td align="center">6</td>
                <td align="center">14</td>
            </tr>
            <tr>
                <td></td>
                <td align="center"><b>Total</b></td>
                <td align="center"><b>42</b></td>
                <td align="center"><b>18</b></td>
                <td align="center"><b>26</b></td>
                <td align="center"><b>26</b></td>
                <td align="center"><b>70</b></td>
            </tr>
        </tbody>
    </table>

</body>

</html>
```

Output

Figure 6: Table Preview

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to Internet Technology	2	4	4	0	8
II	Basic of HTML & CSS	6	0	2	6	8
III	Active Server Pages	6	4	8	0	12
IV	Server Side Coding with VBScript and XML	8	2	4	8	14
V	ASP Object & Components	10	4	4	6	14
VI	Accessing database with ASP & ADO	10	4	4	6	14
	Total	**42**	**18**	**26**	**26**	**70**

Question 3

Write the HTML code, which defines all the formatting

Figure 7: Table 3

Text Formatting Tags

HTML Tag	Output
normal text	hello world
Font & its attributes	hello world
<B>	**Bold**
<I>	*Italic*
<U>	Underline
<EM>	*Emphasis*
<STRONG>	**STRONG**
<TELETYPE>	TELETYPE
<CITE>	*Citation*
<STRIKE>	~~strike through text~~
<BIG>	text in a big font
<SMALL>	text in a small font
<SUB>	a_b
<SUP>	a^b

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
    <style>
        table,
        td,
        th {
            border: 1px solid black;
        }
    </style>
</head>

<body>

    <h1 style="color: red;">Text Formatting Tags</h1>
    <table>
        <thead>
            <tr>
                <th>HTML Tag</th>
                <th>Output</th>
            </tr>
        </thead>
        <tbody>
            <tr>
                <td>normal text</td>
                <td>hello world</td>
            </tr>
            <tr>
                <td>font &amp;amp; its attributes</td>
                <td style="color: blue; font-size: large;">hello world</td>
            </tr>
            <tr>
                <td>&lt;B&gt;</td>
                <td><b>Bold</b></td>
            </tr>
            <tr>
                <td>&lt;I&gt;</td>
                <td><i>Italic</i></td>
            </tr>
            <tr>
                <td>&lt;U&gt;</td>
                <td><u>underline</u></td>
            </tr>
            <tr>
                <td>&lt;EM&gt;</td>
                <td><em>Emphasis</em></td>
            </tr>
            <tr>
                <td>&lt;STRONG&gt;</td>
                <td>
                    <strong>STRONG</strong>
```

```
            </td>
        </tr>
        <tr>
            <td>&lt;TELETYPE&gt;</td>
            <td>
                <teletype>TELETYPE</teletype>
            </td>
        </tr>
        <tr>
            <td>&lt;CITE&gt;</td>
            <td><cite>Citation</cite></td>
        </tr>
        <tr>
            <td>&lt;STRIKE&gt;</td>
            <td>
                <strike>strike through text</strike>
            </td>
        </tr>
        <tr>
            <td>&lt;BIG&gt;</td>
            <td><big>text in a big font</big></td>
        </tr>
        <tr>
            <td>&lt;SMALL&gt;</td>
            <td><small>text in a small font</small></td>
        </tr>
        <tr>
            <td>&lt;SUB&gt;</td>
            <td>a<sub>b</sub></td>
        </tr>
        <tr>
            <td>&lt;SUP&gt;</td>
            <td>a<sup>b</sup></td>
        </tr>
    </tbody>
</table>
</body>

</html>
```

Output

Figure 8: Table Preview

Text Formatting Tags

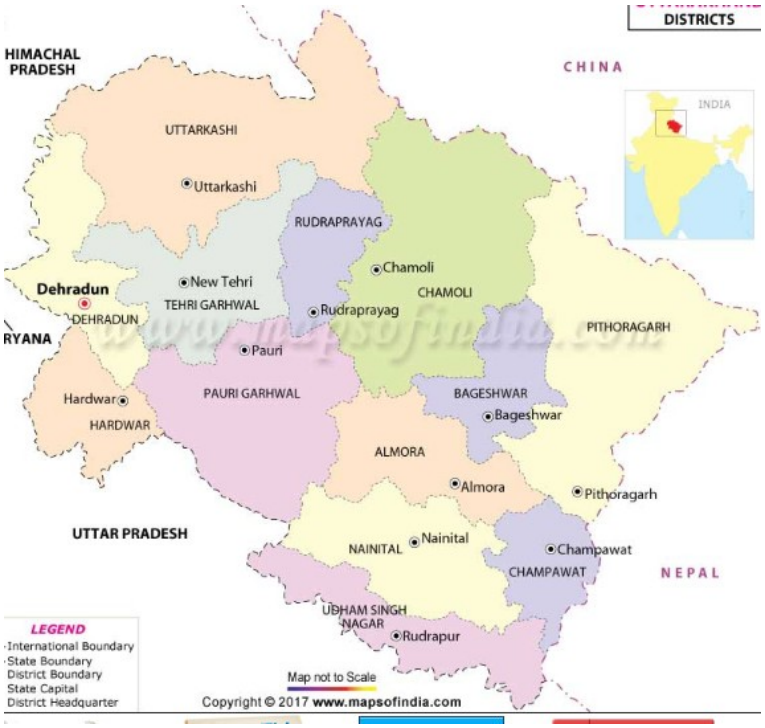
HTML Tag	Output
normal text	hello world
font & its attributes	hello world
<B>	**Bold**
<I>	*Italic*
<U>	underline
<EM>	*Emphasis*
<STRONG>	**STRONG**
<TELETYPE>	TELETYPE
<CITE>	*Citation*
<STRIKE>	~~strike through text~~
<BIG>	text in a big font
<SMALL>	text in a small font
<SUB>	a_b
<SUP>	a^b

Question 4

Code

Write the HTML code to display Uttarakhand map. And also display districts detail after clicking on a particular district.

Figure 9: Map

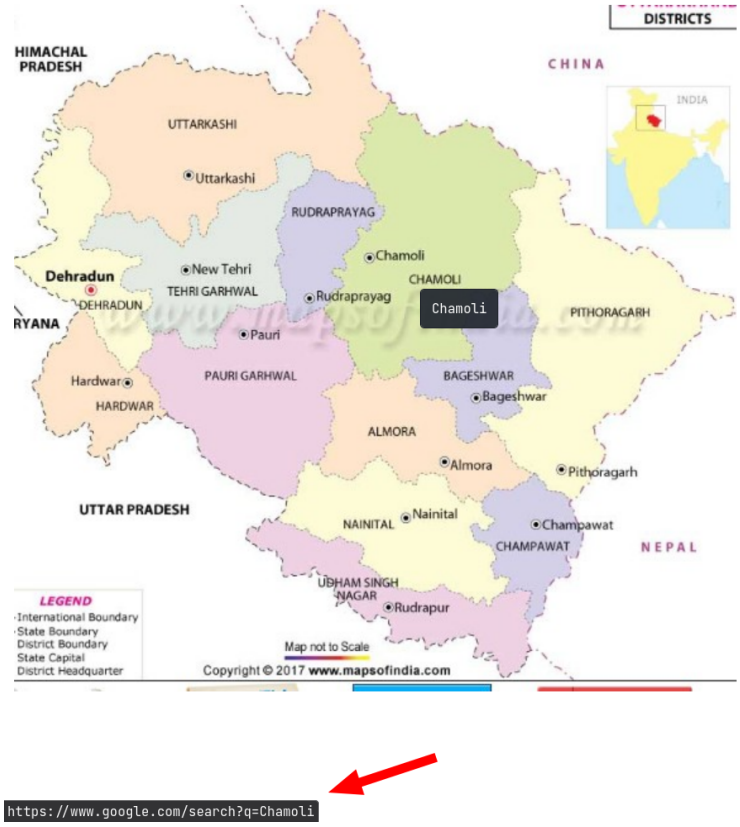


```
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <title>Map</title>
</head>

<body>
    <img src="./img.png" alt="Uttrakhand Map" usemap="#image-map" />
    <map name="image-map">
        <area target="" alt="Uttarkashi" title="Uttarkashi" href="https://www.google.
↪ com/search?q=Uttarkashi"
            coords="
↪ 68,165,65,121,37,91,118,39,236,66,221,40,243,2,297,72,269,125,215,118,143,171"
↪ shape="poly">
        <area target="" alt="Rudraprayag" title="Rudraprayag" href="https://www.google.
↪ com/search?q=Rudraprayag"
            coords="221,248,212,171,236,133,285,149,263,197,249,229" shape="poly">
        <area target="" alt="Tehri" title="Tehri" href="https://www.google.com/search?q
↪ =Tehri"
            coords="
↪ 55,190,62,172,145,178,209,128,231,126,201,167,208,229,163,245,148,267,108,255,97,214,7
↪ "
            shape="poly">
        <area target="" alt="Dehradun" title="Dehradun" href="https://www.google.com/
↪ search?q=Dehradun"
            coords="
↪ 28,91,59,127,60,155,46,193,80,213,108,261,91,286,52,241,2,208,32,184,18,132"
↪ shape="poly">
        <area target="" alt="Haridwar" title="Haridwar" href="https://www.google.com/
↪ search?q=Haridwar"
            coords="29,336,12,300,50,244,121,318,71,365" shape="poly">
        <area target="" alt="Pauri" title="Pauri" href="https://www.google.com/search?q
↪ =Pauri"
            coords="103,286,215,386,245,305,266,286,243,242,215,252,184,241" shape="
↪ poly">
        <area target="" alt="Chamoli" title="Chamoli" href="https://www.google.com/
↪ search?q=Chamoli"
            coords="
↪ 276,289,250,243,293,155,279,127,303,73,338,98,413,129,399,212,354,253,359,274"
↪ shape="poly">
        <area target="" alt="Almora" title="Almora" href="https://www.google.com/search
↪ ?q=Almora"
            coords="242,364,268,292,308,291,406,369,364,397,338,373,287,359" shape="
↪ poly">
        <area target="" alt="Nanital" title="Nanital" href="https://www.google.com/
↪ search?q=Nanital"
            coords="218,406,233,368,310,374,368,407,381,458,371,470,303,458" shape="
↪ poly">
        <area target="" alt="Pithoragarh" title="Pithoragarh" href="https://www.google.
↪ com/search?q=Pithoragarh"
            coords="416,136,572,235,444,381,373,327,419,295,414,241,401,225" shape="
↪ poly">
        <area target="" alt="Bageshwar" title="Bageshwar" href="https://www.google.com/
↪ search?q=Bageshwar"
            coords="319,286,368,280,365,258,396,223,416,284,364,328" shape="poly">
```

```
        <area target="" alt="Chapawat" title="Chapawat" href="https://www.google.com/
    ↪ search?q=Champawat"
            coords="385,452,419,469,453,414,418,376,372,397" shape="poly">
        <area target="" alt="Udahm Singh Nagar" title="Udahm Singh Nagar"
            href="https://www.google.com/search?q=Udham+Singh+Nagar"
            coords="206,403,302,464,401,466,404,512,389,524,356,496,299,495,186,427"
    ↪ shape="poly">
     </map>
</body>

</html>
```

Output

Figure 10: Map



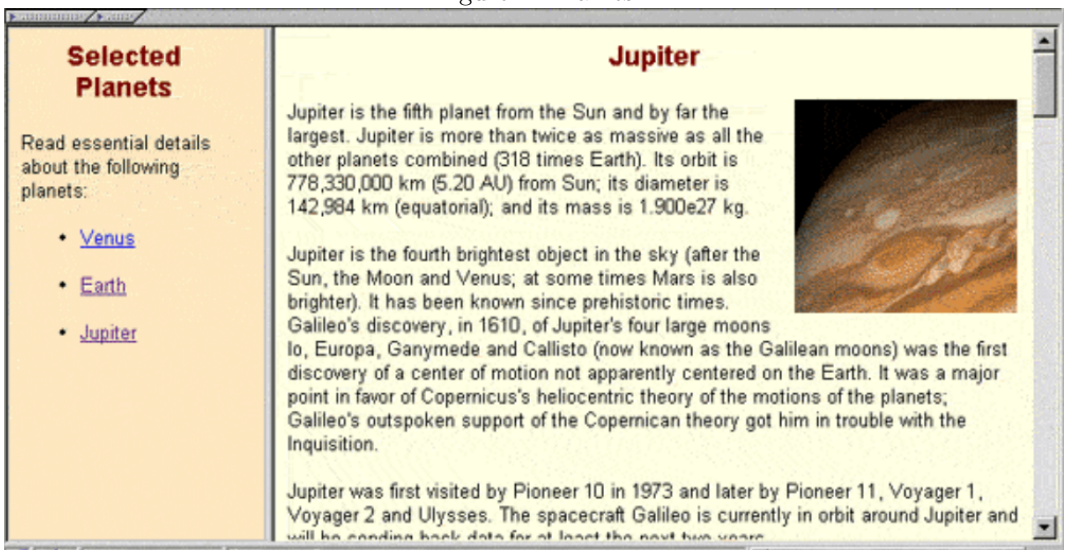
https://www.google.com/search?q=Chamoli

Assignment 2

Question 1

WAP in HTML to implement a frame

Figure 1: Frames



Code

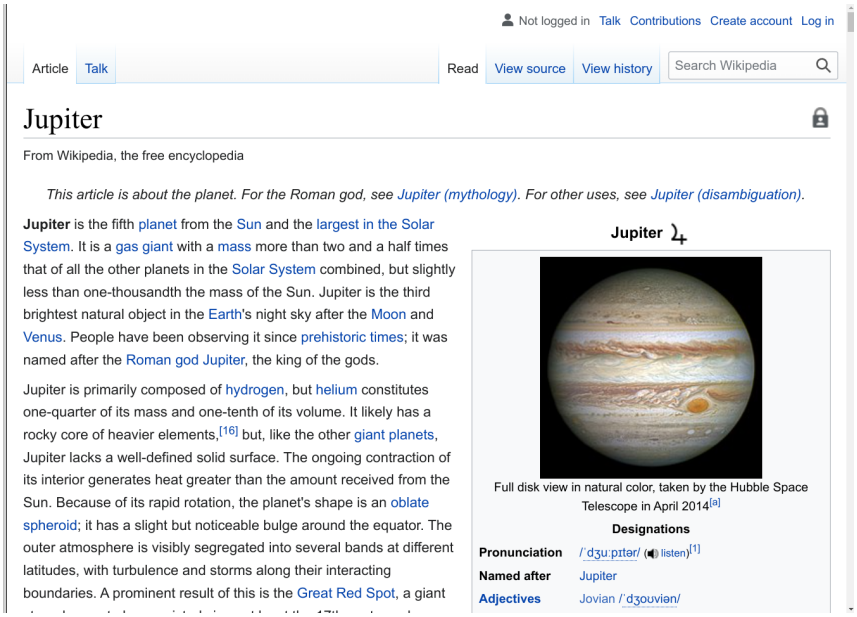
```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.
   ↪ dtd">

<html>

<head>
    <meta charset="UTF-8">
    <title>2</title>
</head>

<frameset cols="30%,*">
    <frame name="main" src="11.html" />
    <frame name="side" src="https://en.wikipedia.org/wiki/Jupiter" />
    <noframes>

        <body>Your browser does not support frames.</body>
    </noframes>
</frameset>

</html>

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.
   ↪ dtd">
<html lang="en">

<head>
    <meta charset="UTF-8">
    <title>2</title>
</head>

<body>
    <h1> Selected Planets </h1>
    <p> Read essential details about the following planets: </p>
    <ul>
        <li><a href="https://en.wikipedia.org/wiki/Venus" target="side">Venus</li>
        <li><a href="https://en.wikipedia.org/wiki/Earth" target="side">Earth</li>
        <li><a href="https://en.wikipedia.org/wiki/Jupiter" target="side">Jupiter</li>
    </ul>
</body>

</html>
```

Output

Selected Planets

Read essential details about the following planets:

- Venus
- Earth
- Jupiter



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Jupiter

From Wikipedia, the free encyclopedia

This article is about the planet. For the Roman god, see Jupiter (mythology). For other uses, see Jupiter (disambiguation).

Jupiter is the fifth planet from the Sun and the largest in the Solar System. It is a gas giant with a mass more than two and a half times that of all the other planets in the Solar System combined, but slightly less than one-thousandth the mass of the Sun. Jupiter is the third brightest natural object in the Earth's night sky after the Moon and Venus. People have been observing it since prehistoric times; it was named after the Roman god Jupiter, the king of the gods.

Jupiter is primarily composed of hydrogen, but helium constitutes one-quarter of its mass and one-tenth of its volume. It likely has a rocky core of heavier elements,[16] but, like the other giant planets, Jupiter lacks a well-defined solid surface. The ongoing contraction of its interior generates heat greater than the amount received from the Sun. Because of its rapid rotation, the planet's shape is an oblate spheroid; it has a slight but noticeable bulge around the equator. The outer atmosphere is visibly segregated into several bands at different latitudes, with turbulence and storms along their interacting boundaries. A prominent result of this is the Great Red Spot, a giant

Jupiter ♃

Full disk view in natural color, taken by the Hubble Space Telescope in April 2014[a]

Designations

Pronunciation	/ˈdʒuːpɪtər/ (listen)[1]
Named after	Jupiter
Adjectives	Jovian /ˈdʒouviən/

Question 2

WAP in HTML to implement a table.

Figure 2: Table

<table>
<tr><th rowspan="3">Day</th><th colspan="3">Seminar</th></tr>
<tr><th colspan="2">Schedule</th><th rowspan="2">Topic</th></tr>
<tr><th>Begin</th><th>End</th></tr>
<tr><td rowspan="2">Monday</td><td rowspan="2">8:00 a.m.</td><td rowspan="2">5:00 p.m.</td><td>Introduction to XML</td></tr>
<tr><td>Validity: DTD and Relax NG</td></tr>
<tr><td rowspan="3">Tuesday</td><td>8:00 a.m.</td><td>11:00 a.m.</td><td>XPath</td></tr>
<tr><td>11:00 a.m.</td><td>2:00 p.m.</td><td rowspan="2">XSL Transformations</td></tr>
<tr><td>2:00 p.m.</td><td>5:00 p.m.</td></tr>
<tr><td>Wednesday</td><td>8:00 a.m.</td><td>12:00 p.m.</td><td>XSL Formatting Objects</td></tr>
</table>

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>1</title>
</head>

<body>
    <table border="1">
        <thead>
            <tr>
                <th rowspan="3">Day</th>
                <th colspan="3">Seminar</th>
            </tr>
            <tr>
                <th colspan="2">Schedule</th>
                <th rowspan="2">Title</th>
            </tr>
            <tr>
                <th>Begin</th>
                <th>End</th>
            </tr>
        </thead>
        <tbody>
            <tr>
                <td rowspan="2">Monday</td>
                <td rowspan="2">8:00 a.m.</td>
                <td rowspan="2">5:00 p.m.</td>
                <td>Introduction to XML</td>
            </tr>
            <tr>
                <td>Validity: DTD and Relax NG</td>
            </tr>
            <tr>
                <td rowspan="6">Tuesday</td>
                <td rowspan="2">8:00 a.m.</td>
                <td rowspan="2">11:00 a.m.</td>
                <td rowspan="3">XPath</td>
            </tr>
            <tr>
            </tr>
            <tr>
                <td rowspan="2">11:00 a.m.</td>
                <td rowspan="2">2:00 p.m.</td>
            </tr>
            <tr>
                <td rowspan="3">XSL Transformations</td>
            </tr>
            <tr>
                <td rowspan="2">2:00 p.m.</td>
                <td rowspan="2">5:00 p.m.</td>
            </tr>
            <tr>
```

```
            </tr>
            <tr>
                <td>Wednesday</td>
                <td>8:00 a.m.</td>
                <td>12:00 p.m.</td>
                <td>XSL Formatting objects</td>
            </tr>
        </tbody>
    </table>
</body>

</html>
```

Output

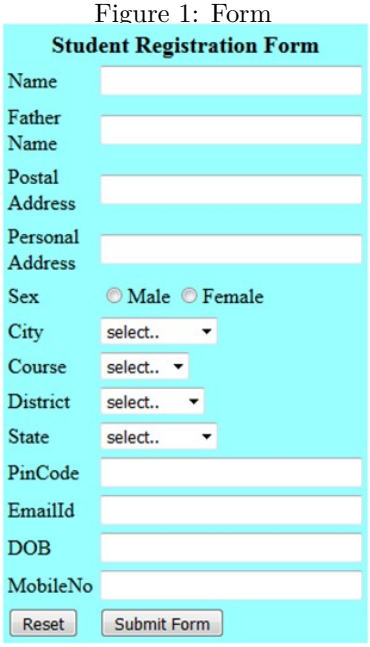
Day	Seminar		
	Schedule		Title
	Begin	End	
Monday	8:00 a.m.	5:00 p.m.	Introduction to XML
			Validity: DTD and Relax NG
Tuesday	8:00 a.m.	11:00 a.m.	XPath
	11:00 a.m.	2:00 p.m.	XSL Transformations
	2:00 p.m.	5:00 p.m.	
Wednesday	8:00 a.m.	12:00 p.m.	XSL Formatting objects

Assignment 3

Question 1

Write a program to implement form in HTML.

Figure 1: Form



Code

form.html

```
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width,initial-scale=1.0">
    <title>form</title>
    <link rel="stylesheet" href="style.css">
</head>

<body>
    <form id="form1">
        <h3>Student Registration Form</h3>
        <label for="name1">Name:</label> <input type="text" id="name1"><br>
        <label for="name2">Father Name</label> <input type="text" id="name2"><br>
        <label for="address">Postal Address</label> <input type="text" id="address"><br
    ↪ >
        <label for="address">Personal Address</label> <input type="text" id="address"><
    ↪ br>

        <label for="sex">Sex</label>
        <input type="radio" id="male" name="sex">Male
        <input type="radio" id="female" name="sex">Female
        <br>

        <label for="city">City</label>
        <select id="s1">
            <option>Select..</option>
            <option value="Dehradun">Dehradun</option>
        </select><br>

        <label for="course">Course</label>
        <select id="s2">
            <option>Select..</option>
            <option value="btech">BTech</option>
            <option value="bse">bse</option>
            <option value="mtech">MTech</option>
        </select><br>

        <label for="District">District</label>
        <select id="s3">
            <option>Select..</option>
            <option value="Chamoli">Chamoli</option>
            <option value="Rudrapryag">Rudraprayag</option>
        </select><br>

        <label for="State">State</label>
        <select id="s4">
            <option>Select..</option>
            <option value="uttarakhand">Uttarakhand</option>
        </select><br>

        <label for="pincode">Pincode</label> <input type="number" id="pincode"><br>
        <label for="email">EmailId</label> <input type="text" id="email"><br>
        <label for="dob">DOB</label> <input type="text" id="dob"><br>
```

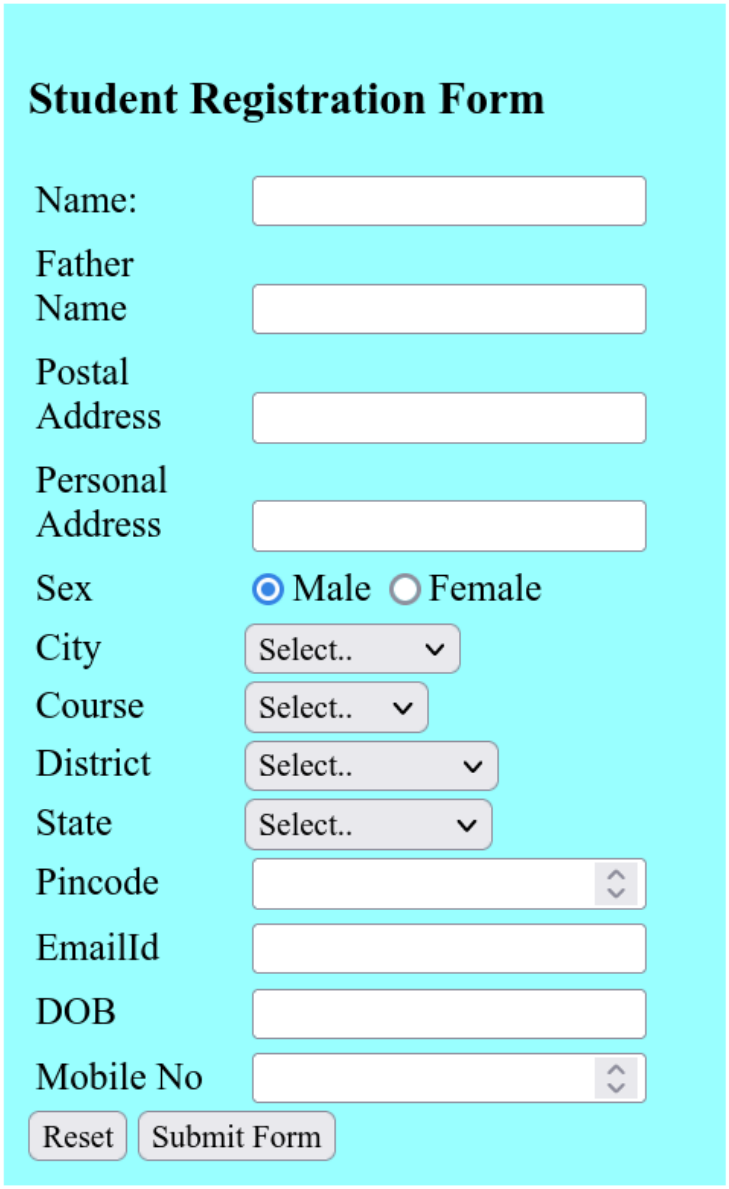
```
        <label for="mobile">Mobile No</label> <input type="number" id="mobile"><br>

        <button type="reset">Reset</button>
        <button type="submit" value="submit">Submit Form</button>
    </form>
</body>

</html>
```

style.css

```
* {
    font-family: 'Times New Roman', Times, serif;
}

#form1 {
    background-color: #99ffff;
    padding: 10px;
    max-width: 280px;
    margin: auto;
}

label {
  display: inline-block;
  width: 80px;
}

label, input {
  margin: 3px;
}
```

Output

Figure 2: Output Form



Assignment 4

Question 1

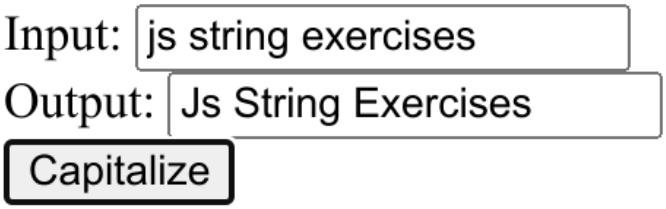
Write a JavaScript function to capitalize the first letter of each word in a string.
Test Data :

```
(capitalize_Words('js string exercises'));
Output: "Js String Exercises"
```

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <title>1</title>
    <script>
        function capitalize_word(string) {
            var arr = string.split(" ");
            var ans = ""
            for (let i of arr) {
                ans += i.charAt(0).toUpperCase() + i.slice(1) + " ";
            }
            return ans;
        }
        function main() {
            input1 = document.getElementById("input1");
            temp = capitalize_word(input1.value)
            document.getElementById("output").value = temp;
        }
    </script>
</head>

<body>
    Input: <input id="input1" type="text"> <br />
    Output: <input id="output" type="text"> <br />
    <input type="button" value="Capitalize" onclick="main()">
</body>

</html>
```

Output


Input: js string exercises
Output: Js String Exercises
Capitalize

Question 2

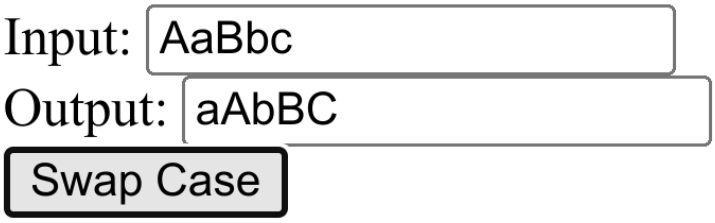
Write a JavaScript function that takes a string which has lower and upper case letters as a parameter and converts upper case letters to lower case, and lower case letters to upper case.
Test Data:

```
  (swapcase('AaBbc'));
  Output: "aAbBC"
```

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <title>2</title>
    <script>
        function changecase(s) {
            if ('a' <= s && s <= 'z') return s.toUpperCase();
            else return s.toLowerCase();
        }

        /* change the case of each character */
        function swapcase(s) {
            var ans = s.split('').map(changecase).join('');
            return ans;
        }

        function main() {
            input1 = document.getElementById("input1");
            temp = swapcase(input1.value)
            document.getElementById("output").value = temp;
        }
    </script>
</head>

<body>
    Input: <input id="input1" type="text"> <br />
    Output: <input id="output" type="text"> <br />
    <input type="button" value="Swap Case" onclick="main()">
</body>

</html>
```

Output



Question 3

Develop and demonstrate a HTML file that includes JavaScript script that uses functions for the following problems:

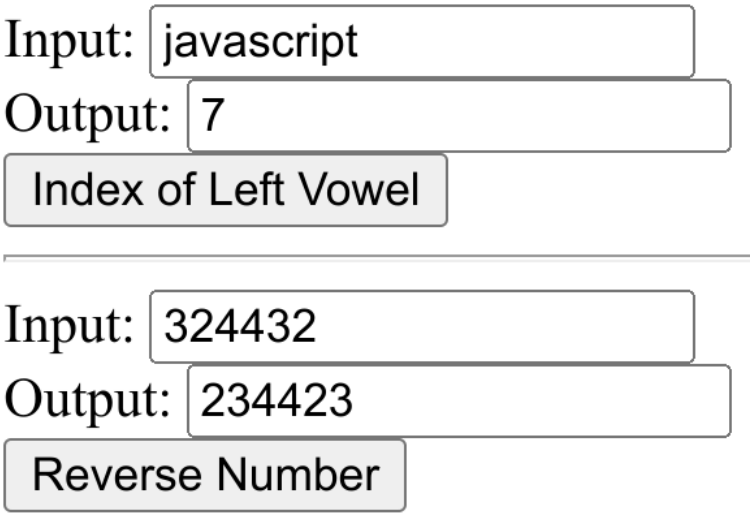
- Parameter: A string
  Output: The position in the string of the left-most vowel
- Parameter: A number
  Output: The number with its digits in the reverse order.

Code

```
<!DOCTYPE html>
<html>

<head>
    <meta charset="UTF-8">
    <title>3</title>
    <script>
        function isVowel(c) {
            return ['a', 'e', 'i', 'o', 'u'].includes(c.toLowerCase());
        }
        function indexOfLeftVowel(str) {
            for (var i = str.length - 1; i >= 0; i--) {
                if (isVowel(str[i])) return i;
            }
            return i;
        }
        function reverseNo(x) {
            if (Number.isNaN(Number(x)) || !Number.isInteger(Number(x))) {
                alert("Enter a valid number!");
                return;
            }
            var ans = 0;
            while (x > 0) {
                ans = ans * 10 + x % 10;
                x = Math.floor(x / 10);
            }
            return ans;
        }
        function main() {
            input1 = document.getElementById("input1");
            temp = indexOfLeftVowel(input1.value)
            document.getElementById("output1").value = temp;
        }
        function main2() {
            input1 = document.getElementById("input2");
            temp = reverseNo(input2.value)
            document.getElementById("output2").value = temp;
        }
    </script>
</head>

<body>
    Input: <input id="input1" type="text"> <br />
    Output: <input id="output1" type="text"> <br />
    <input type="button" value="Index of Left Vowel" onclick="main()"> <br />
```

```
    <hr />
    Input: <input id="input2" type="text"> <br />
    Output: <input id="output2" type="text"> <br />
    <input type="button" value="Reverse Number" onclick="main2()">
</body>

</html>
```

Output


Input: javascript
Output: 7
Index of Left Vowel
Input: 324432
Output: 234423
Reverse Number

Question 4

Write a JavaScript function that takes a string as a parameter and count occurrence of each alphabet in a given string.

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <title>4</title>
    <style>
        table {
            font-size: smaller;
        }

        table,
        th,
        td {
            border: 1px solid black;
            border-collapse: collapse;
        }
    </style>
    <script>
        /* return a map of each character count */
        function func1(s) {
            const m = new Map();
            for (let i = 0; i < s.length; i++) {
                if (m.has(s[i])) m.set(s[i], m.get(s[i]) + 1);
                else m.set(s[i], 1);
            }
            return m;
        }
        function main() {
            input1 = document.getElementById("input1");
            const m = func1(input1.value);
            tbody = document.getElementById('characters');
            tbody.innerHTML = "";
            for (const [key, value] of m) {
                console.log(key + ' = ' + value)
                row = document.createElement('tr');
                h1 = document.createElement('td'); h1.innerHTML = key;
                h2 = document.createElement('td'); h2.innerHTML = value;
                row.appendChild(h1); row.appendChild(h2);
                tbody.appendChild(row);
            }
        }
    </script>
</head>

<body>
    Input: <input id="input1" type="text">
    <input type="button" value="Count" onclick="main()">
    <table>
        <thead>
            <tr>
                <th>Character</th>
```

```
                <th>Occurrence</th>
            </tr>
        </thead>
        <tbody id="characters">
            <tr>
                <td>...</td>
                <td>...</td>
            </tr>
        </tbody>
    </table>
</body>

</html>
```

Output

Input: javascript practical Count

Character	Occurrence
j	1
a	4
v	1
s	1
c	3
r	2
i	2
p	2
t	2
	1
l	1

Assignment 5

Question 1

Write a JavaScript function to chop a string into chunks of a given length
Test Data :

```
    console.log(string_chop('welcome'));
    console.log(string_chop('welcome',2));
    console.log(string_chop('welcome',3));
Output:
    ["welcome"]
    ["we", "lc", "om", "e"]
    ["wel", "com", "e"]
```

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <title>1</title>
    <script>
        function string_chop(str, n) {
            if (n == undefined) return [str];
            const a = [];
            for (i = n; i < str.length; i += n) {
                a.push(str.substring(i - n, i));
            }
            if (i >= str.length) a.push(str.substring(i - n));
            return a;
        }
        console.log(string_chop('welcome'))
        console.log(string_chop('welcome', 1))
        console.log(string_chop('welcome', 2))
        console.log(string_chop('welcome', 3))
    </script>
</head>

<body>

</body>

</html>
```

Output

```
> console.log(string_chop('welcome'))
  ▶ ['welcome']
< undefined
> console.log(string_chop('welcome', 1))
  ▶ (7) ['w', 'e', 'l', 'c', 'o', 'm', 'e']
< undefined
> console.log(string_chop('welcome', 2))
  ▶ (4) ['we', 'lc', 'om', 'e']
< undefined
> console.log(string_chop('welcome', 3))
  ▶ (3) ['wel', 'com', 'e']
< undefined
>
```

Question 2

Write a JavaScript function to convert a string to title case.
Test Data :

```
    console.log(sentenceCase('hoW aRe YOU'));
Output:
    "How Are You"
```

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <title>2</title>
    <script>
        function helper(str) {
            if (str=='') return str;
            return str[0].toUpperCase() + str.substring(1).toLowerCase();
        }
        function sentenceCase(str) {
            return str.split(' ').map(helper).join(' ');
        }
        console.log(sentenceCase("hOW aRe YOU"));
    </script>
</head>

<body>

</body>

</html>
```

Output


How Are You
console.log(sentenceCase("hOW aRe YOU"))
How Are You
undefined

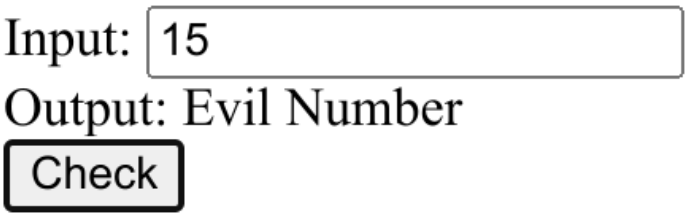
Question 3

An Evil number is a positive whole number which has even number of 1's in it's binary equivalent.
Example: 9 - 1001, contains even no of 1's. Thus 9 is evil number. Design a program to accept a positive whole number n where $n > 2$ and $n < 100$, and find if the number is evil or not.

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <title>3</title>
    <script>
        function isEvil(n) {
            c = 0;
            t = 1;
            while (n) {
                if (n & 1) c++;
                n = n >> 1;
            }
            if (c & 1) return false;
            else return true;
        }
        function evil() {
            n = Number(document.getElementById('input1').value);
            if (isNaN(n)) {
                alert("Enter a valid number")
                return;
            }
            if (n <= 2 || n >= 100) {
                document.getElementById('output').innerHTML = "Number out of Range";
                return;
            }
            if (isEvil(n)) {
                document.getElementById('output').innerHTML = "Evil Number";
            } else {
                document.getElementById('output').innerHTML = "Not and Evil number";
            }
        }
    </script>
</head>

<body>
    Input: <input id="input1" type="text"> <br>
    Output: <label id="output"></label> <br>
    <input type="button" value="Check" onclick="evil()">
</body>

</html>
```

Output



Assignment 6

Question 1

Printing an array into Zigzag fashion. Suppose you were given an array of integers, and you are told to sort the integers in a zigzag pattern. In general, in a zigzag pattern, the first integer is less than the second integer, which is greater than the third integer, which is less than the fourth integer, and so on. Hence, the converted array should be in the form of $e1 < e2 > e3 < e4 > e5 < e6$.

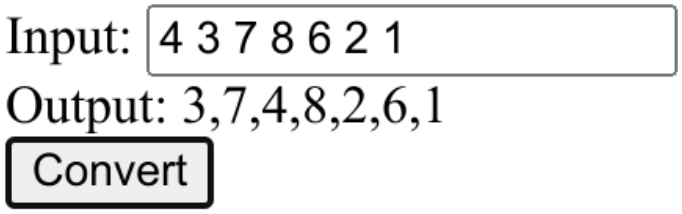
Test cases:

```
Input 1:
    7
    4 3 7 8 6 2 1
Output 1:
    3 7 4 8 2 6 1
Input 2:
    4
    1 4 3 2
Output 2:
    1 4 2 3
```

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <title>1</title>
    <script>
        function zigZag(arr) {
            flag = true;
            for (let i = 0; i <= arr.length - 2; i++) {
                if ((flag && arr[i] > arr[i + 1]) ||
                    (!flag && arr[i] < arr[i + 1])) {
                    temp = arr[i];
                    arr[i] = arr[i + 1];
                    arr[i + 1] = temp;
                }
                flag = !flag;
            }
        }
        function main() {
            arr = document.getElementById('inp').value.split(' ').map(x => Number(x));
            zigZag(arr);
            document.getElementById('output').innerHTML = arr.toString()
        }
    </script>
</head>

<body>
    Input: <input type="text" id="inp" placeholder="Enter space separated array"> <br>
    Output: <label id="output"></label> <br>
    <input type="button" onclick="main()" value="Convert">
</body>

</html>
```

Output



Question 2

The problem to rearrange positive and negative numbers in an array . Method: This approach moves all negative numbers to the beginning and positive numbers to the end but changes the order of appearance of the elements of the array. Steps:

1. Declare an array and input the array elements.
2. Start traversing the array and if the current element is negative, swap the current element with the first positive element and continue traversing until all the elements have been encountered.
3. Print the rearranged array.

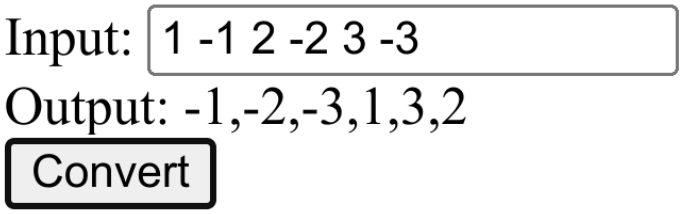
Test case:

```
Input: 1 -1 2 -2 3 -3
Output: -1 -2 -3 1 3 2
```

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <title>2</title>
    <script>
        function main() {
            var arr = document.getElementById('input').value.split(" ").map(x =>
    ↪ parseInt(x));
            let ptr = 0;
            for (let i = 0; i < arr.length; i++) {
                if (arr[i] < 0) {
                    var temp = arr[i];
                    arr[i] = arr[ptr];
                    arr[ptr] = temp;
                    ptr++;
                }
            }
            document.getElementById('output').innerHTML = arr.toString()
        }
    </script>
</head>

<body>
    Input: <input type="text" id="input" placeholder="Enter space separated array..."><
    ↪ br>
    Output: <label id="output"></label> <br>
    <input type="button" onclick="main()" value="Convert">
</body>

</html>
```

Output



Question 3

Q3: Program to find all the patterns of `0(1+)0` in the given string. Given a string containing 0's and 1's, find the total number of `0(1+)0` patterns in the string and output it. `0(1+)0` - There should be at least one '1' between the two 0's. For example, consider the following string.

```
Input: 01101111010
Output: 3
```

Explanation:

```
01101111010 - count = 1
01101111010 - count = 2
01101111010 - count = 3
```

Step to find all the patterns of `0(1+)0` in the given string

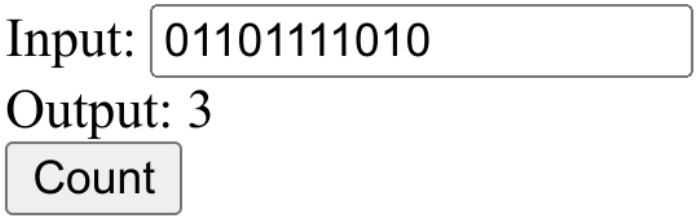
- Input the given string.
- Scan the string, character by character.
- If the given pattern is encountered, increment count.
- Print count.

Program to find all the patterns of `0(1+)0`W

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <title>3</title>
    <script>
        function main() {
            n = document.getElementById('input').value
            flag = false;
            count = 0;
            for (i = 0; i < n.length; i++) {
                if (!flag && n[i] == '0') flag = true;
                else if (flag && n[i] == '0' && n[i - 1] == '1') count++;
            }
            document.getElementById('output').innerHTML = count;
        }
    </script>
</head>

<body>
    Input: <input type="text" id="input" placeholder="Enter binary string here"> <br>
    Output: <label id="output"></label> <br>
    <input type="button" value="Count" onclick="main()">
</body>

</html>
```

Output



Question 4

Write a Java script program to o find all pairs of elements in an Array whose sum is equal to a given number.

```
Array numbers= [4, 6, 5, -10, 8, 5, 20], target=10
Output :
Pairs of elements whose sum is 10 are:
4 + 6 = 10
5 + 5 = 10
-10 + 20 = 10
```

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <title>4</title>
    <script>
        function main() {
            var arr = document.getElementById('inp').value.split(" ").map(x => parseInt
    ↪ (x));
            var target = Number(document.getElementById('target').value);
            map = {}
            arr.forEach(x => {
                if (x in map) map[x]++;
                else map[x] = 1;
            });
            ans = ""
            for (var key in map) {
                y = target - key;
                if (y in map) {
                    temp = "(" + key.toString() + "," + y.toString() + ")";
                    ans = ans + temp;
                }
                delete map[key];
            }
            document.getElementById('output').innerHTML = ans;
        }
    </script>
</head>

<body>
    Input: <br>
    Array: <input type="text" id="inp" placeholder="Enter space separated array here">
    ↪ <br>
    Target: <input type="number" id="target" placeholder="Enter target sum here"> <br>
    Output: <label id="output"></label> <br>
    <input type="button" onclick="main()" value="Solve">
</body>

</html>
```

Output

Input:
Array: 4 6 5 -10 8 5 20
Target: 10
Output: (4,6)(5,5)(20,-10)
Solve

Question 5

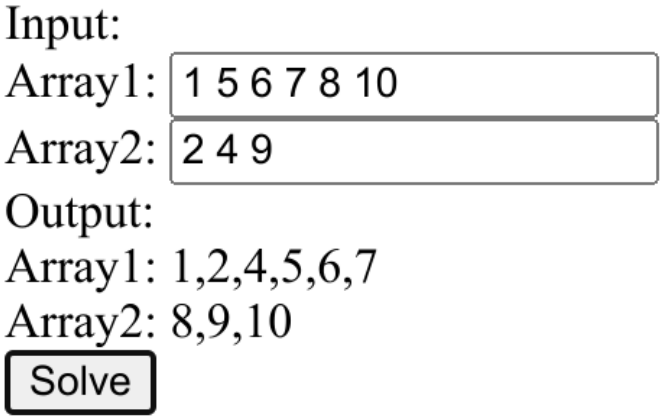
Given two sorted arrays A and B of size p and q to merge elements of A with B by maintaining the sorted order i.e. fill A with first p smallest elements and fill B with remaining elements. **Example:**

```
Input :
    int[] A = { 1, 5, 6, 7, 8, 10 }
    int[] B = { 2, 4, 9 }
Output:
Sorted Arrays:
    A: [1, 2, 4, 5, 6, 7]
    B: [8, 9, 10]
```

Code

```
<!DOCTYPE html>
<html lang="en">

<head>
    <title>5</title>
    <script>
        function main() {
            var arr1 = document.getElementById("input1").value.split(" ").map(x =>
    ↪ parseInt(x));
            var arr2 = document.getElementById("input2").value.split(" ").map(x =>
    ↪ parseInt(x));
            var arr3 = []
            var i = 0, j = 0;
            while (i < arr1.length && j < arr2.length) {
                if (arr1[i] < arr2[j]) arr3.push(arr1[i++]);
                else arr3.push(arr2[j++]);
            }
            while (i < arr1.length) arr3.push(arr1[i++]);
            while (j < arr2.length) arr3.push(arr2[j++]);
            arr1 = arr3.slice(0, arr1.length);
            arr2 = arr3.slice(arr1.length);
            document.getElementById('arr1').innerHTML = arr1.toString();
            document.getElementById('arr2').innerHTML = arr2.toString();
        }
    </script>
</head>

<body>
    Input: <br />
    Array1: <input type="text" id="input1"> <br />
    Array2: <input type="text" id="input2"> <br />
    Output: <br />
    Array1: <label id="arr1"></label> <br />
    Array2: <label id="arr2"></label> <br />
    <input type="button" onclick="main()" value="Solve">
</body>

</html>
```

Output


Input:
Array1: 1 5 6 7 8 10
Array2: 2 4 9
Output:
Array1: 1,2,4,5,6,7
Array2: 8,9,10
Solve