NEPAL COLLEGE OF INFORMATION TECHNOLOGY

Balkumari, Lalitpur

(Affiliated to Pokhara University)

A Lab Report

On

Subject:- Web Technology

Lab Report # 9

Title: - JavaScript

Submitted by:

Name: -Abiral Chaudhary

Roll No: - 221702

Faculty: - Science and Technology

Semester:second

Submitted to:

Instructor: - Simanta Kasaju

Department of Software engineering

Submission Date: - 2023/08/ 13

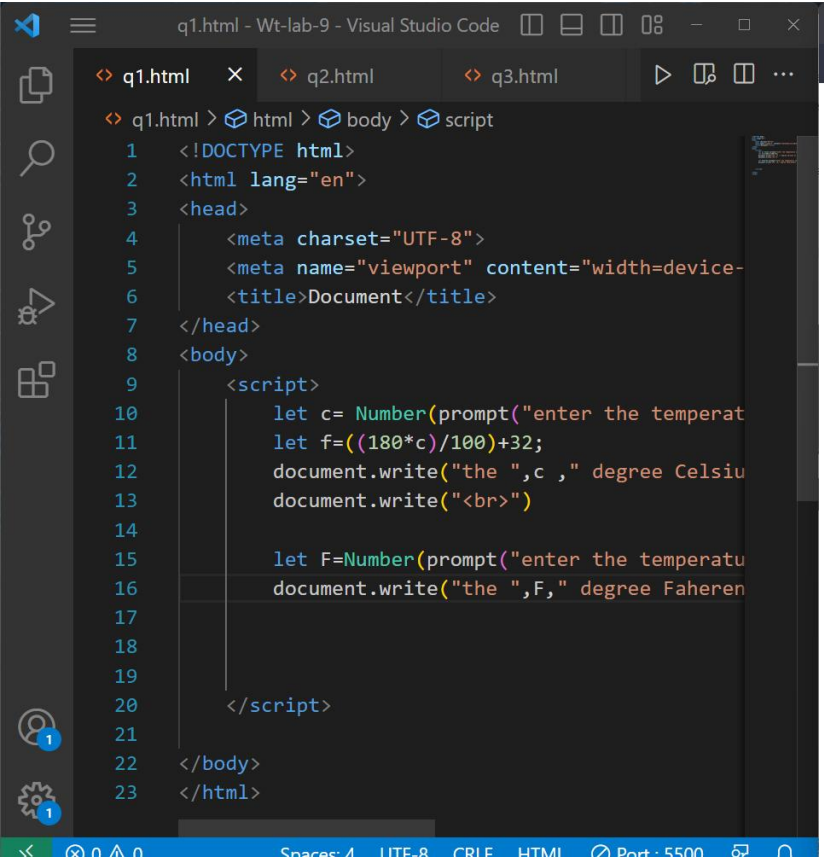
Q1.Write a JavaScript program to convert temperatures to and from Celsius, Fahrenheit

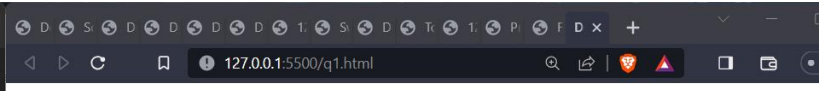
CODE:-

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
    <script>
        let c= Number(prompt("enter the temperature in celcius"));
        let f=((180*c)/100)+32;
        document.write("the ",c ," degree Celsius is ",f," degree Faherenheit" );
        document.write("<br>")

        let F=Number(prompt("enter the temperature in Faherenheit"));
        document.write("the ",F," degree Faherenheit is equal to ",(((F-32)/180)*100),"degree Celsius");
```

```
    </script>

</body>
</html>
```

OUTPUT:-





the 100 degree Celsius is 212 degree Faherenheit
the 98 degree Faherenheit is equal to 36.666666666666664degree Celsius

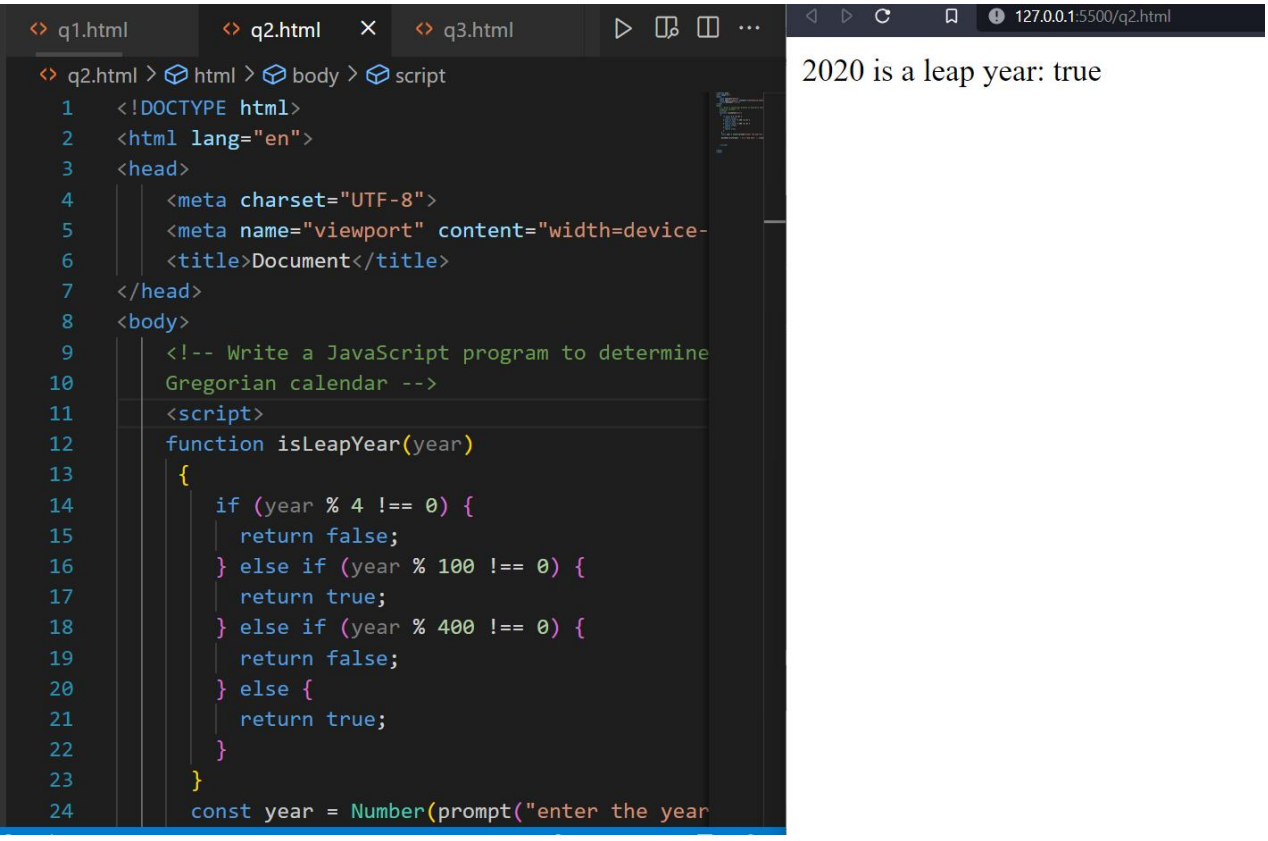
Q2:-Write a JavaScript program to determine whether a given year is a leap year in the Gregorian calendar.

CODE:-

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <!-- Write a JavaScript program to determine whether a given year is a leap year in the

    Gregorian calendar -->

    <script>

    function isLeapYear(year)

     {

        if (year % 4 !== 0) {

          return false;

        } else if (year % 100 !== 0) {

          return true;
```

```
    } else if (year % 400 !== 0) {
      return false;
    } else {
      return true;
    }
  }
  const year = Number(prompt("enter the year"));

  document.write(year, " is a leap year: ", isLeapYear(year))

</script>

</body>
</html>
```

OUTPUT:-



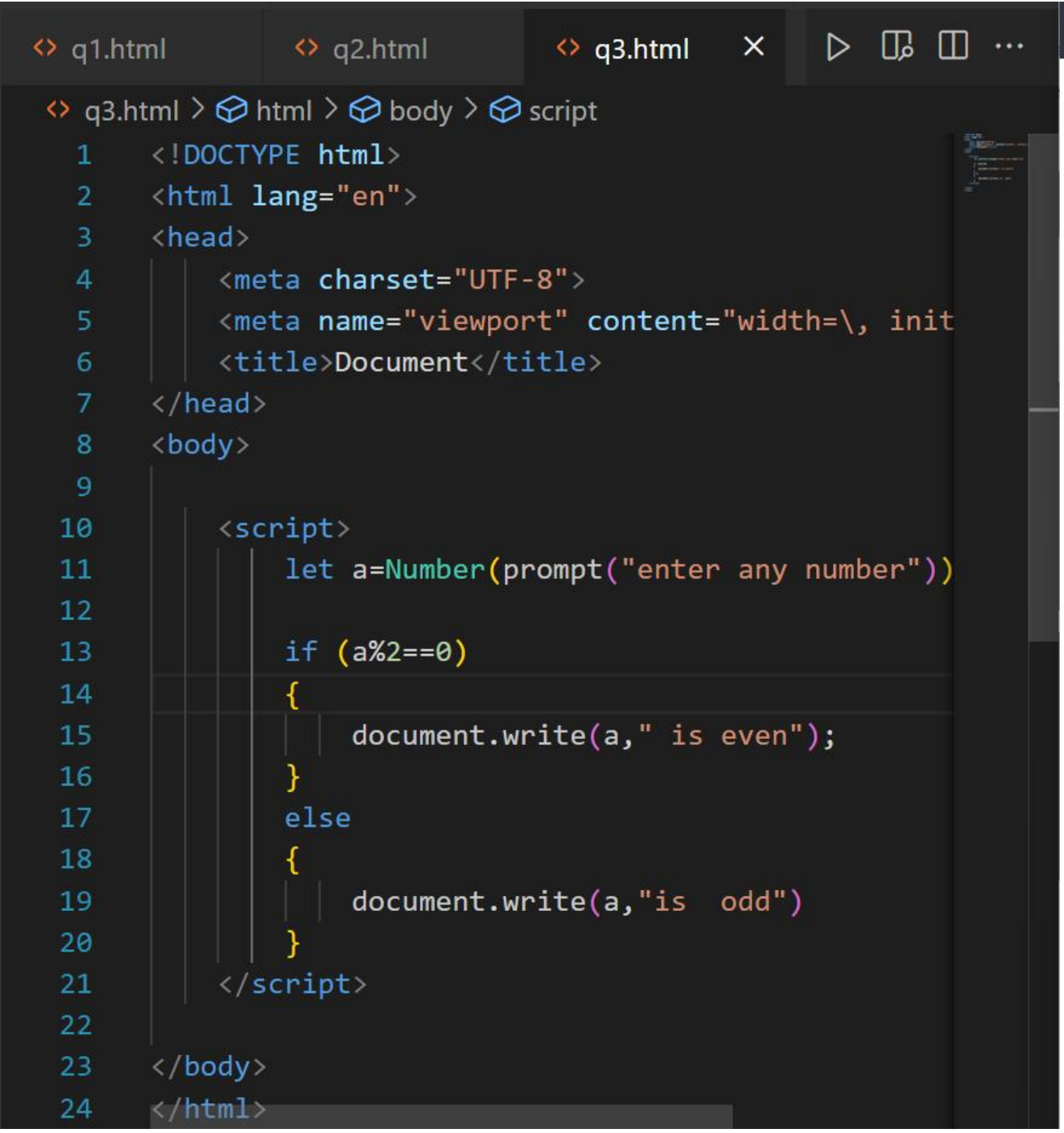
Q3.Write a JS program Using a conditional statement.

CODE:-

```
<!DOCTYPE html>
```

```html
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=\, initial-scale=1.0">
    <title>Document</title>
</head>
<body>

    <script>
        let a=Number(prompt("enter any number"));

        if (a%2==0)
        {
            document.write(a," is even");
        }
        else
        {
            document.write(a,"is  odd")
        }
    </script>

</body>
</html>
```

OUTPUT:-



Q4.Write a JS program Using every kind of loop.

CODE:-

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <script>
```

```
        document.write("for loop");
        document.write("<br>");
        for(let i=0;i<5;i++)
        {
            document.write(i);
            document.write("<br>");
        }

        document.write("<br>");
```

```
        document.write("do while loop")
        document.write("<br>");
        let i = 0;
         while (i < 5) {
         document.write(i);
         document.write("<br>");
          i++;
         }

         document.write("while loop");
         document.write("<br")
         let c=0;
         do{
            document.write(c);
            document.write("<br>");
            c++
         }while(c<10);
```

```
    </script>

</body>
</html>
```

Output:-

```
q4.html > html > body > script
1   <!DOCTYPE html>
2   <html lang="en">
3   <head>
4       <meta charset="UTF-8">
5       <meta name="viewport" content="width=device-
6       <title>Document</title>
7   </head>
8   <body>
9       <script>
10          document.write("for loop");
11          document.write("<br>");
12          for(let i=0;i<5;i++)
13          {
14              document.write(i);
15              document.write("<br>");
16          }
17
18          document.write("<br>");
19
20          document.write("do while loop")
21          document.write("<br>");
22          let i = 0;
23          while (i < 5) {
24          document.write(i);
0 ⚠ 0   Spaces: 4   UTF-8   CRLF   HTML   Port : 5500
```

```
for loop
0
1
2
3
4

do while loop
0
1
2
3
4
while loop1
2
3
4
5
6
7
8
9
```

Q5.Write a program in JavaScript to illustrate the difference between primitives and Objects.

Code:-

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
    <script>


      // premitives
let numberPrimitive = 42;
let stringPrimitive = "Hello, world!";
```

```
let booleanPrimitive = true;

let nullPrimitive = null;

let undefinedPrimitive;



// Objects

let numberObject = new Number(42);

let stringObject = new String("Hello, world!");

let booleanObject = new Boolean(true);

let arrayObject = new Array(1, 2, 3);

let objectLiteral = { name: "John", age: 30 };
```

```
document.write("Primitive Data Types:");

document.write(numberPrimitive); // 42

document.write(stringPrimitive); // "Hello, world!"

document.write(booleanPrimitive); // true

document.write(nullPrimitive); // null

document.write(undefinedPrimitive); // undefined
```

```
document.write("\n Objects:");

document.write(numberObject); // [Number: 42]

document.write(stringObject); // [String: 'Hello, world!']

document.write(booleanObject); // [Boolean: true]

document.write(arrayObject); // [1, 2, 3, 4]

document.write(objectLiteral); // { name: 'John', age: 30 }
```

```
    </script>



</body>

</html>
```

Output:-

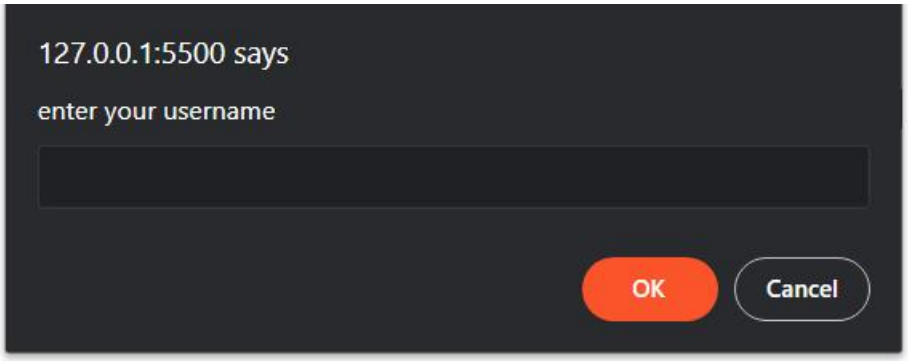
Primitive Data Types:42Hello, world!truenullundefined
Objects:42Hello, world!true1,2,3[object Object]

Q6.Write a program in JavaScript that takes a username as input from the Prompt box and displays that name as an output in the Alert box.

Code:-

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <script>

        let name=prompt("enter your username");

        alert(name);

    </script>


</body>

</html>
```

Output:-

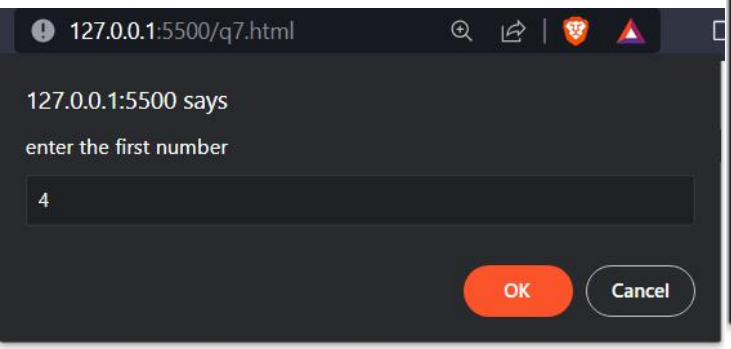


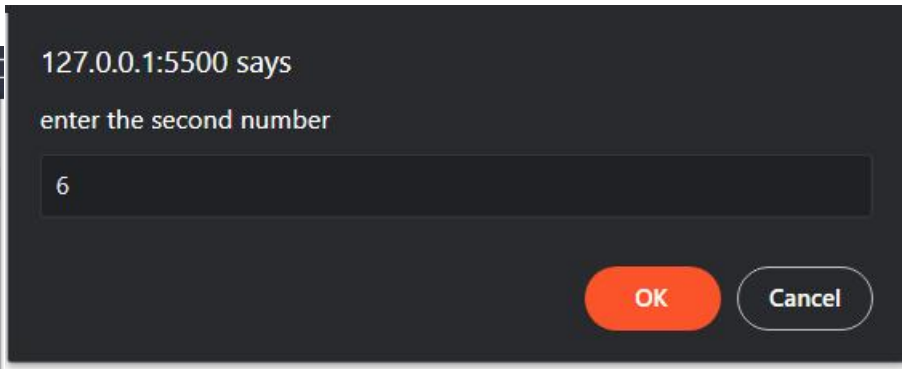
Q7.Write a program and execute it in JavaScript to display a prompt for 2 numbers and show its sum, difference, Multiplication, and Division in the alert box after confirming with the user.

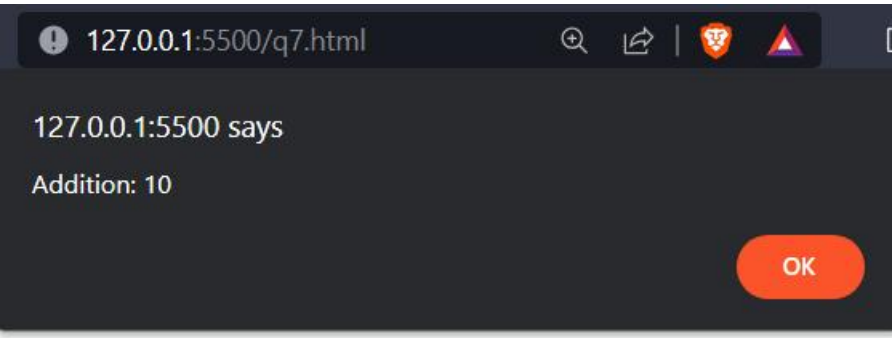
code

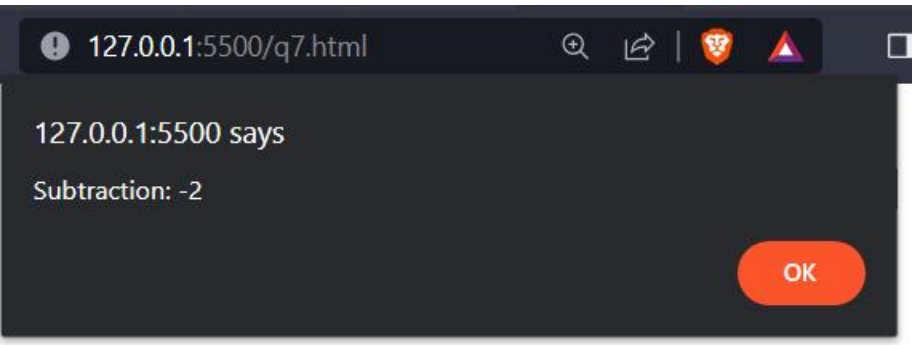
```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
    <script>
        let num1=Number(prompt("enter the first number"));
        let num2=Number(prompt("enter the second number"));
        let num3=num1+num2;
        let num4=num1-num2;
        let num5=num1*num2;
        let num6=num1/num2;



        alert("Addition: " + num3);
        alert("Subtraction: " + num4);
        alert("Division: " + num6);
       alert("Multiplication: " + num5);
    </script>

</body>
</html>
```

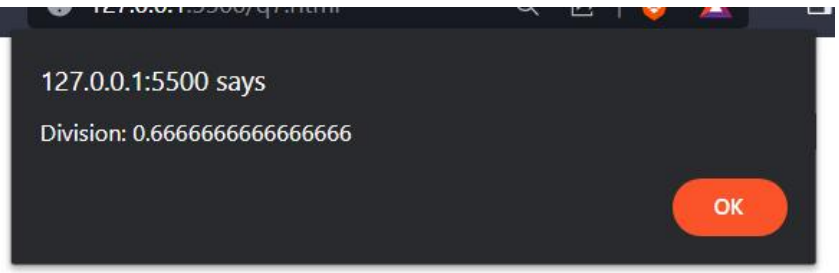
Output:-

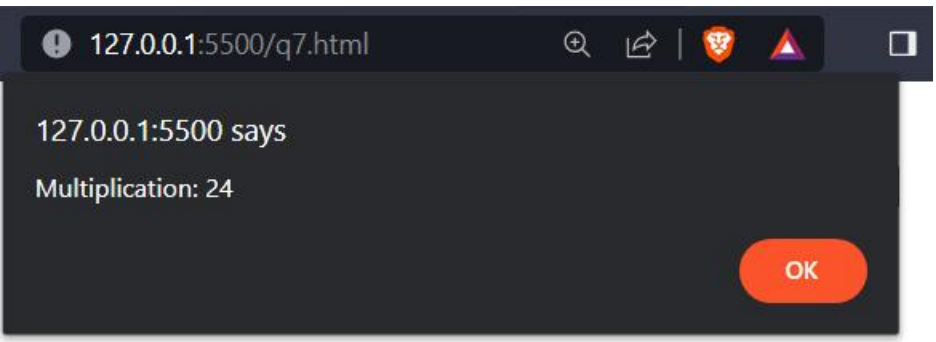

127.0.0.1:5500/q7.html
127.0.0.1:5500 says
enter the first number
4
OK
Cancel


127.0.0.1:5500 says
enter the second number
6
OK
Cancel


127.0.0.1:5500/q7.html
127.0.0.1:5500 says
Addition: 10
OK


127.0.0.1:5500/q7.html
127.0.0.1:5500 says
Subtraction: -2
OK


127.0.0.1:5500 says
Division: 0.6666666666666666
OK


127.0.0.1:5500/q7.html
127.0.0.1:5500 says
Multiplication: 24
OK

Q8.Write a JS program that includes all kinds of operators (refer to slides for the operator).

Code:-

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <script>

                // Arithmetic Operators

    let a = 10;

    let b = 5;

    let resultAdd = a + b;

    let resultSubtract = a - b;

    let resultMultiply = a * b;

    let resultDivide = a / b;

    let resultModulus = a % b;

    let resultIncrement = ++a;

    let resultDecrement = --b;



    document.write("Arithmetic Operators:");

    document.write("<br>");

    document.write(a);

    document.write("<br>");

    document.write(b);

    document.write("<br>");

    document.write("Addition:", resultAdd);

    document.write("<br>");

    document.write("Subtraction:", resultSubtract);
```

```
document.write("<br>");
document.write("Multiplication:", resultMultiply);
document.write("<br>");
document.write("Division:", resultDivide);
document.write("<br>");
document.write("Modulus:", resultModulus);
document.write("<br>");
document.write("Increment:", resultIncrement);
document.write("<br>");
  document.write("Decrement:", resultDecrement);
 document.write("<br>");
```

```
 // Assignment Operators
  let c = 15;
c += 2; // equivalent to c = c + 2;
c -= 3; // equivalent to c = c - 3;
c *= 4; // equivalent to c = c * 4;
 c /= 5; // equivalent to c = c / 5;
 c %= 6; // equivalent to c = c % 6;
```

```
document.write("\nAssignment Operators:");
 document.write("c after assignments:", c);
```

```
 // Comparison Operators
 let num1 = 10;
let num2 = 5;
```

```
 console.log("\nComparison Operators:");
 console.log("num1 > num2:", num1 > num2);
 console.log("num1 >= num2:", num1 >= num2);
 console.log("num1 < num2:", num1 < num2);
 console.log("num1 <= num2:", num1 <= num2);
 console.log("num1 === num2:", num1 === num2);
console.log("num1 !== num2:", num1 !== num2);
```

```
 // Logical Operators
```

```
    let x = true;
    let y = false;

    console.log("\nLogical Operators:");
    console.log("x && y:", x && y); // Logical AND
    console.log("x || y:", x || y); // Logical OR
    console.log("!x:", !x); // Logical NOT

    // Bitwise Operators
    let num3 = 5;
    let num4 = 3;

    console.log("\nBitwise Operators:");
    console.log("num3 & num4:", num3 & num4); // Bitwise AND (0001 -> 1)
    console.log("num3 | num4:", num3 | num4); // Bitwise OR (0111 -> 7)
    console.log("num3 ^ num4:", num3 ^ num4); // Bitwise XOR (0110 -> 6)
    console.log("~num3:", ~num3); // Bitwise NOT (1010 -> -6)
    console.log("num3 << 1:", num3 << 1); // Bitwise Left Shift (1010 -> 10)
    console.log("num4 >> 1:", num4 >> 1); // Bitwise Right Shift (0001 -> 1)

    // Ternary Operator
    let age = 18;
    let isAdult = age >= 18 ? "Adult" : "Minor";
    console.log("\nTernary Operator:");
    console.log("isAdult:", isAdult);


    </script>

</body>
</html>
```

Output:-

Arithmetic Operators:
11
4
Addition:15
Subtraction:5
Multiplication:50
Division:2
Modulus:0
Increment:11
Decrement:4
Assignment Operators:c after assignments:5.199999999999999

Q9:-Write a program and execute it in JavaScript to compute the real roots of the quadratic equation, asking for the user's coefficients of equation (a,b,c). [Use prompt, Math. sqrt]

Code:-

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <script>

        let a=Number(prompt("enter the cofficient of X^2"));

        let b= Number(prompt("enter the coefficient of x"));

        let c=Number(prompt("enter the constant term"));



        let det=Math.sqrt(b*b-4*a*c);



        if((b*b-4*a*c)>=0)
```

```
        {
            if(det==0)
            {
                document.write("the roots are equal and they are",(-b/(2*a)))
            }
            else

            {
                document.write("The roots are not equal ");
                document.write("the first root is ",((-b-det)/(2*a)));
                document.write("<br>");
                document.write("the first root is ",((-b+det)/(2*a)));

            }

        }
        else{
            document.write("Roots are imaginary");
        }
    </script>

</body>
</html>
```

Output:

The roots are not equal the first root is -4.561552812808831
the first root is -0.4384471871911697

Q10.Write a JavaScript that calculates the squares and cubes of the numbers from 0 to 10 and outputs HTML text that displays the resulting values in an HTML table format.

Code:-

```html
<!DOCTYPE html>
<html>
<head>
  <title>Squares and Cubes</title>
</head>
<body>
  <h2>Squares and Cubes</h2>
  <table border="2px">
    <tr>
      <th>Number</th>
      <th>Square</th>
      <th>Cube</th>
    </tr>
    <script>

      function calculateSquaresAndCubes(num) {
        return [num * num, num * num * num];
      }



      for (let i = 0; i <= 10; i++) {
        const [square, cube] = calculateSquaresAndCubes(i);
        document.write(`
          <tr>
            <td>${i}</td>
            <td>${square}</td>
            <td>${cube}</td>
          </tr>
        `);
      }
    </script>
  </table>
</body>
</html>
```

Output:

Squares and Cubes

Number	Square	Cube
0	0	0
1	1	1
2	4	8
3	9	27
4	16	64
5	25	125
6	36	216
7	49	343
8	64	512
9	81	729
10	100	1000

Q11.Write a JS program to check whether a given number is even or odd.

Code:-

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <script>

        let num=Number(prompt("enter a number"));
```

```
        if(num%2==0)
        {
            document.write(num," is even");
        }
        else{
            document.write(num," is odd")
        }
    </script>

</body>
</html>
```

Output:-

2 is even

Q12. Write a JS program to print the multiplication table of a number provided by user.

Code:-

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
    <table border="1" align="center">
      <tr>
        <th>Number</th>
        <th>Product</th>
        <th>result </th>
      </tr>
    <script>
        let a=Number(prompt('Enter a no.'));
        let n=Number(prompt('range'));
        for(let i=1;i<=n;i++){
```

```
            document.write("<tr>");

            document.write("<td bgcolor='green'>",a,"*</td>");

            document.write("<td bgcolor='blue'>",i,"</td>");

            document.write("<td bgcolor='red'>",a*i,"</td>");



            document.write("</tr>");

        }

    </script>


</table>

</body>

</html>
```

Output:-

Number	Product	result
13*	1	13
13*	2	26
13*	3	39
13*	4	52

Q13.WAP to use switch case.

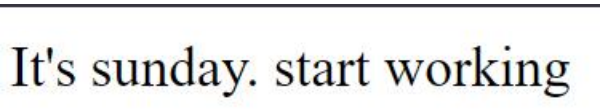
Code:-

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Switch Case Example</title>

</head>

<body>



    <script>

        let dayOfWeek = prompt("Enter a day of the week  :");



        switch(dayOfWeek.toLowerCase()) {
```

```
        case "monday":
            document.write("It's Monday.  push");
            break;
        case "tuesday":
            document.write("It's Tuesday. Keep going!");
            break;
        case "wednesday":
            document.write("It's Wednesday. Halfway through the week!");
            break;
        case "thursday":
            document.write("It's Thursday. Almost there!");
            break;
        case "friday":
            document.write("It's Friday. Weekend is coming!");
            break;
        case "saturday":
            document.write("It's Saturday. Enjoy your weekend!  Relax and recharge!");
            break;
        case "sunday":
            document.write("It's  sunday. start working");
            break;
        default:
            document.write("Invalid input or day not recognized.");
    }
</script>
```

```
</body>
</html>
```

Output:-



Q14.WAP in jS that display and hide the paragraph.

Code:-

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
    <!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Show/Hide Paragraph</title>
    <style>


    </style>
</head>
<body>
    <button onclick="toggleParagraph()">Toggle Paragraph</button>
    <p id="hiddenParagraph">This paragraph can be shown and hidden.</p>


    <script>
        function toggleParagraph() {
            const paragraph = document.getElementById("hiddenParagraph");
            if (paragraph.style.display === "none") {
                paragraph.style.display = "block";
            } else {
                paragraph.style.display = "none";
            }
        }
    </script>
</body>
</html>
```

```
</body>

</html>
```

Q15.WAP to display today’s date in the red box.

Code:-

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Today's Date in Red Box</title>

    <style>



        .red-box {

            border: 2px solid red;

            padding: 10px;

            display: inline-block;

        }

    </style>

</head>

<body>

    <div class="red-box" id="dateBox"></div>



    <script>



        function displayTodayDate() {

            const dateBox = document.getElementById("dateBox");

            const today = new Date();
```

```
            const options = {

                weekday: 'long',

                year: 'numeric',

                month: 'long',

                day: 'numeric'
```

```
            };

            const dateString = today.toLocaleDateString('en-US', options);


            dateBox.innerText = dateString;

        }


        displayTodayDate();

    </script>

</body>

</html>
```

Output:-

Q16.WAP uses type of operator.

Code:-

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Document</title>

</head>

<body>

    <script>

        let a=1;

        document.write(a);

        document.write(":")

        document.write(typeof(a));

        document.write("<br>");


        let  b="abc";
```

```
        document.write(b);
        document.write(":");
        document.write(typeof(b));

        let c=null;
        document.write("<br>");
        document.write(c);
        document.write(":");
        document.write(typeof(c));

        let d=true;
        document.write("<br>");
        document.write(d);
        document.write(":");
        document.write(typeof(d));


    </script>

</body>
</html>
```

Output:-

1:number
abc:string
null:object
true:boolean

Q17.WAP that displays all kind of times

Code:-

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
    <style>
```

```
        div{
            background-color: red;
        }
    </style>
</head>
<body>
    <div id="Clock"></div>
    <script>
        function clock(){
    let time=new Date();
    let hour=time.getHours();
    let min=time.getMinutes();
    let sec=time.getSeconds();
    let meri="AM";
    if(hour>12)
    {
    hour-=12;
    meri="PM";
    }
     if(hour==0)
    {
     hour=12;
    }
    if(min<10)
    {
   min="0"+min;
    }
   if(sec<10)
   {
   sec="0"+sec;
   }
   let ghadi=hour+":"+min+":"+sec+meri;
   document.getElementById("Clock").innerHTML=ghadi;


    }
        setInterval(clock,1000);
```

```
    </script>

</body>

</html>
```

Output:-

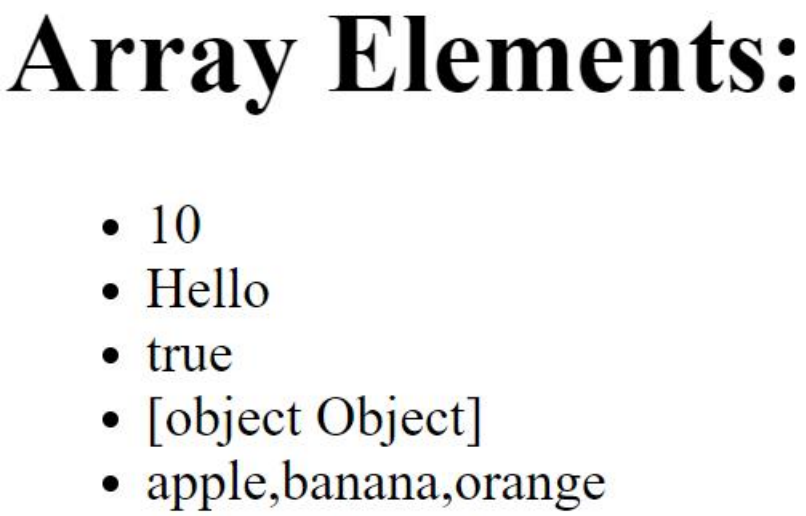
Q18.WAP that includes array.(To print the object of array)

Code:-

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Print Array Elements</title>

</head>

<body>

    <h1>Array Elements:</h1>

    <ul id="array-list"></ul>



    <script>


        const myArray = [10, 'Hello', true, { name: 'John', age: 30 }, ['apple', 'banana', 'orange']];



        const arrayList = document.getElementById('array-list');



        function printArrayElements() {


            arrayList.innerHTML = '';


            myArray.forEach(element => {

                const listItem = document.createElement('li');

                listItem.textContent = element;

                arrayList.appendChild(listItem);

            });
```

```
        }


        printArrayElements();
    </script>
</body>
</html>
```

Output:-



Q19.Write a JS to create a table of family with Id,Name, Gender,Salary refer below table

Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Family Table</title>
</head>
<body>
    <h1>Family Table</h1>
```

```
<div id="table-container"></div>

<script>

    const familyData = [
        { id: 1, name: 'Johnathan', gender: 'Male', salary: 50000 },
        { id: 2, name: 'Marycee', gender: 'Female', salary: 45000 },
        { id: 3, name: 'Alice', gender: 'Female', salary: 60000 },
        { id: 4, name: 'Boblu', gender: 'Male', salary: 55000 },
    ];


    function createFamilyTable() {
        const tableContainer = document.getElementById('table-container');
        const table = document.createElement('table');
        table.border = '1';


        const headers = ['Id', 'Name', 'Gender', 'Salary'];
        const headerRow = document.createElement('tr');

        headers.forEach(headerText => {
            const headerCell = document.createElement('th');
            headerCell.textContent = headerText;
            headerRow.appendChild(headerCell);
        });

        table.appendChild(headerRow);


        familyData.forEach(familyMember => {
            const row = document.createElement('tr');
            for (const key in familyMember) {
                const cell = document.createElement('td');
                cell.textContent = familyMember[key];
                row.appendChild(cell);
```

```
            }
            table.appendChild(row);
        });
```

```
        tableContainer.appendChild(table);
    }
```

```
    createFamilyTable();
</script>
</body>
</html>
```

Output:-

Family Table

Id	Name	Gender	Salary
1	Johnathan	Male	50000
2	Marycee	Female	45000
3	Alice	Female	60000
4	Boblu	Male	55000