Module (JAVASCRIPT BASIC & DOM) – 4

(Basic logic Question)

1) What is JavaScript. How to use it?

→ JavaScript is a scripting language used to develop web pages.
→ Developed in Netscape, JS allows developers to create a dynamic and interactive web page to interact with visitors and execute complex actions.
→ It also enables users to load content into a document without reloading the entire page.

2) How many type of Variable in JavaScript?

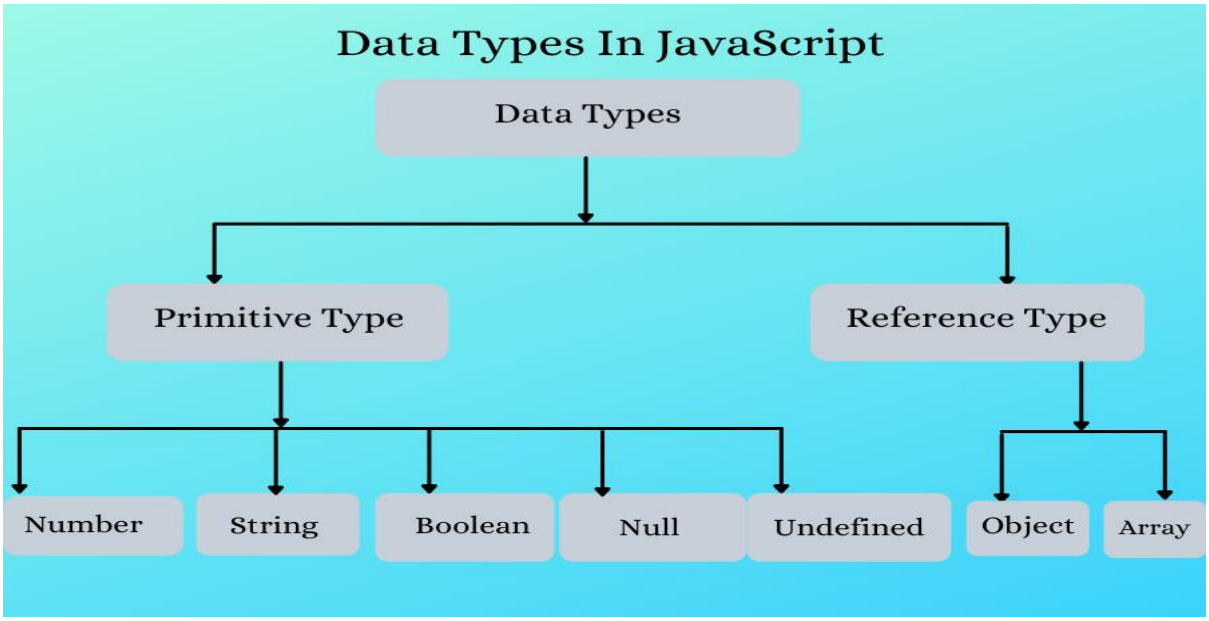
→ There are two types of variable in javascript :

A) Local variable

B) Global variable

3) Define a Data Types in js?

→ Data types in JavaScript define the data type that a variable can store.
→ JavaScript includes primitive and non-primitive data types.
→ The primitive data types in JavaScript include string, number, boolean, undefined, null, and symbol.
→ The non-primitive data type includes the object.
EX:-

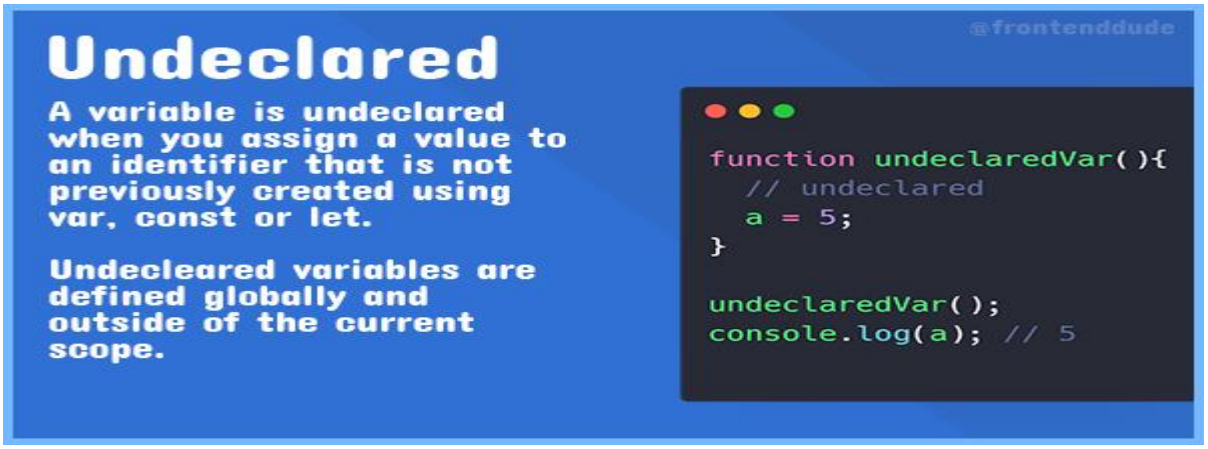


4) Write a mul Function Which will Work Properly When invoked With Following Syntax.

→
```
function mul(num1){
       function mul1(num2){
            function mul2(num3){
                  return num1*num2*num3;
            }; // end of mul2()
            return mul2;
      }; // end of mul1()
      return mul1;
} // end of mul()
```

5) What the deference between undefined and undeclare in JavaScript?

→ Undeclared variables are those that have not been declared or defined in the current scope, while undefined variables are those that have been declared but not given a value.
EX:-



6) Using console.log() print out the following statement: The quote 'There is no exercise better for the heart than reaching down and lifting people up.' by John Holmes teaches us to help one another. Using console.log() print out the following quote by Mother Teresa:

→

7) Check if typeof '10' is exactly equal to 10. If not make it exactly equal?

→

❖ INPUT:-

<!DOCTYPE html>

<html> <body>

<h1>JavaScript Operators</h1>

<h2>The typeof Operator</h2>

The typeof operator returns the type of a variable or an expression:

```
<script>
document.getElementById("demo").innerHTML =
"'jayraj' is " + typeof "jayraj" + "<br><br>" +
"('jayraj' + 'jayraj') is " + typeof ("jayraj" + "jayraj") + "<br><br>" +
"3.14 is " + typeof 3.14 + "<br><br>" +
"33 is " + typeof (33 + 66) + "<br><br>" +
"(33 + 66) is " + typeof 33 + "<br><br>" +
"NaN is " + typeof NaN + "<br><br>" +
"true is " + typeof true + "<br><br>" +
"false is " + typeof false + "<br><br>" +
"1234n is " + typeof 1234n + "<br><br>" +
"Symbol() is " + typeof Symbol() + "<br><br>" +
"x is " + typeof x;
</script>
 </body>  </html>
```

❖ OUTPUT :-

★ JavaScript Operators.
★ The typeof Operator.
★ The typeof operator returns the type of a variable or an expression:

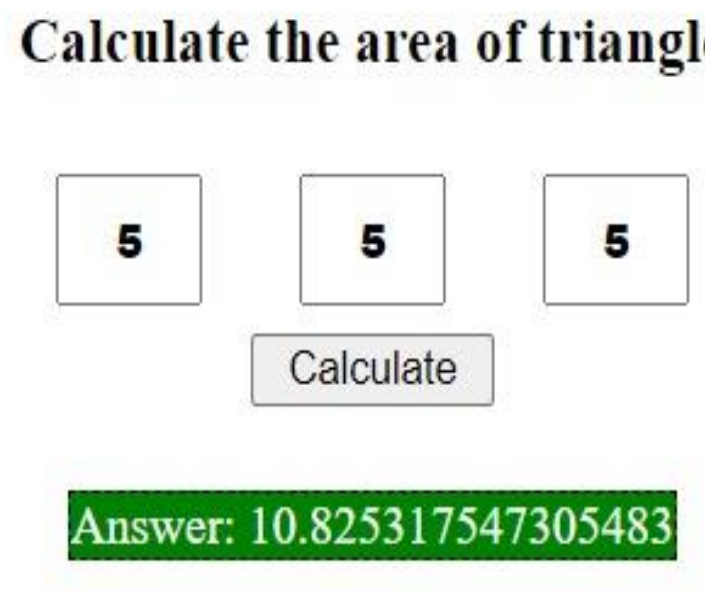
– 'jayraj' is string
– ('jayraj' + 'jayraj') is string
– 3.14 is number
– 33 is number
– (33 + 66) is number
– NaN is number
– true is boolean
– false is boolean
– 1234n is bigint
– Symbol() is symbol
– x is undefined

8) Write a JavaScript Program to find the area of a triangle?

```
❖ <html>
❖ <head>
❖ <title> Area of triangle </title>
❖ <style>
★ Body {
  display: flex;
  flex-direction: column;
  align-items: center;
  gap: 15px;
  }
★ Div {
  display: flex;
  gap: 2rem;
  place-content: center;
  }
★ Input {
  width:30px;
  padding: 15px;
  font-weight: 800;
  text-align: center;
  }
★ Button {
  width: 15px;
  }
★ #ans {
  border: 1px dashed black;
  background-color: green;
  color: white;
  }
❖ </style>
❖ </head>
❖ <body>
❖ </body>
★ <h3> Calculate the area of triangle </h3>
★ <div>
★ <input type="text" id="a"> <input type="text" id="b
★ <input type="text" id="c"> </div>
★ <button onclick="cal()">Calculate</button>
★ <p id="ans"></p>
❖ <script>
★ cal = () => { const a =
```

★ parseInt(document.getElementById("a").value); const b =
★ parseInt(document.getElementById("b").value); const c =
★ parseInt(document.getElementById("c").value); const sp =
★ (a+b+c)/2; const area = Math.sqrt(sp*((sp-a)*(sp-b)*(sp
★ c))); document.getElementById("ans").innerHTML =
★ "Answer:"+area; }
❖ </script>
❖ </html>

– OUTPUT :-



9) Write a JavaScript program to calculate days left until next Christmas?

→ INPUT :-

❖ <!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>
❖
❖ </body>
❖ <script>
★ today=new Date();
★ var cmas=new Date(today.getFullYear(), 11, 25);
★ if (today.getMonth()==11 && today.getDate()>25)

```
★ {
★ cmas.setFullYear(cmas.getFullYear()+1);
★ }
★ var one_day=1000*60*60*24;
★ document.write("<br> <br> <br> <br> <br> <br>  ");
★ document.write("Output:- <br><br><br>")
★ document.write(Math.ceil((cmas.getTime()-today.getTime())/(one_day))+
★ " days left until Christmas!");
❖ </script>
❖ </html>
```

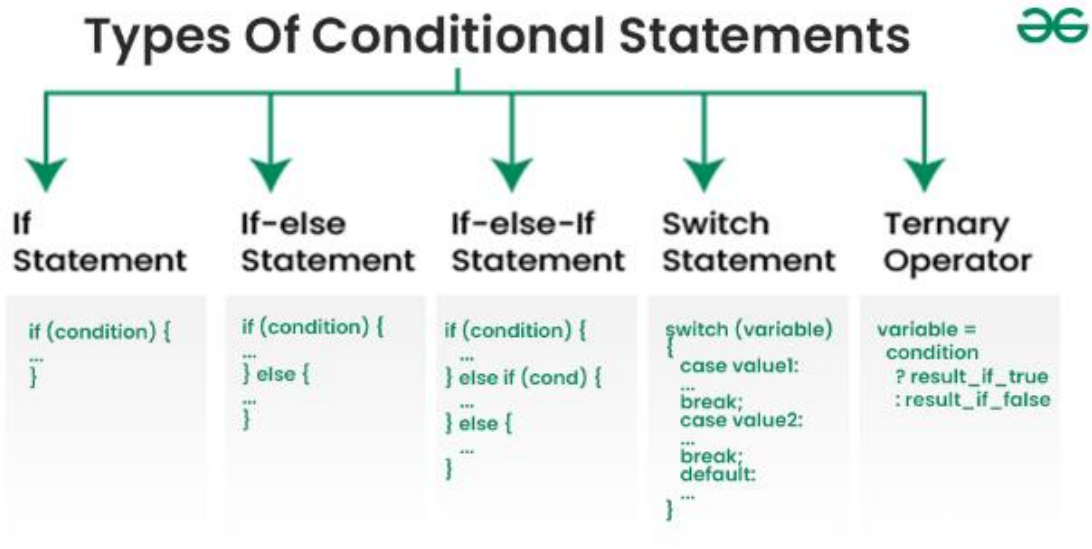
→ OUTPUT :-

Output:-

209days left until Christmas!

10) What is Condition Statement?

→ Conditional statements are those statements where a hypothesis is followed by a conclusion.
→ It is also known as an " If-then" statement.
→ If the hypothesis is true and the conclusion is false, then the conditional statement is false.
→ Likewise, if the hypothesis is false the whole statement is false.
  ❖ EX:-



11) Find circumference of Rectangle formula : C = 4 * a ?

→ INPUT :-

- ❖ <!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>
- ❖ </body>
- ❖ <script>
- ★ function findArea(width, height) {
  return width * height;
  }
- ★ function findPerimeter(width, height) {
  return 2 * (width + height);
  }
- ★ var width = 5;
- ★ var height = 10;
- ★ var area = findArea(width, height);
- ★ var perimeter = findPerimeter(width, height);
- ★ document.write("

 Output :-");
- ★ document.write("

 Area of rectangle: " + area);

★ document.write("

 Perimeter of rectangle: " + perimeter);
❖ </script>
❖ </html>

➢ Output :-

Output :-

Area of rectangle: 50

Perimeter of rectangle: 30

12) WAP to convert years into days and days into years?

→ Input :-

❖ <!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>
❖
❖ </body>
❖ <script>
★ function getAge(date_1, date_2) {
★ var date2_UTC = new Date(Date.UTC(date_2.getUTCFullYear(), date_2.getUTCMonth(), date_2.getUTCDate()));
★ var date1_UTC = new Date(Date.UTC(date_1.getUTCFullYear(), date_1.getUTCMonth(), date_1.getUTCDate()));

★ var year, month, day;
★ var days = date2_UTC.getDate() - date1_UTC.getDate();
➢ if (days < 0) {

```
date2_UTC.setMonth(date2_UTC.getMonth() - 1);
days += DaysInMonth(date2_UTC);
}
var months = date2_UTC.getMonth() - date1_UTC.getMonth();
if (months < 0) {
date2_UTC.setFullYear(date2_UTC.getFullYear() - 1);
months += 12;
}
var years = date2_UTC.getFullYear() - date1_UTC.getFullYear();
if (years > 1) year = " years";
else year = " year";
if (months > 1) month = " months";
else month = " month";
if (days > 1) day = " days";
else day = " day";
document.write("<br><br><br><br>Output :- <br><br><br><br>")
return years + year + ", <br><br> " + months + month + ", <br><br> " +
        days + day + "";
}
function DaysInMonth(date2_UTC) {
   var monthStart = new Date(date2_UTC.getFullYear(),
date2_UTC.getMonth(), 1);

 var monthEnd = new Date(date2_UTC.getFullYear(),
        date2_UTC.getMonth() + 1, 1);

  var monthLength = (monthEnd - monthStart) / (1000 * 60 * 60 * 24);
   return monthLength;
}
document.write(getAge(new Date(1978, 11, 22), new Date()))
</script>
</html>
```

- Output :-

Output :-

45 years,

5 months,

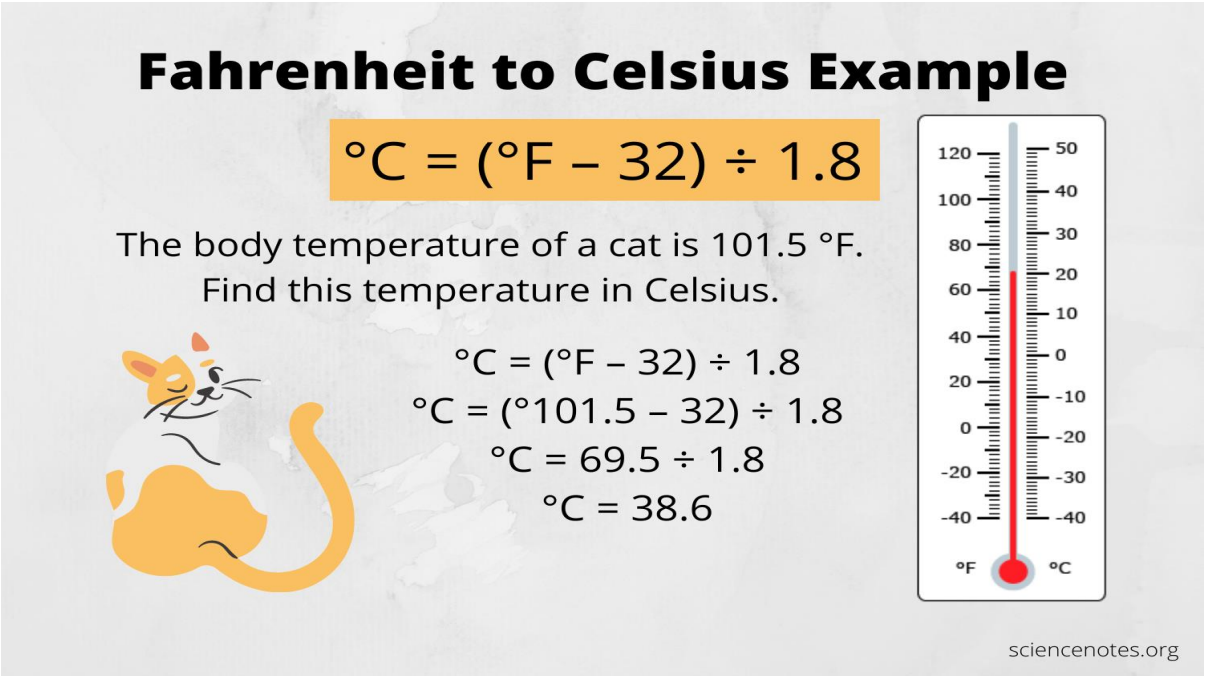
9 days

13) Convert temperature Fahrenheit to Celsius? (Conditional logic Question)

→ To convert Fahrenheit to Celsius, subtract 32 from the Fahrenheit temperature and then multiply the result by 5/9.

→ let fahrenheit = 285; let celsius = (fahrenheit - 32) * 5/9; console. log(celsius); The answer is approximately 140.56 degrees Celsius.

➢ EX :-



14) Write a JavaScript exercise to get the extension of a filename.?

→ Input :-

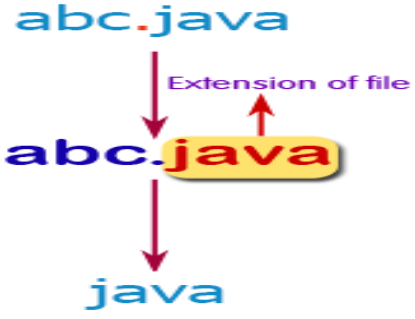
```
<!DOCTYPE html>
<html lang="en">
<head>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-
        scale=1.0">
        <link rel="stylesheet" href="">
 <title>Document</title>
</head>
<body>
   <p id="one"></p>
   <p id="two"></p>
</body>
<script>
   document.write("<br><br><br> &#xf30b;      Output
        <br><br><br>")
  filename = "system.php"
   document.write("&#xf35a;   " +
        filename.split('.').pop() + "<br><br>");
 filename = "abc.js"
   document.write( "&#xf35a;   " +
filename.split('.').pop());
</script>
</html>
```

➢ Output : -

□ Output

□ php

□ js



15) What is the result of the expression (5 > 3 && 2 < 4)?

→ The result is true, because both conditions are true.

16) What is the result of the expression (true && 1 && "hello")?

→ The result is "hello", because all the operands are truthy, and the "&&" operator returns the last truthy operand.

17) What is the result of the expression true && false || false && true?

→ A coworker and I have tried to work this out and the closest thing we could come up with is that the statement is being evaluated by order of precedence.

→ According to the MDN Operator Precedence logical-and has a higher precidence over logical-or, suggesting that the condition is evaluated as if false && true were a single statement, which then moves on to determine the boolean condition of false || true which is then true. Written out, this would be:- (false && true) || true

18) What is a Loop and Switch Case in JavaScript define that ?

→ -> JavaScript switch <-

❖ <!DOCTYPE html>

❖ <html>

❖ <body>

```
<h2>JavaScript switch</h2>
<p id="demo"></p>
```

❖ <script>

```
let day;
switch (new Date().getDay()) {
  case 0:
   day = "Sunday";
   break;
  case 1:
   day = "Monday";
    break;
  case 2:
    day = "Tuesday";
    break;
  case 3:
    day = "Wednesday";
```

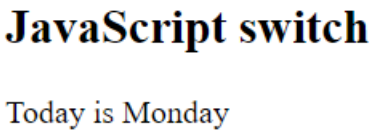
```
    break;
  case 4:
    day = "Thursday";
    break;
  case 5:
    day = "Friday";
    break;
  case  6:
    day = "Saturday";
}
document.getElementById("demo").innerHTML = "Today is " + day;
```

❖ </script>

❖ </body>

❖ </html>

★ Out put:-



19) What is the use of is Nan function?

→ isNaN() returns true if a number is Not-a-Number.

→ In other words: isNaN() converts the value to a number before testing it.

EX:-

★ INPUT :-

❖ <!DOCTYPE html>

- <html>
- <body>
  <h1 style="margin-left:200px;margin-top:200px;">JavaScript Global Methods</h1>
  <h2 style="margin-left:220px;">The isNaN() Method</h2>
  isNaN() returns true if a value is NaN:

- <script>
  let result =
  "Is 123 NaN? " + isNaN(123) + "
" +
  "Is -1.23 NaN? " + isNaN(-1.23) + "
" +
  "Is 5-2 NaN? " + isNaN(5-2) + "
" +
  "Is 0 NaN? " + isNaN(0)+ "
"+
  "Is '123' NaN? " + isNaN('123') + "
" +
  "Is 'Hello' NaN? " + isNaN('Hello') + "
" +
  "Is '2005/12/12' NaN? " + isNaN('2005/12/12');
  document.getElementById("demo").innerHTML = result;

- </script>
- </body>
- </html>
  - ★ Output:--

JavaScript Global Methods

The isNaN() Method

isNaN() returns true if a value is NaN:

Is 123 NaN? false
Is -1.23 NaN? false
Is 5-2 NaN? false
Is 0 NaN? false
Is '123' NaN? false
Is 'Hello' NaN? true
Is '2005/12/12' NaN? true

20) What is the difference between && and || in JavaScript?

→ If the expression on the left of && is falsy, it will immediately return false without checking the expression on the right.
→ If the expression on the left of || is truthy, it will immediately return true without checking the expression on the right.
→ (This is called “short circuiting”.)

21) What is the use of Void (0)?

→ The void operator evaluates an expression and returns undefined .
→ By running void(0) in the URL JavaScript code, nothing is evaluated or returned.

❖ Input:--

```
❖ <!DOCTYPE html>
❖ <html lang="en">
❖ <head>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width,
  initial-scale=1.0">
        <title>GeeksforGeeks</title>
        <style>
            h1 {
                color: green;
            }
        </style>
❖ </head>

❖ <body>
        <h1>GeeksforGeeks</h1>
        <h3>without JavaScript:void(0)</h3>
        <a href="#" ondblclick="alert('Welcome to Geeks for
  Geeks')">
            Double click on me
        </a>
        <a href="#" ondblclick="geeks()">
            Double click on me
        </a>
        <script>
            function geeks() {
```

```
                document.getElementById("gfg").innerHTML =
                'Welcome to GeeksforGeeks';
            }
        </script>
        <p id="gfg"></p>
    </body>
    </html>
```

★ Ourput:-

22) Check Number Is Positive or Negative in JavaScript?

→ Input:-

```
<!DOCTYPE html>
<html>
<body>
<h2>JavaScript Math</h2>
<p>Math.sign() retuns whether a number is negative, positive or zero:</p>
<p id="demo"></p>
<script>
document.getElementById("demo").innerHTML = Math.sign(3);
</script>
</body>
</html>
```

★ Output :-

JavaScript Math

Math.sign() retuns whether a number is negative, positive or zero:

1

23) Find the Character Is Vowel or Not ?

→ INPUT:-

- <!DOCTYPE html>
- <html lang="en">
- <head>

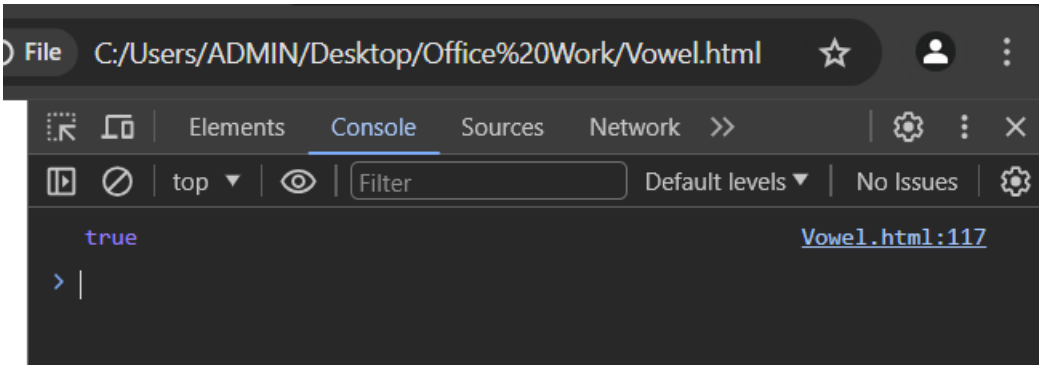
```
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-
scale=1.0">
<title>Document</title>
```

- </head>
- <body>
- </body>
- <script>

```
let input = 'a';
if (
  input === 'a' || input === 'A' ||
  input === 'e' || input === 'E' ||
  input === 'i' || input === 'I' ||
  input === 'o' || input === 'O' ||
  input === 'u' || input === 'U'
) {
  console.log(true);
} else {
  console.log(false);
}
```

- </script>
- </html>

★ Output :-



24) Write to check whether a number is negative, positive or zero?

→ Using Math.
→ abs() method to determine if a number is positive, negative, or zero.
→ The Math. abs() method returns the absolute value of a number, which is its magnitude without regard to its sign.
→ We can then compare the result with the original number to determine its sign.

★ Input :-

❖ <!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>

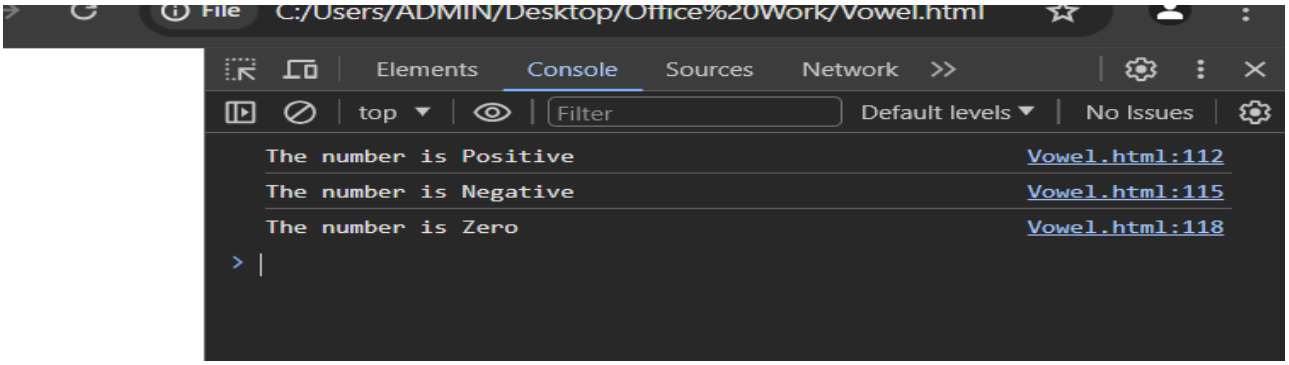
❖ </body>
❖ <script>

```
function numberChecking(num) {
 switch (Math.sign(num)) {
   case 1:
     console.log("The number is Positive");
     break;
   case -1:
     console.log("The number is Negative");
     break;
   default:
```

```
            console.log("The number is Zero");
        }
    }
    numberChecking(12);
    // Output: Positive
    numberChecking(-1);
    // Output: Negative
    numberChecking(0);
    // Output: Zero
```

- </script>
- </html>

★ Output :-



25) Write to find number is even or odd using ternary operator in JS?

→ Input :-

- <!DOCTYPE html>
- <html lang="en">
- <head>

```
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width,
    initial-scale=1.0">
        <title>Document</title>
```

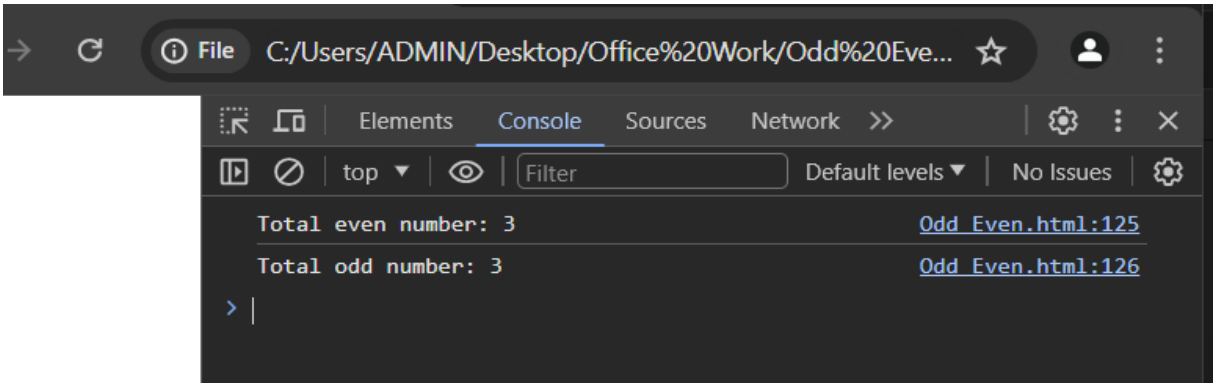
- </head>
- <body>
- </body>
- <script>

```
        let array = [1, 2, 3, 4, 5, 6];
        let oddNum = 0;
        let evenNum = 0;
         for (let index = 0; index < array.length; index++) {
```

```
        if (array[index] % 2 == 0) {
            evenNum++;
        }
        else {
            oddNum++;
        }
    }
    console.log("Total even number: " + evenNum);
    console.log("Total odd number: " + oddNum);
```

- </script>
- </html>

★ Output :-



26) Write find maximum number among 3 numbers using ternary operator in JS?

→ Input :-

- <!DOCTYPE html>
- <html lang="en">
- <head>

```
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width,
    initial-scale=1.0">
        <title>Document</title>
```

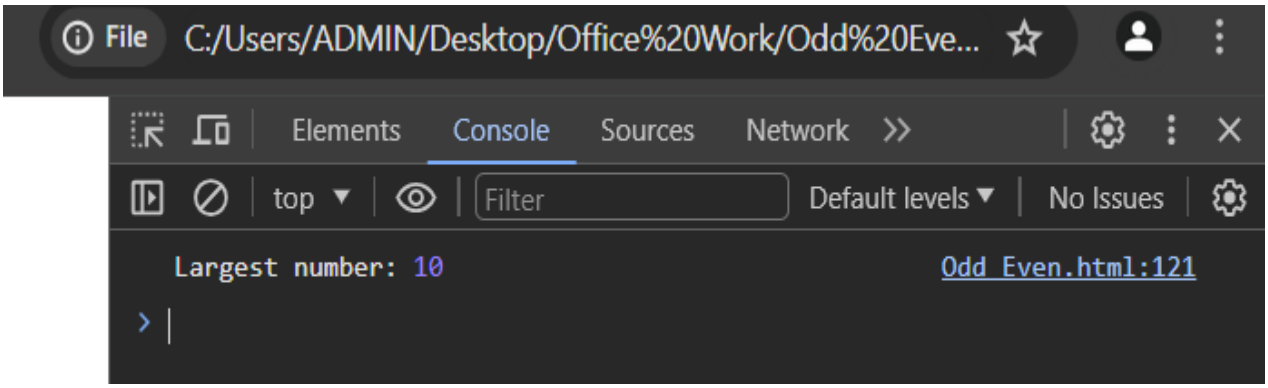
- </head>
- <body>
- </body>
- <script>

```
        function findLargest(num1, num2, num3) {
    if (num1 >= num2 && num1 >= num3) {
    return num1;
```

```
} else if (num2 >= num1 && num2 >= num3) {
return num2;
} else {
return num3;
}
}
const largestNumber = findLargest(10, 5, 8);
console.log("Largest number:", largestNumber);
```

- </script>
- </html>

★ output :-



27) Write to find minimum number among 3 numbers using ternary operator in JS?

→ let num1 = 12;
→ let num2 = 7;
→ let num3 = 18;
→ // Third number let smallest; // Variable to store the smallest number // Employing conditional statements to compare the numbers and find.
→ the smallest if (num1 < num2 && num1 < num3) { smallest = num1; } else if (num2 < num1 && num2 < num3)
→ Input:-

- <!DOCTYPE html>
- <html lang="en">
- <head>

```
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Document</title>
```

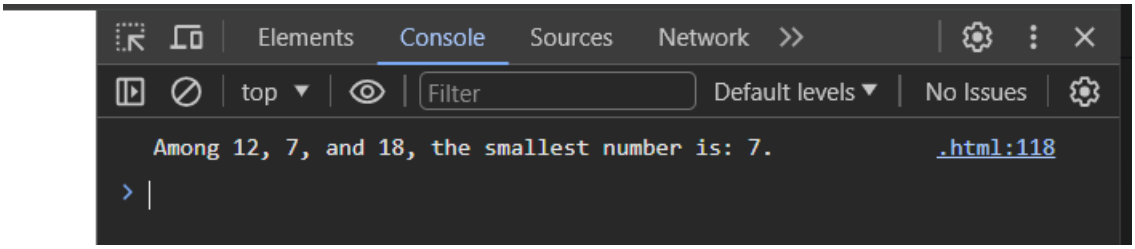
- </head>

- <body>
- </body>
- <script>

```
let num1 = 12;
let num2 = 7;
let num3 = 18;
let smallest;
if (num1 < num2 && num1 < num3) {
  smallest = num1;
} else if (num2 < num1 && num2 < num3) {
  smallest = num2;
} else {
  smallest = num3;
}
console.log("Among " + num1 + ", " + num2 + ", and " + num3 + ",
the smallest number is: " + smallest + ".");
```

- </script>
- </html>

★ Output:-



28) Write to find the largest of three numbers in JS?

→ let num1 = 42;
→ let num2 = 78;
→ let num3 = 55;
→ let largest; // To hold the largest number // Using conditional statements to compare the numbers and determine.
→ The largest if (num1 > num2 && num1 > num3) { largest = num1; } else if (num2 > num1 && num2 > num3).
→ Input :-

- <!DOCTYPE html>
- <html lang="en">
- <head>

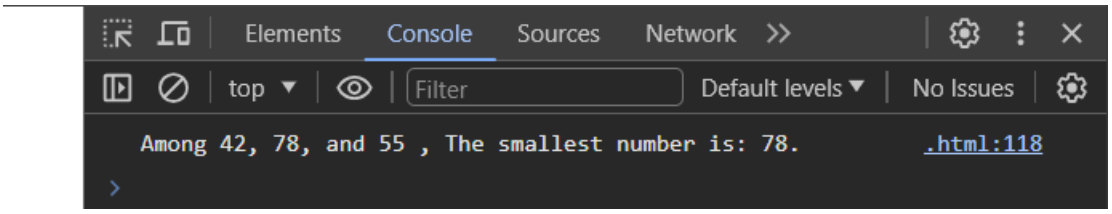
```
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-
scale=1.0">
<title>Document</title>
```

❖ </head>
❖ <body>
❖ </body>
❖ <script>

```
let num1 = 42;
let num2 = 78;
let num3 = 55;
let smallest;
if (num1 > num2 && num1 > num3) {
  smallest = num1;
} else if (num2 > num1 && num2 > num3) {
  smallest = num2;
} else {
  smallest = num3;
}
console.log("Among " + num1 + ", " + num2 + ", and " + num3 + ",
The smallest number is: " + smallest + ".");
```

❖ </script>
❖ </html>

★ Output :-



29) Write to show:
(i) Monday to Sunday using switch case in JS?

→ Input :-

❖ <!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>

```
<p>Enter a number : </p>

  <input type="text" id="numberDay">

<button id="button">OK</button>
```

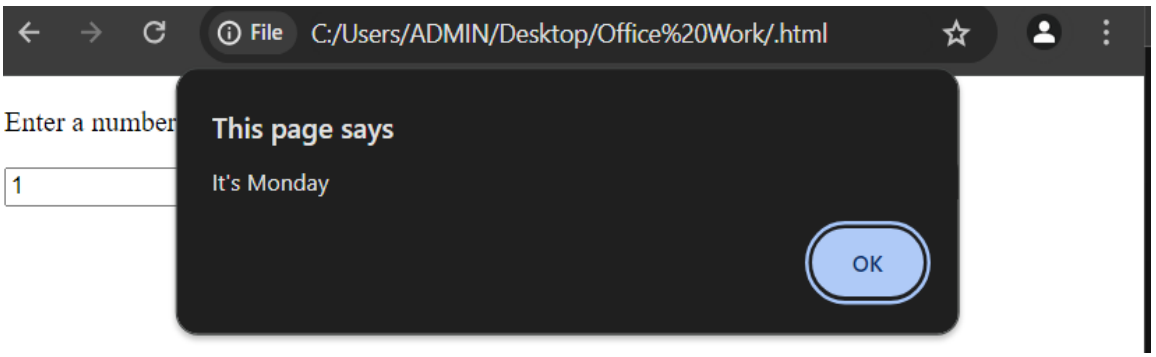
- </body>
- <script>

```
  let clickButton =
document.getElementById("button");
clickButton.addEventListener("click", function
weekDay() {

 let day =
Number(document.getElementById("numberDay").v
alue);

  switch (day) {

case 0:

  alert("It's Sunday!")

  break;

 case 1:

  alert("It's Monday");

  break;

 case 2:

  alert("It's Tuesday");

  break;

 case 3:

  alert("It's Wednesday");

  break;

 case 4:

  alert("It's Thursday");
```

```
            break;
        case 5:
            alert("It's Friday");
            break;
        case 6:
            alert("It's Saturday");
            break;
    }
})
```

- </script>
- </html>

★ Output :-



(ii) Vowel or Consonant using switch case in JS?

→ Input :-

- <!DOCTYPE html>
- <html lang="en">
- <head>

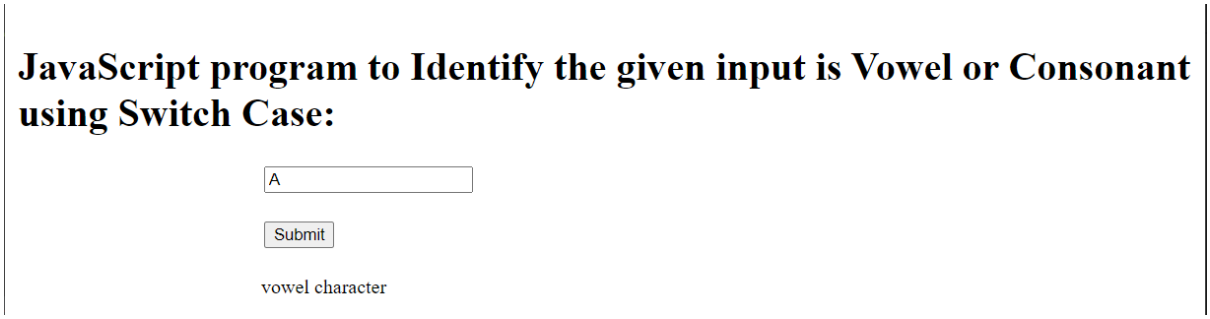
```
        <meta charset="UTF-8">
```

```
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>vowel</title>
</head>
<body>
    <table>
      <tr>
        <td> <input type="text" name="a" id="first"
placeholder="Enter character" /> </td>
      </tr>
      <tr>
        <td> <button onclick="vowel()">Submit</button> </td>
      </tr>
    </table>
    <div id="num"></div>
</body>

<script type="text/javascript">
    function vowel() {
      var ch;
      ch = document.getElementById("first").value;
      switch (ch) {
        case 'a':
        case 'e':
        case 'i':
        case 'o':
        case 'u':
        case 'A':
        case 'E':
        case 'I':
        case 'O':
        case 'U':
          document.getElementById("num").innerHTML = "vowel
character";
          break;
        default: document.getElementById("num").innerHTML =
"Not an vowel";
          break;
      }
    }
</script>
```

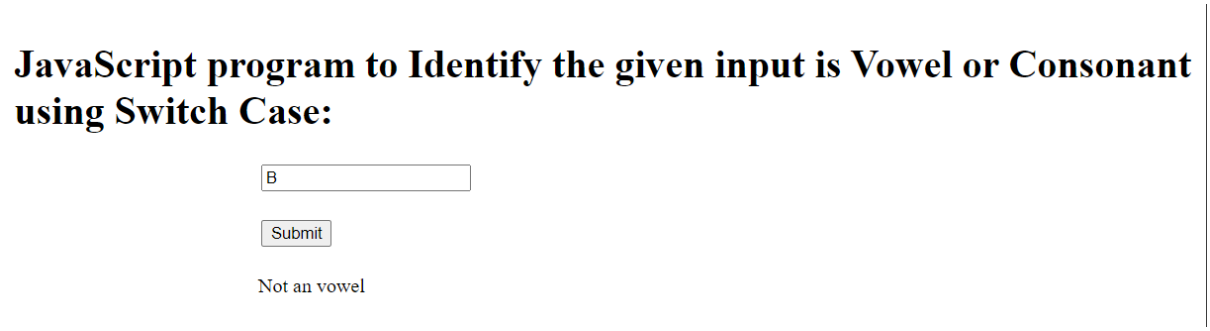
★ </html>

★ Output :-

➢ Vowel character :-



➢ Not an vowel :-



(Conditional looping logic Question)

30) What are the looping structures in JavaScript? Any one Example?

→ Input :-

❖ <!DOCTYPE html>

❖ <html>

❖ <body>

```
<h2 style="margin-left:200px; margin-top:200px;">JavaScript For Loop</h2>

<p id="demo" style="margin-left:300px; margin-top:0px;"></p>
```

❖ </body>

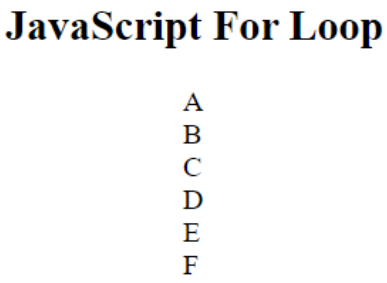
❖ <script>

```
const cars = ["A", "B", "C", "D", "E", "F"];

let text = "";

for (let i = 0; i < cars.length; i++) {

 text += cars[i] + "<br>";

}

document.getElementById("demo").innerHTML = text;
```

❖ </script>

❖ </html>

★ Output :-



31) Write a print 972 to 897 using for loop in JS?

→ Input :-

- <!DOCTYPE html>
- <html lang="en">
- <head>

```
<meta charset="UTF-8">

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

<title>972 to 897 loop</title>
```

- </head>
- <body>

```
<h2 style="margin-left:200px; margin-top:100px;">JavaScript For
Loop</h2>

<p id="demo" style="margin-left:250px;"></p>
```

- </body>

❖ <script>

```
let text = "";

for (let i = 972; i > 897; i--) {

 text += "The number is " + i + " , " + "<br>";

}

document.getElementById("demo").innerHTML = text;
```

❖ </script>

❖ </html>

★ Output :-

JavaScript For Loop

The number is 972 ,
The number is 971 ,
The number is 970 ,
The number is 969 ,
The number is 968 ,
The number is 967 ,
The number is 966 ,
The number is 965 ,
The number is 964 ,
The number is 963 ,
The number is 962 ,
The number is 961 ,
The number is 960 ,
The number is 959 ,
The number is 958 ,
The number is 957 ,
The number is 956 ,
The number is 955 ,
The number is 954 ,
The number is 953 ,
The number is 952 ,
The number is 951 ,
The number is 950 ,
The number is 949 ,
The number is 948 ,
The number is 947 ,
The number is 946 ,
The number is 945 ,
The number is 944 ,
The number is 943 ,
The number is 942 ,
The number is 941 ,
The number is 940 ,
The number is 939 ,
The number is 938 ,
The number is 937 ,
The number is 936 ,
The number is 935 ,
The number is 934 ,
The number is 933 ,
The number is 932 ,
The number is 931 ,
The number is 930 ,
The number is 929 ,
The number is 928 ,
The number is 927 ,
The number is 926 ,
The number is 925 ,
The number is 924 ,
The number is 923 ,
The number is 922 ,
The number is 921 ,
The number is 920 ,
The number is 919 ,
The number is 918 ,
The number is 917 ,
The number is 916 ,
The number is 915 ,
The number is 914 ,
The number is 913 ,
The number is 912 ,
The number is 911 ,
The number is 910 ,
The number is 909 ,
The number is 908 ,
The number is 907 ,
The number is 906 ,
The number is 905 ,
The number is 904 ,
The number is 903 ,
The number is 902 ,
The number is 901 ,
The number is 900 ,
The number is 899 ,
The number is 898 ,
The number is 897 ,
The number is 896 ,
The number is 895 ,
The number is 894 ,
The number is 893 ,
The number is 892 ,
The number is 891 ,
The number is 890 ,
The number is 889 ,
The number is 888 ,
The number is 887 ,
The number is 886 ,
The number is 885 ,
The number is 884 ,
The number is 883 ,
The number is 882 ,
The number is 881 ,
The number is 880 ,

32) Write to print factorial of given number?

→ Input :-

```
<!DOCTYPE html>
<html>
<head>
        <title>Finding Factorial of a Number using JavaScript </title>
</head>
<body>


        <h2>Factorial Calculator</h2>

         <form>

            Enter a number:

            <input type="number" id="inputValue">

            <button type="button"
        onclick="FindFactorial()">Find</button>

          </form>

          <p id="outputArea"></p>


</body>
<script>

            function FindFactorial() {

              let number =
        parseInt(document.getElementById("inputValue").value);

              let result = 1;



              if (number === 0 || number === 1) {

                result = 1;
```

```
        }
        else {
          for (let i = 2; i <= number; i++) {
            result *= i;
          }
        }

        document.getElementById("outputArea").innerHTML =
    "Factorial of " + number + " is: " + result;
      }
```

- </script>
- </html>

★ Input :-

Factorial Calculator

Enter a number: 5 Find

Factorial of 5 is: 120

33) Write to print Fibonacci series up to given numbers?

→ Input :-

- <!DOCTYPE html>
- <html>
- <head>

```
<title>Fibonacci series in JavaScript</title>
```

- `<body>`

```
<h2>Fibonacci series</h2>

<h3>Enter the limit:</h3>

<input type="text" id="limit" />

<button onclick="getFibonacci()" >Print
        Fibonacci Series</button>

    <h4>Output: <span id="output"></span></h4>
```

- `</body>`

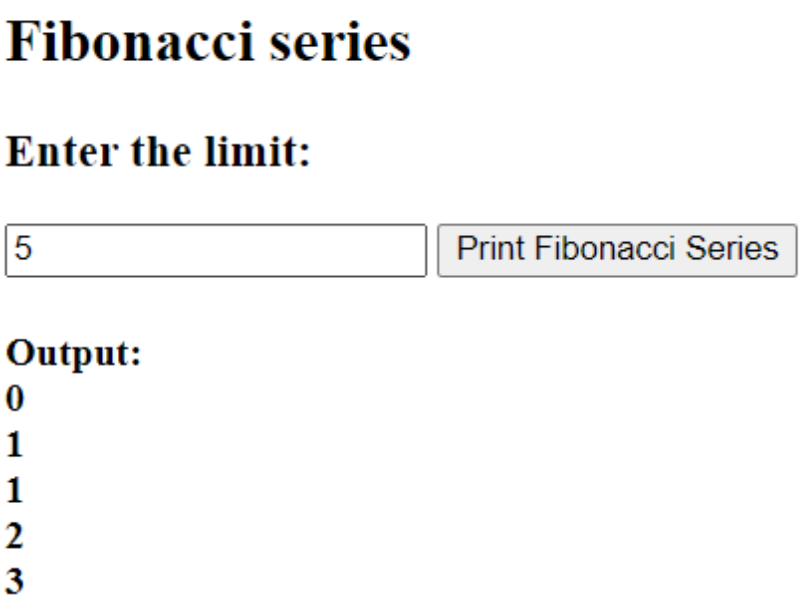
- `<script>`

```
function getFibonacci()

{

var limit = document.getElementById("limit").value;

fibonacciSeries(limit);

}

function fibonacciSeries(limit)

{

var first_num = 0, second_num = 1,
    next_num, outputElement;

if(limit != '')

{

outputElement =
    document.getElementById("output");
```

```
outputElement.innerHTML = "";

outputElement.innerHTML = "<br>";

outputElement.innerHTML +=                    first_num +
"<br>";

outputElement.innerHTML +=                    second_num +
"<br>";

while(limit > 2)

{

  next_num   = first_num +                    second_num;


  first_num  = second_num;

  second_num = next_num;


  outputElement.innerHTML +=                  next_num +
"<br>";


  limit--;

}

}else{

document.getElementById("output").innerHTML =
        "Please enter a value!";

}

}
```

- </script>
- </head>
- </html>

★ Output :-



34) Write to print number in reverse order e.g.: number = 64728 ---> reverse =82746 in JS?

→ Input :-

- <!DOCTYPE html>
- <html lang="en">
- <head>

<meta charset="UTF-8">

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

<title>Reverse Number</title>

- </head>

- <body>

```
    <h1>Q34. Number in reverse order e.g.: number = 64728
==> reverse = 82746</h1>

    <h1 id="result"></h1>
```

- </body>
- <script>

```
        function reverse_a_number(n) {

          n = n + "";

          return n.split("").reverse().join("");

        }


        let number = 64728;

        let reversedNumber =
Number(reverse_a_number(number));

        document.getElementById("result").innerText = `==>
Reversed number: ${reversedNumber}`;
```

- </script>
- </body>
- </html>

★ Output :-

Q34. Number in reverse order e.g.: number = 64728 ==> reverse = 82746 ==> Reversed number: 82746

35) Write a program make a summation of given number (E.g., 1523 Ans: - 11) in JS?

→ Input :-

- <!DOCTYPE html>
- <html lang="en">
- <head>

```
<meta charset="UTF-8">

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

<title>summation</title>
```

- </head>
- <body>

```
<p> summation of given number (1523)</p>
```

- </body>
- <script>

```
  function sumOfDigit(num) {

  return num.toString().split("")

    .reduce((sum, digit) =>

      sum + parseInt(digit), 0);

}


document.write(sumOfDigit(1523));
```

- </script>
- </html>

★ Output :-

summation of given number (1523)

11

36) Write a program you have to make a summation of first and last Digit. (E.g., 1234 Ans: - 5) in JS?

→ Input :-

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title> summation of first and last digit</title>
</head>
<body>
    <p> summation of first and last Digit. (1234)</p>
</body>
<script>
    function firstDigit(n)
    {
      while (n >= 10)
        n /= 10;
      return Math.floor(n);
    }
    function lastDigit(n)
    {
      return Math.floor(n % 10);
    }
      let n = 1234;
      document.write(firstDigit(n) +  lastDigit(n));
```

- </script>
- </html>

★ Output :-

summation of first and last Digit. (1234)

5

38) Use pattern in console.log in JS?

A

B C

D E F

G H I J

K L M N O

→ Input :-

- <!DOCTYPE html>
- <html lang="en">
- <head>

<meta charset="UTF-8">

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

<title>pettern2</title>

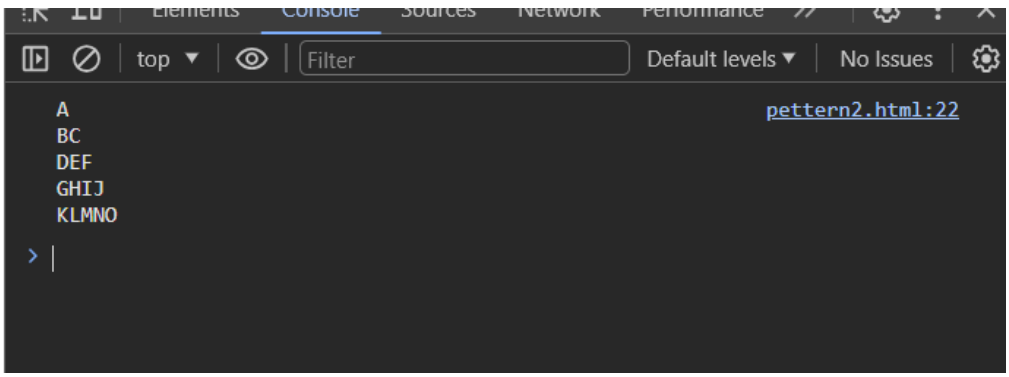
- </head>
- <body>

- </body>
- <script>

```
let n = 5;

let string = "";

let count = 0;

for (let i = 1; i <= n; i++) {

 for (let j = 0; j < i; j++) {

   string += String.fromCharCode(count + 65);

   count++;

 }

 string += "\n";

}

console.log(string);
```

- </script>
- </html>

★ Output :-



ii) 1

2 3

4 5 6

7 8 9 10

11 12 13 14 15

→ Input :-

- <!DOCTYPE html>
- <html lang="en">
- <head>

<meta charset="UTF-8">

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

<title>pettern3</title>

- </head>
- <body>

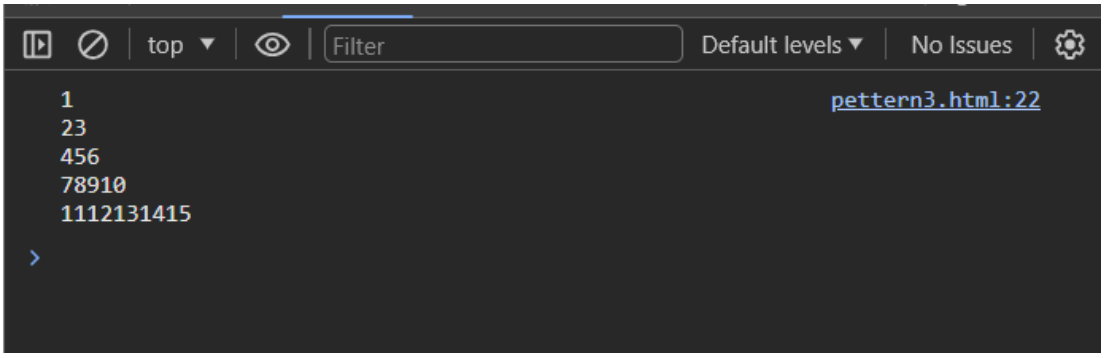
- </body>
- <script>

```
let n = 5;

let string = "";

let count = 1;

for (let i = 1; i <= n; i++) {

  for (let j = 1; j <= i; j++) {

    string += count;

    count++;

  }

  string += "\n";

}
```

```
console.log(string);
```

- ❖ </script>
- ❖ </html>

★ Output :-



Iii) *

**

***

****

*****

→ Input :-

- ❖ <!DOCTYPE html>
- ❖ <html lang="en">
- ❖ <head>

```
<meta charset="UTF-8">

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

<title>pettren4</title>
```

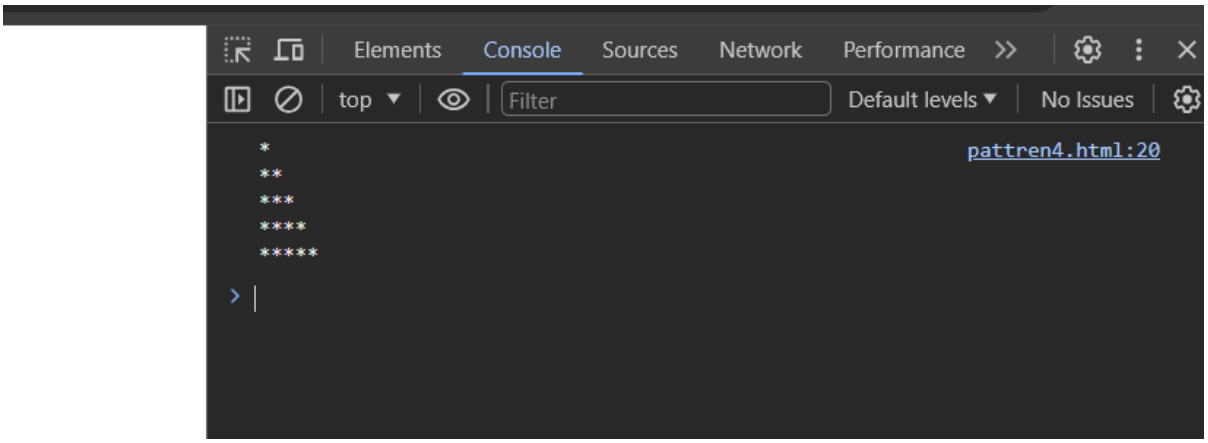
- ❖ </head>
- ❖ <body>

- </body>
- <script>

```
  let rows = 5;

let pattern = "";

for (let n = 1; n <= rows; n++) {

  for (let num = 1; num <= n; num++) {

    pattern += "*";

  }

  pattern += "\n";

}

console.log(pattern);
```

- </script>
- </html>

★ Output :-



39) Accept 3 numbers from user using while loop and check each numbers palindrome?

→ Input :-

- <!DOCTYPE html>
- <html lang="en">
- <head>

    <meta charset="UTF-8">

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

    <title>palindrome</title>

- </head>
- <body>

    <h1>palindrome :-</h1>

- </body>
- <script>

    function isPalindrome(str) {

    let j = str.length - 1

    for (let i = 0; i < str.length / 2; i++) {

    if (str[i] != str[j]) {

    return false;

    }

    j--;

    }

    return true;

    }

    let str1 = "racecar";

    let str2 = "nitin";

```
let str3 = "Rama";

document.write(isPalindrome(str1) + "<br>");

document.write(isPalindrome(str2)+ "<br>");

document.write(isPalindrome(str3)+ "<br>");
```

- </script>
- </html>

★ Output :-

palindrome :-

true
true
false

1) What is JavaScript?

→ JavaScript is the **Programming Language** for the Web.
→ JavaScript can update and change both **HTML** and **CSS.**
→ JavaScript can **calculate**, **manipulate** and **validate** data.

2) What is the use of isNaN function?

→ The isNaN() function determines whether a value is NaN , first converting the value to a number if necessary.
→ Because coercion inside the isNaN() function can be surprising, you may prefer to use Number.isNaN() .

Ex :-

```
isNaN("CR7")      // true
isNaN('7')        // false
isNaN(21)         // false
isNaN(false)      // false
isNaN(true)       // false
isNaN(undefined)  // true
isNaN(null)       // false
isNaN(NaN)        // true
```

3) What is negative Infinity?

→ NEGATIVE_INFINITY is a special numeric value that is returned when an arithmetic operation or mathematical function generates a negative value greater than the largest representable number in JavaScript

→ (i.e., more negative than -Number.)

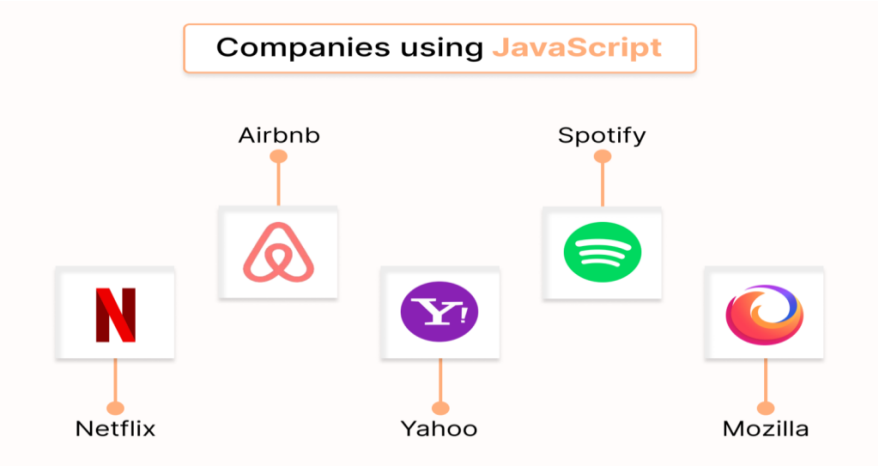
Ex :-

4) Which company developed JavaScript?

→ JavaScript was created at Netscape Communications by Brendan Eich in 1995.

→ Netscape and Eich designed JavaScript as a scripting language for use with the company's flagship web browser, Netscape Navigator.

Ex :-

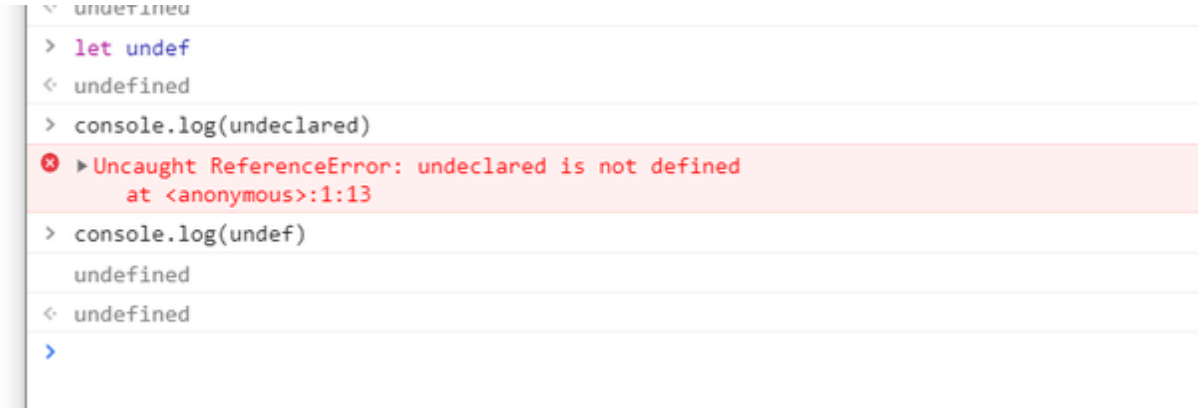


5) What are undeclared and undefined variables?

→ Undefined: It occurs when a variable has been declared but has not been assigned any value.

→ Undefined is not a keyword. Undeclared: It occurs when we try to access any variable that is not initialized or declared earlier using the var or const keyword.

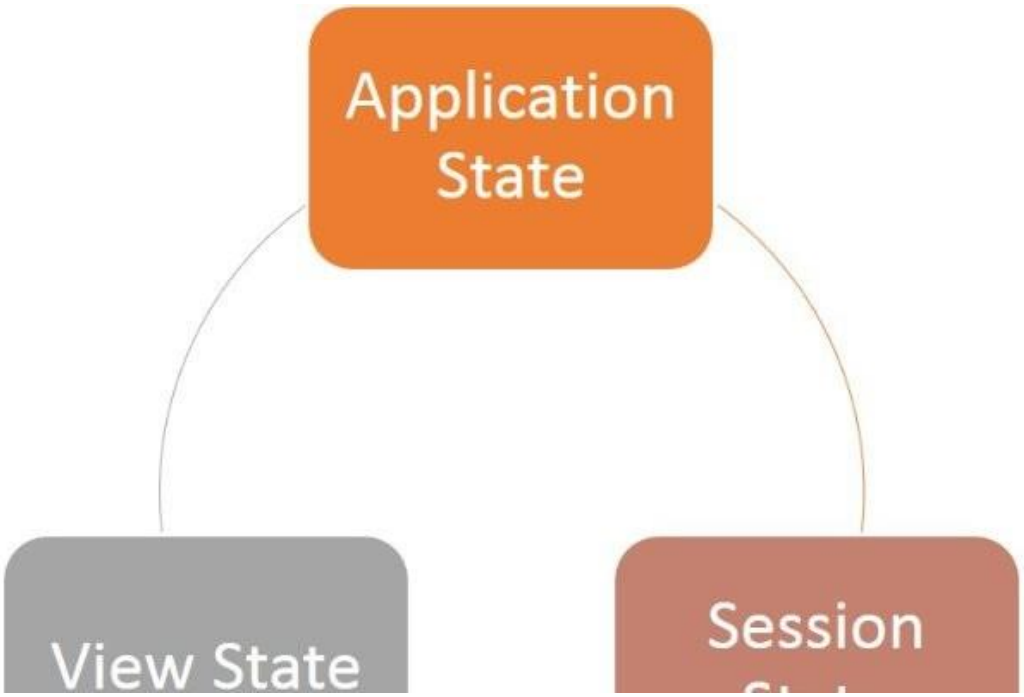
Ex :-



6) What is the difference between ViewState and SessionState?

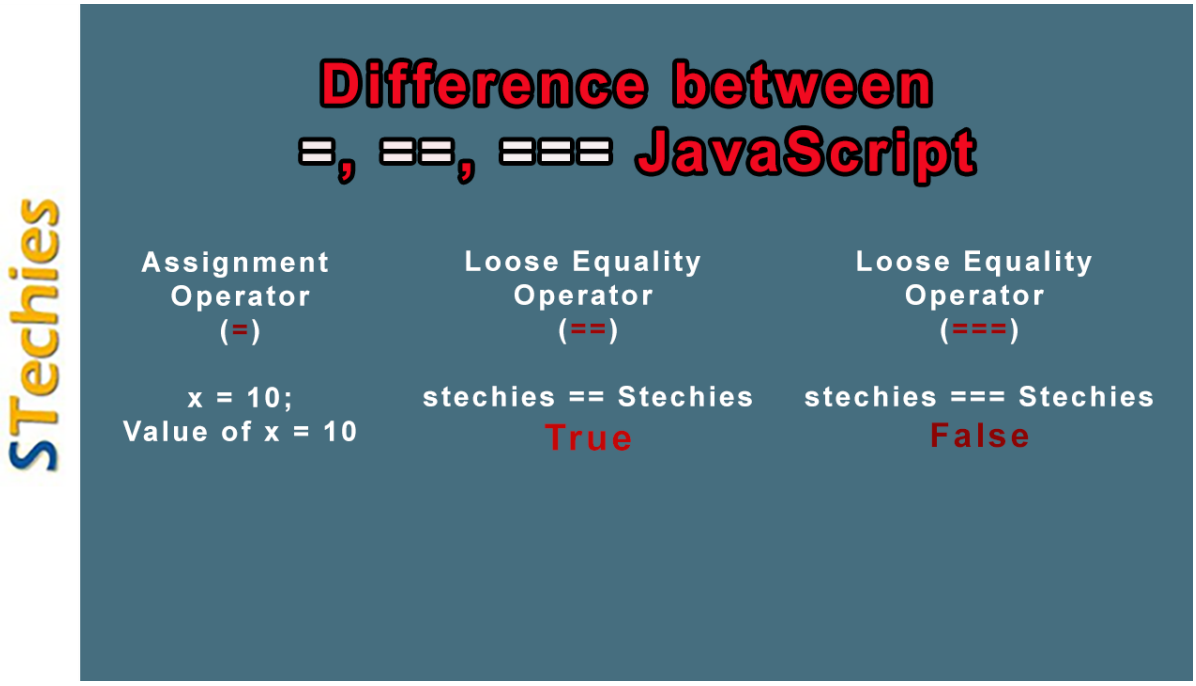
→ View state can only be visible from a single page and not multiple pages.
→ Session state value availability is across all pages available in a user session.
→ It will retain values in the event of a postback operation occurring.
→ In session state, user data remains in the server

Ex :-



7) What is === operator?
→ The strict equality (===) operator checks whether its two operands are equal, returning a Boolean result.
→ Unlike the equality operator, the strict equality operator always considers operands of different types to be different.

Ex :-



8) How can the style/class of an element be changed?

→ The document. getElementById() method is used to return the element in the document with

→ the “id” attribute

→ the “className” attribute

→ can be used to change/append the class of the element.

Ex :-

9) How to read and write a file using JavaScript?

→ The fs.readFile() and rs.writeFile()

→ methods are used to read and write of a file using javascript.

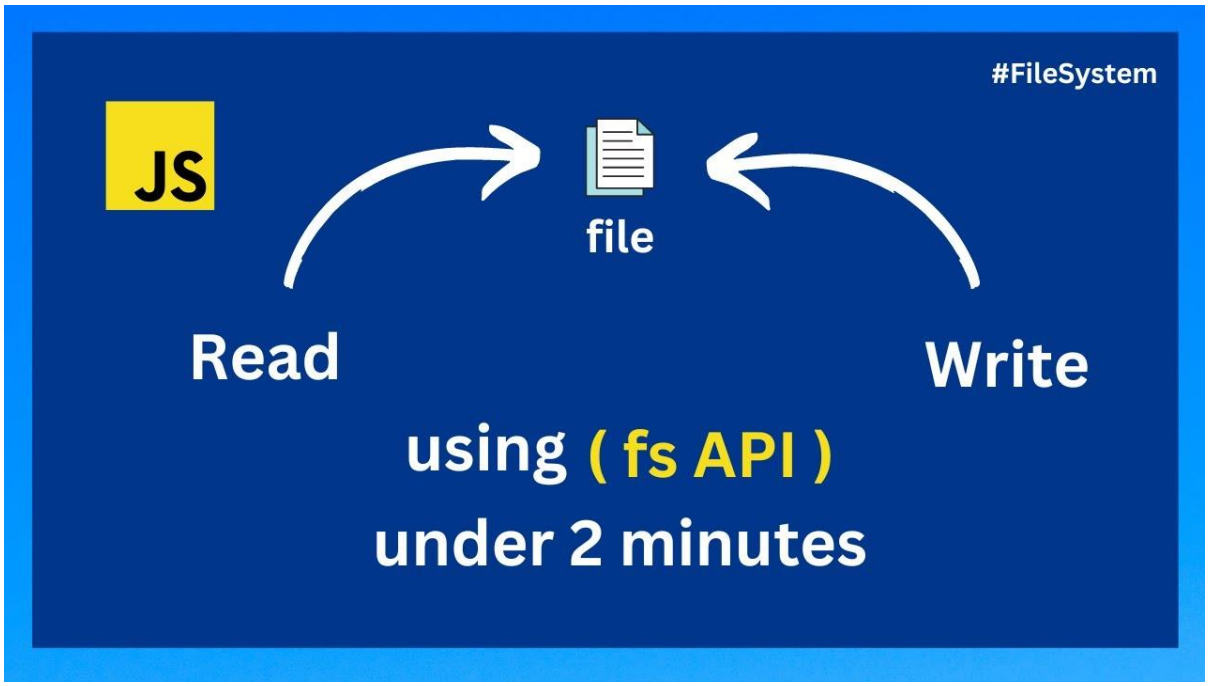
→ The file is read using the fs.readFile() function, which is an inbuilt method.

→ This technique reads the full file into memory and stores it in a buffer.

Syntax :-

```
fs.readFile( file_name, encoding, callback_function )
```

Ex :-



10) What are all the looping structures in JavaScript?

→ **The statements for loops provided in JavaScript are:**

→ for statement.

→ do...while statement.

→ while statement.

→ labeled statement.

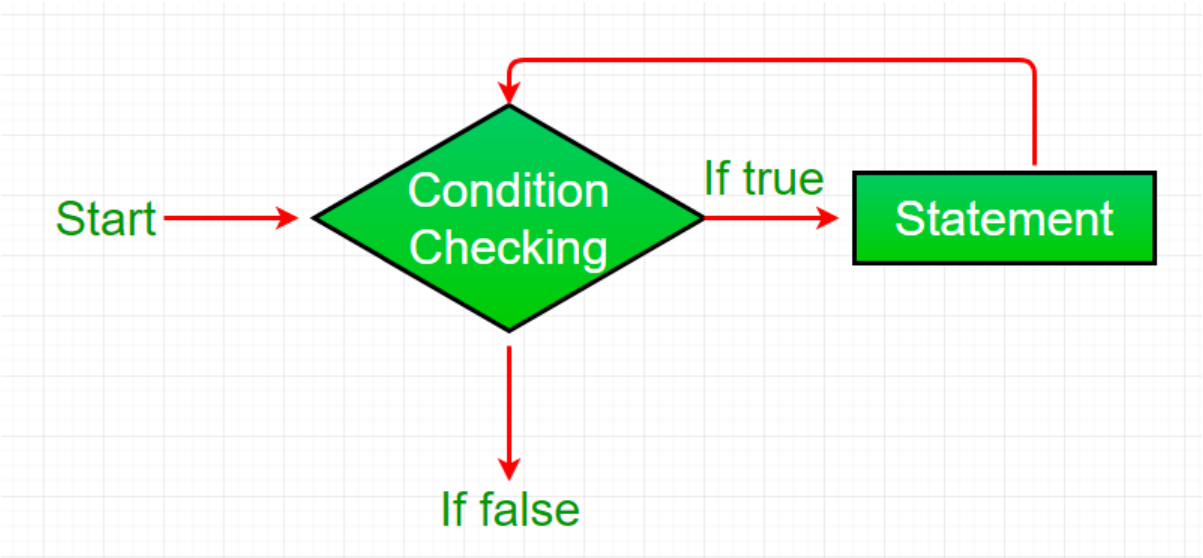
→ break statement.

→ for...in statement.

→ continue statement.

→ for...of statement.

Ex:-



11) How can you convert the string of any base to an integer in JavaScript?

→ The unary plus (+) operator can be used to convert a string to a number in JavaScript.

→ It is placed before the string, like this: + “1234”.

→ This would return the number 1234.

→ If the string cannot be converted into a number, it returns NaN.

Ex :-

```
> new Number("1234")
◂· ▼Number {1234} i
     ▶__proto__: Number
      [[PrimitiveValue]]: 1234
> Number("1234")
◂· 1234
> typeof Number("1000")
◂· "number"
> typeof new Number("1234")
◂· "object"
```

12) What is the function of the delete operator?

→ The delete operator removes a property from an object.

→ If the property's value is an object and there are no more references to the object, the object held by that property is eventually released automatically.

EX:-

```
'use strict'
let user = {};
Object.defineProperty(user, "name", {
    value: "Jayanth"
});

console.log(delete user.name);
//Cannot delete property 'name' of #<Object>
```

13) What are all the types of Pop up boxes available in JavaScript?

→ JavaScript has three kind of popup boxes:-

→ Alert box, Confirm box, and Prompt box.

14) What is the use of Void (0)?

→ JavaScript void 0 means returning undefined (void) as a primitive value.

→ You might come across the term “JavaScript:void(0)” while going through HTML documents.

→ It is used to prevent any side effects caused while inserting an expression in a web page.

Ex :-

GeeksforGeeks

without JavaScript:void(0)

Double click on me

15) How can a page be forced to load another page in JavaScript?

→ In JavaScript, we can use window.

→ location object to force a page to load another page.

→ We can use the location object to set the URL of a new page

16) What are the disadvantages of using innerHTML in JavaScript?

→ It is very slow because as inner HTML already parses the content even we have to parse the content again so that's why it takes time.

→ When we have used the event handlers then the event handlers are not automatically attached to the new elements created by innerHTML.

17) Create password field with show hide functionalities

→ Input :-

- <!DOCTYPE html>
- <html>

- <head>

```
<meta charset="UTF-8">

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

<title> Password Visibility</title>
```

- </head>

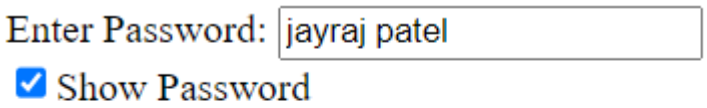
```
Enter Password: <input type="password" value="" id="pswrd">
<br>

<input type="checkbox" onclick="toggleVisibility()" />Show Password</br>
```

- <body>
- <script>

```
function toggleVisibility() {
 var getPasword = document.getElementById("pswrd");
 if (getPasword.type === "password") {
  getPasword.type = "text";
 } else {
  getPasword.type = "password";
 }
}
```

- </script>
- </body>
- </html>

★ Output :-



18) Create basic math operation in JS

→ Input :-

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

- <head>

```
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width,
initial-scale=1.0">
<title>Math Operations</title>
```

❖ <style>

```
.Table {
  border: 2px solid black;
  height: 500px;
  width: 500px;
}
```

❖ </style>
❖ </head>

❖ <body>

```
<table class="Table">
  <tr>
    <th colspan="2">Maths Operations</th>
  </tr>
  <tr>
    <td>Enter 1st Number: </td>
    <td><input type="text" id="num1"></td>
  </tr>
  <tr>
    <td>Enter 2nd Number: </td>
    <td><input type="text" id="num2"></td>
  </tr>
  <tr>
    <td colspan="2">
```

```
            <button
onclick="performOperation('+')">+</button>

            <button onclick="performOperation('-')">-</button>

            <button
onclick="performOperation('*')">*</button>

            <button onclick="performOperation('/')">/</button>

            <button
onclick="performOperation('%')">%</button>

          </td>

        </tr>

        <tr>

          <td colspan="2">Answer is : <span
id="result"></span></td>

        </tr>

      </table>
```

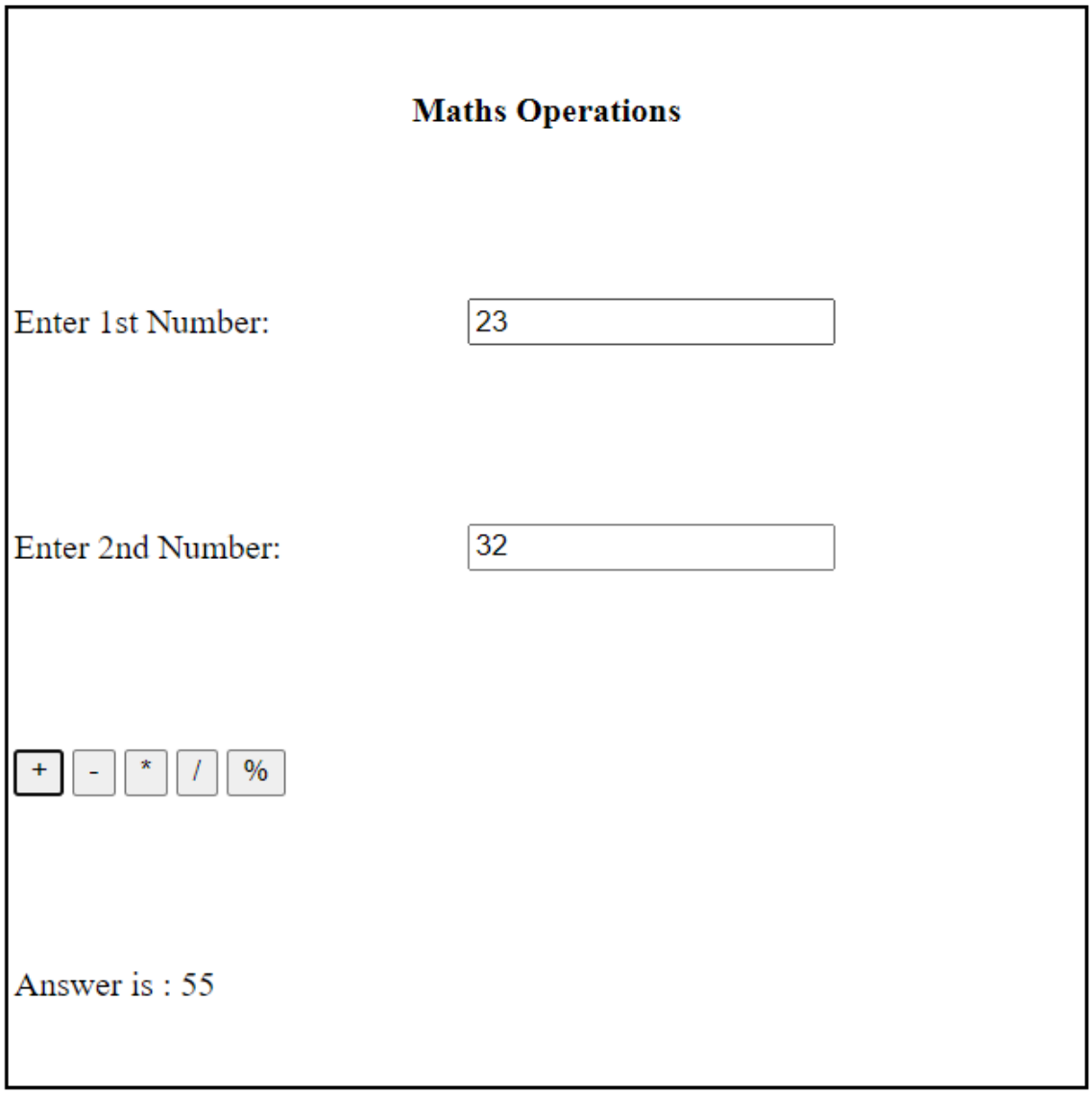
- </body>
- <script>

```
        function performOperation(operation) {

          const num1 =
parseFloat(document.getElementById('num1').value);

          const num2 =
parseFloat(document.getElementById('num2').value);

          let result;

          if (isNaN(num1) || isNaN(num2)) {

            result = 'Please enter valid numbers';

          } else {

            switch (operation) {
```

```
                case '+':
                    result = num1 + num2;
                    break;
                case '-':
                    result = num1 - num2;
                    break;
                case '*':
                    result = num1 * num2;
                    break;
                case '/':
                    result = num1 / num2;
                    break;
                case '%':
                    result = num1 % num2;
                    break;
                default:
                    result = 'Invalid Operation';
            }
        }
        document.getElementById('result').textContent =
result;
    }
```

- </script>
- </html>

★ Output :-



19) Create result

→ Input :-

❖ <!DOCTYPE html>

❖ <html lang="en">

❖ <head>

<meta charset="UTF-8">

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

<title>Math Marks Entry</title>

❖ <style>

h1, table {

text-align: center;

}

td {

padding: 8px;

}

.table{

display: flex;

justify-content: center;

align-items: center;

/* width: 500px; */

border: 1px solid black;

}

❖ </style>

❖ </head>

❖ <body>

<h1>Enter Maths</h1>

<table class="table" id="table">

<tr>

<td>C Language:</td>

```
      <td><input type="text" id="cLanguage" /></td>
    </tr>
    <tr>
      <td>C++ Language:</td>
      <td><input type="text" id="cppLanguage"
/></td>
    </tr>
    <tr>
      <td>Database:</td>
      <td><input type="text" id="database" /></td>
    </tr>
    <tr>
      <td>HTML:</td>
      <td><input type="text" id="html" /></td>
    </tr>
    <tr>
      <td>CSS:</td>
      <td><input type="text" id="css" /></td>
    </tr>
    <tr>
      <td>PHP:</td>
      <td><input type="text" id="php" /></td>
    </tr>
    <tr>
```

```
            <td>Core Java:</td>
            <td><input type="text" id="coreJava" /></td>
        </tr>
        <tr>
            <td colspan="2">
                <button
onclick="calculateResults()">Result</button>
            </td>
        </tr>
        <tr>
            <td>Total is:</td>
            <td><h1 id="total">0</h1></td>
        </tr>
        <tr>
            <td>Percentage is:</td>
            <td><h1 id="percentage">0%</h1></td>
        </tr>
    </table>
```

- `</body>`

- `<script>`

```
        function calculateResults() {
            const subjects = ['cLanguage', 'cppLanguage',
'database', 'html', 'css', 'php', 'coreJava'];
```

```
        let total = 0;
        let isValid = true;

        for (let i = 0; i < subjects.length; i++) {
            const mark =
parseFloat(document.getElementById(subjects[i]).v
alue);
            if (isNaN(mark) || mark < 0 || mark > 50) {
                alert('Please enter valid marks between 0
and 50 for all subjects.');
                isValid = false;
                break;
            }
            total += mark;
        }

        if (!isValid) return;

        const percentage = (total / (subjects.length *
50)) * 100;

        document.getElementById('total').textContent
= total;

document.getElementById('percentage').textConten
t = percentage.toFixed(2) + '%';
    }
```

- </script>
- </html>

★ Output : -