

## Assignment 6

Roll No :- 24

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### A). Decision Making (if, if-else, nested if, switch) —

1. Write a program to accept three numbers and print the second largest number without using logical operators (&&, ||).

- Code

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Second Largest Number</title>
  </head>
  <body>
    <p id="para"></p>
    <p id="Ans"></p>

    <script>
      let a = 1;
      let b = 2;
      let c = 3;

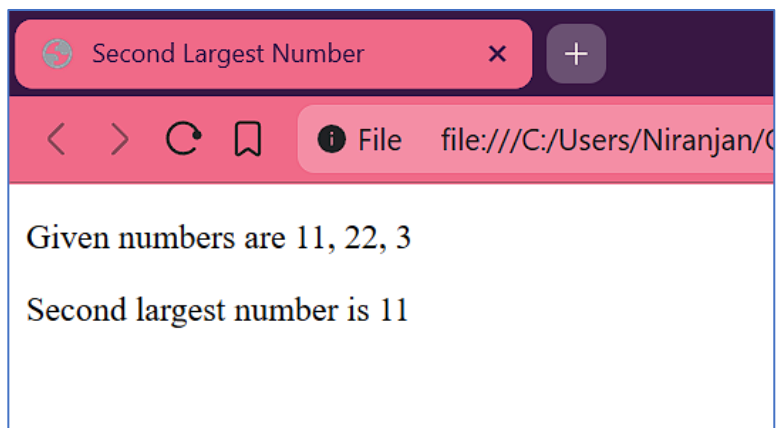
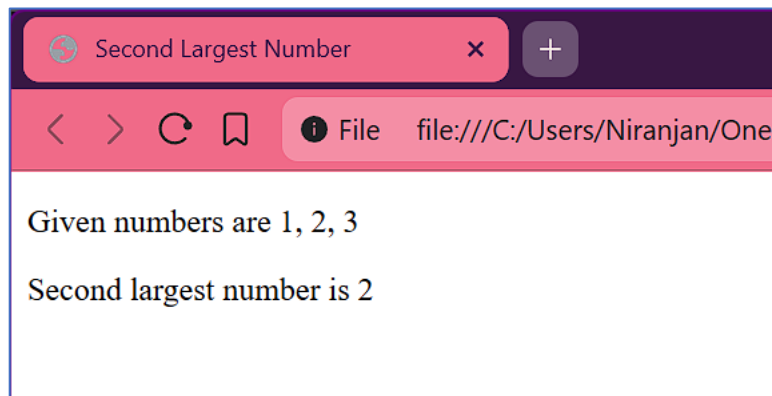
      let para = document.getElementById("para");
      let Ans = document.getElementById("Ans");

      para.innerText = "Given numbers are " + a + ", " + b + ", " + c;

      if (a > b) {
        if (a < c) {
          Ans.innerText = "Second largest number is " + a;
          console.log("Second largest number is " + a);
        } else {
          if (b > c) {
            Ans.innerText = "Second largest number is " + b;
            console.log("Second largest number is " + b);
          } else {
            Ans.innerText = "Second largest number is " + c;
            console.log("Second largest number is " + c);
          }
        }
      } else {
        if (b < c) {
          Ans.innerText = "Second largest number is " + b;
          console.log("Second largest number is " + b);
        }
      }
    }
  </body>
</html>
```

```
} else {  
  if (a > c) {  
    Ans.innerText = "Second largest number is " + a;  
    console.log("Second largest number is " + a);  
  } else {  
    Ans.innerText = "Second largest number is " + c;  
    console.log("Second largest number is " + c);  
  }  
}  
}  
}  
</script>  
</body>  
</html>
```

- Output



2. Write a program to input marks of five subjects and display the grade according to the following rules:

- 90-100: A+
  - 80-89: A
  - 70-79: B
  - 60-69: C
  - 50-59: D
  - <50: Fail
- (Use nested if-else only)*

- Code

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Question 2 Assignment 6</title>
  </head>
  <body>
    <p id="para"></p>
    <p id="percentage"></p>
    <p id="Ans"></p>

    <script>
      let sub1 = 50;
      let sub2 = 50;
      let sub3 = 50;
      let sub4 = 50;
      let sub5 = 50;

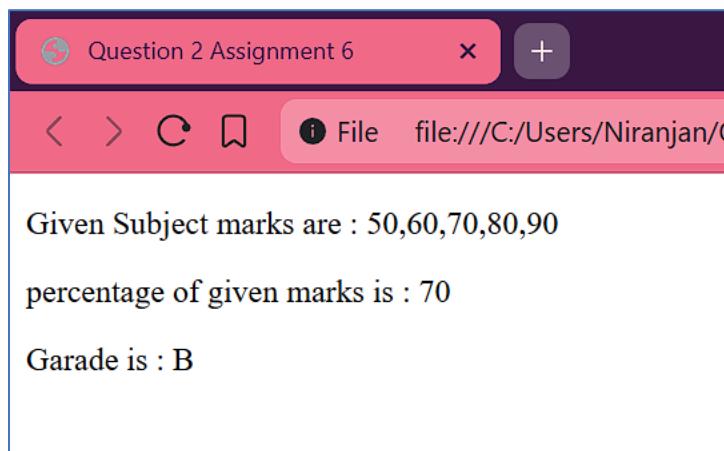
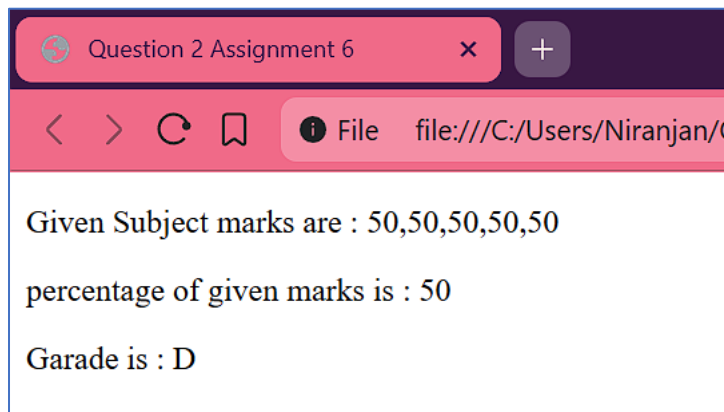
      let per = (sub1 + sub2 + sub3 + sub4 + sub5) / 5;

      let percentage = document.getElementById("percentage");
      percentage.innerText = "percentage of given marks is : " + per;

      let para = document.getElementById("para");
      para.innerText =
        "Given Subject marks are : " +
        sub1 +
        "," +
        sub2 +
        "," +
        sub3 +
        "," +
        sub4 +
        "," +
        sub5;
```

```
sub5;  
if (per >= 90) {  
    Ans.innerText = "Garade is : A+";  
} else if (per >= 80) {  
    Ans.innerText = "Garade is : A";  
} else if (per >= 70) {  
    Ans.innerText = "Garade is : B";  
} else if (per >= 60) {  
    Ans.innerText = "Garade is : C";  
} else if (per >= 50) {  
    Ans.innerText = "Garade is : D";  
} else {  
    Ans.innerText = "Garade is : Fail";  
}  
</script>  
</body>  
</html>
```

- Output



3. Write a program to check whether a given year is a leap year or not without using the modulus operator (%).

- Code

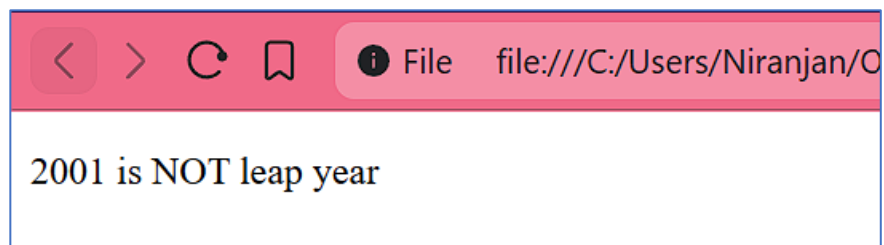
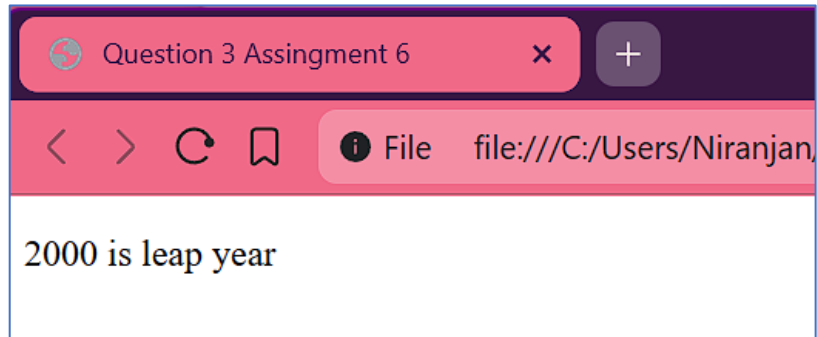
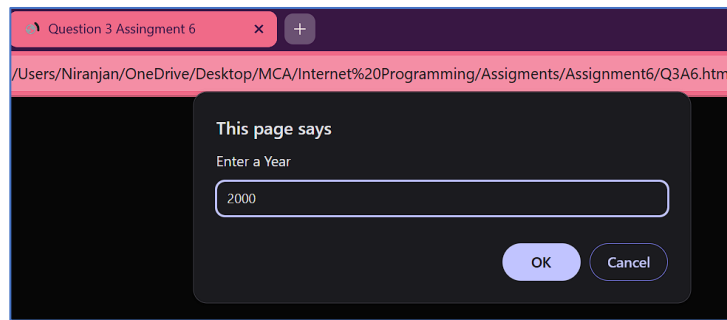
```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Question 3 Assingment 6</title>
  </head>
  <body>
    <p id="Ans"></p>
    <script>
      function isDivisibleBy(n, divisor) {
        return Number.isInteger(n / divisor) && (n / divisor) * divisor === n;
      }

      let year = parseInt(prompt("Enter a number"));

      let Ans = document.getElementById("Ans");

      if (
        isDivisibleBy(year, 400) ||
        (isDivisibleBy(year, 4) && !isDivisibleBy(year, 100))
      ) {
        Ans.innerText = year + " Given year is leap year";
      } else {
        Ans.innerText = year + " Given year is NOT leap year";
      }
    </script>
  </body>
</html>
```

- Output



4. Write a JavaScript program to accept feet and inch of two distances and print the total distance.

(Use simple variables and decision-making statement to handle inches greater than 12)

Example Logic

Distance 1: 5 feet, 8 inch

Distance 2: 3 feet, 11 inch

Total = 9 feet, 7 inch

(12 inches = 1 foot carry forward)

- Code

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Question 4 Assignment 6</title>
  </head>
  <body>
    <p id="Que"></p>
    <p id="Ans"></p>
    <script>
      let feet = 12;
      let inches = 12;
      let feet1 = 12;
      let inches1 = 12;
      let totalFeet = feet + feet1;
      let totalInchesh = inches + inches1;
      if (totalInchesh >= 12) {
        totalFeet = totalFeet + Math.floor(totalInchesh / 12);
        totalInchesh = totalInchesh % 12;    }
      let Que = document.getElementById("Que");
      let Ans = document.getElementById("Ans");
      Que.innerText = `Given Foot:Inches ${feet}: ${inches} + ${feet1}: ${inches1}`;
```

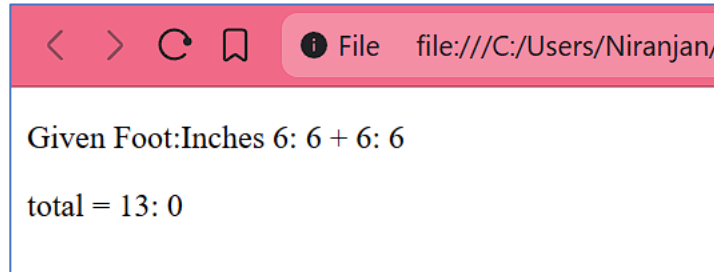
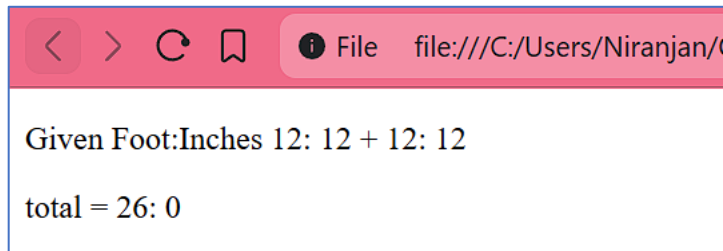
```
Ans.innerText = `total = ${totalFeet}: ${totalInches}`;
```

```
</script>
```

```
</body>
```

```
</html>
```

- Output





5. Write a program to create a class Employee and calculate salary based on basic salary entered by user:

- If salary > 50000, HRA = 25%, DA = 20%
- If salary between 20000–50000, HRA = 20%, DA = 15%
- If salary < 20000, HRA = 15%, DA = 10%

Print Gross Salary = Basic + HRA + DA.

- Code

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8" />
<meta name="viewport" content="width=device-width, initial-scale=1.0" />
<title></title>
</head>
<body>
<script>
class Employee {
  constructor(basicSalary) {
    this.basicSalary = basicSalary;
    this.HRA = 0;
    this.DA = 0;
    this.grossSalary = 0;
  }
  calculateSalary() {
    if (this.basicSalary >= 50000) {
      this.HRA = this.basicSalary * 0.25;
      this.DA = this.basicSalary * 0.2;
      this.grossSalary = basicSalary + this.HRA + this.DA;
    } else {
      if (this.basicSalary > 20000 && this.basicSalary < 50000) {
        this.HRA = this.basicSalary * 0.2;
        this.DA = this.basicSalary * 0.15;
```

```

        this.grossSalary = this.basicSalary + this.HRA + this.DA;
    } else {
        if (this.basicSalary < 20000) {
            this.HRA = this.basicSalary * 0.15;
            this.DA = this.basicSalary * 0.1;
            this.grossSalary = this.basicSalary + this.HRA + this.DA;
        }
    }
}

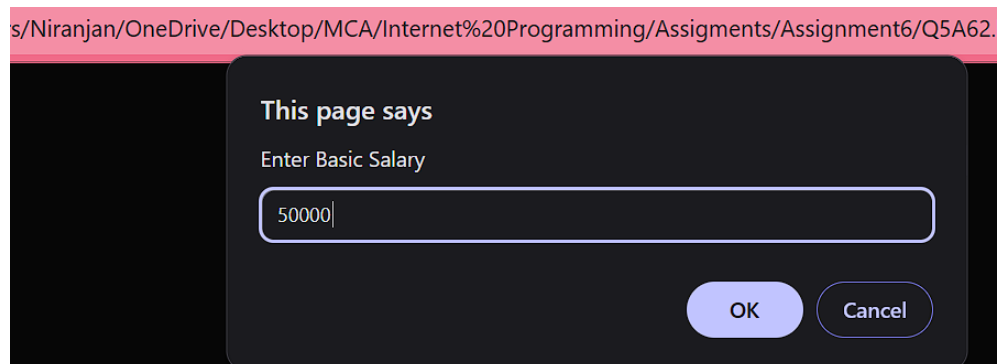
document.write(`Basic salary is : ${this.basicSalary}<br>`);
document.write(`HRA is : ${this.HRA}<br>`);
document.write(`DA is : ${this.DA}<br>`);
document.write(`Gross salary is : ${this.grossSalary}<br>`);
}
}

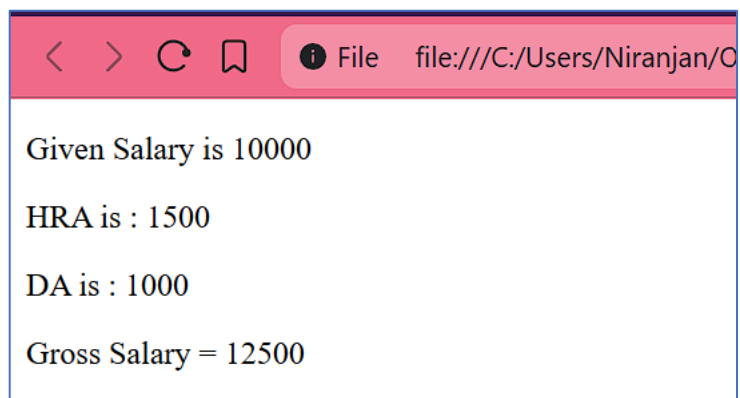
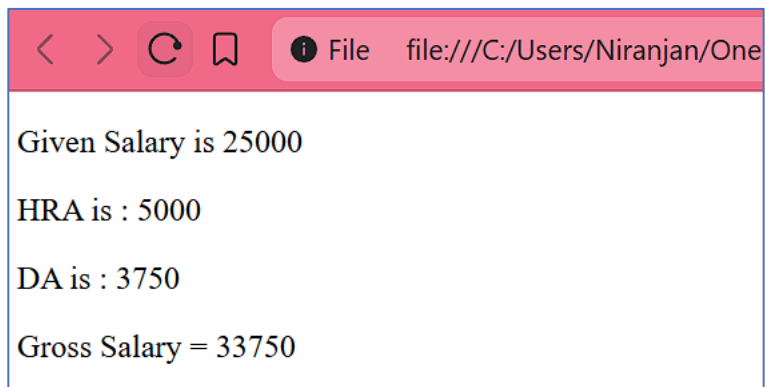
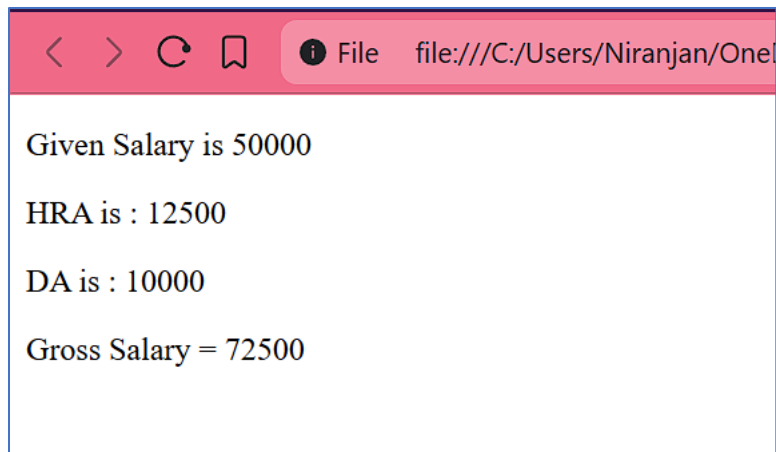
const basicSalary = parseInt(prompt("Enter Basic Salary"));
const emp = new Employee(basicSalary);
emp.calculateSalary();

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

```

- Output





6. Using switch-case, create a simple calculator that performs +, -, \*, /, % operations.

- Code

```
<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

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

    <title>Question 6 Assignment 6</title>

  </head>

  <body>

    <p id="N1"></p>

    <p id="N2"></p>

    <p id="Ans"></p>

    <script>

      let num1 = parseInt(prompt("Enter first number"));

      let num2 = parseInt(prompt("Enter second number"));

      let op = prompt("enter operation");

      let Ans = document.getElementById("Ans");

      let N1 = document.getElementById("N1");

      let N2 = document.getElementById("N2");

      N1.innerText = `Number First : ${num1}`;

      N2.innerText = `Number Second : ${num2}`;

      switch (op) {

        case "+":

          Ans.innerText = `Addition is : ${num1 + num2}`;

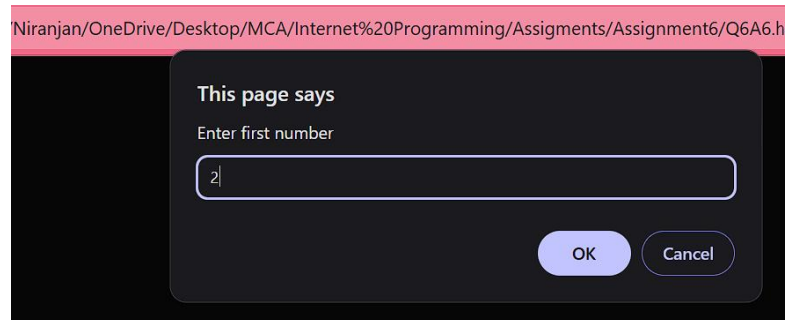
          break;

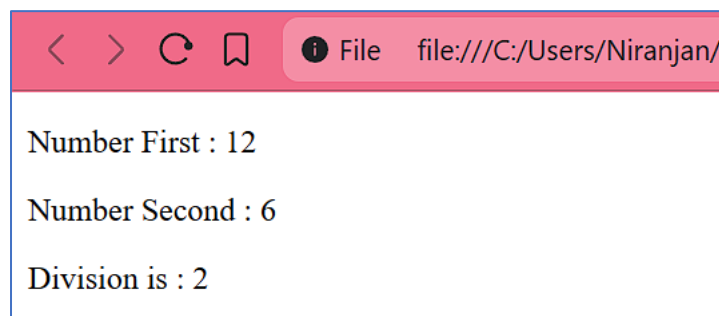
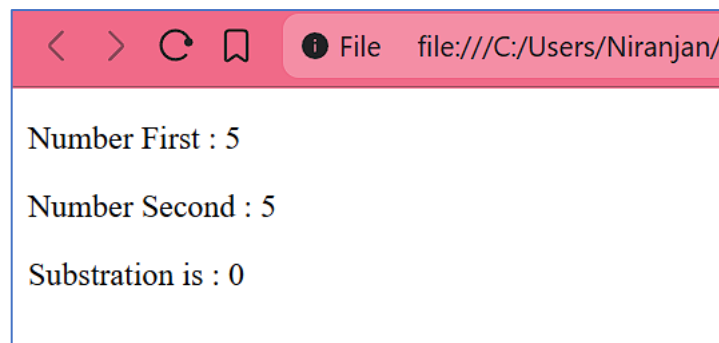
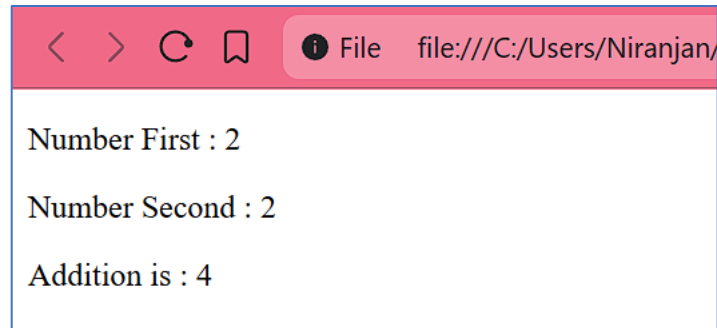
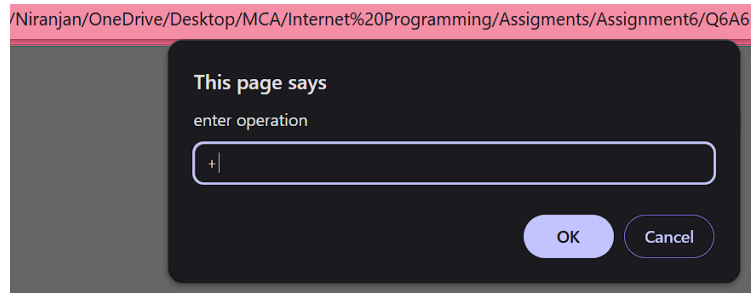
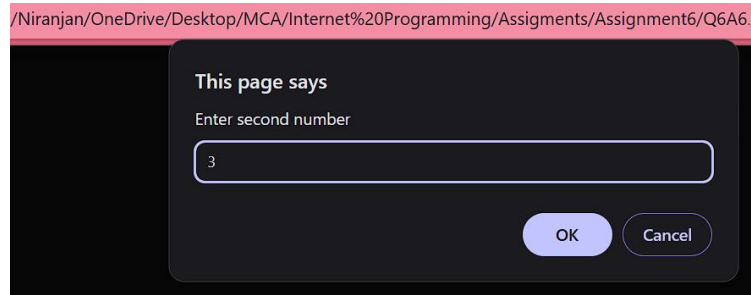
        case "-":

          Ans.innerText = `Substraction is : ${num1 - num2}`;
```

```
        break;
    case "*":
        Ans.innerText = `Multiply is : ${num1 * num2}`;
        break;
    case "/":
        Ans.innerText = `Division is : ${num1 / num2}`;
        break;
    case "%":
        Ans.innerText = `Mod is : ${num1 % num2}`;
        break;
    default:
        Ans.innerText = "Enter correct choice";
    }
</script>
</body>
</html>
```

- Output





7. Accept the day number (1–7) and print the day name.

- Code

```
<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

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

    <title>Question 7 Assignment 6</title>

  </head>

  <body>

    <p id="Qus"></p>

    <p id="Ans"></p>

    <script>

      let num = parseInt(prompt("Enter Day Number from 1 - 7"));

      let Ans = document.getElementById("Ans");

      let Qus = document.getElementById("Qus");

      Qus.innerText = `Given day number is : ${num}`;

      switch (num) {

        case 1:

          Ans.innerText = "Sunday";

          break;

        case 2:

          Ans.innerText = "Monday";

          break;

        case 3:

          Ans.innerText = "Tuesday";

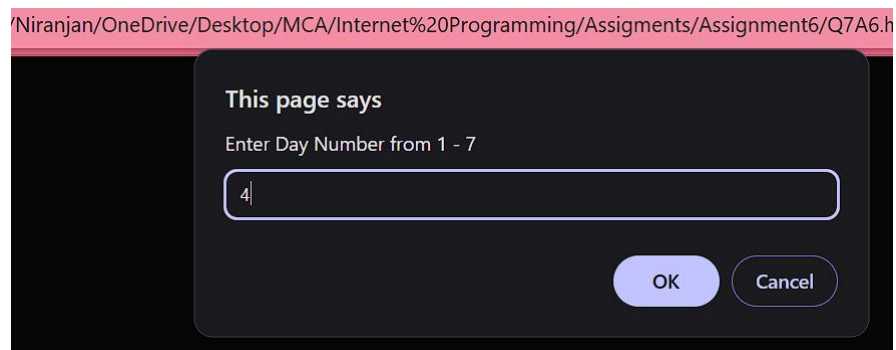
          break;

        case 4:

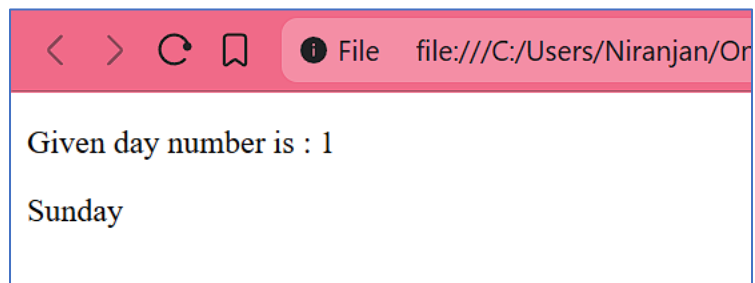
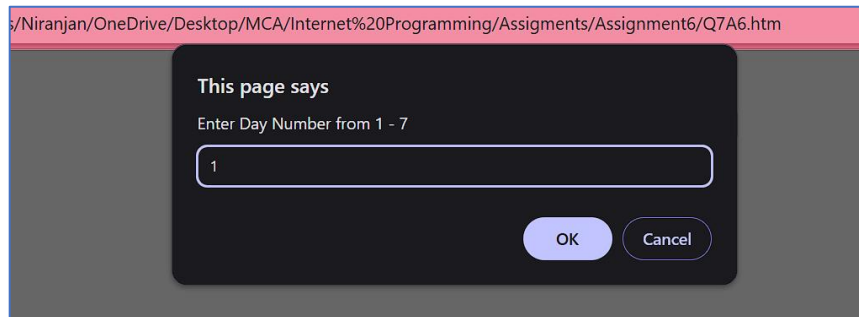
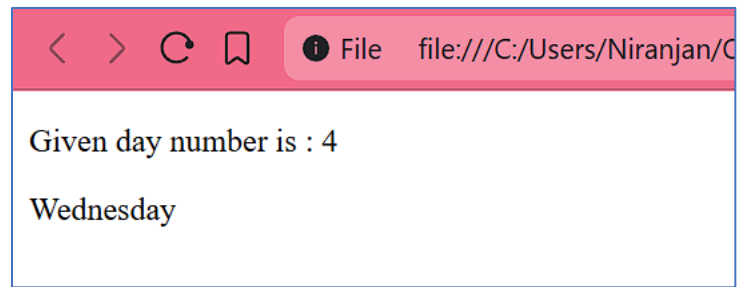
          Ans.innerText = "Wednesday";
```

```
        break;
    case 5:
        Ans.innerText = "Thrusday";
        break;
    case 6:
        Ans.innerText = "Friday";
        break;
    case 7:
        Ans.innerText = "Saturday";
        break;
    default:
        Ans.innerText = "Enter correct choice";
    }
</script>
</body>
</html>
```

- Output







8. Write a program to check if an input character is a vowel, consonant, digit, or special character. (Use nested if)

- Code

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8" />

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

  <title>Question 8 Assignment 6</title>

</head>

<body>

  <p id="DATA"></p>

  <p id="Ans"></p>

  <script>

    let data = prompt("Enter data");

    let Ans = document.getElementById("Ans");

    let DATA = document.getElementById("DATA");

    DATA.innerText = `Given data is : ${data}`;

    if ((data >= "A" && data <= "Z") || (data >= "a" && data <= "z")) {

      if (

        data == "A" ||

        data == "E" ||

        data == "I" ||

        data == "O" ||

        data == "U" ||

        data == "a" ||

        data == "e" ||

        data == "i" ||

        data == "o" ||

        data == "u"

      ) {

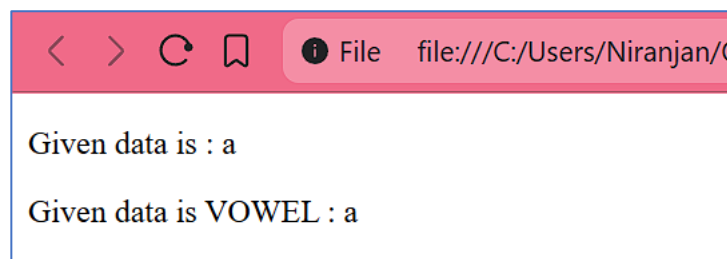
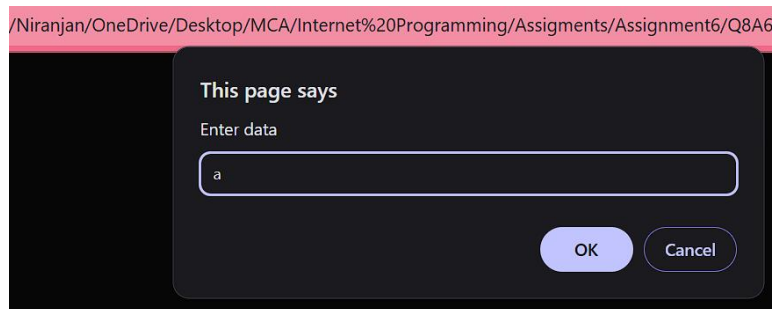
        Ans.innerText = `Given data is VOWEL : ${data}`;
```

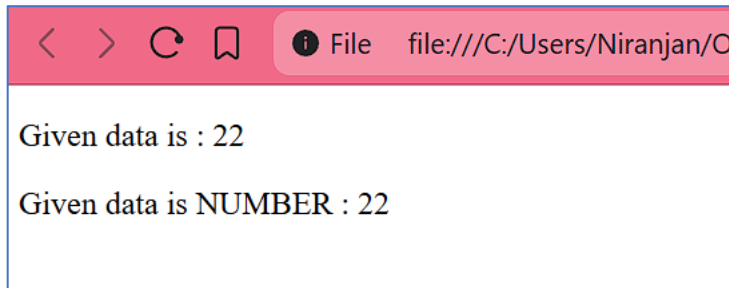
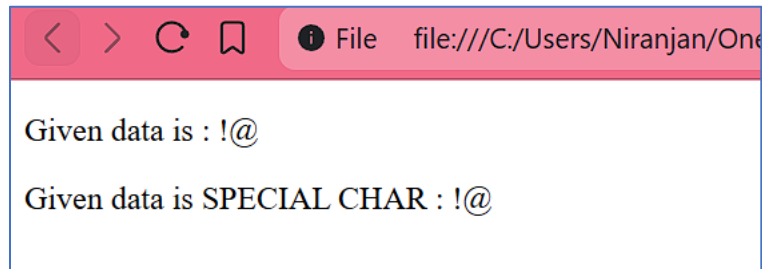
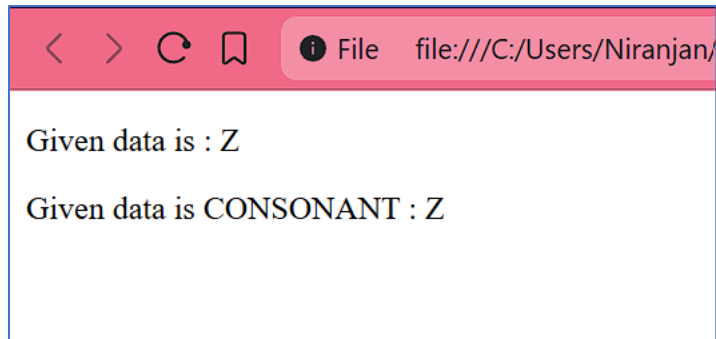
```

    } else {
        Ans.innerText = `Given data is CONSONANT : ${data}`;
    }
} else {
    if (data > "0" && data < "9") {
        Ans.innerText = `Given data is NUMBER : ${data}`;
    } else {
        Ans.innerText = `Given data is SPECIAL CHAR : ${data}`;
    }
}
</script>
</body>
</html>

```

- Output





## B) Looping Statements (for, while, do-while) —

1. Print the Fibonacci series up to N terms.

- Code

```
<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

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

    <title>Question 1 Assignment 6</title>

  </head>

  <body>

    <p id="para"></p>

    <script>

      let para = document.getElementById("para");

      let num = parseInt(prompt("Enter a number"));

      para.innerText = `Given number is ${num}`;

      let a = 0;

      let b = 1;

      document.write(a + " _ ");

      document.write(b);

      for (let i = 0; i < num-1; i++) {

        let c = a + b;

        document.write("_ " + c);

        a = b;

        b = c;

        c = a;

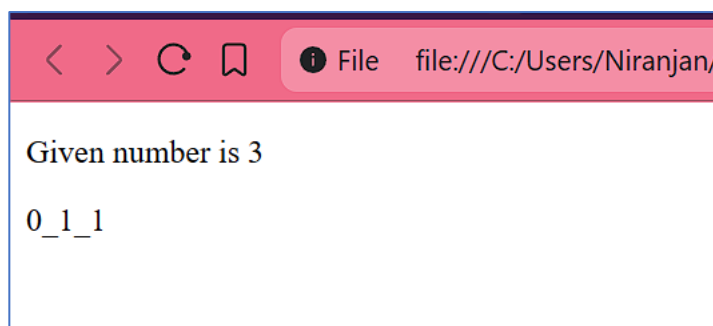
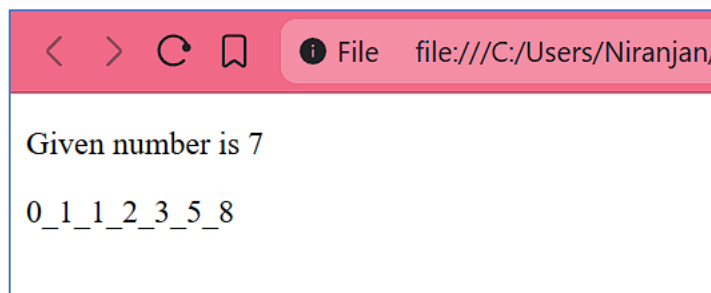
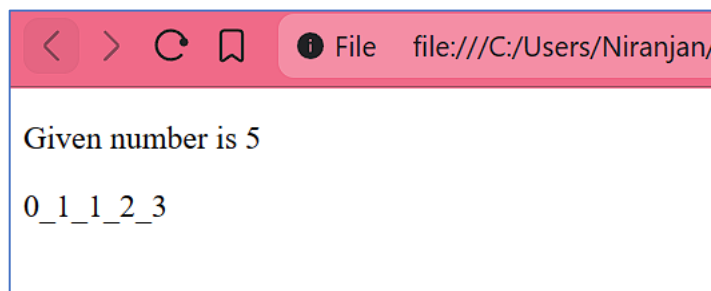
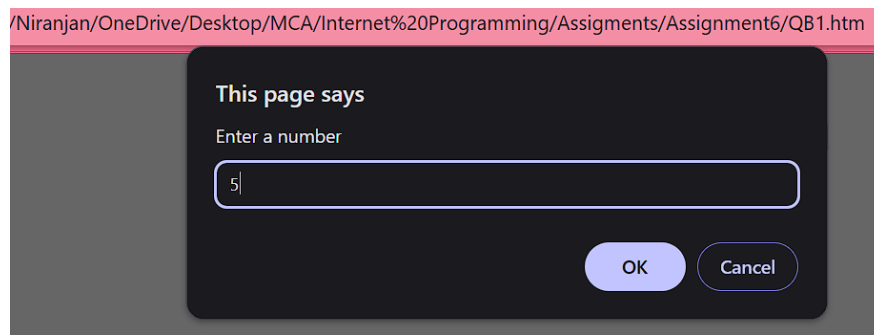
      }

    </script>

  </body>

</html>
```

- Output



2. Print all prime numbers between 1 and 100.

- Code

```
<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

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

    <title>Question 2 Assignment 6</title>

  </head>

  <body>

    <script>

      for (let i = 2; i <= 100; i++) {

        let isPrime = true;

        for (let j = 2; j < i; j++) {

          if (i % j === 0) {

            isPrime = false;

          }

        }

        if (isPrime) {

          document.write(i + "_");

        }

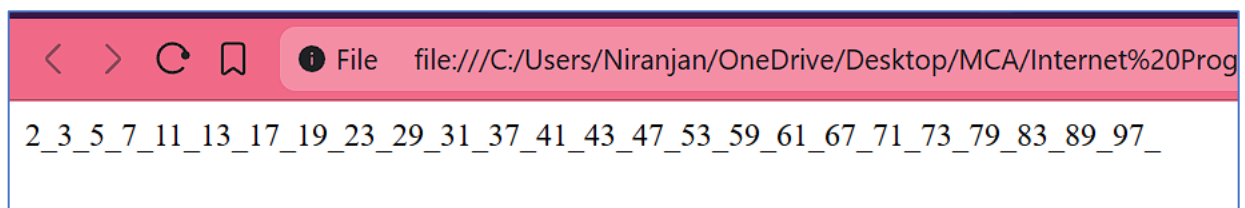
      }

    </script>

  </body>

</html>
```

- Output



3. Accept a number and print its reverse.

- Code

```
<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

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

    <title>Question 3 Assignment 6</title>

  </head>

  <body>

    <p id="Que"></p>

    <p id="Ans"></p>

    <script>

      let num = parseInt(prompt("Enter a number"));

      let Que = document.getElementById("Que");
      let Ans = document.getElementById("Ans");

      Que.innerText = `Given number is : ${num}`;

      let temp = num;
      let dig = 0;
      let rev = 0;
      while (temp > 0) {
        dig = temp % 10;
        rev = rev * 10 + dig;
        temp = Math.floor(temp / 10);
      }

      Ans.innerText = `Reverse of given number is : ${rev}`;
```

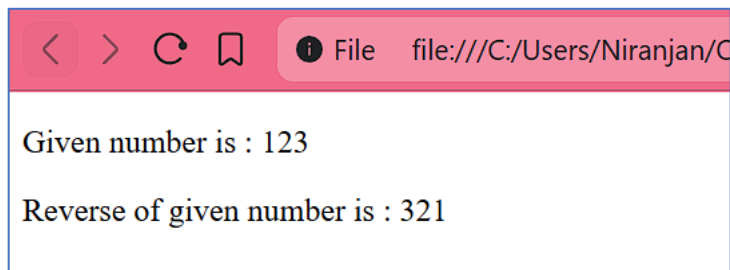
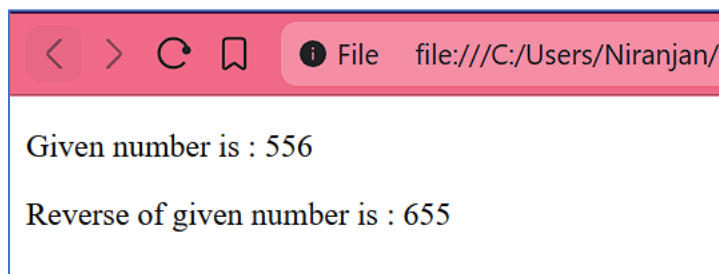
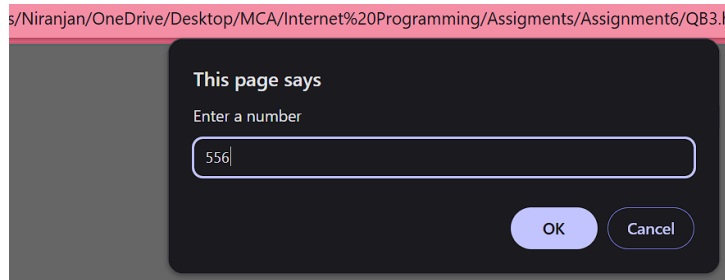


</script>

</body>

</html>

- Output



4. Print multiplication table of any number up to 10.

- Code

```
<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

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

    <title>Question 4 Assignment 6</title>

  </head>

  <body>

    <script>

      let num = parseInt(prompt("Enter a number"));

      let j = 1;

      for (let i = num; i <= num * 10; i = i + num) {

        document.write(`${num} x ${j} = ${i}`);

        document.write("<br>");

        j++;

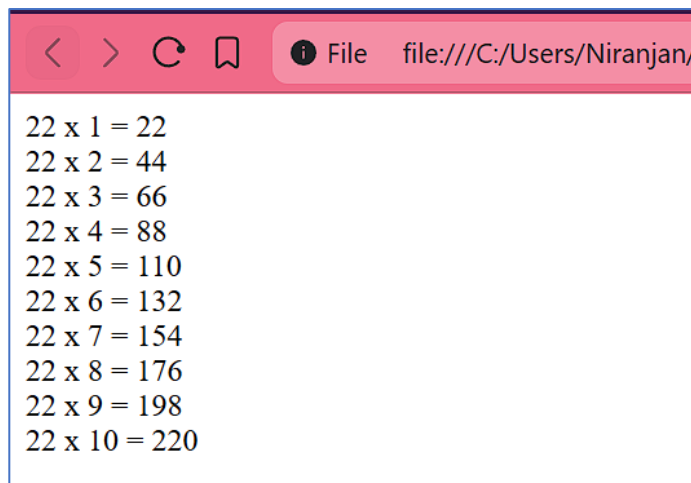
      }

    </script>

  </body>

</html>
```

- Output



5. Accept a number and check whether it is a palindrome or not.

- Code

```
<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

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

    <title></title>

  </head>

  <body>

    <script>

      let num = parseInt(prompt("Enter a number"));

      document.write(`Given Number is ${num}`);

      document.write("<br>");

      let temp = num;

      let dig = 0;

      let rev = 0;

      while (temp > 0) {

        dig = temp % 10;

        rev = rev * 10 + dig;

        temp = Math.floor(temp / 10);

      }

      if (num == rev) {

        document.write(`Given Number is Palendrone`);

      } else {

        document.write(`Given Number is NOT Palendrone`);

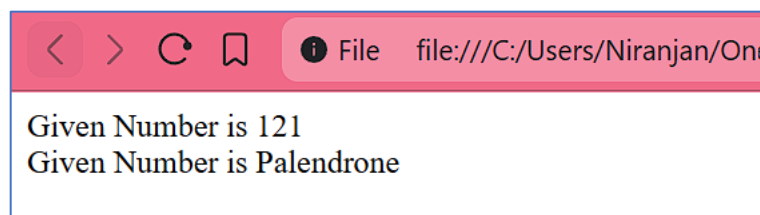
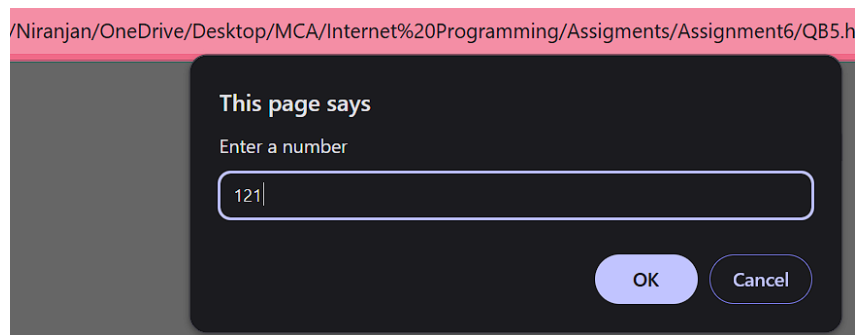
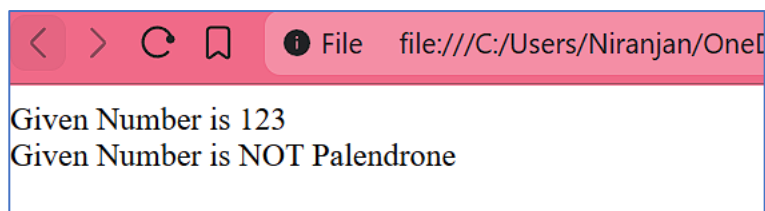
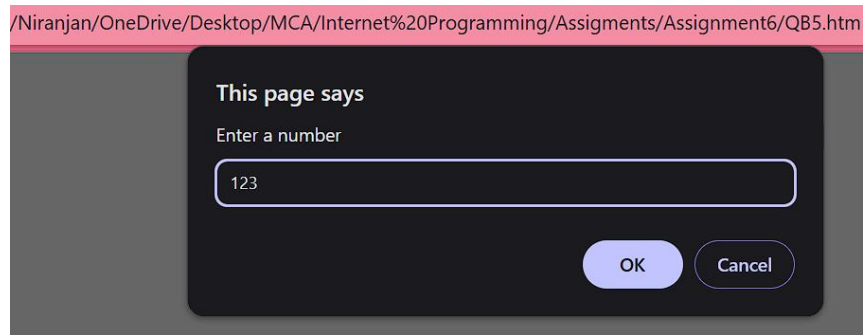
      }

    </script>

  </body>

</html>
```

- Output



6. Count the number of digits in a given number without converting it to a string.

- Code

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8" />

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

  <title>Question 6 Assignment 6</title>

</head>

<body>

  <script>

    let st = prompt("enter a string");

    document.write(`Given string is : ${st}<br>`);

    let count = 0;

    for (i in st) {

      if (st[i] >= "0" && st[i] <= "9") {

        count++;

      }

    }

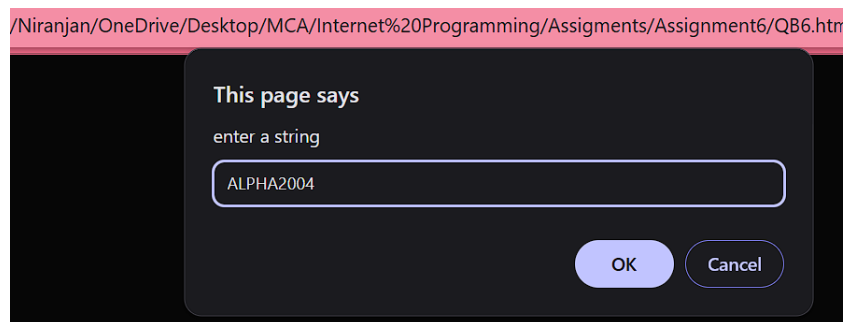
    document.write(`count of number in given string is ${count}`);

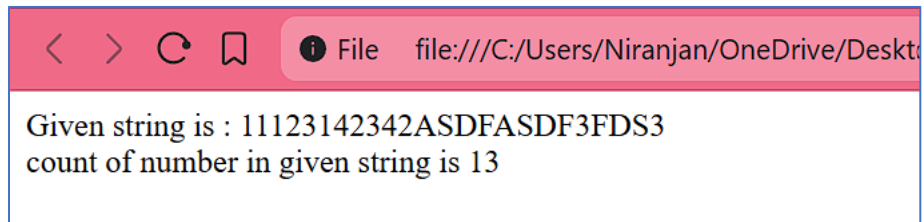
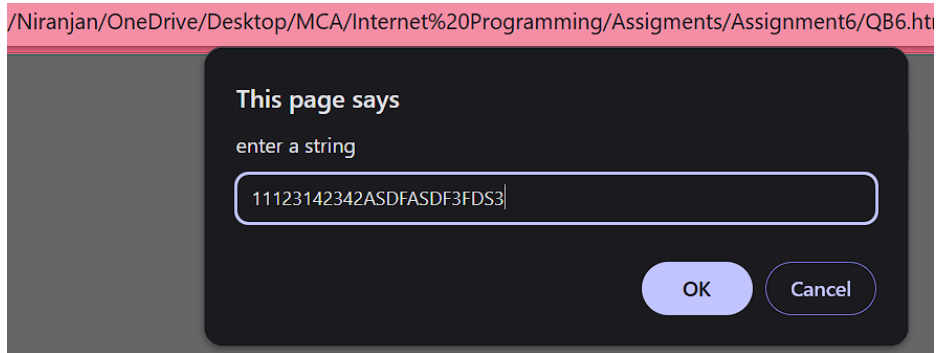
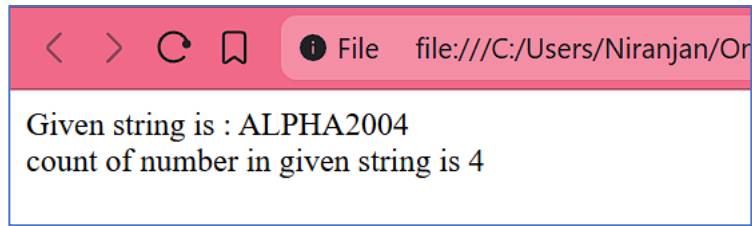
  </script>

</body>

</html>
```

- Output





7. Print the sum of all even and odd numbers separately from 1 to 100.

- Code

```
<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

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

    <title>Question 7 Assignment 6</title>

  </head>

  <body>

    <script>

      let odd = 0;

      let even = 0;

      for (let i = 0; i <= 100; i++) {

        if (i % 2 === 0) {

          even = even + i;

        } else {

          odd = odd + i;

        }

      }

      document.write(`Total of all even numbers : ${even}<br>`);

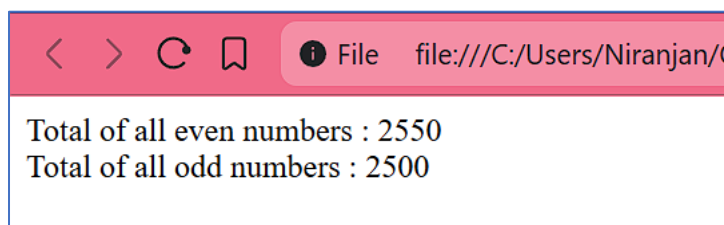
      document.write(`Total of all odd numbers : ${odd}`);

    </script>

  </body>

</html>
```

- Output



8. Print the factorial of a number using a loop.

- Code

```
<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

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

    <title>Question 8 Assignment 6</title>

  </head>

  <body>

    <script>

      let num = parseInt(prompt("Enter a number"));

      document.write(`Given number is : ${num}<br>`);

      let fact = 1;

      for (let i = num; i > 0; i--) {

        fact = fact * i;

      }

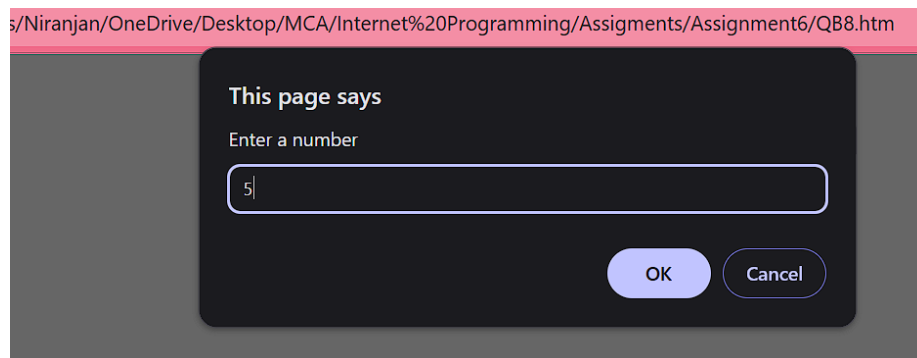
      document.write(`Factorial of given number is : ${fact}`);

    </script>

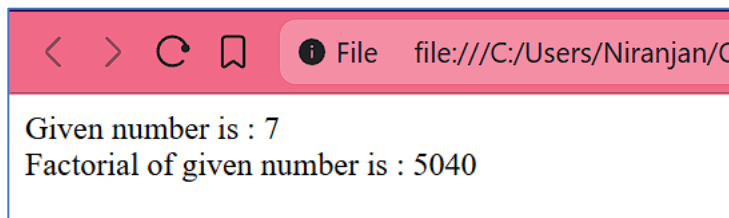
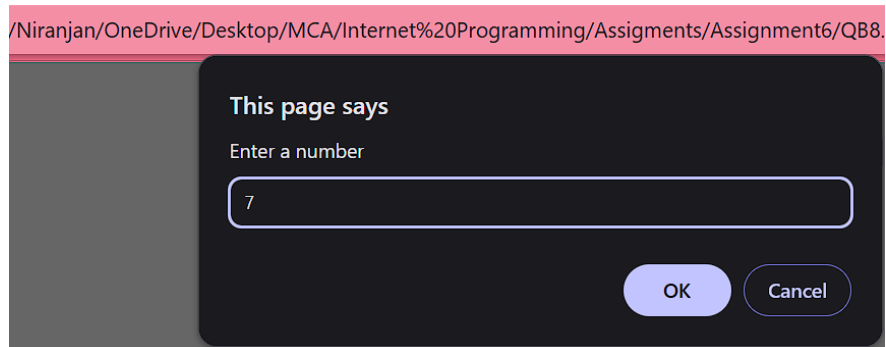
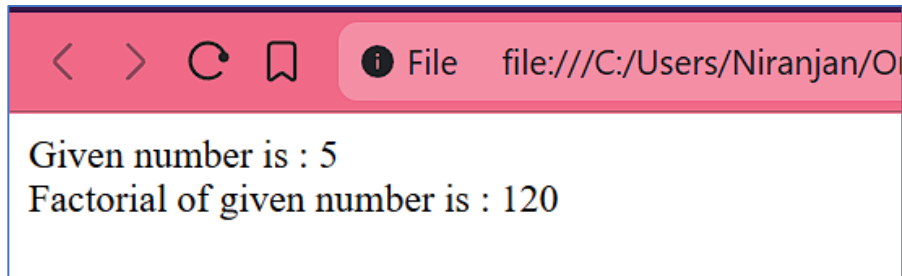
  </body>

</html>
```

- Output







9. Print a pattern as follows

1

23

456

7891

23456

- Code

```
<!DOCTYPE html>
```

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

```
<head>
```

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

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

```
<title>Question 9 Assignment 6</title>
```

```
</head>
```

```
<body>
```

```
<script>
```

```
document.write("PRINTING PATTERN");
```

```
let row = parseInt(prompt("Enter row size"));
```

```
let num = 1;
```

```
for (let i = 0; i <= row; i++) {
```

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

```
    document.write(`${num} `);
```

```
    if (num >= 9) {
```

```
      num = 0;
```

```
    }
```

```
    num++;
```

```
  }
```

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

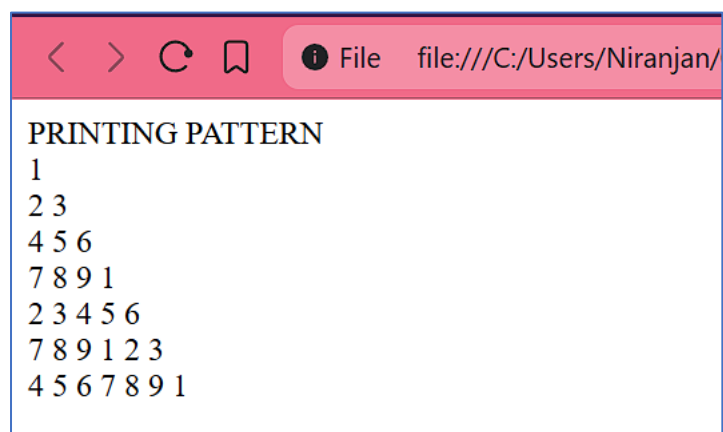
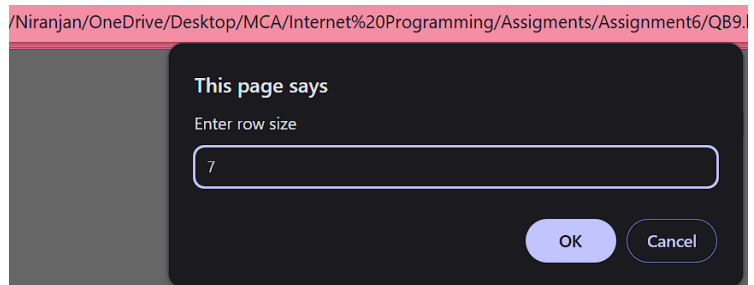
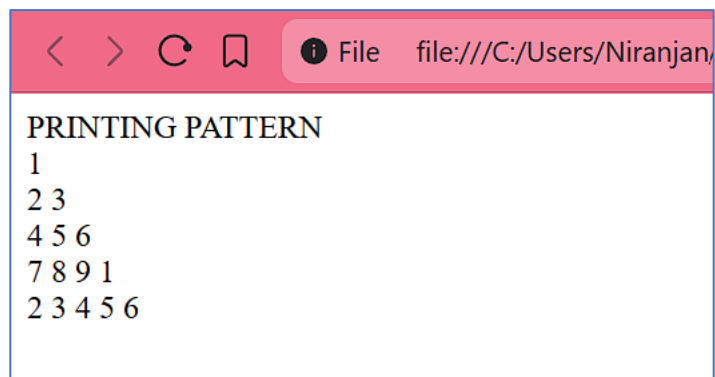
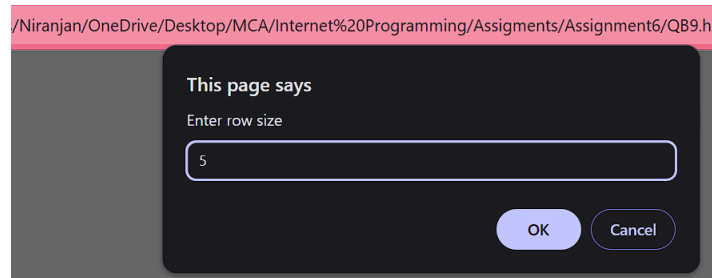
```
}
```

```
</script>
```

```
</body>
```

</html>

- Output



10. Find the sum of digits of a number using a loop.

- Code

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8" />

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

  <title>Question 10 Assignment 6</title>

</head>

<body>

  <script>

    let num = parseInt(prompt("Enter a number"));

    document.write(`Given number is : ${num}<br>`);

    let temp = num;
    let dig = 0;
    let sum = 0;

    while (temp > 0) {
      dig = temp % 10;
      sum = sum + dig;
      temp = Math.floor(temp / 10);
    }

    document.write(`Sum of given number is : ${sum}`);

  </script>

</body>

</html>
```

- Output

