

Assignment 6

Roll No :- 24

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;

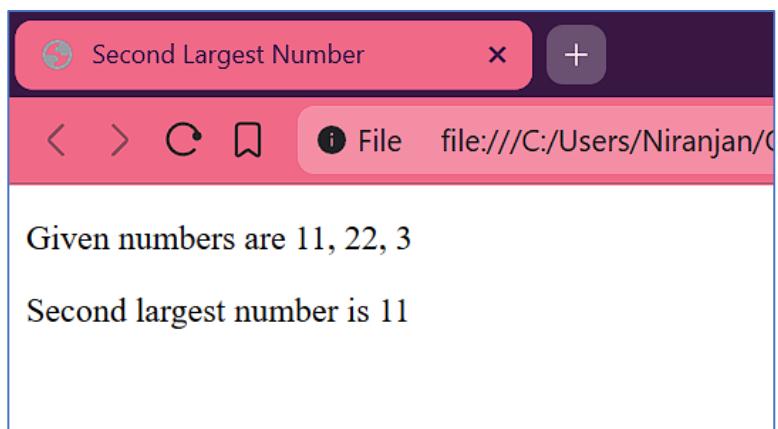
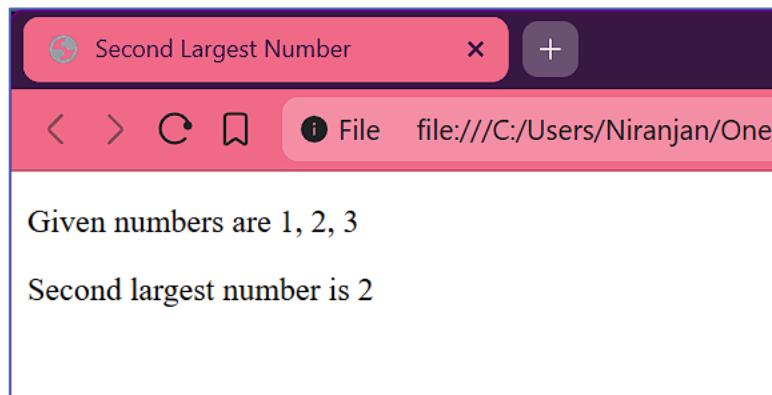
      let para = document.getElementById("para");
      let Ans = document.getElementById("Ans");

      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);
```

```
    } 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:

- o 90-100: A+
- o 80-89: A
- o 70-79: B
- o 60-69: C
- o 50-59: D
- o <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;  
if (per >= 90) {  
    Ans.innerHTML = "Grade is : A+";  
} else if (per >= 80) {  
    Ans.innerHTML = "Grade is : A";  
} else if (per >= 70) {  
    Ans.innerHTML = "Grade is : B";  
} else if (per >= 60) {  
    Ans.innerHTML = "Grade is : C";  
} else if (per >= 50) {  
    Ans.innerHTML = "Grade is : D";  
} else {  
    Ans.innerHTML = "Grade is : Fail";  
}  
</script>  
</body>  
</html>
```

- Output

Given Subject marks are : 50,50,50,50,50
percentage of given marks is : 50
Grade is : D

Given Subject marks are : 50,60,70,80,90
percentage of given marks is : 70
Grade is : B

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

- Code

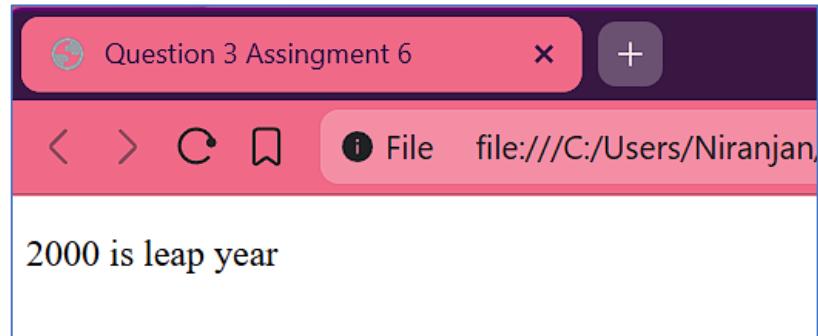
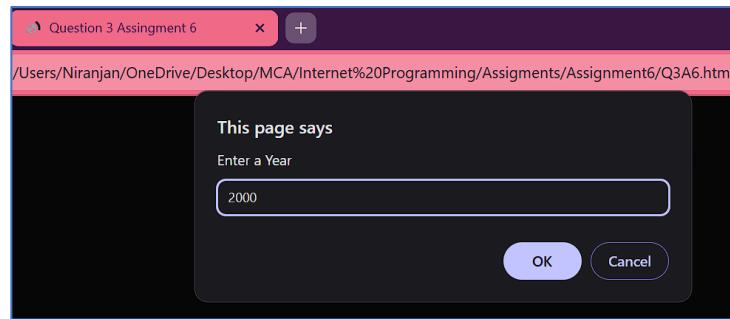
```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8" />
<meta name="viewport" content="width=device-width, initial-scale=1.0" />
<title>Question 3 Assingment 6</title>
</head>
<body>
<p id="Ans"></p>
<script>
function isDivisibleBy(n, divisor) {
    return Number.isInteger(n / divisor) &&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

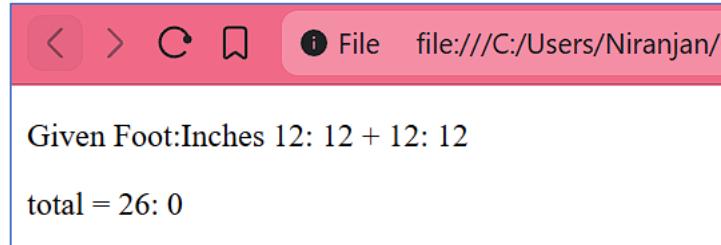
(12 inches = 1 foot carry forward)

- 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



```
Given Foot:Inches 12: 12 + 12: 12  
total = 26: 0
```



```
Given Foot:Inches 6: 6 + 6: 6  
total = 13: 0
```

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

- o If salary > 50000, HRA = 25%, DA = 20%
- o If salary between 20000–50000, HRA = 20%, DA = 15%
- o 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;
            }
        }
    }
}</script>
```

```

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>');
}

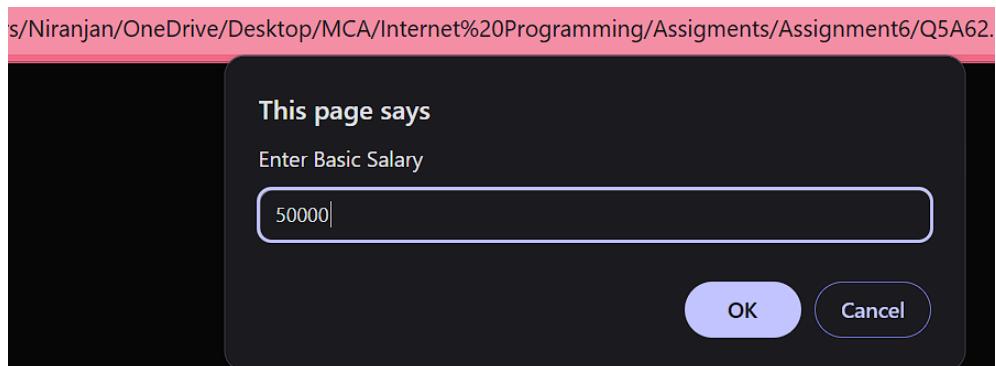
}

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

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

```

- Output



A screenshot of a web browser window with a pink header bar. The header bar contains navigation icons (back, forward, refresh, and bookmark), a file icon, and the path "file:///C:/Users/Niranjan/One". The main content area displays the following text:

```
Given Salary is 50000
HRA is : 12500
DA is : 10000
Gross Salary = 72500
```

A screenshot of a web browser window with a pink header bar. The header bar contains navigation icons (back, forward, refresh, and bookmark), a file icon, and the path "file:///C:/Users/Niranjan/One". The main content area displays the following text:

```
Given Salary is 25000
HRA is : 5000
DA is : 3750
Gross Salary = 33750
```

A screenshot of a web browser window with a pink header bar. The header bar contains navigation icons (back, forward, refresh, and bookmark), a file icon, and the path "file:///C:/Users/Niranjan/One". The main content area displays the following text:

```
Given Salary is 10000
HRA is : 1500
DA is : 1000
Gross Salary = 12500
```

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 = `Substration is : ${num1 - num2}`;
```

```

        break;

    case "*":
        Ans.innerText = `Multply is : ${num1 * num2}`;
        break;

    case "/":
        Ans.innerText = `Division is : ${num1 / num2}`;
        break;

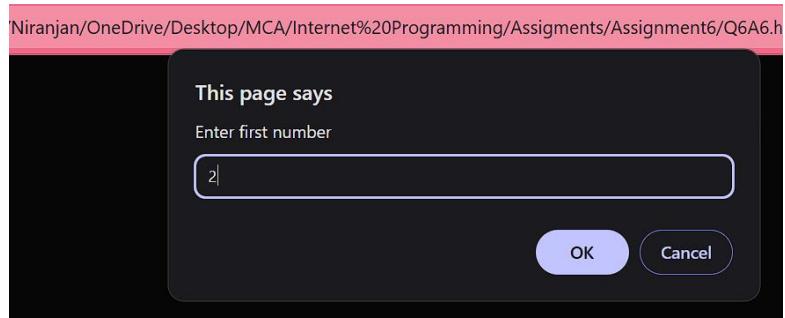
    case "%":
        Ans.innerText = `Mod is : ${num1 % num2}`;
        break;

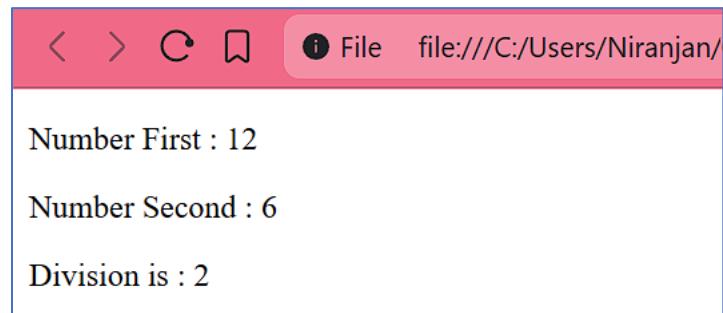
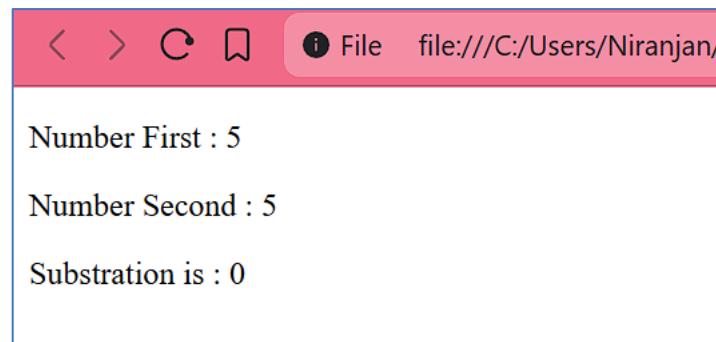
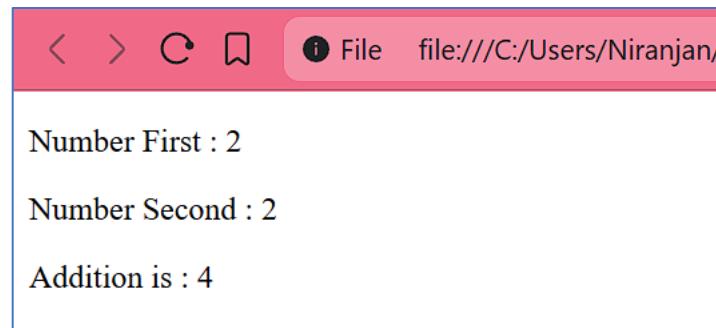
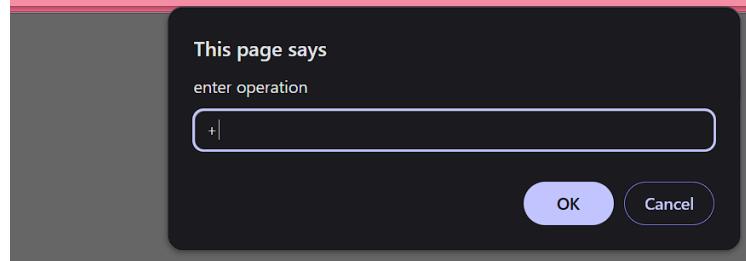
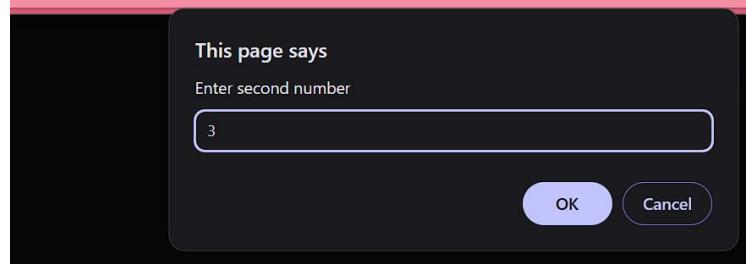
    default:
        Ans.innerText = "Enter correct choice";
    }
}

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

```

- Output





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

- Code

```
<!DOCTYPE html>

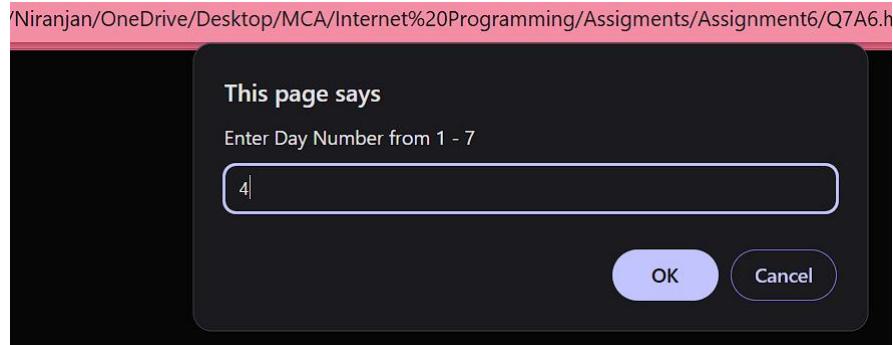
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Question 7 Assignment 6</title>
  </head>
  <body>
    <p id="Qus"></p>
    <p id="Ans"></p>
    <script>
      let num = parseInt(prompt("Enter Day Number from 1 - 7"));
      let Ans = document.getElementById("Ans");

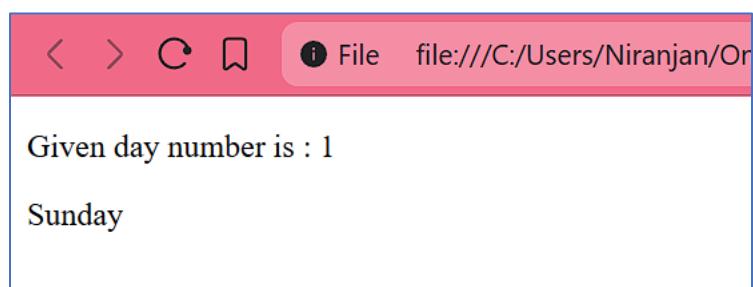
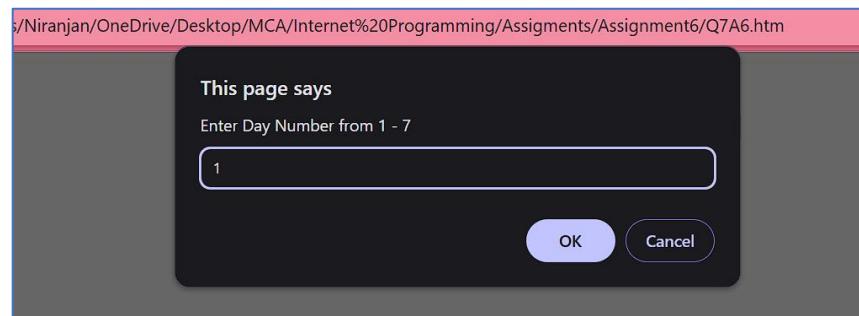
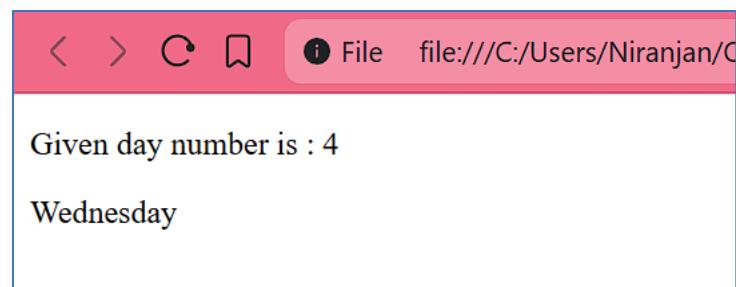
      let Qus = document.getElementById("Qus");
      Qus.innerText = `Given day number is : ${num}`;

      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}`;
    }
}
```

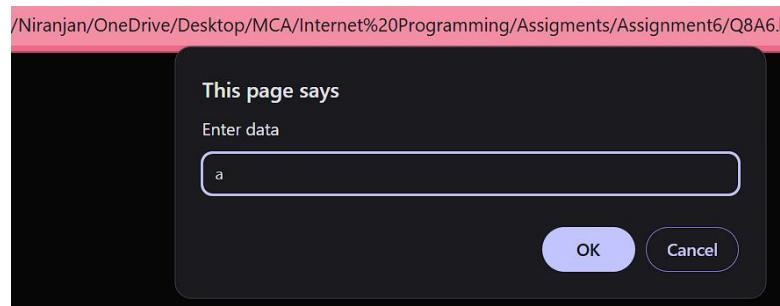
```

} 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



< > ⌂ ⌂

File

file:///C:/Users/Niranjan/

Given data is : Z

Given data is CONSONANT : Z

< > ⌂ ⌂

File

file:///C:/Users/Niranjan/One

Given data is : !@

Given data is SPECIAL CHAR : !@

< > ⌂ ⌂

File

file:///C:/Users/Niranjan/O

Given data is : 22

Given data is NUMBER : 22

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

1. Print the Fibonacci series up to N terms.

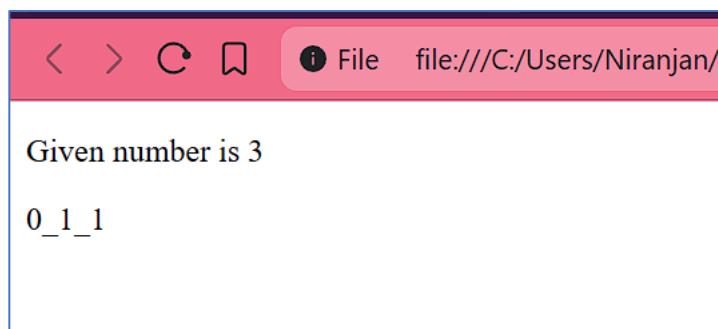
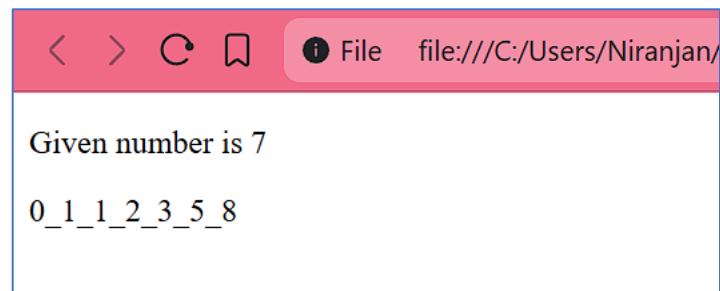
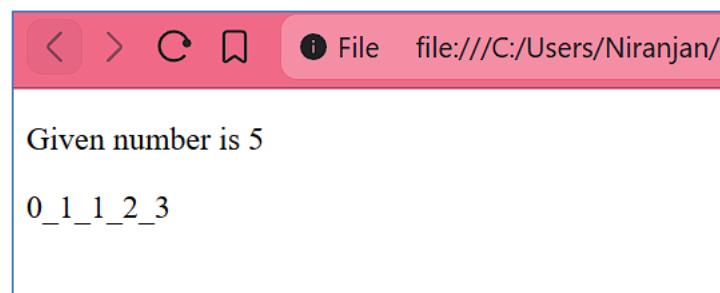
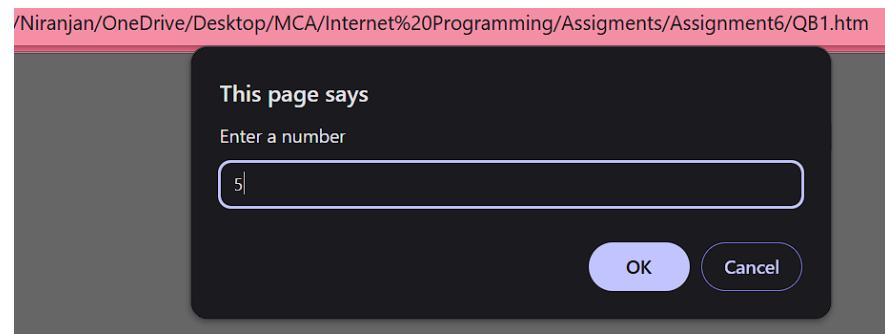
- Code

```
<!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



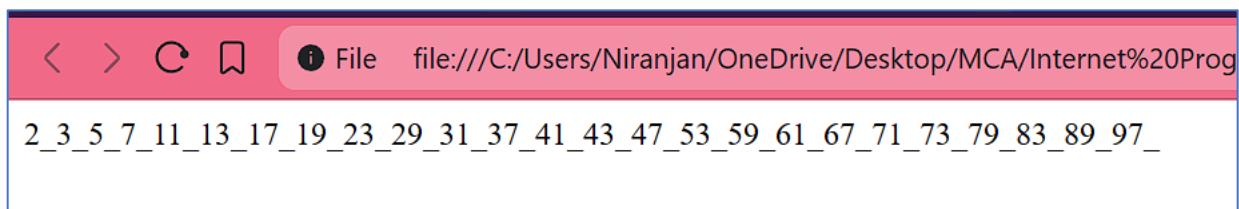
2. Print all prime numbers between 1 and 100.

- 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");

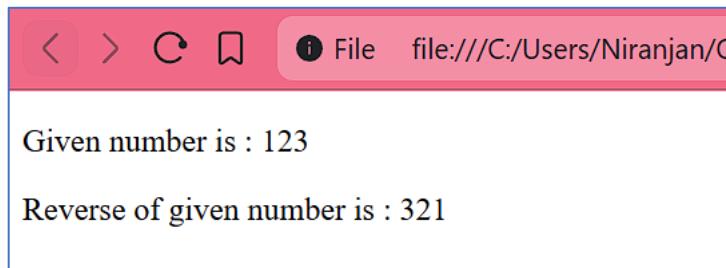
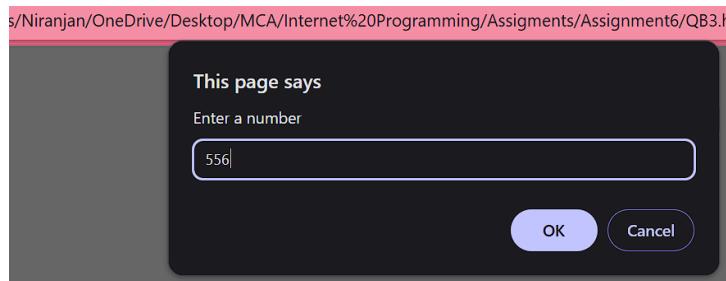
      Que.innerText = `Given number is : ${num}`;

      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>
```

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

- Output



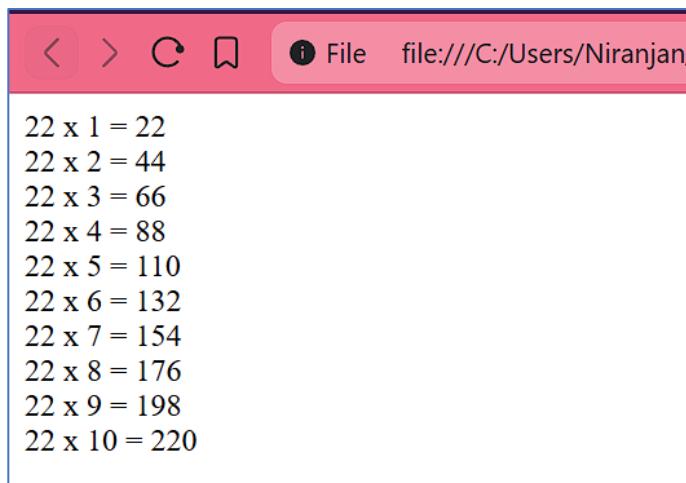
4. Print multiplication table of any number up to 10.

- 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



A screenshot of a web browser window. The title bar says "File file:///C:/Users/Niranjan/". The main content area displays the multiplication table of 22:

```
22 x 1 = 22
22 x 2 = 44
22 x 3 = 66
22 x 4 = 88
22 x 5 = 110
22 x 6 = 132
22 x 7 = 154
22 x 8 = 176
22 x 9 = 198
22 x 10 = 220
```

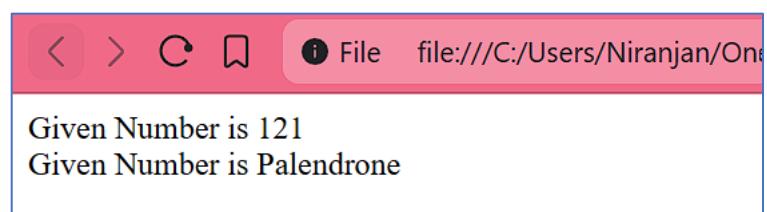
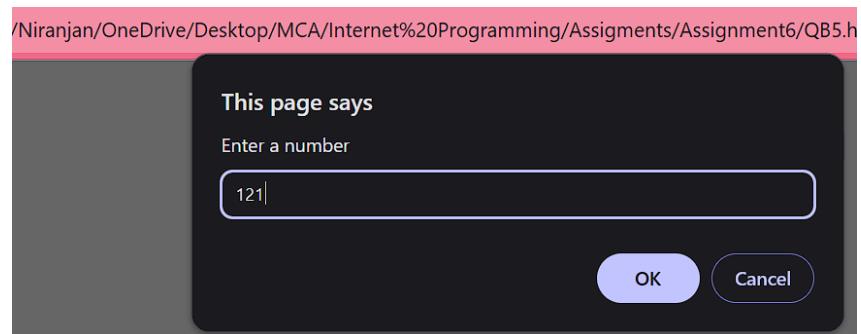
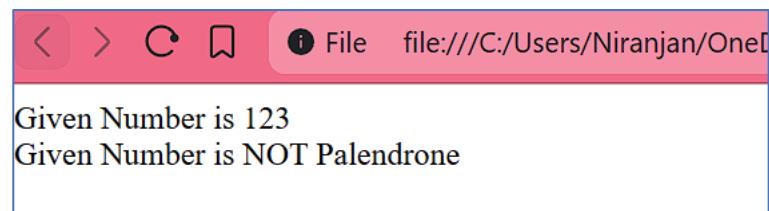
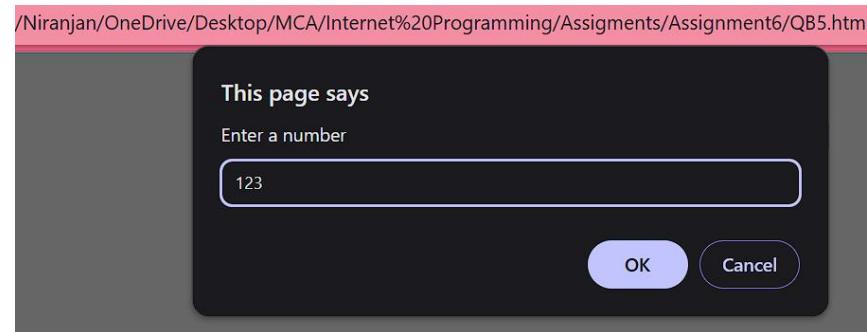
5. Accept a number and check whether it is a palindrome or not.

- 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



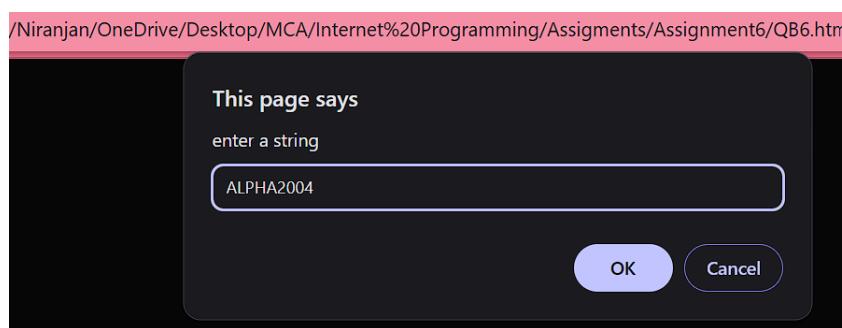
6. Count the number of digits in a given number without converting it to a string.

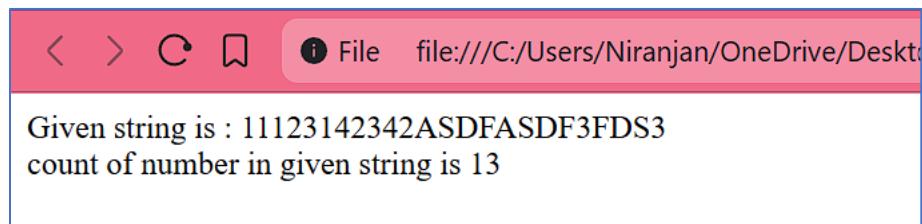
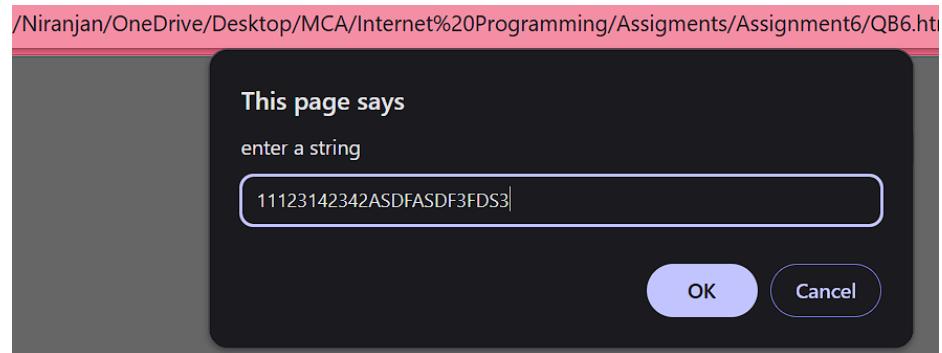
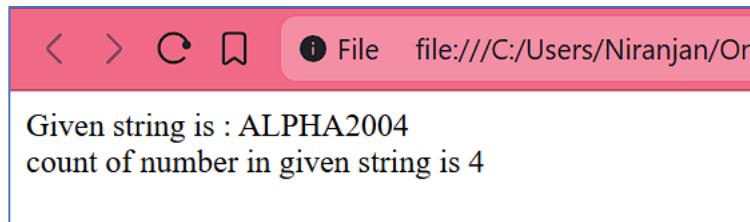
- Code

```
<!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.

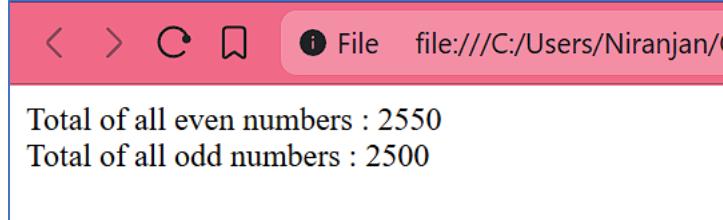
- Code

```
<!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



A screenshot of a browser window displaying the output of the provided JavaScript code. The browser interface includes a red header bar with navigation icons and a file path. The main content area shows two lines of text: "Total of all even numbers : 2550" and "Total of all odd numbers : 2500".

```
< > ⏪ ⏴ ⓘ File file:///C:/Users/Niranjan/C...
```

Total of all even numbers : 2550
Total of all odd numbers : 2500

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

- Code

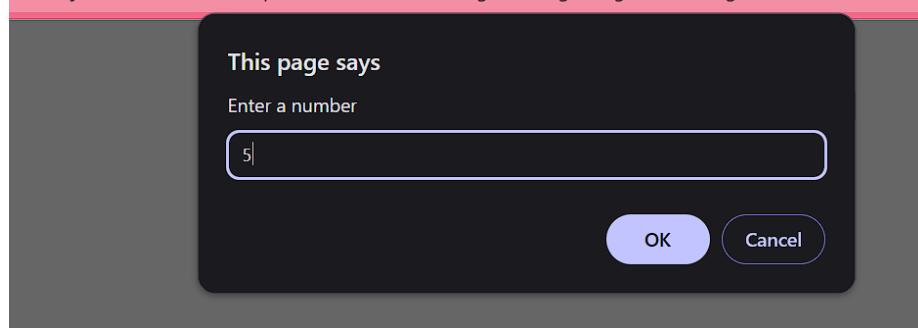
```
<!DOCTYPE html>

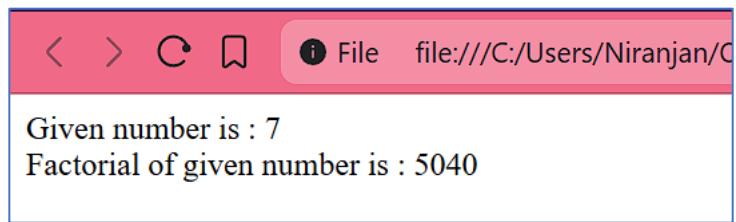
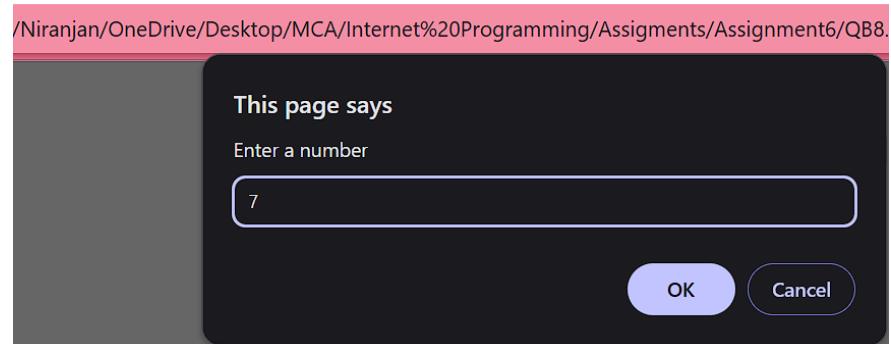
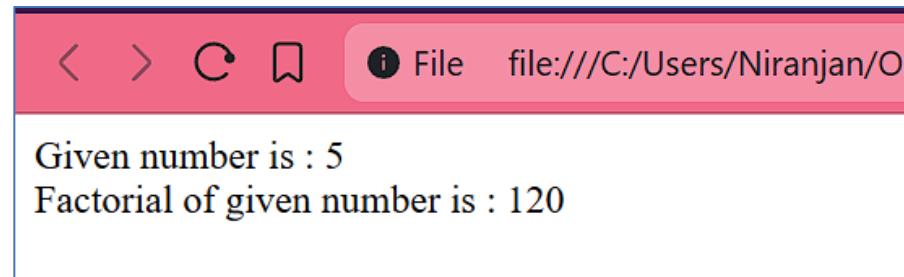
<html lang="en">
<head>
<meta charset="UTF-8" />
<meta name="viewport" content="width=device-width, initial-scale=1.0" />
<title>Question 8 Assignment 6</title>
</head>
<body>
<script>
let num = parseInt(prompt("Enter a number"));
document.write('Given number is : ${num}<br>');

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

s/Niranjan/OneDrive/Desktop/MCA/Internet%20Programming/Assigments/Assignment6/QB8.htm





9. Print a pattern as follows

1

23

456

7891

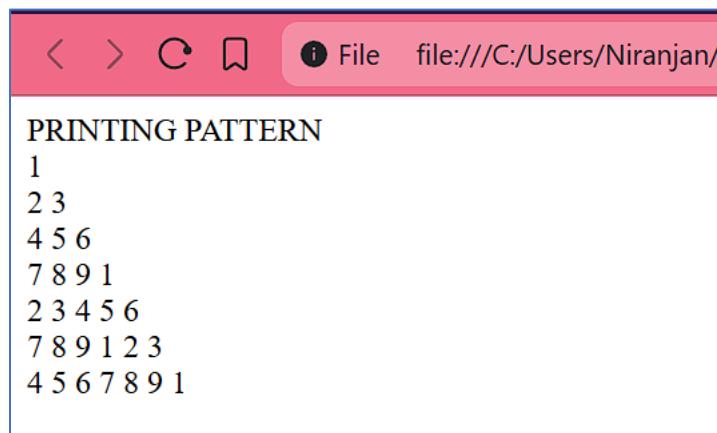
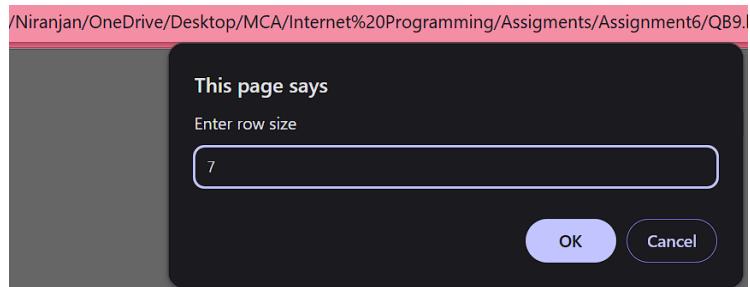
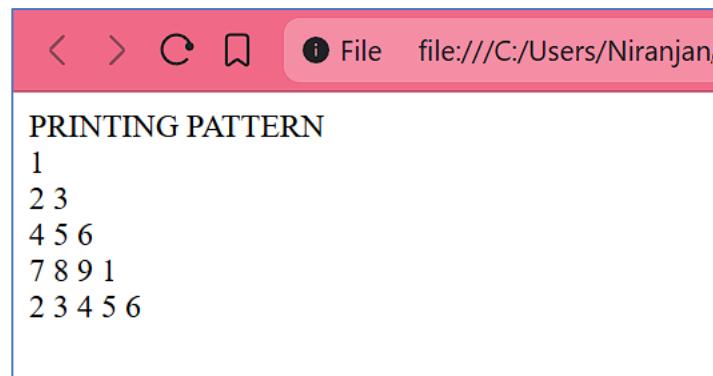
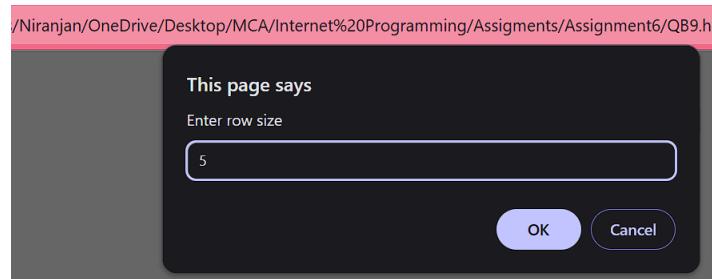
23456

- 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

