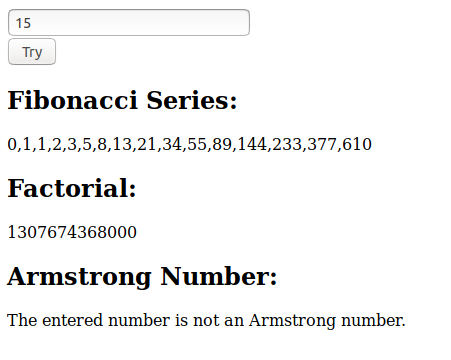
**Program 6**

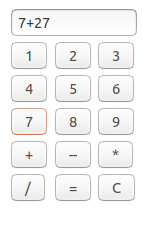
**PART-A**

**A.1 Aim:**

**Write a JavaScript code to find out factorial, Fibonacci, Armstrong number as shown below**



**Create a simple calculator with JavaScript as shown below**



**Implement front end form validation with javascript**

**A.2 Prerequisite:**

HTML, CSS, Java (only for programming basics)

**A.3 Outcome:**

After successful completion of this experiment students will be able to

1. Understand and implement basic javascript programming for variables, objects, functions, arrays

2. Understand and implement front end validation of simple form with javascript

**A.4 Theory:**

* JavaScript is High-level scripting (interpreted) language
* Embedded in an HTML document between script tags
* 2 Ways to do this
* <script language="javascript"> JavaScript statements go here </script>
* OR in an external file which is loaded using **<script src="program.js" ...></script>**
* JavaScript is an untyped language so a variable can hold any kind of value.
* The **var** keyword is used to define variables.

var i = 1;

i = "a string";

i = new Date ();

* Objects defined in javascript include Number, String, Boolean, Date, Array
* function square(x)

{  
 return x \* x;

}

* Operators include Arithemetic, assignement, relational,…..
* In javascript we use document.write() to print output
* Ex:

function validateForm() {  
    var x = document.forms["myForm"]["fname"].value;  
    if (x == "") {  
        alert("Name must be filled out");  
        return false;  
    }  
}

* The above code takes fname field and checks if its empty

In this program students are expected to work with form validation for empty fields, regular expressions for password…..

The DOM defines a standard for accessing documents:

•Finding HTML elements by id

var myElement = document.getElementById("intro");

Example

<!DOCTYPE html>

<html>

<body>

<h1 onclick="changeText(this)">Click on this text!</h1>

<script>

function changeText(id) {

id.innerHTML = "Ooops!";

}

</script>

</body>

</html>

**PART B**

**(PART B: TO BE COMPLETED BY STUDENTS)**

**(Students must submit the soft copy as per following segments within two hours of the**

**practical. The soft copy must be uploaded on the Blackboard or emailed to the concerned lab in charge faculties at the end of the practical in case the there is no Black board access available)**

**B.1 Software Code written by student:**

**(Students must paste the code here)**

**Fibonacci, Factorial and Armstrong:**

<!DOCTYPE html>

<html>

  <body>

    <input type="text" id="num" /><br /><br />

    <button onclick="create()">Try</button>

  </body>

  <script>

    function create() {

      document.body.appendChild(document.createElement("br"));

      document.body.appendChild(document.createElement("br"));

      document.body.append("Fibonacci Series:");

      document.body.appendChild(document.createElement("br"));

      var input = document.getElementById("num").value;

      var num1 = 0;

      var num2 = 1;

      var sum;

      var i;

      document.body.append(num1 + " " + num2 + " ");

      for (i = 1; i < input; i++) {

        sum = num1 + num2;

        num1 = num2;

        num2 = sum;

        document.body.append(num2 + " ");

      }

      document.body.appendChild(document.createElement("br"));

      document.body.appendChild(document.createElement("br"));

      document.body.append("Factorial: ");

      document.body.appendChild(document.createElement("br"));

      var x = 1;

      for (var i = 2; i <= input; i++) x = x \* i;

      document.body.append(x);

      document.body.appendChild(document.createElement("br"));

      document.body.appendChild(document.createElement("br"));

      document.body.append("Armstrong Number: ");

      document.body.appendChild(document.createElement("br"));

      var x = input.length;

      var sum = 0;

      var temp = input;

      while (temp > 0) {

        rem = temp % 10;

        sum += rem \*\* x;

        temp = parseInt(temp / 10);

      }

      if (sum == input) {

        document.body.append("It is an Armstong Number");

      } else {

        document.body.append("It is not an Armstong Number");

      }

    }

  </script>

</html>

**Calculator:**

<!DOCTYPE html>

<html>

  <head>

    <title>Calculator</title>

    <style>

    </style>

  </head>

  <body onload="dis();">

    <input type="text" id="disp" readonly="true" />

    <br />

    <script type="text/javascript">

      function dis() {

        var arr = [

          "1",

          "2",

          "3",

          "4",

          "5",

          "6",

          "7",

          "8",

          "9",

          "0",

          "+",

          "-",

          "\*",

          "/",

          "=",

          "C",

        ];

        for (var i = 0; i < arr.length; i++) {

          if (i % 3 == 0) {

            document.body.appendChild(document.createElement("br"));

          }

          var bt = document.createElement("button");

          bt.setAttribute("id", arr[i]);

          bt.innerHTML = arr[i];

          bt.style.margin = "10px";

          bt.style.width = "40px";

          bt.onclick = function () {

            calc(this.id);

          };

          document.body.appendChild(bt);

        }

      }

      function calc(a) {

        if (a == "=") {

          document.getElementById("disp").value = eval(

            document.getElementById("disp").value

          );

        } else if (a == "C") {

          document.getElementById("disp").value = "";

        } else {

          document.getElementById("disp").value += a;

        }

      }

    </script>

  </body>

</html>

**Form Validation:**

<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="utf-8" />

    <title>Registration Form</title>

  </head>

  <body>

    <h1>pls fill</h1>

    <form>

      <label for="name">Name: </label>

      <input type="text" id="name" name="name" placeholder="Jane Doe" />

      <br /><br />

      <label for="e\_id">Email: </label>

      <input

        type="email"

        id="e\_id"

        name="e\_id"

        placeholder="email@example.com"

        required

      />

      <br /><br />

      <label for="pwd">Password: </label>

      <input

        type="password"

        id="pwd"

        name="pwd"

        placeholder="Minimum 8 characters"

        required

      />

      <br /><br />

      <p>Gender</p>

      <input type="radio" name="gender" id="male" />

      <label for="male">Male</label>

      <input type="radio" name="gender" id="female" />

      <label for="female">Female</label>

      <br /><br />

      <p>Sports You Play</p>

      <input

        type="checkbox"

        name="sport"

        id="Cricket"

        checked

        value="Cricket"

      />

      <label for="Cricket">Cricket</label>

      <input type="checkbox" name="sport" id="Football" value="Football" />

      <label for="Football">Football</label>

      <input type="checkbox" name="sport" id="Volleyball" value="VolleyBall" />

      <label for="Volleyball">VolleyBall</label>

      <br /><br />

      <input type="button" onclick="validateform()" value="submit"></input>

    </form>

    <div id="output"></div>

    <script type="text/javascript">

      function validateform() {

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

        var password = document.getElementById("pwd").value;

        var x = document.getElementsByName("sport");

        var out = document.getElementById("output");

        if (name == null || name == "") {

          console.log("Name can't be blank");

          return false;

        }

        if (password.length < 8) {

          alert("Password must be at least 8 characters long");

          return false;

        }

        if (!(password.match("^(?=.\*[0-9])(?=.\*[a-z])(?=.\*[A-Z]).{8,120}.\*$"))) {

          alert("Password too weak");

          return false;

        }

        var c=0;

        for(var i=0;i<x.length;i++)

        {

                if(x[i].checked==false)

                    c++;

                else{

                    alert(x[i].id);

                    console.log(x[i].value);

                    out.innerHTML+=x[i].id;

                }

        }

        if(c==x.length)

            alert("one checkbox to be checked");

        out.innerHTML=""

        out.innerHTML+="ANSWERS"+document.createElement("BR")+" name = "+name + " "

      }

    </script>

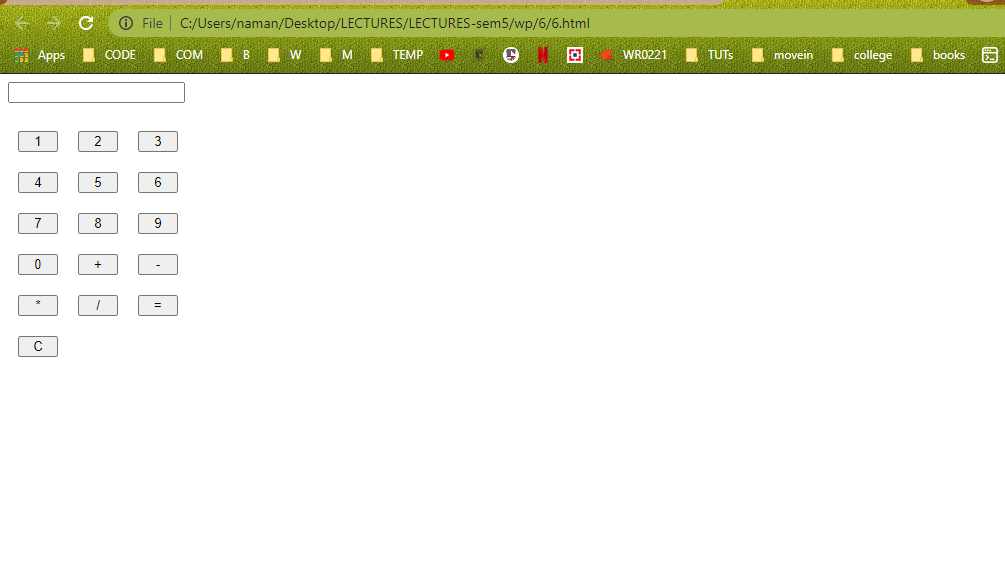
  </body>

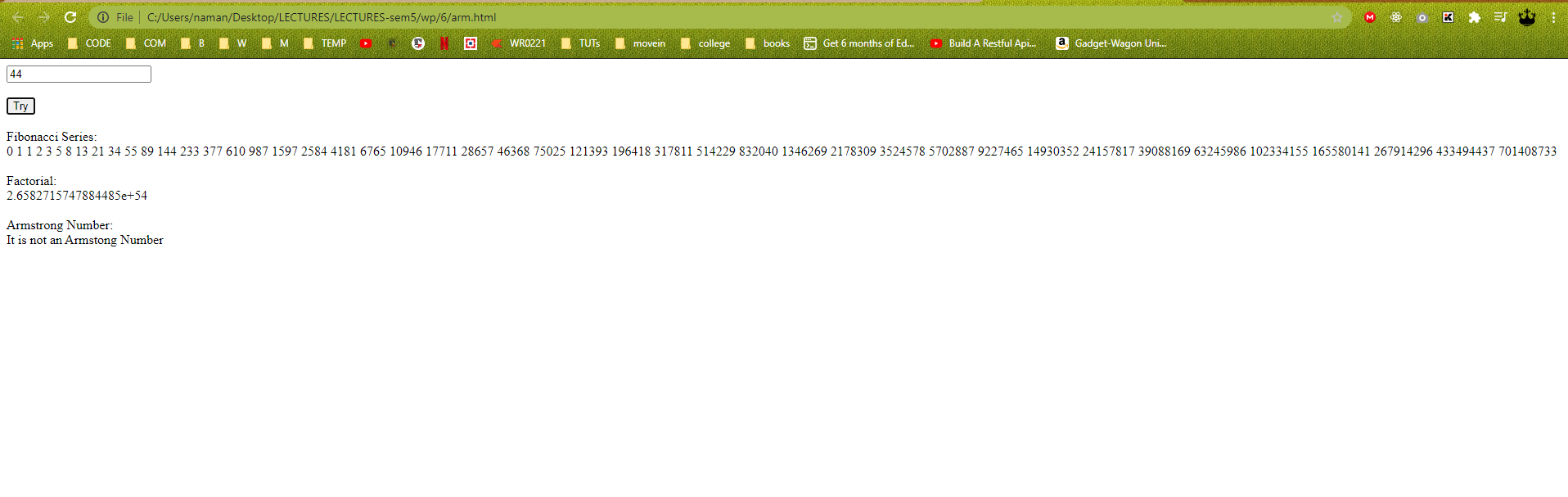
</html>

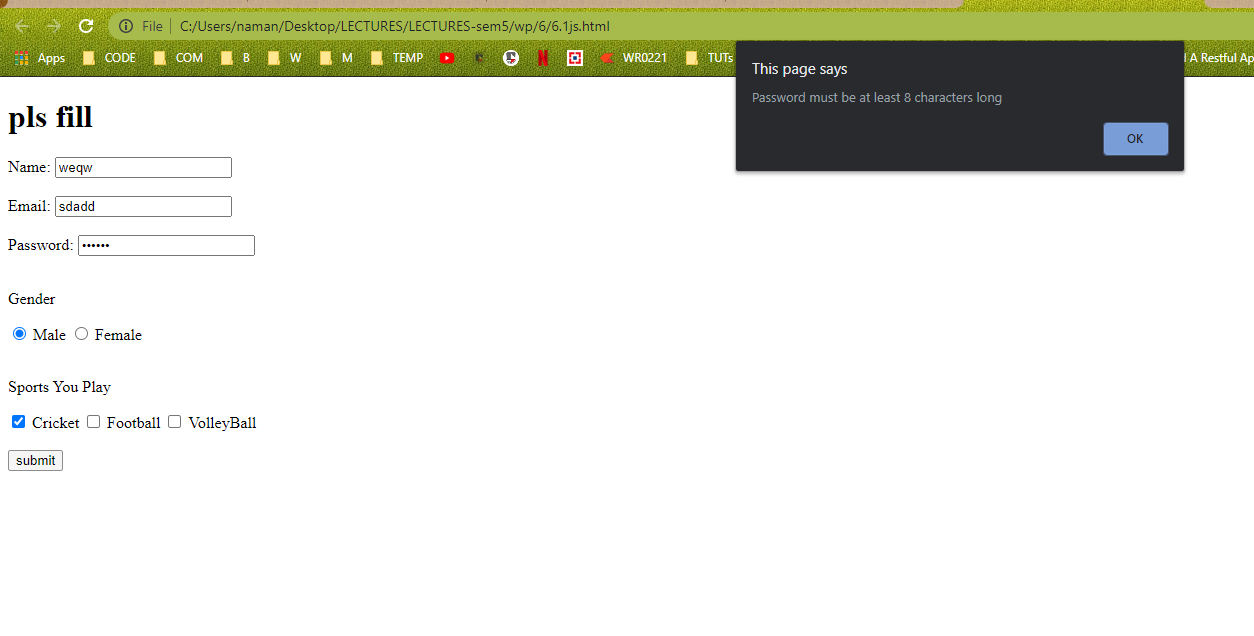
**B.2 Input and Output**

**(Students must paste input and output here)**

**Task 1:**

****

****

****

**B.3. Observations and Learning**

I learnt the implementation and use of javascript in a webpage and I learnt how to do form validation using javascript and displaying alert when there’s an invalid input.

**B.4. Conclusion**

1. Understood and implement basic javascript programming for variables, objects, functions, arrays

2. Understood and implement front end validation of simple form with javascript