**Batch: A3 Roll No.:16010122083**

**Experiment No. 03**

|  |
| --- |
| **TITLE:** **Develop and demonstrate JavaScript with POP-UP boxes and functions** |

**AIM:** To demonstrate the functionalities of JavaScript using HTML and CSS

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**Expected Outcome of Experiment:** Design static web pages using various HTML tags.

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**Books/ Journals/ Websites referred:**

1. .

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Describe and utilize Javascript programming concepts such as variables, arrays, conditionals, and loops.

Write and deploy Javascript code to solve practical web design problems.

**Problem Statement: Description of the application implemented with output**:

**a) Input**: Click on Display Date button using onclick( ) function

**Output:** Display date in the textbox

**b) Input:** A number n obtained using prompt

**Output:** Factorial of n number using alert

**c) Input:** A number n obtained using prompt

**Output:** A multiplication table of numbers from 1 to 10 of n using

d**) Write JavaScript to validate the following fields for the registration page**.

Name (Name should contain alphabets and the length should not be less than 6 characters).

Password (Password should not be less than 6 characters length).

E-mail id (should not contain any invalid and must follow the standard pattern

name@domain.com)

Phone number (Phone number should contain 10 digits only).

**Javascript Basic Concepts Learned With Syntax**

**A)**

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>Date Display</title>

    <script>

        function displayDate() {

            let currentDate = new Date();

            document.getElementById("dateOutput").value = currentDate.toDateString();

        }

    </script>

</head>

<body>

    <button onclick="displayDate()">Display Date</button>

    <label for="dateOutput">Date Output:</label>

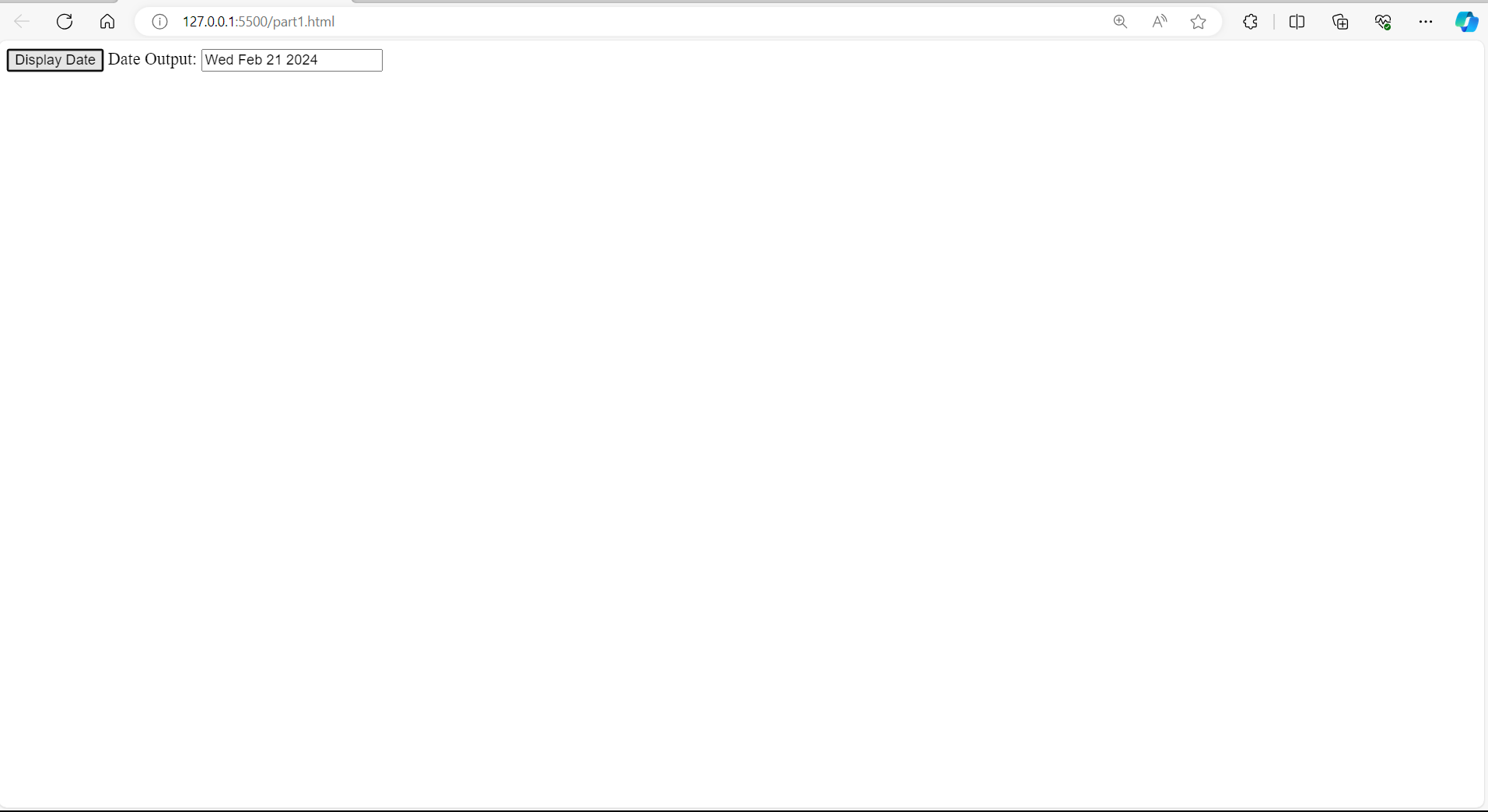
    <input type="text" id="dateOutput" readonly placeholder="Enter date">

</body>

</html>

**Description of the application implemented with output**:

A)



**Javascript Basic Concepts Learned With Syntax**

**b)**

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>Factorial Calculation</title>

    <script>

        function calculateFactorial() {

            let n = prompt("Enter a number:");

            let result = 1;

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

                result \*= i;

            }

            alert(`Factorial of ${n} is: ${result}`);

        }

    </script>

</head>

<body>

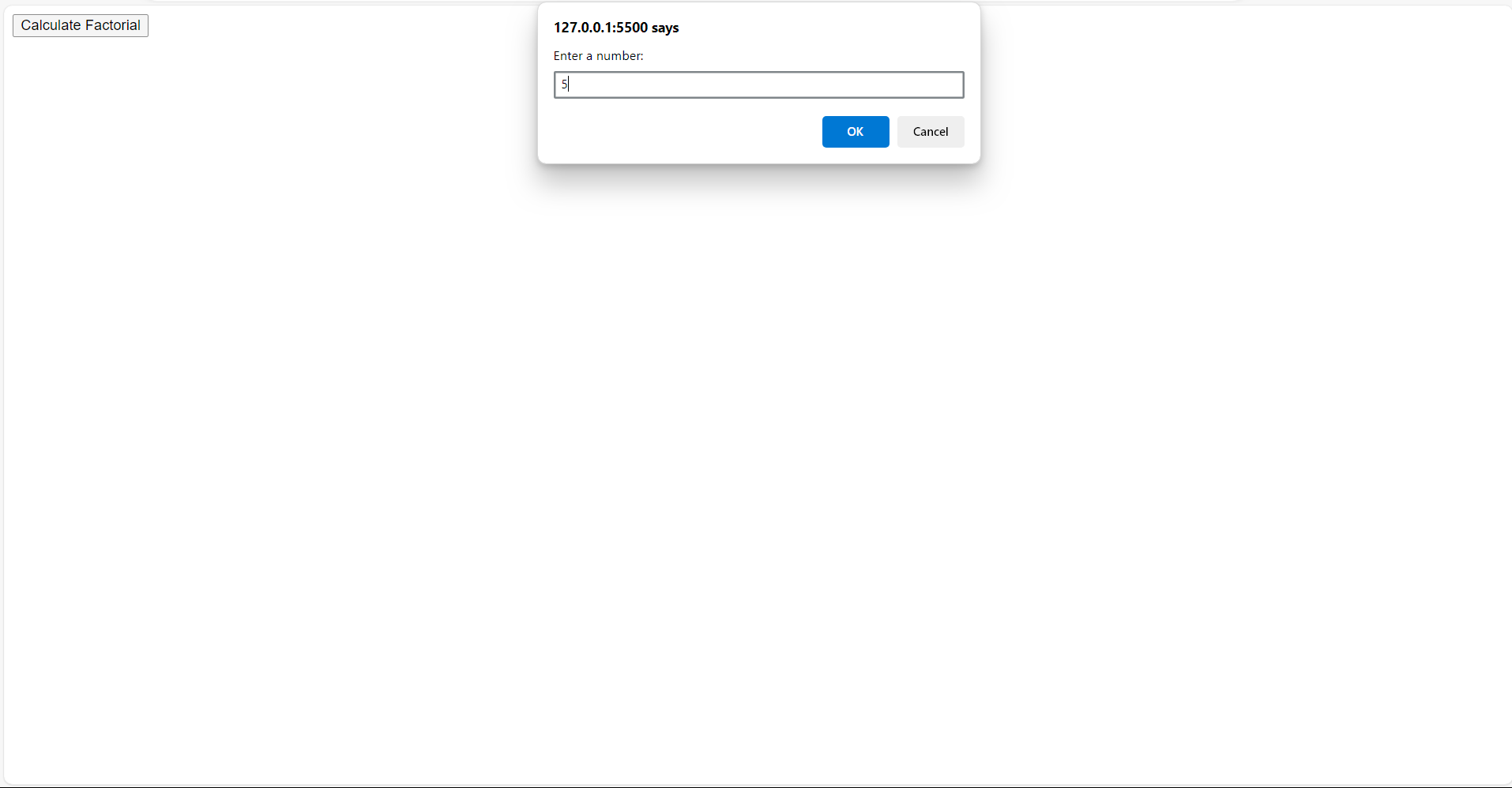
    <button onclick="calculateFactorial()">Calculate Factorial</button>

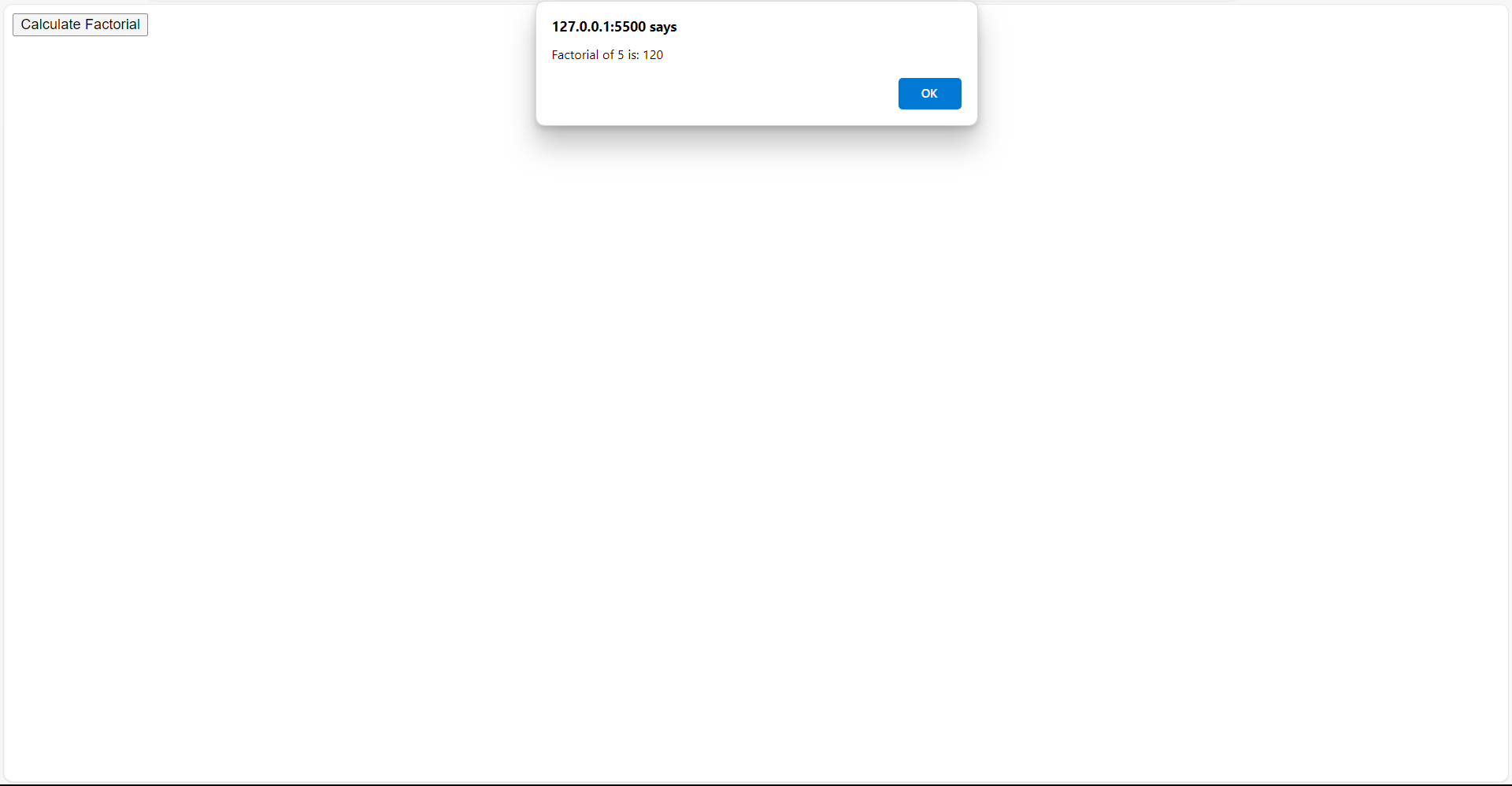
</body>

</html>

**Description of the application implemented with output**:

b)





**Javascript Basic Concepts Learned With Syntax**

**C)**

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>Multiplication Table</title>

    <script>

        function generateTable() {

            let n = prompt("Enter a number:");

            let tableOutput = "";

            for (let i = 1; i <= 10; i++) {

                tableOutput += `${n} x ${i} = ${n \* i}\n`;

            }

            alert(tableOutput);

        }

    </script>

</head>

<body>

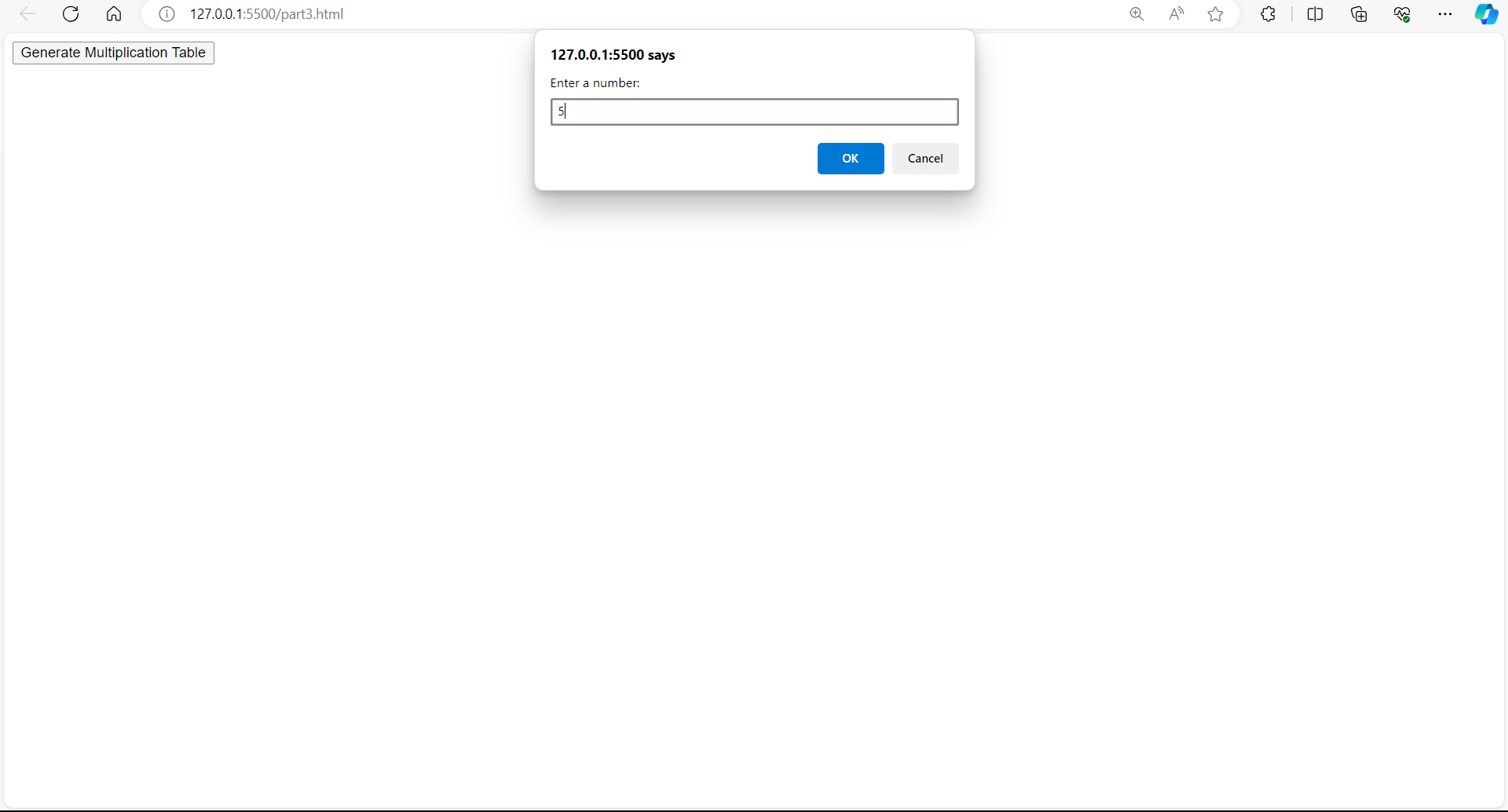
    <button onclick="generateTable()">Generate Multiplication Table</button>

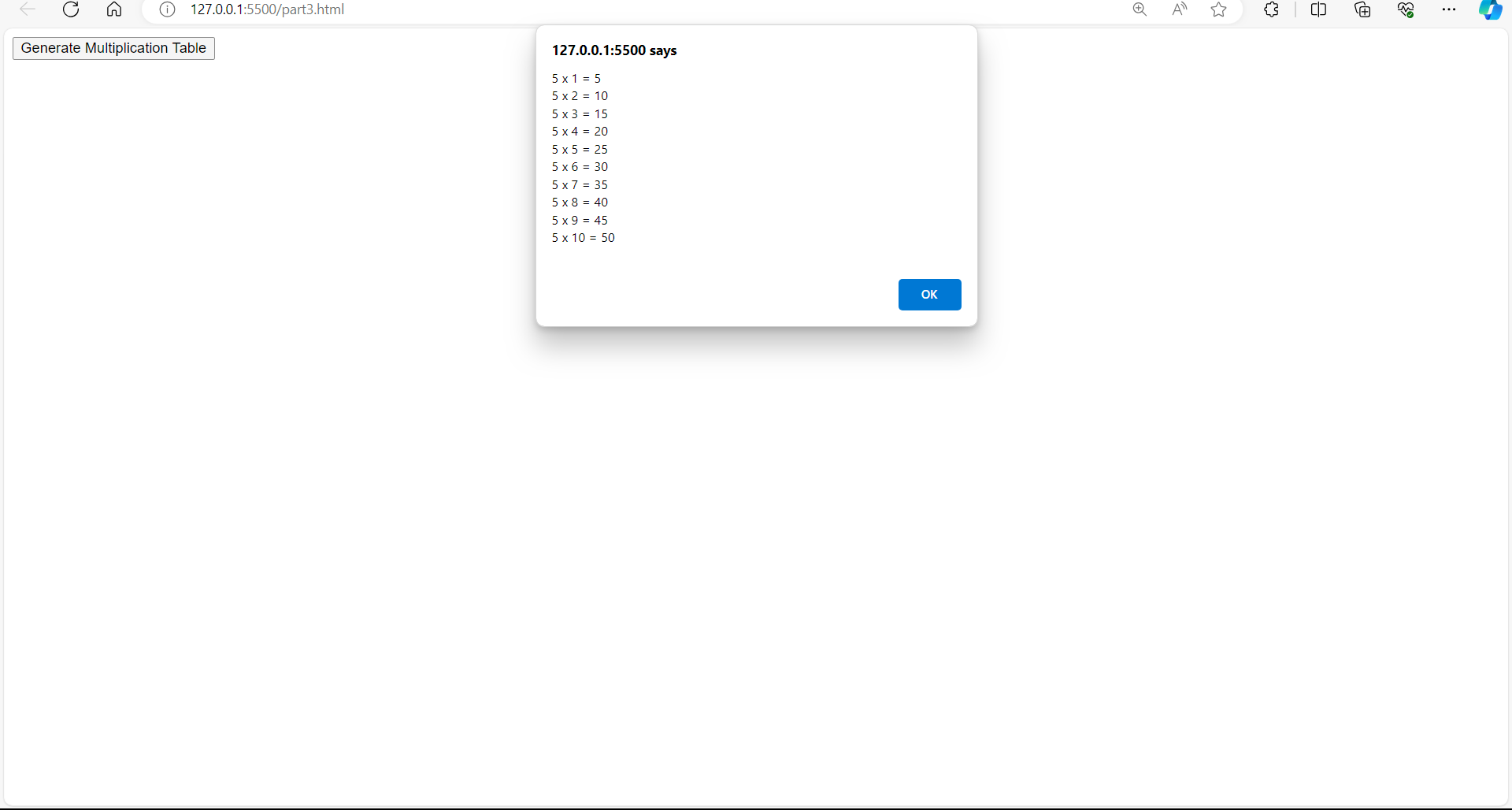
</body>

</html>

**Description of the application implemented with output**:

C)





**Javascript Basic Concepts Learned With Syntax**

**D)**

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>Form Validation</title>

    <script>

        function validateForm() {

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

            let password = document.getElementById("password").value;

            let email = document.getElementById("email").value;

            let phone = document.getElementById("phone").value;

            // Validation logic for each field

            if (!/^[a-zA-Z]+$/.test(name) || name.length < 6) {

                alert("Invalid Name. Name should contain alphabets and be at least 6 characters long.");

                return false;

            }

            if (password.length < 6) {

                alert("Invalid Password. Password should be at least 6 characters long.");

                return false;

            }

            if (!/^[^\s@]+@[^\s@]+\.[^\s@]+$/.test(email)) {

                alert("Invalid Email. Please enter a valid email address.");

                return false;

            }

            if (!/^\d{10}$/.test(phone)) {

                alert("Invalid Phone Number. Phone number should contain 10 digits only.");

                return false;

            }

            alert("Form submitted successfully!");

            return true;

        }

    </script>

</head>

<body>

    <form onsubmit="return validateForm()">

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

        <input type="text" id="name" name="name"><br>

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

        <input type="password" id="password" name="password"><br>

        <label for="email">Email:</label>

        <input type="text" id="email" name="email"><br>

        <label for="phone">Phone:</label>

        <input type="text" id="phone" name="phone"><br>

        <input type="submit" value="Submit">

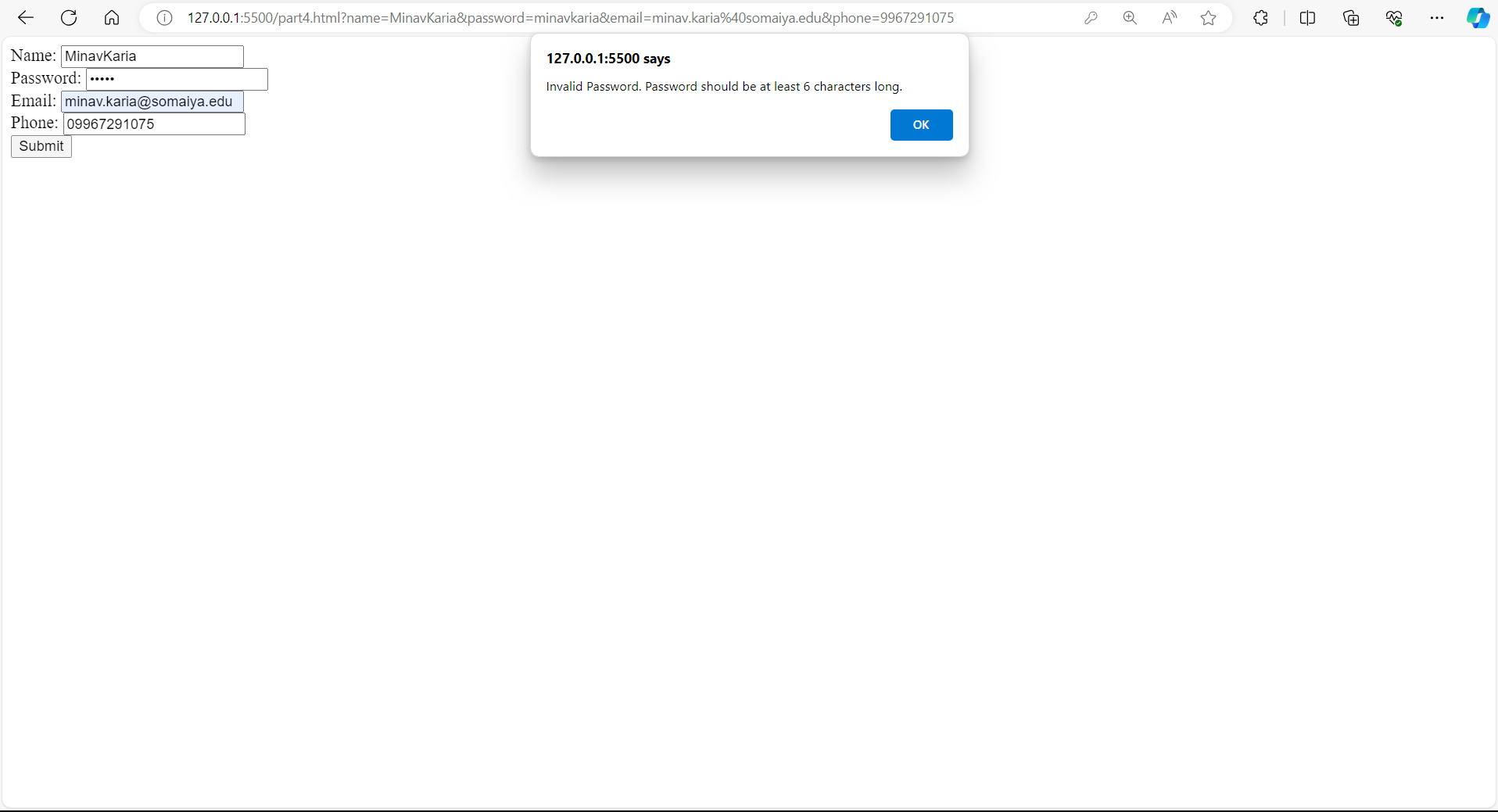
    </form>

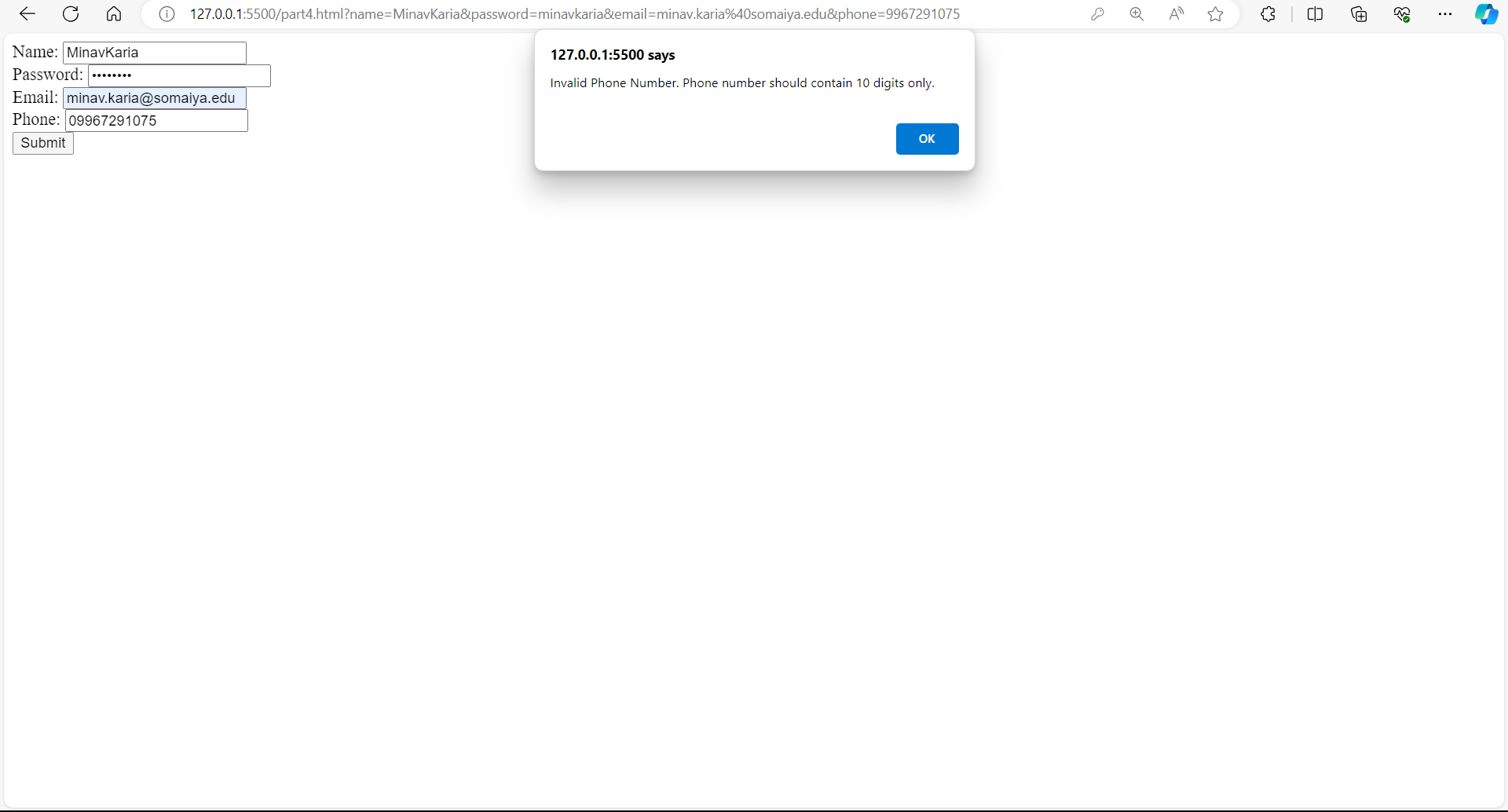
</body>

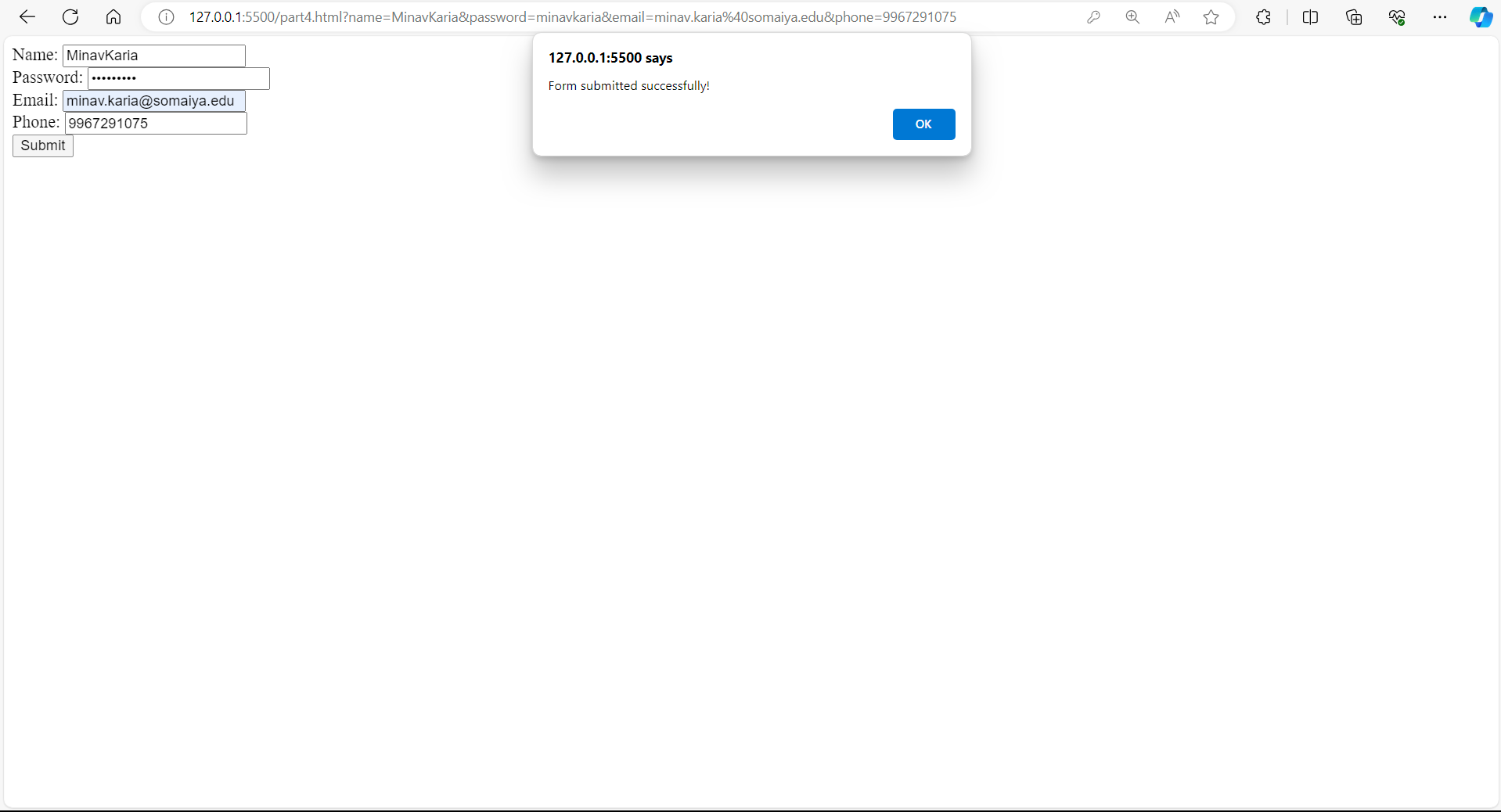
</html>

**Description of the application implemented with output**:

D)







**Post Lab Objective with Ans :**

* **What are the possible ways to create objects in JavaScript?**

**Object Literal:**

const person = { name: "John", age: 30 };

**Constructor Function:**

function Person(name, age) {

this.name = name;

this.age = age;

}

const person = new Person("John", 30);

**Object.create():**

const personPrototype = { sayHello: function() { console.log("Hello!"); } };

const person = Object.create(personPrototype);

* **What is the Difference between = = and = = = operators**

== is the equality operator that performs type coercion, meaning it converts the operands to the same type before making the comparison.

**Example:**

5 == "5" // true (coerced to the same type before comparison)

=== is the strict equality operator that does not perform type coercion, and it checks both the value and the type.

**Example:**

5 === "5" // false (different types)

* **What is the difference between let and var**

let is block-scoped, meaning it is limited to the block, statement, or expression where it is defined. Example:

if (true) {

let x = 10;

}

console.log(x); // ReferenceError: x is not defined

var is function-scoped, and it has a global scope if declared outside any function. Example:

if (true) {

var y = 20;

}

console.log(y); // 20 (var is not block-scoped)