

SVKM's NMIMS Mukesh Patel School of Technology Management & Engineering Mumbai and Shirpur Campus IT Department		
Manual Prepared by Prof.Sulalah Mirkar	Lab Manual	Academic Year- 2024-25
Year:-	Subject:- Web Programming	Semester:-

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Class:-B.Tech CSE Cybersecurity		Division:-K

Aim:-

A. Event handling

B. Validation and OOPS

Common HTML Events

Here is a list of some common HTML events:

Event	Description
onchange	An HTML element has been changed
onclick	The user clicks an HTML element
onmouseover	The user moves the mouse over an HTML element
onmouseout	The user moves the mouse away from an HTML element
onkeydown	The user pushes a keyboard key
onload	The browser has finished loading the page

```
<html>
<body>
<h2>JavaScript Arrays</h2>
<p>JavaScript array elements are accessed using numeric indexes (starting from 0).</p>
<p id="demo"></p>
<script>
var cars = ["Saab", "Volvo", "BMW"];
document.getElementById("demo").innerHTML = cars[0];
</script>
</body>
```

</html>

Change the Array Value

- var cars = ["Saab", "Volvo", "BMW"];
cars[0] = "Opel";
document.getElementById("demo").innerHTML = cars[0];

2. Example 11

```
<html>
<body>
<h2>JavaScript Arrays</h2>
<p>JavaScript array elements are accessed using numeric indexes (starting from 0).</p>
<p id="demo"></p>
<script>
var cars = ["Saab", "Volvo", "BMW"];
document.getElementById("demo").innerHTML = cars[0];
</script>
</body>
</html>
```

Change the Array Value

- var cars = ["Saab", "Volvo", "BMW"];
cars[0] = "Opel";
document.getElementById("demo").innerHTML = cars[0];

Length() function

```
var fruits = ["Banana", "Orange", "Apple", "Mango"];  
document.getElementById("demo").innerHTML = fruits.length;
```

Access the first and last element of an Array

- `fruits = ["Banana", "Orange", "Apple", "Mango"];`
`var first = fruits[0];`
- `fruits = ["Banana", "Orange", "Apple", "Mango"];`
`var last = fruits[fruits.length - 1];`

9. Example 12

Looping An Array :- Example 1

- `<html>`
- `<body>`
- `<h2>JavaScript Arrays</h2>`
- `<p>The best way to loop through an array is using a standard for loop:</p>`
- `<p id="demo"></p>`
- `<script>`
- `var fruits, text, fLen, i;`
- `fruits = ["Banana", "Orange", "Apple", "Mango"];`
- `fLen = fruits.length;`
- `text = "";`
- `for (i = 0; i < fLen; i++) {`
- `text += "" + fruits[i] + "";`
- `}`
- `text += "";`
- `document.getElementById("demo").innerHTML = text;`
- `</script>`
- `</body>`
- `</html>`

JavaScript Arrays

The best way to loop through an array is using a standard for loop:

- Banana
- Orange
- Apple
- Mango

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10. Example 13

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Push New element

- | | |
|--|--|
| <ul style="list-style-type: none"> • <html> • <body> • <h2>JavaScript Arrays</h2> • <p>The push method appends a new element to an array.</p> • <button onclick="myFunction()">Try it</button> • <p id="demo"></p> • <script> | <ul style="list-style-type: none"> • var fruits = ["Banana", "Orange", "Apple", "Mango"]; • document.getElementById("demo").innerHTML = fruits; [before click] • function myFunction() { • fruits.push("Lemon"); • document.getElementById("demo").innerHTML = fruits; [after click] • } • </script> • </body> • </html> |
|--|--|

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ARRAY METHODS

- var fruits = ["Banana", "Orange", "Apple", "Mango"];
document.getElementById("demo").innerHTML = fruits.toString();
- var fruits = ["Banana", "Orange", "Apple", "Mango"];
document.getElementById("demo").innerHTML = fruits.join(" * ");
- OUTPUT :---Banana * Orange * Apple * Mango
- var fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits.pop(); // Removes the last element ("Mango") from fruits
- var fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits.push("Kiwi"); // Adds a new element ("Kiwi") to fruits
- var fruits = ["Banana", "Orange", "Apple", "Mango"];

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fruits.shift(); // Removes the first element "Banana" from fruits

- var fruits = ["Banana", "Orange", "Apple", "Mango"];
fruits[0] = "Kiwi"; // Changes the first element of fruits to "Kiwi"

11. Example 14

Splice()

- <button onclick="myFunction()">Try it</button>
- <p id="demo1"></p>
- <p id="demo2"></p>
- <script>
- var fruits = ["Banana", "Orange", "Apple", "Mango"];
- document.getElementById("demo1").innerHTML = fruits;
- function myFunction() {
- fruits.splice(2, 0, "Lemon", "Kiwi");
- document.getElementById("demo2").innerHTML = fruits;
- }
- </script>

JavaScript Array Methods

splice()

The splice() method adds new elements to an array.

Try it

Original Array:
Banana, Orange, Apple, Mango

New Array:
Banana, Orange, Lemon, Kiwi, Apple, Mango

Concatenates

```
var myGirls = ["Cecilie", "Lone"];
var myBoys = ["Emil", "Tobias", "Linus"];
var myChildren = myGirls.concat(myBoys); // Concatenates (joins) myGirls and myBoys
document.getElementById("demo").innerHTML = myChildren
```

Slice

```
var fruits = ["Banana", "Orange", "Lemon", "Apple", "Mango"];
var citrus = fruits.slice(1);
document.getElementById("demo").innerHTML = fruits + "<br><br>" + citrus;
```

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/*output*/

- Banana,Orange,Lemon,Apple,Mango

Orange,Lemon,Apple,Mango

12. Example 15

SORT FUNCTIONS

- `<button onclick="myFunction()">Try it</button>`
- `<p id="demo"></p>`
- `<script>`
- `var fruits = ["Banana", "Orange", "Apple", "Mango"];`
- `document.getElementById("demo").innerHTML = fruits;`

- `function myFunction() {`
- `fruits.sort();`
- `document.getElementById("demo").innerHTML = fruits;`
- `}`
- `</script>`

Try it

Banana,Orange,Apple,Mango

Try it

Apple,Banana,Mango,Orange

JavaScript Form Validation

- Form data that typically are checked by a JavaScript could be:
- has the user left required fields empty?
- has the user entered a valid e-mail address?
- has the user entered a valid date?
- has the user entered text in a numeric field?

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Naming Form Elements in HTML

Name:
 Phone:
 Email:

```
<form name="addressform">
Name: <input name="yourname"><br />
Phone: <input name="phone"><br />
Email: <input name="email"><br />
</form>
```

13. Example 16

Using Form Data

Personalising an alert box

Enter your name:



```
<form name="alertform">
Enter your name:
<input type="text" name="yourname">
<input type="button" value= "Go"
  onClick="window.alert('Hello ' + →
    document.alertform.yourname.value); ">
</form>
```

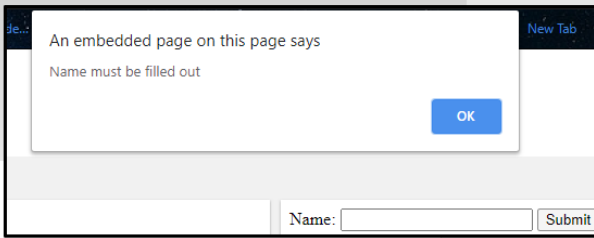
14.Example 17

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FORM VALIDATION

- `<form name="myForm" onsubmit="return validateForm()" method="post">`
- Name: `<input type="text" name="fname">`
`<input type="submit" value="Submit">`
`</form>`

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



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15.Example 18

Numeric Validation

- `<input id="numb">`
- `<button type="button" onclick="myFunction()">Submit</button>`
- `<p id="demo"></p>`

```

<script>
function myFunction() {
  var x, text;

  x = document.getElementById("numb").value;

  // If x is Not a Number or less than one or greater than 10
  if (isNaN(x) || x < 1 || x > 10) {
    text = "Input not valid";
  } else {
    text = "Input OK";
  }
  document.getElementById("demo").innerHTML = text;
}
</script>
</body>
</html>

```

Please input a number between 1 and 10:

12

Input not valid

Please input a number between 1 and 10:

9

Input OK

HTML form validation

Automatic HTML Form Validation

- HTML form validation can be performed automatically by the browser:
 - If a form field (`fname`) is empty, the `required` attribute prevents this form from being submitted:
- Example


```

<form action="/action_page.php" method="post">
  <input type="text" name="fname" required>
  <input type="submit" value="Submit">
</form>

```

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Data Validation

- Data validation is the process of ensuring that user input is clean, correct, and useful.
- Typical validation tasks are:
 - I. has the user filled in all required fields?
 - II. has the user entered a valid date?
 - III. has the user entered text in a numeric field?

HTML Validations

- HTML constraint validation is based on:
 - I. Constraint validation **HTML Input Attributes**
 - II. Constraint validation **CSS Pseudo Selectors**
 - III. Constraint validation **DOM Properties and Methods**

Constraint validation **HTML Input Attributes**


Attribute	Description
disabled	Specifies that the input element should be disabled
max	Specifies the maximum value of an input element
min	Specifies the minimum value of an input element
pattern	Specifies the value pattern of an input element
required	Specifies that the input field requires an element
type	Specifies the type of an input element

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16. Example 19

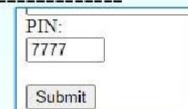
Example: Constraint validation **HTML Input Attributes**

- Eg1.
- `<form action="/action_page.php">`
- `<label for="fname">First name:</label>
`
- `<input type="text" id="fname" name="fname" value="John" disabled>
`



- Eg2.
- `<label for="pin">PIN:</label>
`
- `<input type="text" id="pin" name="pin" maxlength="4" size="4">

`



- Eg3.
- `<form>`
- `<label for="datemax">Enter a date before 1980-01-01:</label>`
- `<input type="date" id="datemax" name="datemax" max="1979-12-31">

`
- `<label for="datemin">Enter a date after 2000-01-01:</label>`
- `<input type="date" id="datemin" name="datemin" min="2000-01-02">

`
- `<label for="quantity">Quantity (between 1 and 5):</label>`
- `<input type="number" id="quantity" name="quantity" min="1" max="5">`
- `</form>`

Output

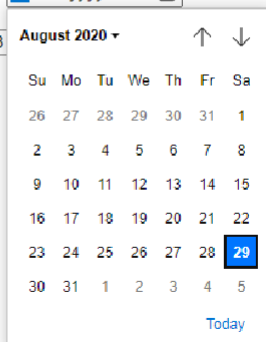
The input min and max attributes

The min and max attributes specify the minimum and maximum values

Enter a date before 1980-01-01:

Enter a date after 2000-01-01:

Quantity (between 1 and 5):



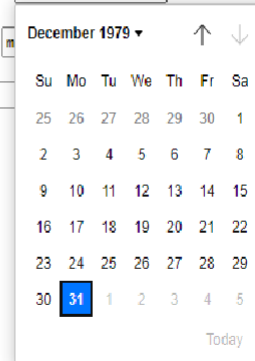
The input min and max attributes

The min and max attributes specify the minimum and maximum values for

Enter a date before 1980-01-01:

Enter a date after 2000-01-01:

Quantity (between 1 and 5):



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17. Example 20

Example

- `<form action="/action_page.php">`
- `<label for="username">Username:</label>`
- `<input type="text" id="username" name="username" required>`
- `<input type="submit">`
- `</form>`

The input required attribute

Username:

 Please fill out this field.

II. Constraint validation CSS Pseudo Selectors

Constraint Validation CSS Pseudo Selectors

Selector	Description
:disabled	Selects input elements with the "disabled" attribute specified
:invalid	Selects input elements with invalid values
:optional	Selects input elements with no "required" attribute specified
:required	Selects input elements with the "required" attribute specified
:valid	Selects input elements with valid values

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III.Constraint Validation DOM Methods

Property	Description
checkValidity()	Returns true if an input element contains valid data.
setCustomValidity()	Sets the validationMessage property of an input element.

Constraint Validation DOM Properties

Property	Description
validity	Contains boolean properties related to the validity of an input element.
validationMessage	Contains the message a browser will display when the validity is false.
willValidate	Indicates if an input element will be validated.

18. Example 21

Example

- `<input id="id1" type="number" min="100" max="300" required>`
- `<button onclick="myFunction()">OK</button>`
- `<p id="demo"></p>`
- `<script>`
- `function myFunction() {`
- `var inpObj = document.getElementById("id1");`
- `if (!inpObj.checkValidity()) {`
- `document.getElementById("demo").innerHTML = inpObj.validationMessage;`
- `} else {`
- `document.getElementById("demo").innerHTML = "Input OK";`
- `}`
- `}`

Enter a number and click OK:

99

If the number is less than 100 or greater than 300, an error message will be displayed.

Value must be greater than or equal to 100.

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Validity Properties

Property	Description
customError	Set to true, if a custom validity message is set.
patternMismatch	Set to true, if an element's value does not match its pattern attribute.
rangeOverflow	Set to true, if an element's value is greater than its max attribute.
rangeUnderflow	Set to true, if an element's value is less than its min attribute.
stepMismatch	Set to true, if an element's value is invalid per its step attribute.
tooLong	Set to true, if an element's value exceeds its maxLength attribute.
typeMismatch	Set to true, if an element's value is invalid per its type attribute.
valueMissing	Set to true, if an element (with a required attribute) has no value.
valid	Set to true, if an element's value is valid.

19. Example 22

Example 1:

- `<input id="id1" type="number" max="100">`
- `<button onclick="myFunction()">OK</button>`
- `<p id="demo"></p>`
- `<script>`
- `function myFunction() {`
- `var txt = "";`
- `if (document.getElementById("id1").validity.rangeOverflow) {`
- `txt = "Value too large";`
- `} else {`
- `txt = "Input OK";`
- `}`
- `document.getElementById("demo").innerHTML = txt;`
- `}`
- `</script>`

Enter a number and click OK:

If the number is greater than 100 (the input's max attribute), an error message will be displayed.

Value too large

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20. Example 23

Example 2:

- <script>
- function myFunction() {
- var txt = "";
- if (document.getElementById("id1").validity.rangeUnderflow) {
- txt = "Value too small";
- } else {
- txt = "Input OK";
- }
- document.getElementById("demo").innerHTML = txt;
- }
- </script>

- <input id="id1" type="number" min="100">
- <button onclick="myFunction()">OK</button>
- <p id="demo"></p>

Enter a number and click OK:

If the number is less than 100 (the input's min attribute), an error message will be displayed.

Value too small

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1. Write a program to search for the @ position in the given mail id on submit button event.
2. Write a program to compare password and confirm password on mouse down event
3. Write a program to accept the input from html form and slice the 3characters using on submit Event.
4. Write a program to accept the user first name and last name and return only first name on using substring function on onchange event using document Object Model.
5. Write a program to replace the old password with new password on button click event and display output using alert.
6. Write a program to concatenate user first name with last name and convert it into uppercase on onkeydown & onkeyup event and display atthe textbox.

7. Validations for html form using javascript

- I. Write a Program to Accept User Name , User Age ,User Phone Number and User Email ID.
- II. Check ,No user input is left or blank.
- III. User Name length should be 10 char long.
- IV. User Age should be more than 20 and less than 90.
- V. User Phone length should be 10 digit long.
- VI. Also check for email id verification.
- VII. Note:- User inner html for displaying an error message.

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Codes:

Q1

```
<html>
  <head>
    <title>Q1 K036</title>
  </head>
  <body>
    <form id="emailForm">
      <label for="email">Enter Email=</label>
      <input type="text" id="email" required>
      <button type="submit">Submit</button>
    </form>
    <script>
      document.getElementById("emailForm").onsubmit=function(event) {
        event.preventDefault();
        let email=document.getElementById("email").value;
        let atPosition=email.indexOf("@");
        if (atPosition!==-1) {
          alert("Position of @= "+atPosition);
        } else {
          alert("No @");
        }
      };
    </script>
  </body>
</html>
```

Q2

```
<html>
  <head>
    <title>Q2 K036</title>
  </head>
  <body>
    <form>
      <label for="password">Password=</label>
      <input type="password" id="password" required>
      <br>
      <label for="confirmPassword">Confirm Password=</label>
      <input type="password" id="confirmPassword" required>
      <br>
    </form>
  </body>
</html>
```

```

        <button type="button" id="compareBtn">Compare</button>
    </form>
    <script>
        document.getElementById("compareBtn").onmousedown=function() {
            let password=document.getElementById("password").value;
            let
confirmPassword=document.getElementById("confirmPassword").value;
            if (password===confirmPassword) {
                alert("Passwords are matching.");
            } else {
                alert("Passwords are not matching.");
            }
        };
    </script>
</body>
</html>

```

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Q3

```

<html>
    <head>
        <title>Q3 K036</title>
    </head>
    <body>
        <form id="sliceForm">
            <label for="inputField">Enter text=</label>
            <input type="text" id="inputField" required>
            <button type="submit">Submit</button>
        </form>
        <script>
            document.getElementById("sliceForm").onsubmit=function(event) {
                event.preventDefault();
                let inputText=document.getElementById("inputField").value;
                let slicedText=inputText.slice(0,3);
                alert("First 3 characters: "+slicedText);
            };
        </script>
    </body>
</html>

```

Q4

```

<html>
    <head>
        <title>Q4 K036</title>
    </head>
    <body>
        <form>

```

```
<label for="firstName">First Name=</label>
<input type="text" id="firstName" required>
<br>
<label for="lastName">Last Name=</label>
<input type="text" id="lastName" required>
</form>
<script>
    document.getElementById("firstName").onchange=function() {
        let firstName=document.getElementById("firstName").value;
        let result=firstName.substring(0);
        alert("First Name="+result);
    };
</script>
</body>
</html>
```

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Q5

```
<html>
<head>
    <title>Q5 K036</title>
</head>
<body>
    <form>
        <label for="oldPassword">Old Password=</label>
        <input type="password" id="oldPassword" required>
        <br>
        <label for="newPassword">New Password=</label>
        <input type="password" id="newPassword" required>
        <br>
        <button type="button" id="replaceBtn">Replace Password</button>
    </form>
    <script>
        document.getElementById("replaceBtn").onclick=function() {
            let newPassword=document.getElementById("newPassword").value;
            alert("Password changed. Latest Password="+newPassword);
        };
    </script>
</body>
</html>
```

Q6

```
<html>
<head>
    <title>Q6 K036</title>
</head>
<body>
```

```
<form>
  <label for="firstName">First Name=</label>
  <input type="text" id="firstName" required>
  <br>
  <label for="lastName">Last Name=</label>
  <input type="text" id="lastName" required>
  <br>
  <input type="text" id="result" readonly>
</form>

<script>
  function concatenateNames() {
    let firstName=document.getElementById("firstName").value;
    let lastName=document.getElementById("lastName").value;
    let fullName=(firstName+" "+lastName).toUpperCase();
    document.getElementById("result").value=fullName;
  }
  document.getElementById("firstName").onkeydown=concatenateNames;
  document.getElementById("lastName").onkeyup=concatenateNames;
</script>
</body>
</html>
```

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Q7

```
<html>
  <head>
    <title>Q7 K036</title>
  </head>
  <body>
    <form id="userForm">
      <label for="userName">Name=</label>
      <input type="text" id="userName" required>
      <span id="userNameError"></span>
      <br>
      <label for="userAge">Age=</label>
      <input type="number" id="userAge" required>
      <span id="userAgeError"></span>
      <br>
      <label for="userPhone">Phone No.=</label>
      <input type="text" id="userPhone" required>
      <span id="userPhoneError"></span>
      <br>
      <label for="userEmail">Email Address=</label>
      <input type="email" id="userEmail" required>
      <span id="userEmailError"></span>
      <br>
      <button type="submit">Submit</button>
```

```

</form>

<script>
    document.getElementById("userForm").onsubmit=function(event) {
        event.preventDefault();
        let userName=document.getElementById("userName").value;
        let userAge=document.getElementById("userAge").value;
        let userPhone=document.getElementById("userPhone").value;
        let userEmail=document.getElementById("userEmail").value;
        let isValid=true;
        document.getElementById("userNameError").innerHTML="";
        document.getElementById("userAgeError").innerHTML="";
        document.getElementById("userPhoneError").innerHTML="";
        document.getElementById("userEmailError").innerHTML="";

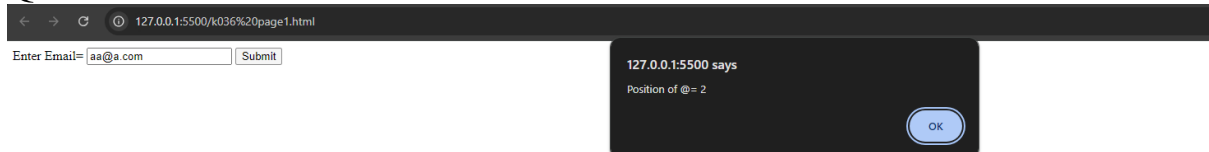
        if (!userName||!userAge||!userPhone||!userEmail) {
            alert("Please fill out required field");
            isValid=false;
        }
        if (userName.length<10) {
            document.getElementById("userNameError").innerHTML="Name
should be 10 characters long.";
            isValid=false;
        }
        if (userAge<20||userAge>90) {
            document.getElementById("userAgeError").innerHTML="Age
should be between 20 and 90.";
            isValid=false;
        }
        if (userPhone.length!=10) {
            document.getElementById("userPhoneError").innerHTML="Pleas
e enter a valid phone no..";
            isValid=false;
        }
        if (!userEmail.includes("@")) {
            document.getElementById("userEmailError").innerHTML="Pleas
e enter a valid email address";
            isValid=false;
        }
        if (isValid) {
            alert("Form submitted");
        }
    };
</script>
</body>
</html>

```

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Inputs and Outputs:


Q1



Enter Email=

127.0.0.1:5500 says
Position of @= 2

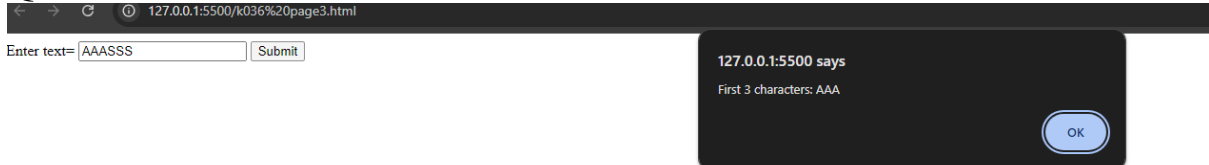
Q2



Password=
 Confirm Password=

127.0.0.1:5500 says
Passwords are matching.

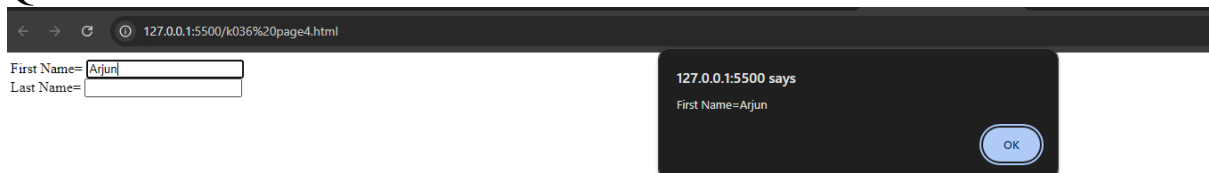
Q3



Enter text=

127.0.0.1:5500 says
First 3 characters: AAA

Q4



First Name=
 Last Name=

127.0.0.1:5500 says
First Name=Arjun

Q5

<div>127.0.0.1:5500/k036%20page5.html</div> <div>Old Password= <input type="password"/> New Password= <input type="password"/> <input type="button" value="Replace Password"/></div>	<div>127.0.0.1:5500 says Password changed. Latest Password=aabb</div> <div><input type="button" value="OK"/></div>	024-25
M		
Pi		
Y		

Q6

127.0.0.1:5500/k036%20page6.html

First Name=
Last Name=

Q7

127.0.0.1:5500/k036%20page7.html

Name=
Age=
Phone No.= Please enter a valid phone no..
Email Address=

127.0.0.1:5500 says
Form submitted

Conclusion

Have been able to complete given task and understood procedure and implemented it successfully.