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Assignment1 Q1

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Date : 22/02/24

File Name: Assignment1 Q1

Purpose : The purpose of this program is to do a webpage that collect personal information

# Problem Description/program description:

The problem involves creating a web page that collects specific user information, including name, phone number, birth date, and favourite pastime. The collected data is then sent to a server via a CGI destination URL for processing.

# Solution Approach:

To address the problem, a web page is developed using HTML for the structure and JavaScript for client-side validation. The user input is validated to ensure data integrity and adherence to specified requirements. Upon successful validation, the form data is submitted to the server using the GET method.

# Design description:

The JavaScript validation function validateForm() is designed to ensure that user input in the form meets certain criteria before allowing submission. Here's a brief description of the design:

Retrieving Input Values: The function retrieves the values entered by the user for the name, phone number, birth date, and favorite pastime from the HTML form.

Simple Validation for Empty Fields: It performs a simple check to ensure that none of the fields are left empty. If any field is empty, an alert is displayed prompting the user to fill in all fields, and the function returns false to prevent form submission.

Additional Validation for Name: A regular expression is used to validate the name input. Only alphabetic characters and spaces are allowed. If the name input does not match this pattern, an alert is displayed, and the function returns false.

Additional Validation for Phone Number: Another regular expression is employed to validate the phone number input. It must be in an 8-digit format. If the phone number input does not match this pattern, an alert is displayed, and the function returns false.

Additional Validation for Birth Date: Further validation is performed for the birth date input to ensure it contains a valid year, month, and day. Leap year and month-specific day validation are included in this process. If the birth date input is not valid, an alert is displayed, and the function returns false.

Return Value: If all validation checks pass successfully, the function returns true, indicating that the form can be submitted.

This design ensures that the form data is validated comprehensively, covering various aspects such as empty fields, correct input formats, and valid date entries, thereby enhancing the user experience and maintaining data integrity.

Structured Design / Pseudo-code:

// JavaScript Validation Function

function validateForm() {

// Retrieve form input values

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

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

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

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

// Simple validation for empty fields

if (name === "" || phone === "" || birthDate === "" || pastime === "") {

alert("Please fill in all fields.");

return false;

}

// Additional validation for name (only alphabetic characters and spaces)

var nameRegex = /^[a-zA-Z\s]\*$/;

if (!nameRegex.test(name)) {

alert("Please enter a valid name (only alphabetic characters and spaces).");

return false;

}

// Additional validation for phone number (8-digit format)

var phoneRegex = /^\d{8}$/;

if (!phoneRegex.test(phone)) {

alert("Please enter a valid 8-digit phone number.");

return false;

}

// Additional validation for birth date (valid year, month, and day)

// Leap year and month-specific day validation included

// If all validation passed, return true for form submission

return true;

}

# Testing

Test table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected Outcome | Reason | Result |
| Empty Field Test | Name: "", Phone: "", Birth Date: "", Pastime: "" | Alert prompts user to fill in all fields | Ensure all fields are required | Pass |
| Valid Inputs Test | Name: "John Doe", Phone: "12345678", Birth Date: "1990-01-01", Pastime: "Reading" | Form submits successfully without validation alerts | Confirm form submission with valid inputs | Pass |
| Invalid Name Test | Name: "John123", Phone: "12345678", Birth Date: "1990-01-01", Pastime: "Reading" | Alert prompts user to enter a valid name | Validate name input format | Pass |
| Invalid Phone Number Test | Name: "John Doe", Phone: "1234", Birth Date: "1990-01-01", Pastime: "Reading" | Alert prompts user to enter a valid 8-digit phone number | Validate phone number input format | Pass |
| Invalid Birth Date Test | Name: "John Doe", Phone: "12345678", Birth Date: "2023-02-30", Pastime: "Reading" | Alert prompts user to enter a valid birth date | Ensure birth date input follows valid date format | Pass |
| Leap Year Test | Name: "John Doe", Phone: "12345678", Birth Date: "2024-02-29", Pastime: "Reading" | Form submits successfully for a leap year birth date | Confirm handling of leap year dates | Pass |
| Non-Leap Year Test | Name: "John Doe", Phone: "12345678", Birth Date: "2023-02-29", Pastime: "Reading" | Alert prompts user to enter a valid date | Ensure validation for non-leap year dates | Pass |
| Valid Pastime Selection Test | Name: "John Doe", Phone: "12345678", Birth Date: "1990-01-01", Pastime: "Surfing the Web" | Form submits successfully with selected pastime | Confirm pastime selection options | Pass |
| Form Submission Test | Valid inputs submitted | Data is sent to server and form submits successfully | Confirm form submission functionality | Pass |
| Server Response Test | Verify server logs or monitoring | Form data is received and processed correctly | Confirm data processing on the server side | Pass |

Empty Field Test:

Leave one or more fields empty and attempt to submit the form. Verify that an alert message prompts the user to fill in all fields.

Input :

A screenshot of a computer screen

Description automatically generated

Outcome:

A screenshot of a computer

Description automatically generated

Valid Inputs Test:

Enter valid inputs for all fields and submit the form. Confirm that the form submits successfully without any validation alerts.

Input :

A screenshot of a computer

Description automatically generated

Output:

A black text on a white background

Description automatically generated

Invalid Name Test:

Enter a name with special characters, numbers, or symbols. Verify that an alert message prompts the user to enter a valid name containing only alphabetic characters and spaces.

Input:

A screenshot of a computer

Description automatically generated

Output:

A screenshot of a computer

Description automatically generated

Invalid Phone Number Test:

Enter a phone number with less than 8 digits or more than 8 digits. Verify that an alert message prompts the user to enter a valid 8-digit phone number.

Input:

A screenshot of a computer

Description automatically generated

Output:

A screenshot of a computer

Description automatically generated

Invalid Birth Date Test:

Enter invalid dates such as February 30th, April 31st, etc., and future dates. Verify that an alert message prompts the user to enter a valid birth date.

Input:

A screenshot of a computer

Description automatically generated

Output:

A screenshot of a computer

Description automatically generated

Leap Year Test:

Enter February 29th on a leap year (e.g., 2024). Confirm that the form accepts the date as valid.

Input:

A screenshot of a computer

Description automatically generated

Output:

A black text on a white background

Description automatically generated

Non-Leap Year Test:

Enter February 29th on a non-leap year (e.g., 2023). Verify that an alert message prompts the user to enter a valid date.

Input:

A screenshot of a computer

Description automatically generated

Output:

A screenshot of a computer

Description automatically generated

Valid Pastime Selection Test:

Select each option from the "Favorite Pastime" dropdown list and submit the form. Confirm that the form submits successfully for each option.

Input:

A screenshot of a computer

Description automatically generated

Output:

A black text on a white background

Description automatically generated

Form Submission Test:

Fill out the form with valid inputs and submit it. Monitor the network activity using browser developer tools to ensure that the form data is sent to the server.

Input:

A screenshot of a computer

Description automatically generated

Output:

A screenshot of a computer

Description automatically generated

Address sent: https://www.it.murdoch.edu.au/cgi-bin/reply1.pl?name=john+doe&phone=12345678&birthDate=1990-01-01&pastime=Surfing+the+Web

Server Response Test:

Verify on the server-side (using appropriate logging or monitoring) that the form data is received correctly and processed as expected.

Input:

A screenshot of a computer

Description automatically generated

Output:

A screenshot of a computer

Description automatically generated

Time: 241ms

Conclusion:

All input validations and alerts are working as expected, ensuring that the user is prompted to fill in all required fields and enter valid data.

Valid inputs result in successful form submission without any validation alerts, confirming that the form handles valid inputs correctly.

Invalid inputs trigger appropriate alerts, indicating that the form correctly validates input formats.

Both invalid phone numbers and birth dates prompt the user to enter valid data, demonstrating accurate validation.

The form successfully handles leap year dates, allowing submission without errors.

Non-leap year dates are appropriately flagged as invalid, ensuring accurate validation.

The selection of valid pastimes results in successful form submission, confirming the availability of valid options.

Overall, the form submission functionality works correctly, ensuring that data is sent to the server as expected.

Server response testing confirms that the server receives and processes form data accurately.

Conclusion:

The user information form has been thoroughly tested and all test cases have passed successfully. The form effectively validates user inputs, handles various scenarios including leap year dates, and ensures proper form submission. Based on these results, it can be concluded that the form meets the requirements specified and is ready for deployment.

# Listing;

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>User Information Form</title>

<script>

function validateForm() {

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

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

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

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

// Simple validation

if (name === "" || phone === "" || birthDate === "" || pastime === "") {

alert("Please fill in all fields.");

return false;

}

// Additional validation for name (allow only alphabetic characters and spaces)

var nameRegex = /^[a-zA-Z\s]\*$/;

if (!nameRegex.test(name)) {

alert("Please enter a valid name (only alphabetic characters and spaces).");

return false;

}

// Additional validation for phone number (must have exactly 8 digits)

var phoneRegex = /^\d{8}$/;

if (!phoneRegex.test(phone)) {

alert("Please enter a valid 8-digit phone number.");

return false;

}

// Additional validation for birth date

var dateParts = birthDate.split("-");

var year = parseInt(dateParts[0]);

var month = parseInt(dateParts[1]);

var day = parseInt(dateParts[2]);

// Check for leap year

var isLeapYear = (year % 4 === 0 && year % 100 !== 0) || (year % 400 === 0);

var daysInMonth = [31, (isLeapYear ? 29 : 28), 31, 30, 31, 30, 31, 31, 30, 31, 30, 31];

if (month < 1 || month > 12 || day < 1 || day > daysInMonth[month - 1]) {

alert("Please enter a valid birth date.");

return false;

}

// If all validation passed, submit the form

return true;

}

</script>

</head>

<body>

<h2>User Information Form</h2>

<form action="http://www.it.murdoch.edu.au/cgi-bin/reply1.pl" method="get" onsubmit="return validateForm()">

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

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

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

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

<label for="birthDate">Birth Date:</label>

<input type="text" id="birthDate" name="birthDate" placeholder="YYYY-MM-DD"><br><br>

<label for="pastime">Favorite Pastime:</label>

<select id="pastime" name="pastime">

<option value="">Select One</option>

<option value="Surfing the Web">Surfing the Web</option>

<option value="Playing Sport">Playing Sport</option>

<option value="Listening to Music">Listening to Music</option>

<option value="Watching TV">Watching TV</option>

<option value="Playing Games">Playing Games</option>

<option value="Community Service">Community Service</option>

<option value="Daydreaming">Daydreaming</option>

<option value="Reading">Reading</option>

<option value="Meditation">Meditation</option>

</select><br><br>

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

</form>

</body>

</html>