

INTERNET PROGRAMMING ASSIGNMENT

1. Develop a script that will determine whether a department-store customer has exceeded the credit limit on a charge account. For each customer, the following facts are available:

- a) Account number
- b) Balance at the beginning of the month
- c) Total of all items charged by this customer this month
- d) Total of all credits applied to this customer's account this month
- e) Allowed credit limit

The script should input each of these facts from a prompt dialog as an integer, calculate the new balance ($= \text{beginning balance} + \text{charges} - \text{credits}$), display the new balance and determine whether the new balance exceeds the customer's credit limit. For customers whose credit limit is exceeded, the script should output HTML text that displays the message "Credit limit exceeded."

PROGRAM:

```
<html>

<head>

<script>

a=parseInt(prompt("Account number"))

b=parseInt(prompt("Balance at the beginning of the month"))

c=parseInt(prompt("Total of all items charged by this customer this month"))

d=parseInt(prompt("Total of all credits applied to this customer's account this month"))

e=parseInt(prompt("Allowed credit limit"))

result=b+c-d

document.write(result)

if(result>e)

alert("limit exceeded")

</script>

<head>

<body>

Result

</body>

</html>
```

2. A company wants to transmit data over the telephone, but it's concerned that its phones may be tapped. All of its data is transmitted as four-digit integers. It has asked you to write a script that will encrypt its data so that the data may be transmitted more securely. Your script should read a four-digit integer entered by the user in a prompt dialog and encrypt it as follows: Replace each digit by (the sum of that digit plus 7) modulus 10. Then swap the first digit with the third, and swap the second digit with the fourth. Then output HTML text that displays the encrypted integer.

SOLUTION PROGRAM:

```
<html>

<body>

    <script>

        let a=prompt("Enter a four digit number")

        let result=""

        for(let i=0;i<a.length;i++){

            let c=(parseInt(a[i])+7)%10

            result=result+c.toString()

        }

        output=result[2]+result[3]+result[0]+result[1]

        document.write("The encrypted 4-digit:"+output)

    </script>

</body>

</html>
```

2. Create a HTML Form that allows the user to enter all the details of the passenger (name, age, emailid, gender). Write a JavaScript to validate the emailid, age and gender, where email id should consist of the special symbol @and period(.), where age between 1 to 100 and gender is male or female. Generate an error message in red color nearer to that field

SOLUTION:

```
<html>
<head>
    <title>Passenger Form</title>
</head>
<body>
    <form id="passengerForm">
        Name: <input type="text" id="name"><br><br>
        Age: <input type="number" id="age"><span id="ageError" style="color:red;"></span><br><br>
        Email: <input type="text" id="email"><span id="emailError" style="color:red;"></span><br><br>
        Gender:
        <select id="gender">
            <option value="">Select</option>
            <option value="male">Male</option>
            <option value="female">Female</option>
        </select>
```

```

        <span id="genderError" style="color:red;"></span><br><br>
        <button type="button" onclick="validateForm()">Submit</button>
    </form>

<script>
    function validateForm() {
        let age = document.getElementById("age").value;
        let email = document.getElementById("email").value;
        let gender = document.getElementById("gender").value;

        let emailError = document.getElementById("emailError");
        let ageError = document.getElementById("ageError");
        let genderError = document.getElementById("genderError");

        emailError.innerHTML = "";
        ageError.innerHTML = "";
        genderError.innerHTML = "";

        let isValid = true;

        if (!email.includes("@") || !email.includes(".")) {
            emailError.innerHTML = "Invalid email";
            isValid = false;
        }

        if (age < 1 || age > 100) {
            ageError.innerHTML = "Age must be between 1 and 100";
            isValid = false;
        }

        if (gender !== "male" && gender !== "female") {
            genderError.innerHTML = "Select a valid gender";
            isValid = false;
        }

        if (isValid) {
            alert("Form is valid");
        }
    }
</script>
</body>
</html>

```

3. Write a JavaScript function to count all the sub-strings of a given string which are palindromes and their length is prime.

Solution:

```

<!DOCTYPE html>

<html>

<head>

    <title>Palindrome Substring Counter</title>

```

</head>

<body>

<script>

```
function isPrime(n) {  
    if (n < 2) return false;  
    for (let i = 2; i * i <= n; i++) {  
        if (n % i === 0) return false;  
    }  
    return true;  
}
```

```
function isPalindrome(s) {  
    let left = 0;  
    let right = s.length - 1;  
    while (left < right) {  
        if (s[left] !== s[right]) return false;  
        left++;  
        right--;  
    }  
    return true;  
}
```

```
function countPalindromePrimes(str) {  
    let count = 0;  
    for (let i = 0; i < str.length; i++) {  
        for (let j = i + 1; j <= str.length; j++) {  
            let subStr = str.substring(i, j);  
            if (isPalindrome(subStr) && isPrime(subStr.length)) {  
                count++;  
            }  
        }  
    }  
    return count;  
}
```

```
}
```

```
let input = "ababa"; // Example input
```

```
let result = countPalindromePrimes(input);
```

```
console.log("Number of prime-length palindrome substrings: " + result);
```

```
</script>
```

```
</body>
```

```
</html>
```

4. Write a JavaScript function to count all the sub-strings of a given string which are palindromes and their length is prime.

Solution:

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
  <title>Palindrome Substring Counter</title>
```

```
</head>
```

```
<body>
```

```
  <script>
```

```
    function isPrime(n) {
```

```
      if (n < 2) return false;
```

```
      for (let i = 2; i * i <= n; i++) {
```

```
        if (n % i === 0) return false;
```

```
      }
```

```
      return true;
```

```
    }
```

```
    function isPalindrome(s) {
```

```
      return s === s.split('').reverse().join('');
```

```
    }
```

```
    function countPalindromePrimes(str) {
```

```
      let count = 0;
```

```
      for (let i = 0; i < str.length; i++) {
```

```
        for (let j = i + 1; j <= str.length; j++) {
```

```
          let subStr = str.substring(i, j);
```

```
          if (isPalindrome(subStr) && isPrime(subStr.length)) {
```

```
            count++;
```

```
          }
```

```
        }
```

```
      }
```

```
    }
```

```
    return count;
```

```
  }
```

```
  let input = "ababa";
```

```
  let result = countPalindromePrimes(input);
```

```

        console.log("Number of prime-length palindrome substrings: " + result);
    </script>
</body>
</html>

```

5. Write a script that uses relational and equality operators to compare two Strings input by the user through an HTML form. Output in an HTML textarea whether the first string is less than, equal to or greater than the second.

Solution:

```

<!DOCTYPE html>
<html>
<head>
    <title>String Comparison</title>
</head>
<body>
    <form onsubmit="compareStrings(event)">
        String 1: <input type="text" id="string1"><br>
        String 2: <input type="text" id="string2"><br>
        <button type="submit">Compare</button>
    </form>
    <textarea id="output" rows="4" cols="50"></textarea>

    <script>
        function compareStrings(event) {
            event.preventDefault();
            let str1 = document.getElementById("string1").value;
            let str2 = document.getElementById("string2").value;
            let result;
            if (str1 < str2) {
                result = "String 1 is less than String 2";
            } else if (str1 === str2) {
                result = "String 1 is equal to String 2";
            } else {
                result = "String 1 is greater than String 2";
            }
            document.getElementById("output").value = result;
        }
    </script>
</body>
</html>

```

6. Write a script that inputs text from an HTML form and outputs the text in uppercase and lowercase letters

Solution:

```

<!DOCTYPE html>

<html>

<head>

    <title>Text Case Converter</title>

</head>

```

```

<body>

  <form onsubmit="convertText(event)">

    Input Text: <input type="text" id="inputText"><br>

    <button type="submit">Convert</button>

  </form>

  <textarea id="output" rows="4" cols="50"></textarea>


  <script>

    function convertText(event) {

      event.preventDefault();

      let text = document.getElementById("inputText").value;

      document.getElementById("output").value =

        "Uppercase: " + text.toUpperCase() + "\n" +

        "Lowercase: " + text.toLowerCase();

    }

  </script>

</body>

</html>

```

7. Write a script that inputs a telephone number as a string in the form (555)555-5555. The script should use strings method substring to extract the area code as token and the last four digits of the phone numbers as a token. Display the area code in one text field and the seven digit phone number in another text field.

Solution:

```

<!DOCTYPE html>

<html>

<head>

  <title>Telephone Number Extractor</title>

</head>

<body>

  <form onsubmit="extractNumber(event)">

    Enter Phone Number: <input type="text" id="phoneNumber" placeholder="(555)555-5555"><br>

    <button type="submit">Extract</button>

  </form>

  Area Code: <input type="text" id="areaCode" readonly><br>

  Last Four Digits: <input type="text" id="lastFour" readonly>

```

```

<script>
    function extractNumber(event) {
        event.preventDefault();

        let number = document.getElementById("phoneNumber").value;

        let areaCode = number.substring(1, 4);

        let lastFour = number.substring(9);

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

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

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

```

8. A university has asked you to create an HTML document that allows potential students to provide feedback about their campus visit. Your HTML document should contain a form with text boxes for a name, address and e-mail. Provide check boxes that allow prospective students to indicate what they liked most about the campus. These check boxes should include: students, location, campus, atmosphere, dorm rooms and sports. Also, provide radio buttons that ask the prospective student how they became interested in the university. Options should include: friends, television, Internet and other. In addition, provide a text area for additional comments, a submit button and a reset button. Apply validation to accept all values and proper values. Provide Error messages when the values are not entered and not proper values entered.

Solution:

```

<!DOCTYPE html>

<html>

<head>

    <title>Campus Visit Feedback</title>

</head>

<body>

    <form onsubmit="validateForm(event)">

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

        Address: <input type="text" id="address"><br>

        Email: <input type="email" id="email"><br>

        What did you like? (Select all that apply)<br>

        <input type="checkbox" id="students">Students<br>

        <input type="checkbox" id="location">Location<br>

```



```
<input type="checkbox" id="campus">Campus<br>
<input type="checkbox" id="atmosphere">Atmosphere<br>
<input type="checkbox" id="dorms">Dorm Rooms<br>
<input type="checkbox" id="sports">Sports<br>
How did you hear about us?<br>
<input type="radio" name="source" value="friends">Friends<br>
<input type="radio" name="source" value="television">Television<br>
<input type="radio" name="source" value="internet">Internet<br>
<input type="radio" name="source" value="other">Other<br>
Additional Comments:<br>
<textarea id="comments"></textarea><br>
<button type="submit">Submit</button>
<button type="reset">Reset</button>
</form>
```

```
<script>
function validateForm(event) {
    event.preventDefault();

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

    if (!name || !address || !email) {
        alert("Please fill in all fields.");
        return;
    }

    alert("Thank you for your feedback!");
}
</script>
```

```
</body>
```

```
</html>
```

9. Implement the following functions:

a) Function `celsius` returns the Celsius equivalent of a Fahrenheit temperature, using the calculation $C = 5.0 / 9.0 * (F - 32)$;

b) Function `fahrenheit` returns the Fahrenheit equivalent of a Celsius temperature, using the calculation $F = 9.0 / 5.0 * C + 32$;

c) Use these functions to write a script that enables the user to enter either a Fahrenheit or a Celsius temperature and displays the Celsius or Fahrenheit equivalent, respectively.

Your HTML document should contain two buttons—one to initiate the conversion from Fahrenheit to Celsius and one to initiate the conversion from Celsius to Fahrenheit.

Solution:

```
<!DOCTYPE html>

<html>

<head>

    <title>Temperature Converter</title>

</head>

<body>

    <form onsubmit="convertTemp(event)">

        <input type="number" id="tempInput" placeholder="Enter temperature">

        <select id="unit">

            <option value="C">Celsius</option>

            <option value="F">Fahrenheit</option>

        </select>

        <button type="submit">Convert</button>

    </form>

    <p id="result"></p>

    <script>

        function celsius(f) {

            return 5.0 / 9.0 * (f - 32);

        }

        function fahrenheit(c) {

            return 9.0 / 5.0 * c + 32;

        }

        function convertTemp(event) {
```

```
event.preventDefault();

let temp = parseFloat(document.getElementById("tempInput").value);

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

let result;

if (unit === "C") {

    result = fahrenheit(temp);

    document.getElementById("result").innerText = temp + "°C = " + result.toFixed(2) + "°F";

} else {

    result = celsius(temp);

    document.getElementById("result").innerText = temp + "°F = " + result.toFixed(2) + "°C";

}

}

</script>

</body>

</html>
```