SCS2208 Rapid Application Development
Lab Sheet - Basic JS
Part II

Question 01

- JavaScript file – Q1

```javascript
function Alert() {
    let Name = document.getElementById("name").value;
    let Hometown = document.getElementById("hometown").value;

    if (Name != "" && Hometown != "") {
        alert("Name: " + Name + "\nHome town: " + Hometown);
    }
}
```

- HTML file – Q1

```html
<!DOCTYPE html>
<html lang="en">
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<head>
    <title>Question 01</title>
    <link rel="stylesheet" href="common.css">
</head>

<body>
    <script src="Q1.js"></script>
    <div class="window">
        <form>
            <label for="Name">Name:</label><br>
            <input type="text" id="name" name="name" class="box" placeholder="Insert a name.." required><br><br>
            <label for="hometown">Hometown:</label><br>
            <input type="text" id="hometown" name="hometown" class="box" placeholder="Insert home town.."
                required><br><br>
            <button type="submit" class="button" onClick="Alert()">Click</button>
        </form>
    </div>
</body>

</html>
```

- CSS file - (common for Q1, Q2, Q3, Q4, Q6, Q7 and Q8)

```css
.window {
  display: inline-block;
  position: fixed;
  border: none;
  border-radius: 5px;
  background-color: #cacaca;
  padding: 40px 30px;
  font-size: 18px;
}

.button {
  display: inline-block;
  background-color: green;
  border: none;
  border-radius: 5px;
  font-size: 15px;
  color: white;
  text-align: center;
  padding: 10px 40px;
}

.box {
  padding: 10px 12px;
}
```

Question 02

- JavaScript file – Q2

```javascript
function showtime(item) {

    const date = new Date();
    let hour = date.getHours();
    let min = date.getMinutes();

    if (min < 10) {
        if (hour > 12) {
            document.getElementById("time").innerHTML = "Now the time is " + hour - 12 + ":0" + min + "PM";
        }
        else {
            document.getElementById("time").innerHTML = "Now the time is " + hour + ":0" + min + "AM";
        }
    } else {
        if (hour > 12) {
            document.getElementById("time").innerHTML = "Now the time is " + hour - 12 + ":" + min + "PM";
        }
        else {
            document.getElementById("time").innerHTML = "Now the time is " + hour + ":" + min + "AM";
        }
    }

    if (min == 0) {
        item.innerHTML = "Remains " + (24 - hour) + " hours more";
    }
    else {
        item.innerHTML = "Remains " + (23 - hour) + " hours and " + (60 - min) + " minutes more";
    }
}
```

- HTML file – Q2

```html
<!DOCTYPE html>
<html lang="en">
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<head>
    <title>Question 02</title>
    <link rel="stylesheet" href="common.css">
</head>

<body>
    <script src="Q2.js"></script>

    <div class="window">
        <p id="time"></p>
        <button type="button" class="button"
onclick="showtime(this)">Time</button>

    </div>
</body>

</html>
```

Question 03

- JavaScript file – Q3

```javascript
function AlertAGE() {
    let Name = document.getElementById("name").value;
    let BDay = document.getElementById("bday").value;

    if (Name != "" && BDay != "") {
        const cdate = new Date();
        const bdate = new Date(document.getElementById("bday").valueAsDate);
        let CY = cdate.getFullYear();
        let CM = cdate.getMonth();

        let BY = bdate.getFullYear();
        let BM = bdate.getMonth();

        if (CM > BM) {
            alert("Age: " + (CY - BY) + " years and " + (CM - BM) + " months.");
        }
        else {
            alert("Age: " + (CY - BY - 1) + " years and " + (12 + CM - BM) + " months.");
        }
    }
}
```

- HTML file – Q3

```html
<!DOCTYPE html>
<html lang="en">
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">>

<head>
    <title>Question 03</title>
    <link rel="stylesheet" href="common.css">
</head>

<body>
    <script src="Q3.js"></script>
    <div class="window">
        <form>
            <label for="Name">Name:</label><br>
            <input type="text" id="name" name="name" class="box" placeholder="Insert a name.." required><br><br>
            <label for="bday">Birthday:</label><br>
            <input type="date" id="bday" name="bday" class="box" placeholder="Insert birthday.."
required><br><br>
            <button type="submit" class="button" onClick="AlertAGE()">Click</button>
        </form>
    </div>
</body>

</html>
```

Question 04

- JavaScript file – Q4

```javascript
function AreaCal() {
    let Height = document.getElementById("height").value;
    let Width = document.getElementById("width").value;

    if (Height >= 0 && Width >= 0) {
        document.getElementById("area").innerHTML = "Area of the rectangle
is " + Height * Width + "cm<sup>2</sup>";
    }
    else {
        alert("Please enter valid number for value!")
    }
}
```

- HTML file – Q4

```html
<!DOCTYPE html>
<html lang="en">
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<head>
    <title>Question 04</title>
    <link rel="stylesheet" href="common.css">
</head>

<body>
    <script src="Q4.js"></script>
    <div class="window">
        <form>
            <label for="Width">Width:</label><br>
            <input type="number" id="width" name="width" class="box"
placeholder="Insert width" required><br><br>
            <label for="Height">Height:</label><br>
            <input type="text" id="height" name="height" class="box"
placeholder="Insert height" required><br><br>
            <button type="button" class="button" onClick="AreaCal()">Find
Area</button>
            <p id="area"></p>
        </form>
    </div>
</body>

</html>
```

Question 05

- JavaScript file – Q5

```javascript
function changecolor(btn) {
  btn.style.backgroundColor = "blue";
}
```

- HTML file – Q5

```html
<!DOCTYPE html>
<html lang="en">
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<head>
    <title>Question 05</title>
    <link rel="stylesheet" href="Q5.css">
</head>

<body>
    <script src="Q5.js"></script>
    <h2>Purchase your item</h2>
    <table>
        <tr>
            <td><a href="####">Free trial</a></td>
        </tr>
        <tr>
            <td>Help you to design <br>provide security <br>manage
plans</td>
        </tr>
        <tr>
            <td><button type="submit" class="button"
onClick="changecolor(this)">Try it now</button></td>
        </tr>
    </table>
</body>

</html>
```

- CSS file – Q5

```css
table {
    border-collapse: collapse;
    width: 20%;
}

td {
    border: 1px solid #cccccc;
    padding: 10px;
    text-align: left;
}

tr:nth-child(odd) {
    background-color: #cccccc;
}

.button {
    display: inline-block;
    background-color: rgb(10, 188, 233);
    border: none;
    border-radius: 5px;
    font-size: 15px;
    color: white;
    text-align: center;
    padding: 10px 40px;
}
```

Question 06

- JavaScript file – Q6

```javascript
function sqrroot() {
    let Value = document.getElementById("number").value;

    if (Value >= 0) {
        alert("Square root of " + Value + " is " + Math.sqrt(Value));
    }
    else {
        alert("Invalid input! Please enter valid input");
    }
}
```

- HTML file – Q6

```html
<!DOCTYPE html>
<html lang="en">
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<head>
    <title>Question 06</title>
    <link rel="stylesheet" href="common.css">
</head>

<body>
    <script src="Q6.js"></script>
    <div class="window">
        <form>
            <label for="number">Insert the number</label>
            <input type="number" id="number" name="number" class="box"
placeholder="Insert value" required><br><br>
            <button type="button" class="button" onClick="sqrroot()">Find root</button>
        </form>
    </div>
</body>

</html>
```

Question 07

- JavaScript file – Q7

```javascript
function changeothers(changedbox) {
    var boxset = document.getElementsByClassName("cbox");
    var cdbox = document.getElementById(changedbox.id)

    if (cdbox.checked) {
        for (var i = 0; i < boxset.length; i++) {
            if (boxset[i].checked) {
                boxset[i].disabled = false;
            }
            else {
                boxset[i].disabled = true;
            }
        }
    }
    else {
        for (var i = 0; i < boxset.length; i++) {
            boxset[i].disabled = false;
        }
    }
}
```

- HTML file – Q7

```html
<!DOCTYPE html>
<html lang="en">
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<head>
    <title>Question 07</title>
    <link rel="stylesheet" href="common.css">
</head>

<body>
    <script src="Q7.js"></script>
    <div class="window">
        <form>
            <h2>Available Hotel Packages</h2>

            <input type="checkbox" id="wedding" name="wedding" class="cbox" value="1"
onclick="changeothers(this)">
            <label for="wedding"> Wedding package</label><br>
            <input type="checkbox" id="bday" name="bday" class="cbox" value="1"
onclick="changeothers(this)">
            <label for="bday"> Birthday package</label><br>
            <input type="checkbox" id="normal" name="normal" class="cbox" value="1"
onclick="changeothers(this)">
            <label for="normal"> Normal function package</label><br>
            <input type="checkbox" id="dout" name="dout" class="cbox" value="1"
onclick="changeothers(this)">
            <label for="dout"> Day out package</label><br><br>
            <button type="submit" class="button">Submit</button>
        </form>
    </div>
</body>

</html>
```

Question 08

- JavaScript file – Q8

```javascript
function calculate() {
    let Amount = document.getElementById("amount").value;
    document.getElementById("results").innerHTML = "20% of the value: " +
Amount * 0.2 + "<br>Total: " + Amount + " + " + Amount * 0.2 + " = " +
Amount * 1.2;
}
```

- HTML file – Q8

```html
<!DOCTYPE html>
<html lang="en">
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<head>
    <title>Question 08</title>
    <link rel="stylesheet" href="common.css">
</head>

<body>
    <script src="Q8.js"></script>
    <div class="window">
        <form>
            <label for="amount">insert the amount: </label><br><br>
            <input type="number" id="amount" name="amount" class="box"
placeholder="Insert an amount"
                onmouseout="calculate()"><br><br>
            <p id="results"></p>
        </form>
    </div>
</body>

</html>
```

Question 09

- JavaScript file – Q9

```javascript
function GetResult() {
    let mark = document.getElementById("mark").value;
    let sub = document.getElementById("subject").value;

    if (mark >= 35 && mark <= 100) {
        document.getElementById("results").innerHTML = "Subject PASSED:
Congratulations! you have passed this subject!";
    } else {
        document.getElementById("results").innerHTML = "Subject FAILED:
Sorry! you have to work hard for <b>" + sub + "</b> subject...";
    }
}
```

- HTML file – Q9

```html
<!DOCTYPE html>
<html lang="en">
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<head>
    <title>Question 09</title>
    <link rel="stylesheet" href="Q9.css">
</head>

<body>
    <script src="Q9.js"></script>
    <div class="window">
        <form>
            <label for="subject">Subject: </label>
            <input type="text" id="subject" name="subject" class="box"
placeholder="Enter subject" required><br><br>
            <label for="mark">Marks: </label>
            <input type="number" id="mark" name="mark" class="box"
placeholder="Insert value" required><br><br>
            <button type="button" class="button"
onClick="GetResult()">Results</button><br>
            <p id="results"></p>
        </form>
    </div>
</body>

</html>
```

- CSS file – Q9

```css
.window {
  display: inline-block;
  position: fixed;
  border: none;
  border-radius: 5px;
  background-color: #cacaca;
  padding: 40px 30px;
  font-size: 18px;
}

.button {
  display: inline-block;
  background-color: rgb(241, 69, 233);
  border: none;
  border-radius: 5px;
  font-size: 15px;
  color: white;
  text-align: center;
  padding: 10px 100px;
}

.box {
  padding: 10px 12px;
}
```

Question 10 – JavaScript file

```javascript
var TYPING = [];
var DISPLAY = '';
var ANSWER;
var EXPRESSION = '';

function button(character) {
    TYPING.push(character);

    if (TYPING.length > 1) {
        DISPLAY = '';
    }
    for (i = 0; i < TYPING.length; i++) {
        DISPLAY = DISPLAY + TYPING[i];
    }
    document.getElementById('display').innerHTML = DISPLAY;
}

function calculate() {
    document.getElementById('display').innerHTML = '';
    for (i = 0; i < TYPING.length; i++) {
        EXPRESSION = EXPRESSION + TYPING[i];
    }

    ANSWER = eval(EXPRESSION);
    document.getElementById('display').innerHTML = ANSWER;

    cleartyping();
    DISPLAY = ANSWER;
}

function clearscreen() {
    DISPLAY = '';
    EXPRESSION = '';
    document.getElementById('display').innerHTML = DISPLAY;

    cleartyping();
}

function cleartyping() {
    while (TYPING.length > 0) {
        TYPING.pop();
    }
}
```

- HTML file – Q10

```html
<!DOCTYPE html>
<html lang="en">
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<head>
    <title>Question 10</title>
    <link rel="stylesheet" href="Q10.css">
</head>


<body>
    <script src="Q10.js"></script>
    <table>
        <tr>
            <td colspan="4" id="display" class="black"> </td>
        </tr>
        <tr class="grey">
            <td onclick="button('+')">+</td>
            <td onclick="button('-')">-</td>
            <td onclick="button('*')">x</td>
            <td onclick="button('/')">/</td>
        </tr>
        <tr>
            <td onclick="button('7')">7</td>
            <td onclick="button('8')">8</td>
            <td onclick="button('9')">9</td>
            <td class="orange" rowspan="4" onclick="calculate()">=</td>
        </tr>
        <tr>
            <td onclick="button('4')">4</td>
            <td onclick="button('5')">5</td>
            <td onclick="button('6')">6</td>
        </tr>
        <tr>
            <td onclick="button('1')">1</td>
            <td onclick="button('2')">2</td>
            <td onclick="button('3')">3</td>
        </tr>
        <tr>
            <td onclick="button('0')">0</td>
            <td onclick="button('.')">.</td>
            <td onclick="clearscreen()">AC</td>
        </tr>
    </table>
</body>
</html>
```

- CSS file – Q10

```css
table {
    display: inline-table;
    border-collapse: collapse;
    width: 20%;
    border-radius: 10px;
}

td {
    border: 1px solid rgb(150, 150, 150);
    padding: 10px;
    text-align: center;
}

.black {
    background-color: black;
    color: white;
    text-align: right;
    height: 50px;
}

.grey {
    background-color: rgb(197, 197, 197)
}

.orange {
    background-color: rgb(255, 115, 0)
}
```

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GitHub link: https://github.com/BhanukaRajk/SCS2208_RAD/tree/main/Labsheet_JS_II

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