Web Programming
Lab – 10
Java Script

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Course Code: BCSE203E
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Question 1:

1. Assume that you are appointed as Data Analytics Engineer for a hospital. Ages for 8 patients are given below.

P-Id	Name	Age
1	Alen	39
2	Deena	47
3	Diana	21
4	Jack	54
5	Jain	23
6	Kelvin	61
7	Louis	69
8	Rex	49

Write a JavaScript program using appropriate functions to
    (i) sort the data in descending order according to the patient's age and display the same
    (ii) check whether a particular P-Id is presented in the list
    (iii) filter the patients by age range.

Code:
HTML

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>23BCE1728</title>
    <style>
        table{
            border-collapse: collapse;
            border: 2px solid black;
            box-sizing: border-box;
        }
        td,th{
            text-align: left;
            width: 150px;
        }
        #sort-button{
            width: 150px;
        }
        input{
            width: 100px;
        }
        #pid-found-status{
            width: 400px;
            height: 50px;
            margin: 20px 0px 0px 0px;
        }
        .range-value{
            border: 2px solid black;
            border-radius: 5px;
            width: 40px;
            height: 20px;
            display: inline-block;
        }
        .range-container{
            width: 300px;
            display: flex;
            justify-content: space-evenly;
            align-items: center;
        }
    </style>
</head>
```

```html
<body>
    <h2>Exercise 10.1</h2>
    <table border="1" id="table1">
        <tr class="table-header-row">
            <th>P-Id</th>
            <th>Name</th>
            <th>Age</th>
        </tr>
        <tr class="table-row">
            <td>1</td>
            <td>Alen</td>
            <td>39</td>
        </tr>
        <tr class="table-row">
            <td>2</td>
            <td>Deena</td>
            <td>47</td>
        </tr>
        <tr class="table-row">
            <td>3</td>
            <td>Diana</td>
            <td>21</td>
        </tr>
        <tr class="table-row">
            <td>4</td>
            <td>Jack</td>
            <td>54</td>
        </tr>
        <tr class="table-row">
            <td>5</td>
            <td>Jain</td>
            <td>23</td>
        </tr>
        <tr class="table-row">
            <td>6</td>
            <td>Kelvin</td>
            <td>61</td>
        </tr>
        <tr class="table-row">
            <td>7</td>
            <td>Luis</td>
            <td>69</td>
        </tr>
        <tr class="table-row">
            <td>8</td>
            <td>Rex</td>
            <td>49</td>
        </tr>
    </table>
    <button class="sort-button">Sort</button>
    <br>
    <br>
    <div style="border: 2px solid black;width: 450px;padding: 5px;">
        <label for="">Enter PID to find: </label>
        <input type="text" id="pid-input">
        <br>
        <button id="pid-submit">Submit</button>
        <br>
        <div id="pid-found-status">
            <table id="pid-found-status-table"></table>
        </div>
    </div>
    <br>
    <div style="border: 2px solid black;width: 450px;padding: 5px;height: 500px;">
        <h3>Age Range Filter</h3>
        <div class="range-container">
            <label for="">Min Range</label>
            <input type="range" class="range-input" value="20" min="20" max="70">
            <p class="range-value"></p>
        </div>
        <div class="range-container">
            <label for="">Max Range</label>
            <input type="range" class="range-input" value="70" min="20" max="70">
```

```html
            <p class="range-value"></p>
        </div>
        <table border="1" id="table2">
        </table>
    </div>
    <script src="script1.js"></script>
</body>
</html>
```

JS

```javascript
function sortAge(event){
    event.preventDefault;
    flag=0;
    let table=document.querySelector('#table1');
    let rows=document.querySelectorAll('.table-row');
    let arr=Array.from(rows);
    arr.sort((a,b)=>{
        let age1=parseInt(a.cells[2].textContent);
        let age2=parseInt(b.cells[2].textContent);
        return age1-age2;
    });
    arr.forEach(row=>table.appendChild(row));
}
function findPID(event){
    event.preventDefault;
    let pid=parseInt(document.querySelector("#pid-input").value);
    let table=document.querySelector('table');
    let rows=document.querySelectorAll('.table-row');
    let arr=Array.from(rows);
    let ans=-1;
    let i;
    for(i=0;i<arr.length;i++){
        if(arr[i].cells[0].textContent==pid){
            ans=i;
            break;
        }
    }
    if(ans==-1){
        let element=document.createElement('tr');
        element.innerHTML='<td colspan="3" style="width:450px;text-align:center;">No Patient Found</td>';
        document.querySelector("#pid-found-status-table").innerHTML=element.outerHTML;
    }
    else{
        document.querySelector("#pid-found-status-table").innerHTML=rows[i].outerHTML;
    }
}
document.querySelector(".sort-button").addEventListener('click',sortAge);
document.querySelector("#pid-submit").addEventListener('click',findPID);

const rangeInputs=document.querySelectorAll(".range-input");
const rangeValues=document.querySelectorAll(".range-value");
max=50;
min=20;
function updateRangeValue(index){
    let num=rangeInputs[index].value;
    rangeValues[index].innerHTML=num;
    if(index==0){min=parseInt(num);}
    else{max=parseInt(num);}
    let rows=document.querySelectorAll('.table-row');
    let arr=Array.from(rows);
    let table2=document.querySelector('#table2');
    min=parseInt(min);
    max=parseInt(max);
    table2.innerHTML="";
    for(let i=0;i<arr.length;i++){
        let num=parseInt(arr[i].cells[2].textContent);
        if(num<=max&&num>=min){
            let element=document.createElement('tr');
            element.innerHTML=rows[i].innerHTML;
            table2.append(element);
        }
    }
}
```

```
rangeInputs.forEach((i,index)=>{
    updateRangeValue(index);
    i.addEventListener('input',()=>updateRangeValue(index));
})
```

Output:

Exercise 10.1

P-Id	Name	Age
1	Alen	39
2	Deena	47
3	Diana	21
4	Jack	54
5	Jain	23
6	Kelvin	61
7	Luis	69
8	Rex	49

Sort

Enter PID to find: [   ]

Submit

Exercise 10.1

P-Id	Name	Age
3	Diana	21
5	Jain	23
1	Alen	39
2	Deena	47
8	Rex	49
4	Jack	54
6	Kelvin	61
7	Luis	69

Sort

Enter PID to find: [_____]

Submit

127.0.0.1:5500/ex1.html

1	Alen	39
2	Deena	47
8	Rex	49
4	Jack	54
6	Kelvin	61
7	Luis	69

Sort

Enter PID to find: 5

Submit

5	Jain	23

Age Range Filter

Min Range ⬤───── 20

Max Range ━━━━⬤ 70

127.0.0.1:5500/ex1.html

Age Range Filter

Min Range ●━━━━━━ [27]

Max Range ━━━━●━━ [57]

1	Alen	39
2	Deena	47
8	Rex	49
4	Jack	54
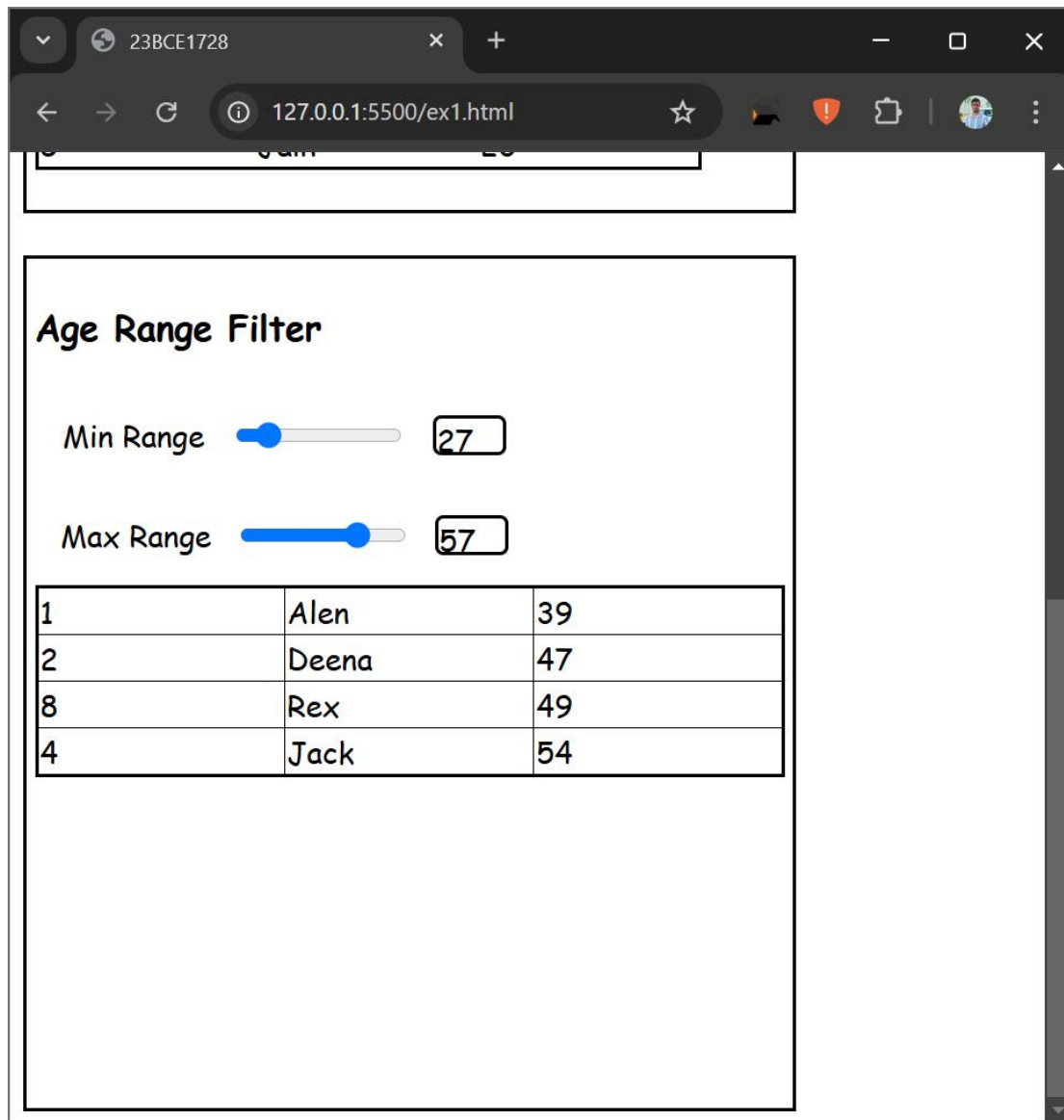
Question 2:

2. Write a JavaScript program that performs the following actions using **different DOM selection methods**:

(a) **Using `getElementById`:**
Select the `<h1>` element and change its text to `"Updated Title"`.

(b) **Using `getElementsByName`:**
Select the input field with the `name="username"` and set its value to `"John Doe"`.
Select all radio buttons with the name `gender` and print the value of the selected radio button.

Using `getElementsByTagName`:

Count and print the total number of `<p>` elements on the page.
Select all `<li>` elements inside the `<ul>` and print their text content to the console.

(d) **Using** `getElementsByClassName`:

Change the background color of all elements with the class `input-field` to `lightblue`.

(e) **Using** `querySelector`:

Select the first `<p>` element with the class `info` and update its text to `"This is the first info paragraph"`.
Select the first radio button with the name `gender` and check it programmatically.

(f) **Using** `querySelectorAll`:

Select all `<p>` elements with the class `info`, loop through them, and print their text content.
Select all checkboxes with the class `hobby`, loop through them, set them as checked and print the checked values.

Code:

HTML

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>23BCE1728</title>
</head>
<body>
    <h2>Exercise 10.2</h2>
    <h1 id="title">Original Title</h1>

    <input type="text" name="username">
    <br>
    <input type="radio" name="gender" value="Male"> Male
    <input type="radio" name="gender" value="Female"> Female
    <br>

    <p>This is paragraph 1.</p>
    <p>This is paragraph 2.</p>
    <ul>
        <li>Item 1</li>
        <li>Item 2</li>
    </ul>
```

```html
    <input type="text" class="input-field">
    <input type="text" class="input-field">

    <p class="info">Info paragraph 1</p>
    <p class="info">Info paragraph 2</p>
```

```html
    <input type="checkbox" class="hobby" value="Reading"> Reading
    <input type="checkbox" class="hobby" value="Gaming"> Gaming
    <input type="checkbox" class="hobby" value="Coding"> Coding

    <script src="script2.js"></script>
</body>
</html>
```

JS

```javascript
document.getElementById("title").textContent = "Updated Title";

document.getElementsByName("username")[0].value = "John Doe";
```

```javascript
const genderRadios = document.getElementsByName("gender");
```

```javascript
for (let radio of genderRadios) {
    if (radio.checked) {
        console.log("Selected Gender:", radio.value);
    }
}
```

```javascript
const paragraphs = document.getElementsByTagName("p");
console.log("Total <p> elements:", paragraphs.length);
```

```javascript
const listItems = document.getElementsByTagName("li");
for (let li of listItems) {
    console.log("List Item:", li.textContent);
}
```

```javascript
const inputFields = document.getElementsByClassName("input-field");
for (let field of inputFields) {
    field.style.backgroundColor = "lightblue";
}
```

```javascript
const firstInfoParagraph = document.querySelector(".info");
if (firstInfoParagraph) {
    firstInfoParagraph.textContent = "This is the first info paragraph";
}
```

```javascript
const firstGenderRadio = document.querySelector('input[name="gender"]');
if (firstGenderRadio) {
    firstGenderRadio.checked = true;
}
```

```javascript
const infoParagraphs = document.querySelectorAll(".info");
infoParagraphs.forEach(p => console.log("Info Paragraph:", p.textContent));
```

```javascript
const hobbyCheckboxes = document.querySelectorAll(".hobby");
hobbyCheckboxes.forEach(checkbox => {
    checkbox.checked = true;
    console.log("Checked Hobby:", checkbox.value);
});
```

Output:

127.0.0.1:5500/ex2.html

Exercise 10.2

Updated Title

John Doe

◉ Male ○ Female

This is paragraph 1.

This is paragraph 2.

- Item 1
- Item 2

This is the first info paragraph

Info paragraph 2

☑ Reading ☑ Gaming ☑ Coding

Exercise 10.2

Updated Title

John Doe

◉ Male ○ Female

This is paragraph 1.

This is paragraph 2.

- Item 1
- Item 2

This is the first info paragraph

Info paragraph 2

☑ Reading ☑ Gaming ☑ Coding

Console output (script2.js):

```
Total <p> elements: 4                         script2.js:13
List Item: Item 1                             script2.js:17
List Item: Item 2                             script2.js:17
Info Paragraph: This is the first             script2.js:36
info paragraph
Info Paragraph: Info paragraph 2              script2.js:36
Checked Hobby: Reading                        script2.js:41
Checked Hobby: Gaming                         script2.js:41
Checked Hobby: Coding                         script2.js:41
```

Question 3:

Design an order form as below and implement a JavaScript program to pass the entries to another page and display the receipt.

Code:
HTML
ex31.html

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>23BCE1728</title>
    <link rel="stylesheet" href="style3.css">
</head>
<body>
    <h2>Exercise 10.3</h2>
    <div class="wrapper">
        <h3 class="heading">Grocery Order Form</h3>
        <div class="info-input-div">
            Customer Name
            <br>
            <input type="text" class="customer-name">
        </div>
        <div class="info-input-div">
            Phone Number
            <br>
            <input type="text" class="phone-number">
        </div>
        <div class="info-input-div">
            Email
            <br>
            <input type="text" class="email">
        </div>
        <hr>
        <h4>Products</h4>
        <form action="" name="f1">
            <ul>
                <li>
                    <img src="apple_fruit_powder3.jpg" class="fruit-image" alt="">
                    <input type="checkbox" name="fruit" id="">
                    <div class="fruit-name">Apple</div>
```

```html
                    <div class="fruit-price">&dollar;10</div>
                    <input type="text" class="fruit-qty">
                    <div class="kg">kg</div>
                </li>
                <li>
                    <img src="download.jpg" class="fruit-image" alt="">
                    <input type="checkbox" name="fruit" id="">
                    <div class="fruit-name">Banana</div>
                    <div class="fruit-price">&dollar;5</div>
                    <input type="text" class="fruit-qty">
                    <div class="kg">kg</div>
                </li>
                <li>
                    <img src="118166873.png" class="fruit-image" alt="">
                    <input type="checkbox" name="fruit" id="">
                    <div class="fruit-name">Avocado</div>
                    <div class="fruit-price">&dollar;7</div>
                    <input type="text" class="fruit-qty">
                    <div class="kg">kg</div>
                </li>
            </ul>
            <button id="submit-button">Submit</button>
        </form>
    </div>
    <script src="script3.js"></script>
</body>
</html>
```

receipt.html

```html
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Receipt</title>
    <link rel="stylesheet" href="style3.css" />
</head>
```

```html
<body>
    <h2>Order Receipt</h2>
    <div id="receipt"></div>
    <script>
        document.addEventListener("DOMContentLoaded", function () {
            let name = localStorage.getItem("customerName");
            let phone = localStorage.getItem("customerPhone");
            let email = localStorage.getItem("customerEmail");
            let products = JSON.parse(localStorage.getItem("orderedProducts"));
            let totalCost = localStorage.getItem("totalCost");
            let receiptHTML = `<p><strong>Name:</strong> ${name}</p><p><strong>Phone:</strong>
${phone}</p><p><strong>Email:</strong> ${email}</p><h3>Products Ordered:</h3><ul>`;
            products.forEach((product) => {receiptHTML += `<li>${product.name} - ${product.quantity} kg @
$${product.price} per kg</li>`;});
            receiptHTML += `</ul><p><strong>Total Cost:</strong> $${totalCost}</p>`;
            document.getElementById("receipt").innerHTML = receiptHTML;
        });
    </script>
</body>
```

```html
</html>
```

style3.css

```css
*{
    margin: 0px;
    padding: 0px;
}
body{
    display: flex;
    flex-direction: column;
    align-items: center;
}
.wrapper{
```

```css
    background-color: #9fac91;
    border: 2px solid black;
    width: 50vw;
    height: 77vh;
    margin: 10px;
    padding: 10px;
    display: flex;
    flex-direction: column;
    justify-content: space-around;
    align-content: space-around;
}
.heading{
    text-align: center;
    padding: 0px;
    margin: 0px;
}
.fruit-image{
    width: 40px;
    height: 40px;
    border-radius: 50%;
}
li{
    margin: 5px 0px 5px 0px;
    display: flex;
    flex-direction: row;
    justify-content: space-around;
}
hr{
    margin: 5px 0px 0px 0px;
    background-color: black;
    height: 1px;
    border: none;
    border-radius: 10px;
}
input{
    height: 25px;
    border: none;
    border-radius: 10px;
}
.fruit-name{
    /* border: 2px solid black; */
    width: 100px;
}
.fruit-qty{
    width:50px;
}
.info-input-div{
    padding: 5px 0px 0px 0px;
}
ul{
    padding: 0px;
    width: 50vw;
}
#submit-button{
    width: 100px;
    border: none;
    border-radius: 10px;
    background-color: rgb(166, 108, 0);
    color: white;
    font-weight: bold;
    height:25px;
}
form[name="f1"]{
    display: flex;
    flex-direction: column;
    justify-content: center;
    align-items: center;
}
```

JS

script3.js

```js
document.addEventListener("DOMContentLoaded", function() {
```

```javascript
    const form = document.forms["f1"];
    const submitButton = document.getElementById("submit-button");

    submitButton.addEventListener("click", function(event) {
        event.preventDefault();

        let name = document.querySelector(".customer-name").value.trim();
        let phone = document.querySelector(".phone-number").value.trim();
        let email = document.querySelector(".email").value.trim();

        if (!name || !phone || !email) {
            alert("Please fill in all customer details.");
            return;
        }

        let products = [];
        let totalCost = 0;

        const items = [
            { name: "Apple", price: 10 },
            { name: "Banana", price: 5 },
            { name: "Avocado", price: 7 }
        ];

        const checkboxes = document.querySelectorAll("input[name='fruit']");
        const quantities = document.querySelectorAll(".fruit-qty");

        checkboxes.forEach((checkbox, index) => {
            if (checkbox.checked) {
                let quantity = parseFloat(quantities[index].value);
                if (!isNaN(quantity) && quantity > 0) {
                    products.push({ name: items[index].name, quantity, price: items[index].price });
                    totalCost += items[index].price * quantity;
                }
            }
        });

        if (products.length === 0) {
            alert("Please select at least one product and enter a valid quantity.");
            return;
        }

        localStorage.setItem("customerName", name);
        localStorage.setItem("customerPhone", phone);
        localStorage.setItem("customerEmail", email);
        localStorage.setItem("orderedProducts", JSON.stringify(products));
        localStorage.setItem("totalCost", totalCost);

        window.location.href = "receipt.html";
    });
});
```
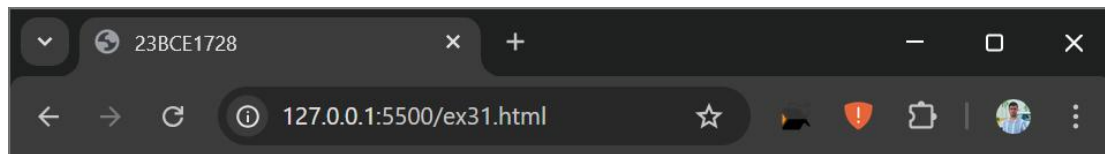
Output:

127.0.0.1:5500/ex31.html

Exercise 10.3

Grocery Order Form

Customer Name

Sushen Grover

Phone Number

07009367016

Email

groversushen@gmail.com

Products

☑ Apple $10 `3` kg

☐ Banana $5   `   ` kg

☑ Avocado $7   `5` kg

Submit

Order Receipt

Name: Sushen Grover
Phone: 07009367016
Email: groversushen@gmail.com

Products Ordered:

Apple - 3 kg @ $10 per kg

Avocado - 5 kg @ $7 per kg

Total Cost: $65