Web Programming
Lab – 11
JavaScript

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Question 1:

1. Write a JavaScript to
   (i) Create a dynamic table with three rows and three columns
   (ii) Change the color of the Button from red to green color on Mouse Over.
   (iii) Change the color of the Textbox from green to yellow color on Focus and display a greeting message on Change

   Note: Both button and textbox should be created using CreateElement

   (iv) Create an input field and a button. When the button is double clicked, add the input text as a new `<li>` item to an unordered list.

   (v) Create two input fields: one for accepting input and another for counting and displaying the number of times any key is pressed.

Code:

```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>
    <h1>Exercise 11A</h1>
    <div class="part1"></div>
    <hr>
    <div class="part2"></div>
    <hr>
    <div class="part3"></div>
    <hr>
    <div class="part4"></div>
    <hr>
    <div class="part5"></div>
    <hr>
    <script src="script1.js"></script>
</body>
</html>
```

```javascript
/* 1st Part */
let wrapper=document.querySelector(".part1");
let table=document.createElement("table");
let num=0;
for(let i=0;i<3;i++){
    let row=table.insertRow();
    for(let j=0;j<3;j++){
        let cell=row.insertCell();
        cell.innerText=num++;
    }
}
table.border=2;
wrapper.append(table);

/* 2nd Part */
wrapper=document.querySelector(".part2");
let button=document.createElement("button");
button.innerText="Click Here";
button.style.background="red";
button.addEventListener("mouseover",function(event){
    event.target.style.background="green";
},true);
button.addEventListener("mouseout",function(event){
    event.target.style.background="red";
},true);
wrapper.append(button);
```

```
// 3rd Part
wrapper=document.querySelector(".part3");
let textbox=document.createElement("input");
textbox.setAttribute("type","textbox");
wrapper.append(textbox);
let message=document.createElement("p");
message.innerText="Hello! You changed the text.";
message.style.visibility="hidden";
wrapper.append(message);
textbox.addEventListener("change",function(event){
    message.style.visibility="visible";
},true);
```

```
// 4th part
wrapper=document.querySelector(".part4");
let input=document.createElement("input");
input.type=textbox;
wrapper.append(input);
```

```
button=document.createElement("button");
button.innerText="Add Item"
wrapper.append(button);
```

```
wrapper.append(document.createElement("br"));
```

```
let list=document.createElement("ul");
wrapper.append(list);
button.ondblclick=()=>{
    let item=document.createElement("li");
    item.innerText=input.value;
    list.append(item);
};
```

```
// 5th part
wrapper=document.querySelector(".part5");
let input1=document.createElement("input");
let input2=document.createElement("input");
input1.type=textbox;
input2.type=textbox;
input2.value=0;
wrapper.append(input1,input2);
let count=0;
document.addEventListener("keypress",function(event){
    count++;
    input2.value=count;
},true);
```

Output:

Exercise 11A

0	1	2
3	4	5
6	7	8

Click Here

[   ]

[   ] Add Item

[   ] [0   ]

Exercise 11A

<div style="border:1px solid black; display:inline-block; padding:5px;">

0	1	2
3	4	5
6	7	8

</div>

Click Here

---

hi

Hello! You changed the text.

---

ok   Add Item

- ok

---

jkkjnkajnk   16

Question 2:

2. (i) Create a simple stopwatch with "Start", "Stop", and "Reset" buttons using JavaScript event listeners.

(ii) Create a text box to accept the Date of Birth and calculate the age on mouseover using an event listener.

(iii) Create a textarea with a character counter that updates dynamically as the user types using an event listener

Code:

```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="style2.css">
</head>
<body>
    <h1>Exercise 11B</h1>
    <div class="part1">
        <div class="part1-buttons">
            <button class="start-button">Start</button>
```

```html
                <button class="stop-button">Stop</button>
                <button class="reset-button">Reset</button>
            </div>
            <div class="part1-clock">
                <div class="timer-div">
                    <div class="hour-div">0</div>:
                    <div class="minute-div">0</div>:
                    <div class="second-div">0</div>
                </div>
            </div>
        </div>
        <hr>
        <div class="part2">
            <input type="date" name="" id="dob-input">
            <br>
            <label for="">Age:</label>
            <input type="text" id="age-output" value="0">
        </div>
        <hr>
        <div class="part3">
            <input type="text" id="text-input">
            <br>
            <label for="">Count:</label>
            <input type="text" id="count-output">
        </div>
        <hr>
        <script src="script2.js"></script>
</body>
</html>
```

```css
.part1-buttons{
    display: flex;
    flex-direction: column;
    width: 20%;
    gap: 1rem;
}
.part1{
    display: flex;
    width: 60%;
}
.part1-buttons button{
    border: 2px solid black;
    background-color: aquamarine;
}
.part1-clock{
    width: 80%;
    display: flex;
    align-items: center;
    justify-content: center;
}
.timer-div{
    display: flex;
    align-items: center;
    justify-content: center;
    gap: 2rem;
}
.timer-div div{
    border: 2px solid black;
    width: 2rem;
    height: 2rem;
    text-align: center;
}
.part1-buttons button:hover{
    background-color: aqua;
}
.part2,.part1,.part3{
    border: 2px solid black;
    padding: 10px;
}
hr{
    visibility: hidden;
}
```
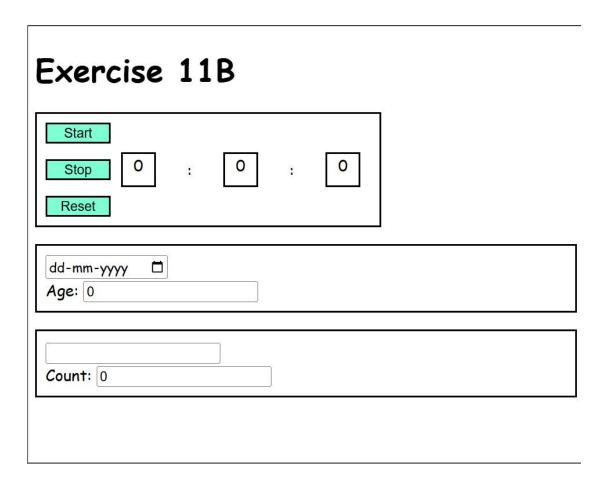
```
// 1st part
let h=0,m=0,s=0;
let residue=0,interval=0;
let startTime=new Date();
let timerStatus=false;
function updateTimer(){
    if(timerStatus){
        let now=new Date();
        interval=Math.abs(now-startTime);
        interval+=residue;
        s=Math.floor(interval/1000);
        m=Math.floor(s/60);
        s%=60;
        h=Math.floor(m/60);
        m%=60;
        document.querySelector(".second-div").textContent=s;
        document.querySelector(".minute-div").textContent=m;
        document.querySelector(".hour-div").textContent=h;
        // console.log(timerStatus);
    }
}
function startTimer(event){
    event.preventDefault();
    if(timerStatus){return;}
    startTime=new Date();
    timerStatus=true;
}
function stopTimer(event){
    event.preventDefault();
    residue=interval;
    timerStatus=false;
}
function resetTimer(event){
    event.preventDefault();
    timerStatus=false;
    residue=0;
    document.querySelector(".second-div").textContent=0;
    document.querySelector(".minute-div").textContent=0;
    document.querySelector(".hour-div").textContent=0;
}

document.querySelector(".start-button").addEventListener("click",startTimer);
document.querySelector(".stop-button").addEventListener("click",stopTimer);
document.querySelector(".reset-button").addEventListener("click",resetTimer);
```

```
let t=setInterval(updateTimer,1000);
```
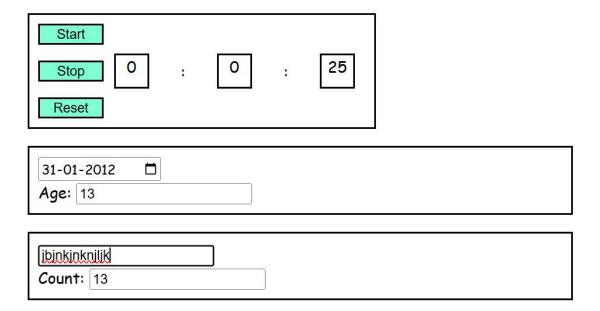
```
// 2nd part
document.querySelector("#age-output").addEventListener("mouseover",function(event){
    let dob=new Date(document.querySelector("#dob-input").value);
    let now=new Date();
    let diff=now-dob;
    diff/=(1000*60*60*24*365);
    event.target.value=Math.floor(diff);
    console.log(dob);
},true);
```

```
//3rd Part
function updateCount(event){
    event.preventDefault();
    let output=document.querySelector("#count-output");
    count=event.target.value.length;
    output.value=count;
}
document.querySelector("#text-input").addEventListener("input",updateCount,true);
document.querySelector("#count-output").value=0;
```

Output:

Exercise 11B

Start

Stop   0   :   0   :   0

Reset

dd-mm-yyyy
Age: 0

Count: 0

Exercise 11B

Start

Stop   0   :   0   :   25

Reset

31-01-2012
Age: 13

jbjnkjnknjljk
Count: 13

Question 3:

3. Design the **below form** and do the following

(i) Set the timer to display the current time

(ii) Print the form content. Use getElementsByName to display Gender, Country and Preferences

(iii) Validate

    (a) All Mandatory Fields (represented by *). If empty focus on the same field.

    (b) Name should not exceed 15 characters

    (c) Address – to be specified in Text Area

    (d) Zip code should be numeric and validated the maximum digits

    (e) Phone numbers should be numeric and validated the maximum digits 10

    (f) e-mail syntax should be validated

    (g) Password should contain a number, character & a special character and length should not exceed 15 and recede 8

    (h) PAN card number – Textbox (validate such that the PAN number is 10 digits and follows the pattern)

Test JavaScript Form Validataion   Time:11:30:55

Name*	[ ]	*Please enter your name!*
Address	[ ]	
Zip Code*	[ ]	
Country*	Please select... ▼	
Gender*	○ Male ○ Female	Pan No: [ ]
Preferences*	☐Red ☐Green ☐Blue	
Phone*	[ ]	
Email*	[ ]	
password (6-8 characters)*	[ ]	
Verify password*	[ ]	
	[SEND] [CLEAR]	

Code:

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>JavaScript Form Validation</title>
    <style>
      body {
        font-family: Arial, sans-serif;
```

```
      }
      .container {
        width: 500px;
        border: 1px solid black;
        padding: 20px;
      }
      h2 {
        text-decoration: underline;
      }
      label {
        display: block;
        margin: 10px 0 5px;
      }
      input,
      select,
      textarea {
        width: 100%;
        padding: 5px;
        margin-bottom: 5px;
      }
      .error {
        color: red;
        font-size: 12px;
      }
      .inline {
        display: inline;
        width: auto;
      }
      .time-box {
        float: right;
        border: 1px solid black;
        padding: 5px;
        background-color: lightgray;
      }
      button {
        padding: 8px 15px;
        margin-top: 10px;
      }
    </style>
    <script>
      function updateTime() {
        document.getElementById("time").innerText =
          new Date().toLocaleTimeString();
      }
      setInterval(updateTime, 1000);

      function validateForm() {
        let isValid = true;
```

```
        let name = document.getElementById("name").value;
        if (name.trim() === "" || name.length > 15) {
          document.getElementById("nameError").innerText =
            "Please enter your name! (Max 15 chars)";
          isValid = false;
        } else {
          document.getElementById("nameError").innerText = "";
        }
```

```
        let address = document.getElementById("address").value;
        if (address.trim() === "") {
          document.getElementById("addressError").innerText =
            "Address is required";
          isValid = false;
        } else {
          document.getElementById("addressError").innerText = "";
        }
```

```
        let zip = document.getElementById("zip").value;
        if (!/^\d{5,6}$/.test(zip)) {
          document.getElementById("zipError").innerText =
            "Enter a valid Zip Code";
          isValid = false;
```

```javascript
    } else {
      document.getElementById("zipError").innerText = "";
    }


    let phone = document.getElementById("phone").value;
    if (!/^\d{10}$/.test(phone)) {
      document.getElementById("phoneError").innerText =
        "Enter a 10-digit phone number";
      isValid = false;
    } else {
      document.getElementById("phoneError").innerText = "";
    }


    let email = document.getElementById("email").value;
    if (!/^\S+@\S+\.\S+$/.test(email)) {
      document.getElementById("emailError").innerText =
        "Enter a valid email address";
      isValid = false;
    } else {
      document.getElementById("emailError").innerText = "";
    }


    let password = document.getElementById("password").value;
    if (!/^(?=.*\d)(?=.*[a-zA-Z])(?=.*[@#$%^&+=]).{8,15}$/.test(password)) {
      document.getElementById("passwordError").innerText =
        "Password must contain a number, letter & special character (8-15 chars)";
      isValid = false;
    } else {
      document.getElementById("passwordError").innerText = "";
    }


    let confirmPassword = document.getElementById("confirmPassword").value;
    if (confirmPassword !== password) {
      document.getElementById("confirmPasswordError").innerText =
        "Passwords do not match";
      isValid = false;
    } else {
      document.getElementById("confirmPasswordError").innerText = "";
    }


    let pan = document.getElementById("pan").value;
    if (!/^[A-Z]{5}[0-9]{4}[A-Z]{1}$/.test(pan)) {
      document.getElementById("panError").innerText =
        "Invalid PAN format (ABCDE1234F)";
      isValid = false;
    } else {
      document.getElementById("panError").innerText = "";
    }


    return isValid;
  }


  function printFormData() {
    let gender = document.getElementsByName("gender");
    let selectedGender = "";
    for (let i = 0; i < gender.length; i++) {
      if (gender[i].checked) {
        selectedGender = gender[i].value;
      }
    }


    let country = document.getElementById("country").value;
    let preferences = [];
    let prefCheckboxes = document.getElementsByName("preference");
    for (let i = 0; i < prefCheckboxes.length; i++) {
      if (prefCheckboxes[i].checked) {
        preferences.push(prefCheckboxes[i].value);
      }
    }


    alert(
```

```html
          `Gender: ${selectedGender}\nCountry: ${country}\nPreferences: ${preferences.join(
            ", "
          )}`
        );
      }
    </script>
  </head>
  <body>
    <div class="container">
      <h2>Test JavaScript Form Validation</h2>
      <div class="time-box">Time: <span id="time"></span></div>

      <form onsubmit="return validateForm()">
        <label>Name*:</label>
        <input type="text" id="name" />
        <span class="error" id="nameError"></span>

        <label>Address*:</label>
        <textarea id="address"></textarea>
        <span class="error" id="addressError"></span>

        <label>Zip Code*:</label>
        <input type="text" id="zip" />
        <span class="error" id="zipError"></span>

        <label>Country*:</label>
        <select id="country">
          <option value="">Please select...</option>
          <option value="India">India</option>
          <option value="USA">USA</option>
        </select>

        <label>Gender*:</label>
        <input type="radio" name="gender" value="Male" class="inline" /> Male
        <input type="radio" name="gender" value="Female" class="inline" />
        Female

        <label>Preferences*:</label>
        <input type="checkbox" name="preference" value="Red" class="inline" />
        Red
        <input type="checkbox" name="preference" value="Green" class="inline" />
        Green
        <input type="checkbox" name="preference" value="Blue" class="inline" />
        Blue

        <label>Phone*:</label>
        <input type="text" id="phone" />
        <span class="error" id="phoneError"></span>

        <label>Email*:</label>
        <input type="text" id="email" />
        <span class="error" id="emailError"></span>

        <label>Password (8-15 characters)*:</label>
        <input type="password" id="password" />
        <span class="error" id="passwordError"></span>

        <label>Verify Password*:</label>
        <input type="password" id="confirmPassword" />
        <span class="error" id="confirmPasswordError"></span>

        <label>PAN No*:</label>
        <input type="text" id="pan" />
        <span class="error" id="panError"></span>

        <button type="submit">SEND</button>
        <button type="button" onclick="printFormData()">CLEAR</button>
      </form>
    </div>
  </body>
```

```
</html>
```

Output:

Test JavaScript Form Validation

Name*:

Time: 9:58:10 PM

Address*:

Zip Code*:

Country*:

Please select...

Gender*:
○ Male ○ Female

Preferences*:
☐ Red ☐ Green ☐ Blue

Phone*:

Email*:

Password (8-15 characters)*:

Verify Password*:

PAN No*:

SEND   CLEAR