

INTERNET PROGRAMMING LAB

Ex3

JavaScript event handling mechanisms, DOM

Name : Vikraman S

Reg No : 185001195

Learning Objective:

- a) To Generate a registration form for a hospital
- b) Write a JS program to develop a memory matching game.

Specifications:

a) For registration form:

- a. Assign a title for the registration form(TextView- textSize, textStyle , typeface)
- b. Name. Specify some font and colour. (text, onfocus, onblur, oninvalid)
- c. Address (textarea, onselect)
- d. Age (onkeypress)
- e. Date of Birth (date)
- f. Gender (RadioButton)
- g. Marital Status (select, onchange)
- h. Contact Number (oninvalid)
- i. Addiction (text area, use drag and drop from a list-select)
- j. Display a digital clock on the top right corner of the webpage
- k. Submit (Button, onclick create a new page and display the contents in table format)
- l. Reset (Button, onclick)

Validate the form elements. Ex: Name should be only alphabet, address only alpha-numeric character. "required" for all fields etc.

b) For Memory Matching game:

- a. Display a timer, Score card.
- b. Arrange even number of pairs. (Minimum 5)
- c. Shuffle the cards, face down, in rows.
- d. Score card changes whenever a pair is found.
- e. On click a card, it should flip (event handling).
- f. When a match is found, remove the cards using DOM.
- g. Set 3 levels.
- h. When the player moves to next level, set a new timer with less time duration.
- i. Mandatory concepts – Event handling, DOM.

HTML Code:

1. 3a.html

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="style.css">
    <title>3a-Hospital Registration Form</title>
  </head>

  <body style="background-color:lightgreen" onload="startTime()">
    <div id="time"></div>
    <center><h1 style="color:maroon">Hospital Registration Form</h1></center>
    <form id="Registration">
      <br><label for="name">Name :</label><br>
      <input type="text" id="name" name="name" placeholder="Enter your Name"
value="" size="30" onfocus="fun_onfocus(this)" onblur="fun_onblur(this)"
oninvalid="fun_oninvalid(this)" required><br>

      <br><label for="address">Address :</label><br>
      <textarea rows="5" cols="80" name="address" id="address"
form="Registration" placeholder="Enter your Address" value=""
oninvalid="fun_oninvalid(this)" onselect="fun_onselect(this)"
required></textarea><br>

      <br><label for="age">Age :</label><br>
      <input type="number" id="age" name="age" placeholder="Enter your Age"
value="" onkeypress="fun_onkeypress(this)" onblur="fun_onblur(this)"
required><br>
```

```

<br><label for="dob">DOB :</label><br>
<input type="date" id="dob" name="dob" value="" required><br>

<br>Gender:<br>
<input type="radio" id="male" name="gender" value="male" required>
<label for="male" style="color:black">Male</label><br>
<input type="radio" id="female" name="gender" value="female">
<label for="female" style="color:black">Female</label><br>

<br>Marital Status:<br>
<select name="marital_status" id="marital_status"
onchange="fun_onchange(this)" required>
  <option value="single">Single</option>
  <option value="married">Married</option>
  <option value="divorced">Divorced</option>
  <option value="widowed">Widowed</option>
</select><br>

<br><label for="num">Mobile No. :</label><br>
<input type="tel" id="num" name="num" placeholder="1234567890" value=""
oninvalid="fun_oninvalid(this)" required><br>

<br>Addiction:<br>
<p style="color:black;font-size:12px">drag and drop from the list into
textarea:</p>
<ul id="list">
  <li id="drag1" draggable="true" ondragstart="drag(event)"> Heroine
</li><br>
  <li id="drag2" draggable="true" ondragstart="drag(event)"> Cocaine
</li><br>
  <li id="drag3" draggable="true" ondragstart="drag(event)"> Crack
</li><br>
  <li id="drag4" draggable="true" ondragstart="drag(event)">
Hallucinogens </li><br>
  <li id="drag5" draggable="true" ondragstart="drag(event)">
Amphetamines </li><br>
  <li id="drag6" draggable="true" ondragstart="drag(event)"> Marijuana
</li><br>
  <li id="drag7" draggable="true" ondragstart="drag(event)"> Alcohol
</li><br>
  <li id="drag8" draggable="true" ondragstart="drag(event)"> Inhalants
</li><br>
  <li id="drag9" draggable="true" ondragstart="drag(event)">
Prescription Drugs </li><br>
</ul>
<div id="box" ondrop="drop(event)" ondragover="allowDrop(event)"></div>
<input type="submit" value="Submit" onclick="fun_table()">

```

```
        <input type="reset" value="Reset" onclick="fun_reset()">
    </form>

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

2. style.css

```
form{
    margin-left: 20%;
    font-size:17px;
    font-family:arial;
    font-weight:bold;
    color:blue;
    background-color:lavender;
    padding:30px;
    border:5px dotted black;
    border-radius: 20px;
    width:60%;
}

input,select,textarea{
    font-size:17px;
    font-family:arial;
    padding: 12px 20px;
    margin: 8px 0;
}

input[type=submit]{
    width:20%;
    font-weight: bold;
    background-color:lightgreen;
}

input[type=reset]{
    width:20%;
    font-weight: bold;
    background-color:antiquewhite;
    margin:40px;
}

input[type=submit]:hover,input[type=reset]:hover{
    color:blue;
}

#box{
```

```

width: 400px;
height: 200px;

border: 1px solid black;
color:mediumslateblue;
background-color: white;
padding: 12px 20px;
margin: 8px 0;
list-style-type: none;
}

ul{
color:dodgerblue;
font-size:12px;
display: inline;
list-style-type: none;
}

#time{
height: 80px;
width: 120px;
position: absolute;
left:1200px;
font-family: courier;
color:darkblue;
font-size: 40px;
}

table,th,td {
border: 2px solid black;
border-collapse: collapse;
padding: 10px;
}

th {
background-color: #65af79;
font-size: 23px;
color: blue;
font-family: "courier new";
}

td {
background-color: #656da0;
color: gold;
font-size: 20px;
list-style-type: none;
}

```

```

table {
    margin-left: auto;
    margin-right: auto;
    text-align: center;
    width: 50%;
}

body {
    background-color: #FFFFE0
}

```

3. script.js

```

function fun_onfocus(x){
    x.style.backgroundColor="lightblue";
}

function fun_onblur(x){
    x.style.backgroundColor="";
}

function fun_oninvalid(x){
    alert("Enter "+x.id);
}

function fun_onselect(x){
    alert('You have selected some text...!');
}

function fun_onkeypress(x){
    x.style.backgroundColor="lightblue";
}

function fun_onchange(x){
    var x = document.getElementById("marital_status").value;
    alert('You have selected '+x);
}

function validate(){
    var pattern1=/[a-zA-z]{1,50}/;
    var pattern2=/[a-zA-z0-9]{1,120}/;
    var pattern3=/[0-9]{10}/;

    var name=document.getElementById("name").value;
    var address=document.getElementById("address").value;
    var num=document.getElementById("num").value;
    var flag=0;
    if(!pattern1.test(name))

```

```

{
    alert("invalid name...!");
    flag=1;
}
if(!pattern2.test(address))
{
    alert("invalid address...!");
    flag=1;
}
if(!pattern3.test(num))
{
    alert("invalid mobile number...!");
    flag=1
}
if(flag==1)
    return false;
else
    return true;
}

function allowDrop(x){
    x.preventDefault();
}
function drag(x){
    x.dataTransfer.setData("text", x.target.id);
}
function drop(x){
    x.preventDefault();
    var data = x.dataTransfer.getData("text");
    x.target.appendChild(document.getElementById(data));
}

function fun_reset(){
    document.getElementById("box").innerHTML="";
    document.getElementById("address").innerHTML="";
    document.getElementById("list").innerHTML='<ul id="list"><li id="drag1"
draggable="true" ondragstart="drag(event)"> Heroin</li><br><li id="drag2"
draggable="true" ondragstart="drag(event)"> Cocaine </li><br><li id="drag3"
draggable="true" ondragstart="drag(event)"> Crack </li><br><li id="drag4"
draggable="true" ondragstart="drag(event)"> Hallucinogens </li><br><li
id="drag5" draggable="true" ondragstart="drag(event)"> Amphetamines
</li><br><li id="drag6" draggable="true" ondragstart="drag(event)"> Marijuana
</li><br><li id="drag7" draggable="true" ondragstart="drag(event)"> Alcohol
</li><br><li id="drag8" draggable="true" ondragstart="drag(event)"> Inhalants
</li><br><li id="drag9" draggable="true" ondragstart="drag(event)">
Prescription Drugs </li><br> </ul>'
    alert('Form is resetted...!');
}

```

```

function startTime(){
    var today = new Date();
    var h = today.getHours();
    var m = today.getMinutes();
    var s = today.getSeconds();
    m = checkTime(m);
    s = checkTime(s);
    document.getElementById("time").innerHTML = h + ":" + m + ":" + s;
    var t = setTimeout(startTime, 500);
}

function checkTime(i){
    if (i < 10) {i = "0" + i};
    return i;
}

function fun_table(){
    if(validate())
    {
        var name=document.getElementById("name").value;
        var address=document.getElementById("address").value;
        var age=parseInt(document.getElementById("age").value);
        var dob=document.getElementById("dob").value;
        var gender= document.querySelector('input[name="gender"]:checked').value;
        var marital_status=document.getElementById("marital_status").value;
        var num=document.getElementById("num").value;
        var addiction=document.getElementById("box").innerHTML;

        document.writeln("<link rel=\"stylesheet\" href=\"style.css\">");
        document.writeln("<body>");
        document.writeln("<center><h1>Details</h1></center>");
        document.writeln("<table>");
        document.writeln("<tr><th>Details</th><th>Value</th></tr>");
        document.writeln("<tr><td>Name</td><td>"+name+"</td></tr>");
        document.writeln("<tr><td>Address</td><td>"+address+"</td></tr>");
        document.writeln("<tr><td>Age</td><td>"+age+"</td></tr>");
        document.writeln("<tr><td>Dob</td><td>"+dob+"</td></tr>");
        document.writeln("<tr><td>Gender</td><td>"+gender+"</td></tr>");
        document.writeln("<tr><td>Marital
Status</td><td>"+marital_status+"</td></tr>");
        document.writeln("<tr><td>Contact</td><td>"+num+"</td></tr>");
        document.writeln("<tr><td>Addiction</td><td>"+addiction+"</td></tr>");
        document.writeln("</table>");
    }
}

```


4. 3b.html

```
<!DOCTYPE html>
<html>
  <head>
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="game.css">
    <title>3b-Memory matching Game</title>
  </head>

  <body>
    <center><h1>Memory Matching Game</h1><br>
    <div id="moves"></div>
    <div id="timer"></div>
    <div id="score"></div></center>

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

5. game.css

```
* {
  padding: 0;
  margin: 0;
  box-sizing: border-box;
}

body {
  display: block;
  background-image: url('pictures/background.png');
  background-size: auto;
  background-repeat: no-repeat;
}

.memory-game {
  width: 640px;
  height: 640px;
  margin: auto;
  display: flex;
  flex-wrap: wrap;
  perspective: 1000px;
}

.memory-card {
```

```

width: 23%;
height: 30%;
margin: 5px;
position: relative;
transform: scale(1);
transform-style: preserve-3d;
transition: transform .5s;
}

.memory-card:active {
  transform: scale(1);
  transition: transform .2s;
}

.memory-card.flip {
  transform: rotateY(180deg);
}

.front-face,
.back-face {
  width: 100%;
  height: 100%;
  padding: 5px;
  position: absolute;
  border-radius: 5px;
  background: white;
  backface-visibility: hidden;
}

.front-face {
  transform: rotateY(180deg);
}

#moves{
  height: 50px;
  width: 200px;
  position: relative;
  color:darkgreen;
  font-size: 20px;
}

#timer,#score{
  height: 50px;
  width: 200px;
  position: relative;
  color:darkblue;
  font-size: 20px;
}

#score{

```

```
        color:maroon;
    }
}
```

6. game.js

```
window.addEventListener("load", create);
```

```
var level=0;
var hasFlippedCard = false;
var lockBoard = false;
var firstCard, secondCard;
var clicks=0;
var moves=0;
var score=0;
var i=0,j=0;
var size=6;
```

```
var cardname=["captain america","thor","black widow","ironman","batman","superman","spiderman","green lantern","flash","wonder woman"];
var
source=["pictures/1.png","pictures/2.png","pictures/3.png","pictures/4.png","pictures/5.png","pictures/6.png","pictures/7.png","pictures/8.png","pictures/9.png","pictures/10.png"];
```

```
function create(){
    document.getElementById("moves").innerHTML="<b>Level "+(level+1)+"</b><br>No Moves ";
    document.getElementById("score").innerHTML="Score : "+score;
```

```
    let temp=document.createElement("section");
    temp.className="memory-game";
    temp.id="memory-game";
    document.body.appendChild(temp);
```

```
    var i=0;
    for(i=0;i<size;i++)
    {
        j=0;
        for(j=0;j<2;j++)
        {
            let temp1=document.createElement("div");
            temp1.className="memory-card";
            temp1.id=cardname[i];
            temp.appendChild(temp1);

            let temp2=document.createElement("img");
            temp2.className="front-face";
```

```

        temp2.id="front-face";
        temp2.src=source[i];
        temp1.appendChild(temp2);

        let temp3=document.createElement("img");
        temp3.className="back-face";
        temp3.id="back-face";
        temp3.src="pictures/0.png";
        temp1.appendChild(temp3);
    }
}
shuffle();
}

function shuffle(){
    var cards = document.querySelectorAll(".memory-card");

    for(i=0;i<cards.length;i++)
        cards[i].addEventListener("click", flipCard);

    cards.forEach(card => {
        var randomPos = Math.floor(Math.random() * cards.length);
        card.style.order = randomPos;
    });
    timer();
}

function flipCard() {
    if (lockBoard)
        return;
    if (this == firstCard)
        return;

    this.classList.add("flip");
    clicks+=1;
    moves=Math.floor(clicks/2);
    if(moves==1)
        document.getElementById("moves").innerHTML="<b>Level
" +(level+1) + "</b><br>" + moves + " Move ";
    else if(moves>=2)
        document.getElementById("moves").innerHTML="<b>Level
" +(level+1) + "</b><br>" + moves + " Moves ";

    if (!hasFlippedCard) {
        hasFlippedCard = true;
        firstCard = this;
        return;
    }
}

```

```

    secondCard = this;
    checkForMatch();
}

function checkForMatch() {
    var isMatch = false;
    if(firstCard.id == secondCard.id)
    {
        isMatch=true;
    }

    if(isMatch)
    {
        lockBoard=true;
        disableCards();
        score++;
        document.getElementById("score").innerHTML="Score : "+score;
        if(score==size)
            stop();
    }
    else
        unflipCards();
}

function disableCards() {
    firstCard.removeEventListener("click", flipCard);
    secondCard.removeEventListener("click", flipCard);
    setTimeout(invisible,1000);
}

function invisible(){
    firstCard.style.visibility="hidden";
    secondCard.style.visibility="hidden";
    firstCard.classList.remove("flip");
    secondCard.classList.remove("flip");
    resetBoard();
}

function unflipCards() {
    lockBoard = true;
    setTimeout(unflip, 1000);
}

function unflip(){
    firstCard.classList.remove("flip");
    secondCard.classList.remove("flip");
    resetBoard();
}

```

```

}

function resetBoard() {
    hasFlippedCard = false;
    lockBoard = false;
    firstCard = null;
    secondCard = null;
}

var s=100;
function timer(){
    s--;
    if(s>0)
    {
        setTimeout(timer,1000);
        document.getElementById("timer").innerHTML= s+" s remaining";
    }
    else if(s==0)
    {
        document.getElementById("timer").innerHTML= s+" s remaining";
        lockBoard=true;
        setTimeout(function(){alert('timeout :(');},1000);
    }
}

function stop(){
    lockBoard=true;
    s=-1;
    if(level<2)
        setTimeout(function(){alert("You have won level "+(level+1)+" :)
...starting level "+(level+2));nextlevel();},1500);
    else
        setTimeout(function(){alert("You have won level "+(level+1)+" :)
...bye");},1500);
}

function visible(){
    cards = document.querySelectorAll(".memory-card");

    for(i=0;i<cards.length;i++)
        cards[i].style.visibility="visible";
}

function nextlevel(){
    level++;
    clicks=0;
    moves=0;
    score=0;
}

```

```

document.getElementById("moves").innerHTML="<b>Level "+(level+1)+"</b><br>
No Moves ";
document.getElementById("score").innerHTML="Score : "+score;
visible();

let temp=document.getElementById("memory-game");
for(i=size;i<size+2;i++)
{
    j=0;
    for(j=0;j<2;j++)
    {
        let temp1=document.createElement("div");
        temp1.className="memory-card";
        temp1.id=cardname[i];
        temp.appendChild(temp1);

        let temp2=document.createElement("img");
        temp2.className="front-face";
        temp2.id="front-face";
        temp2.src=source[i];
        temp1.appendChild(temp2);

        let temp3=document.createElement("img");
        temp3.className="back-face";
        temp3.id="back-face";
        temp3.src="pictures/0.png";
        temp1.appendChild(temp3);
    }
}
size+=2;

if(level==1)
    s=90;
else if(level==2)
    s=80;
shuffle();
}

```

Screenshots:

Hospital Registration:

Hospital Registration Form

21:53:11

Name :

Address :

Age :

DOB :

Gender:

☒ Male

☐ Female

Marital Status:

Mobile No. :

Mobile No. :

Addiction:

drag and drop from the list into textarea:

Heroin

Cocaine

Crack

Hallucinogens

Amphetamines

Marijuana

Inhalants

Prescription Drugs

Alcohol

Submit

Reset

Details

Details	Value
Name	Ram
Address	123 Ssn street
Age	20
Dob	2000-04-03
Gender	male
Marital Status	single
Contact	1234567890
Addiction	Prescription Drugs Alcohol

Memory Matching game:

Memory Matching Game

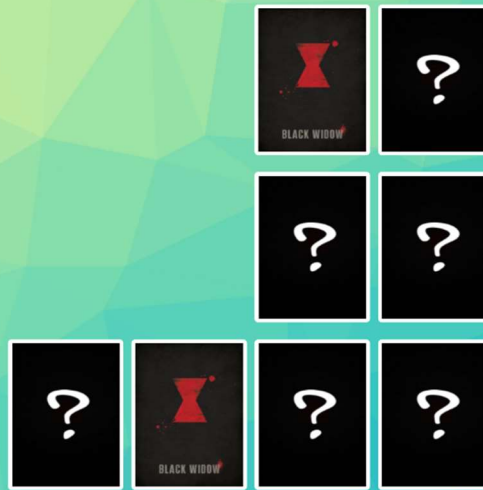
Level 1
No Moves
94 s remaining
Score : 0

?	?	?	?
?	?	?	?
?	?	?	?

Memory Matching Game

Level 1
6 Moves
59 s remaining

Score : 3



ex3-vikramans.ucs1611c.repl.co says
You have won level 1 :) ...starting level 2

OK

Score : 6



Learning Outcomes:

- I have learnt to use of different form elements and events like onclick, onkeypress, oninvalid, onfocus, onblur, etc.
- I have understood the usage of regular expressions to validate the form input.
- I have learnt how Date() works in javascript and used to display the timer.
- I have understood DOM and event handling.
- I have learnt about transitions, transformations and animation in CSS.
- I have learnt the usage of createElement(), appendChild(), removeChild in DOM.
- I have learnt to implement the memory matching game in javascript.