

# Department of CSE

## SSN College of Engineering

Vishakan Subramanian - 18 5001 196 - Semester VI

09 March 2021

---

### UCS 1611 - Internet Programming Lab

---

#### Exercise 3: JavaScript Event Handling Mechanisms, DOM

##### Learning Objective:

Generate a registration form for a hospital to register new patient details as below:

1. Assign a title for the registration form(TextView- textSize, textStyle , typeface)
2. Name. Specify some font and colour. (text, onfocus, onblur, oninvalid)
3. Address (textarea, onselect)
4. Age (onkeypress)
5. Date of Birth (date)
6. Gender (RadioButton)
7. Marital Status (select, onchange)
8. Contact Number (oninvalid)
9. Addiction (text area, use drag and drop from a list-select)
10. Display a digital clock on the top right corner of the webpage
11. Submit (Button, onclick create a new page and display the contents in table format)

12. Reset (Button, onclick)

Write a JS program to develop a memory matching game.

1. Display a timer, Score card.
2. Arrange even number of pairs. (Minimum 5)
3. Shuffle the cards, face down, in rows.
4. Score card changes whenever a pair is found.
5. On click a card, it should flip (event handling).
6. When a match is found, remove the cards using DOM.
7. Set 3 levels.
8. When the player moves to next level, set a new timer with less time duration.
9. Mandatory concepts – Event handling, DOM.

## Code - Registration Page HTML:

```
1 <!DOCTYPE html>
2 <html>
3
4 <head>
5     <meta charset="utf-8">
6     <meta name="viewport" content="width=device-width">
7     <title>Patient Reg. Form</title>
8     <link href="css/styles.css" rel="stylesheet" type="text/css" />
9 </head>
10
11 <body>
12     <h3 id="currentTime" class="titleText">00:00:00</h3>
13     <hr>
14     <h1 class="titleText">Patient Registration Form</h1>
15     <br><br>
16
17     <div class="reg-page">
18         <form name="regform" id="regform" method="POST">
19             <label for="fname">First Name</label><br>
20             <input type="text" id="fname" placeholder="John" size="30"
required onfocus="nameFocus()"
21                 onblur="nameBlur()" oninvalid="nameInvalid()" pattern="^[a
-zA-Z]+$"
22                 title="Enter English alphabets only">
23             <br><br>
24
25             <label for="lname">Last Name</label><br>
26             <input type="text" id="lname" placeholder="Doe" size="30"
required pattern="^[a-zA-Z]+$"
27                 title="Enter English alphabets only">
28             <br><br>
29
30             <label for="phone">Phone Number</label><br>
31             <input type="text" id="phone" placeholder="( +91) 123-456-7890"
size="30" required
32                 oninvalid="phoneInvalid()">
33             <br><br>
34
35             <label for="email">E-Mail</label><br>
36             <input type="text" id="email" placeholder="john.doe@email.com"
size="30" required>
37             <br><br>
38
39             <label for="dob">Date of Birth</label><br>
40             <input type="date" id="dob" required><br><br>
41
42             <label for="age">Age</label><br>
```

```

43         <input type="number" id="age" min="1" max="120" step="1"
placeholder="21" required
44             onkeypress="ageKeyPress()">
45         <br><br>
46
47
48         <label>Gender</label>
49         <br>
50         <input type="radio" id="male" name="gender" value="Male"
required>
51         <label for="male">Male</label>
52         <input type="radio" id="female" name="gender" value="Female"
required>
53         <label for="female">Female</label>
54         <input type="radio" id="other" name="gender" value="Other"
required>
55         <label for="other">Other</label>
56
57         <br><br>
58
59         <label for="marital">Marital Status</label><br>
60         <select id="marital" required onchange="maritalChange()">
61             <option>Single</option>
62             <option>In A Relationship</option>
63             <option>Married</option>
64             <option>Separated</option>
65             <option>Divorced</option>
66             <option>Widowed</option>
67         </select>
68         <br><br>
69
70         <label for="addr">Address</label><br>
71         <textarea cols="30" rows="3" id="addr" required onselect="
addrSelect()"></textarea>
72         <br><br>
73
74         <label for="addict">Addictions</label><br>
75         <textarea cols="30" rows="3" id="addict" required></textarea>
76         <ul id="addict-list">
77             <li draggable="true">Drugs </li>
78             <li draggable="true">Alcohol </li>
79             <li draggable="true">Behavioral </li>
80             <li draggable="true">Gaming </li>
81             <li draggable="true">NA </li>
82         </ul>
83         <br><br>
84
85         <input type="submit" class="btn" name="Submit" id="Submit"
value="Register"></input>
86         <input type="reset" class="btn" name="Reset" id="Reset" value=
"Clear All"></input>

```

```
87         <input type="button" class="btn" name="Game" id="Game" value="
Play A Game!" onclick="playGame()"></input>
88         <input type="button" class="btn" name="Quit" id="Quit" value="
Quit" onclick="exitPage()"></input>
89
90     </form>
91 </div>
92
93 <footer>
94     &copy; Vishakan Subramanian 2021
95 </footer>
96
97 <script src="js/index.js"></script>
98
99 </form>
100 </body>
101
102 </html>
```

## Code - Submission Page HTML:

```
1 <!DOCTYPE html>
2 <html>
3
4 <head>
5     <meta charset="utf-8">
6     <title>Patient Details</title>
7     <link rel="stylesheet" href="css/styles.css">
8 </head>
9
10 <body>
11
12     <h3 id="currentTime" class="titleText">00:00:00</h3>
13     <hr>
14     <h1 class="titleText">Patient Details</h1>
15     <br><br>
16     <table align="center">
17         <tr>
18             <th>First Name</th>
19             <td id="fnamecell"></td>
20         </tr>
21         <tr>
22             <th>Last Name</th>
23             <td id="lnamecell"></td>
24         </tr>
25         <tr>
26             <th>Date of Birth</th>
27             <td id="dobcell"></td>
28         </tr>
29         <tr>
30             <th>Age</th>
31             <td id="agecell"></td>
32         </tr>
33         <tr>
34             <th>Gender</th>
35             <td id="gendercell"></td>
36         </tr>
37         <tr>
38             <th>Marital Status</th>
39             <td id="maritalcell"></td>
40         </tr>
41         <tr>
42             <th>Addictions</th>
43             <td id="addictscell"></td>
44         </tr>
45         <tr>
46             <th>Address</th>
47             <td id="addrcell"></td>
```

```
48         </tr>
49         <tr>
50             <th>Phone</th>
51             <td id="phonecell"></td>
52         </tr>
53         <tr>
54             <th>E-Mail</th>
55             <td id="emailcell"></td>
56         </tr>
57     </table>
58     <script src="js/submission.js"></script>
59 </body>
60
61 </html>
```

## Code - Registration Page JS:

```
1 function nameFocus() {
2     //On focus, change the text color
3     document.getElementById("fname").style.color = "green";
4 }
5
6 function nameBlur() {
7     //On blur, change the background color of the field
8     document.getElementById("fname").style.backgroundColor = "azure";
9 }
10
11 function nameInvalid() {
12     //On invalid, inform the user with alert
13
14     var nameF = document.regform.fname.value;
15     var nameL = document.regform.lname.value;
16     var namePattern = new RegExp("[a-zA-Z]+$");
17
18     if (nameF == null || nameF == "") {
19         window.alert("First Name cannot be left blank!");
20     }
21
22     else if (nameL == null || nameL == "") {
23         window.alert("Last Name cannot be left blank!");
24     }
25 }
26
27 function addrSelect() {
28     //If text is selected, change its color
29     document.getElementById("addr").style.color = "green";
30 }
31
32 function ageKeyPress() {
33     //If key is pressed, change the text's font color & weight
34     document.getElementById("age").style.color = "red";
35     document.getElementById("age").style.fontWeight = "bold";
36 }
37
38 function maritalChange() {
39     //If value is changed, alert the user
40     var status = document.getElementById("marital").value;
41     window.alert("Your marital status: " + status);
42 }
43
44 function phoneInvalid() {
45     //If phone number is invalid, alert the user
46     var num = document.getElementById("phone").value;
47 }
```



```

48     if (isNaN(num)) {
49         window.alert("Phone number can only consist of numbers!");
50     }
51 }
52
53 //Drag and Drop
54 document.addEventListener("dragstart", function (dragEvent) {
55     dragEvent.dataTransfer.setData('Text', dragEvent.target.innerHTML);
56 });
57
58 //Submission event
59 document.getElementById("regform").addEventListener("submit", function (
60     submitEvent) {
61     submitEvent.preventDefault();    //prevent default action
62
63     //Get the values from the form
64     var firstName = document.getElementById("fname").value;
65     var lastName = document.getElementById("lname").value;
66     var dob = document.getElementById("dob").value;
67     var age = document.getElementById("age").value;
68
69     var genderList = document.getElementsByName("gender");
70
71     for (i = 0; i < genderList.length; i++) {
72         if (genderList[i].checked == true)
73             var gender = genderList[i].value;
74     }
75
76     var maritalStatus = document.getElementById("marital").value;
77     var additions = document.getElementById("addict").value;
78     var address = document.getElementById("addr").value;
79     var phone = document.getElementById("phone").value;
80     var email = document.getElementById("email").value;
81
82     //Pass the parameters using the URL as queryParameters
83     window.open('submission.html?fname=${firstName}&lname=${lastName}&dob=
84     ${dob}&age=${age}&gdr=${gender}&mstat=${maritalStatus}&addn=${
85     additions}&addr=${address}&phn=${phone}&mail=${email}');
86
87     //Perform submit action (POST method)
88     //Refreshes the registration page
89     document.getElementById("regform").submit();
90 }));
91
92 function playGame() {
93     //Go to game page
94     //window.location.href = "/game.html";
95     window.open("game.html");
96 }
97
98 function exitPage() {

```

```
96      //Exit the page
97      window.close();
98  }
99
100 //Display time
101 var today = new Date();
102 var time = today.toLocaleTimeString();
103 document.getElementById("currentTime").innerHTML = time;
```

## Code - Submission Page JS:

```
1 //Display time
2 var today = new Date();
3 var time = today.toLocaleTimeString();
4 document.getElementById("currentTime").innerHTML = time;
5
6 //Display the appropriate patient details from the localStorage
7
8 //Get the URL from the window
9 const urlParams = new URLSearchParams(window.location.search);
10
11 //Filter the parameters and display it in the table
12 document.getElementById("fnamecell").innerHTML = urlParams.get("fname");
13 document.getElementById("lnamecell").innerHTML = urlParams.get("lname");
14 document.getElementById("dobcell").innerHTML = urlParams.get("dob");
15 document.getElementById("agecell").innerHTML = urlParams.get("age");
16 document.getElementById("gendercell").innerHTML = urlParams.get("gdr");
17 document.getElementById("maritalcell").innerHTML = urlParams.get("mstat");
18 document.getElementById("addictscell").innerHTML = urlParams.get("addn");
19 document.getElementById("addrcell").innerHTML = urlParams.get("addr");
20 document.getElementById("phonecell").innerHTML = urlParams.get("phn");
21 document.getElementById("emailcell").innerHTML = urlParams.get("mail");
```

## Code - Registration and Submission Page CSS:

```
1 @import url("https://fonts.googleapis.com/css2?family=Barlow+Semi+
   Condensed&display=swap");
2
3 body {
4     background: #76b852;
5     background: linear-gradient(to left, #76b852, #8dc26f);
6     font-family: "Barlow Semi Condensed", -apple-system, "Segoe UI", sans-
       serif;
7 }
8
9 .titleText {
10     text-align: center;
11 }
12
13 .reg-page {
14     width: 500px;
15     position: relative;
16     z-index: 1;
17     background: #ffffff;
18     max-width: 500px;
19     margin: 0 auto 100px;
20     padding: 45px;
21     text-align: left;
22     box-shadow: 0 0 20px 0 rgba(0, 0, 0, 0.2), 0 5px 5px 0 rgba(0, 0, 0,
       0.24);
23 }
24
25 .reg-page input,
26 .reg-page textarea,
27 .reg-page select {
28     outline: 0;
29     background: #f2f2f2;
30     width: 100%;
31     border: 0;
32     margin: 15px 0px 15px 40px;
33     padding: 15px;
34     box-sizing: border-box;
35     font-size: 16px;
36     font-family: "Barlow Semi Condensed", sans-serif;
37 }
38
39 .reg-page label {
40     font-weight: 650;
41 }
42
43 .reg-page textarea {
44     resize: none;
```

```

45 }
46
47 #Submit,
48 #Reset,
49 #Game,
50 #Quit {
51     font-family: "Barlow Semi Condensed", sans-serif;
52     font-size: 16px;
53     font-weight: 300;
54     text-transform: uppercase;
55     outline: 0;
56     background: #4caf50;
57     width: 200px;
58     border: 0;
59     padding: 15px;
60     color: #ffffff;
61     transition: all 0.3 ease;
62     cursor: pointer;
63     user-select: none;
64 }
65
66 #Submit:hover,
67 #Reset:hover,
68 #Game:hover,
69 #Quit:hover,
70 #Submit:active,
71 #Reset:active,
72 #Game:active,
73 #Quit:active,
74 #Submit:focus,
75 #Reset:focus,
76 #Game:focus,
77 #Quit:focus {
78     font-weight: bold;
79     background: #43a047;
80 }
81
82 footer {
83     color: black;
84     font-weight: bold;
85     border-top: 3px solid black;
86     padding: 5px 5px 5px 5px;
87     text-align: center;
88     width: 100%;
89 }
90
91 #addict-list li {
92     display: inline-block;
93     appearance: button;
94     padding: 2px 5px;
95     background-color: #76b852;

```

```
96     border-radius: 25px;
97 }
98
99 table,
100 td,
101 th {
102     font-size: 25px;
103     border: 2px solid black;
104     border-collapse: collapse;
105     text-align: center;
106 }
107
108 table {
109     width: 75%;
110 }
111
112 tr:hover {
113     background-color: azure;
114 }
```

## Code - Game Page HTML:

```
1 <!DOCTYPE html>
2
3 <html lang="en">
4   <head>
5     <meta charset="UTF-8">
6     <title>Memory Game</title>
7     <link rel="stylesheet" href="css/gamestyles.css">
8   </head>
9
10  <body>
11    <aside>
12      <h1>Memory Game</h1>
13      <br><hr>
14      <br><br>
15      <div>Level: <span id="level">1</span></div><br>
16      <div>Score: <span id="score">0</span></div><br>
17      <div>Time Left: <span id="seconds">0</span></div><br>
18    </aside>
19
20    <section class="memory-game">
21      <div class="memory-card" data-framework="react">
22        
24        
26      </div>
27      <div class="memory-card" data-framework="react">
28        
30        
32      </div>
33      <div class="memory-card" data-framework="angular">
34        
36        
38      </div>
39      <div class="memory-card" data-framework="angular">
40        
42        
44      </div>
45      <div class="memory-card" data-framework="apache-hive">
```

```

38         
39         
40     </div>
41     <div class="memory-card" data-framework="apache-hive">
42         
43         
44     </div>
45     <div class="memory-card" data-framework="tableau">
46         
47         
48     </div>
49     <div class="memory-card" data-framework="tableau">
50         
51         
52     </div>
53     <div class="memory-card" data-framework="bitcoin">
54         
55         
56     </div>
57     <div class="memory-card" data-framework="bitcoin">
58         
59         
60     </div>
61     <div class="memory-card" data-framework="gnu">
62         
63         
64     </div>
65     <div class="memory-card" data-framework="gnu">
66         
67         
68     </div>
69 </section>
70
71 <footer>
72     Memory Game by Vishakan Subramanian, inspired by <a href="
https://www.freecodecamp.org" target="_blank">FreeCodeCamp.org</a>
73 </footer>

```



```
74
75     <script src="js/gamescript.js"></script>
76     </body>
77 </html>
```

## Code - Game Page JS:

```
1 //To select all memory card class objects
2 const cards = document.querySelectorAll(".memory-card");
3
4 //To check if user has clicked the first card or the second
5 let hasFlippedCard = false;
6 let firstCard, secondCard;
7
8 //To lock the board once a flip has been done
9 let lockBoard = false;
10
11 //To maintain game state
12 let isGameFinished = false;
13 let score = 0;
14 let countdowns = [90, 60, 30];
15 let level = 1;
16 let count = countdowns[level - 1];
17
18 function flipCard(){
19     //Flips a chosen card
20
21     if(lockBoard){
22         //If the board is locked, do not flip any more cards
23         return;
24     }
25
26     if(this === firstCard){
27         //If the same card is clicked again, don't disable its
28         //eventListener
29         return;
30     }
31
32     this.classList.add("flip");
33
34     if(!hasFlippedCard){
35         //First Card clicked
36         hasFlippedCard = true;
37         firstCard = this;
38
39         return;
40     }
41
42     //Second Card clicked
43     secondCard = this;
44
45     //console.log(firstCard, secondCard);
46
47     //Check if card matches using data-framework attribute
```

```

47
48     //console.log(firstCard.dataset.framework);
49     //console.log(secondCard.dataset.framework);
50     checkForMatch();
51 }
52
53 function checkForMatch(){
54     //Checks if the two flipped cards match
55
56     if(firstCard.dataset.framework === secondCard.dataset.framework){
57         lockBoard = true;    //Do not allow to flip other cards before
existing ones are removed
58         setTimeout(disableCards, 450);
59         updateScore();
60     }
61     else{
62         unflipCards();
63     }
64 }
65
66 function disableCards(){
67     //Disables the chosen cards
68
69     firstCard.removeEventListener("click", flipCard);
70     secondCard.removeEventListener("click", flipCard);
71
72     firstCard.style.setProperty("visibility", "hidden");
73     secondCard.style.setProperty("visibility", "hidden");
74
75     resetBoard();
76 }
77
78 function unflipCards(){
79     //Unflips the chosen cards
80
81     lockBoard = true; //Disable flipping during this operation
82
83     //Flip within 1.5 seconds
84     setTimeout(() => {
85         firstCard.classList.remove("flip");
86         secondCard.classList.remove("flip");
87
88         resetBoard();
89     }, 1200);
90 }
91
92 function resetBoard(){
93     //Reset the current board status variables
94
95     [hasFlippedCard, lockBoard] = [false, false];
96     [firstCard, secondCard] = [null, null];

```

```

97 }
98
99 function shuffleCards(){
100     //Ordering by CSS order property
101
102     cards.forEach(card => {
103         //Random number between 0 - 11
104         let randomPos = Math.floor(Math.random() * 12);
105         card.style.order = randomPos;
106     });
107 }
108
109 function updateScore(){
110     //Updates the score and takes care of level progress
111
112     score++;
113     document.getElementById("score").innerHTML = score;
114
115     if(score == 6){
116         isGameFinished = true;
117
118         setTimeout(() => { //Proceed to next level after 2 seconds
119             proceedToNextLevel();
120             shuffleCards();
121         }, 2000);
122     }
123 }
124
125 function proceedToNextLevel(){
126     //Proceeds the user to the next level, if he passes the current one
127
128     window.alert("You passed Level " + level + "!");
129     level++;
130     score = 0;
131
132     //Update the parameters in the webpage
133     document.getElementById("level").innerHTML = level;
134     document.getElementById("score").innerHTML = score;
135
136     count = countdowns[level - 1];
137
138     //Enable the cards back and remove flip class, and make all cards
    visible
139     cards.forEach(card => card.addEventListener("click", flipCard));
140     cards.forEach(card => card.classList.remove("flip"));
141     cards.forEach(card => card.style.setProperty("visibility", "visible"));
142     ;
143
144     if(level == 4){
145         //No more levels, so reload the page
146         window.alert("You passed the challenge, congrats!");

```

```

146         location.reload();
147     }
148 }
149
150 //Countdown
151 var counter = setInterval(runTimer, 1000);
152
153 function runTimer(){
154     //Runs the timer based on current counter variable value
155     count -= 1;
156
157     if(count <= 0){
158         clearInterval(counter);    //Stop the counter
159
160         if(score < 6){
161             //Reload the page after intimating the user
162             window.alert("Sorry, you lost!");
163             location.reload();
164         }
165     }
166
167     //Display the time remaining
168     document.getElementById("seconds").innerHTML = count;
169 }
170
171 //Add the eventListener for clicking in the beginning
172 cards.forEach(card => card.addEventListener("click", flipCard));
173
174 //Shuffle the cards for the initial level
175 shuffleCards();

```

## Code - Game Page CSS:

```
1 @import url("https://fonts.googleapis.com/css2?family=Press+Start+2P&
   display=swap");
2
3 * {
4     padding: 0;
5     margin: 0;
6     box-sizing: border-box;
7 }
8
9 body {
10     height: 100vh;
11     display: flex;
12     background: #060ab2;
13     background: #00203fff;
14 }
15
16 img {
17     width: 100px;
18 }
19
20 .memory-game {
21     width: 640px;
22     height: 640px;
23     display: flex;
24     flex-wrap: wrap;
25     margin: auto;
26     perspective: 1000px;
27 }
28
29 .memory-card {
30     width: calc(25% - 10px);
31     height: calc(33.33% - 10px);
32     position: relative;
33     margin: 5px;
34     transform: scale(1);
35     transform-style: preserve-3d;
36     transition: transform 0.5s;
37     box-shadow: 1px 1px 1px rgba(0, 0, 0, 0.3);
38 }
39
40 .memory-card:active {
41     transform: scale(0.97);
42     transition: transform 0.2s;
43 }
44
45 .memory-card.flip {
46     transform: rotateY(180deg);
```

```

47 }
48
49 .front-face, .back-face {
50     width: 100%;
51     height: 100%;
52     padding: 20px;
53     border-radius: 5px;
54     background: #1c7ccc;
55     background: #adefd1ff;
56     position: absolute;
57     backface-visibility: hidden;
58 }
59
60 .front-face {
61     transform: rotateY(180deg);
62 }
63
64 aside {
65     color: white;
66     font-size: 20px;
67     font-family: "Press Start 2P", cursive;
68     margin-top: 150px;
69     margin-left: 20px;
70 }
71
72 h1 {
73     color: white;
74     text-transform: uppercase;
75     text-align: center;
76     font-size: 22px;
77     font-family: "Press Start 2P", cursive;
78 }
79
80 footer {
81     position: absolute;
82     bottom: 0;
83     text-align: center;
84     padding-top: 10px;
85     padding-bottom: 10px;
86     border-top: 2px solid black;
87     font-family: "Press Start 2P", cursive;
88     color: white;
89     width: 100%;
90     font-size: 16px;
91 }
92
93 footer a {
94     text-decoration: none;
95     color: white;
96     cursor: pointer;
97 }

```

## Output - Registration Page:

Figure 1: Browser Output: Registration Page.

The screenshot shows a web browser window with a green header bar displaying the time 11:11:47. The main content area has a green background and features a white-bordered box titled "Patient Registration Form". Inside this box, the form fields are as follows:

- First Name:** Text input field containing "John".
- Last Name:** Text input field containing "Doe".
- Phone Number:** Text input field containing "(+91) 123-456-7890".
- E-Mail:** Text input field containing "john.doe@email.com".
- Date of Birth:** Date picker showing "dd/mm/yyyy" with a calendar icon.
- Age:** Text input field containing "21".
- Gender:** Radio buttons for "Male", "Female", and "Other".
- Marital Status:** Dropdown menu showing "Single".
- Address:** Text input field.
- Addictions:** Text input field.
- Tags:** A row of five green pill-shaped buttons labeled "Drugs", "Alcohol", "Behavioral", "Gaming", and "NA".

At the bottom of the form box, there are four green buttons arranged in a 2x2 grid:

- REGISTER
- CLEAR ALL
- PLAY A GAME!
- QUIT

The footer of the browser window shows the copyright notice "© Vishakan Subramanian 2021".



## Output - Registration Page Filled:

Figure 2: Browser Output: Registration Page Filled.

11:11:47

### Patient Registration Form

**First Name**  
John

**Last Name**  
Doe

**Phone Number**  
1234567890

**E-Mail**  
john.doe@email.com

**Date of Birth**  
22/03/2000

**Age**  
20

**Gender**  
☒ Male ☐ Female ☐ Other

**Marital Status**  
Married

**Address**  
12, Villa Apts., Chevrolet Lane,  
Sunset Blvd., CA-29

**Addictions**  
Gaming Drugs

Drugs Alcohol Behavior Gaming NA

REGISTER CLEAR ALL

PLAY A GAME! QUIT

© Vishakan Subramanian 2021

## Output - Submission Page:

Figure 3: Browser Output: Submission Page.

11:13:22

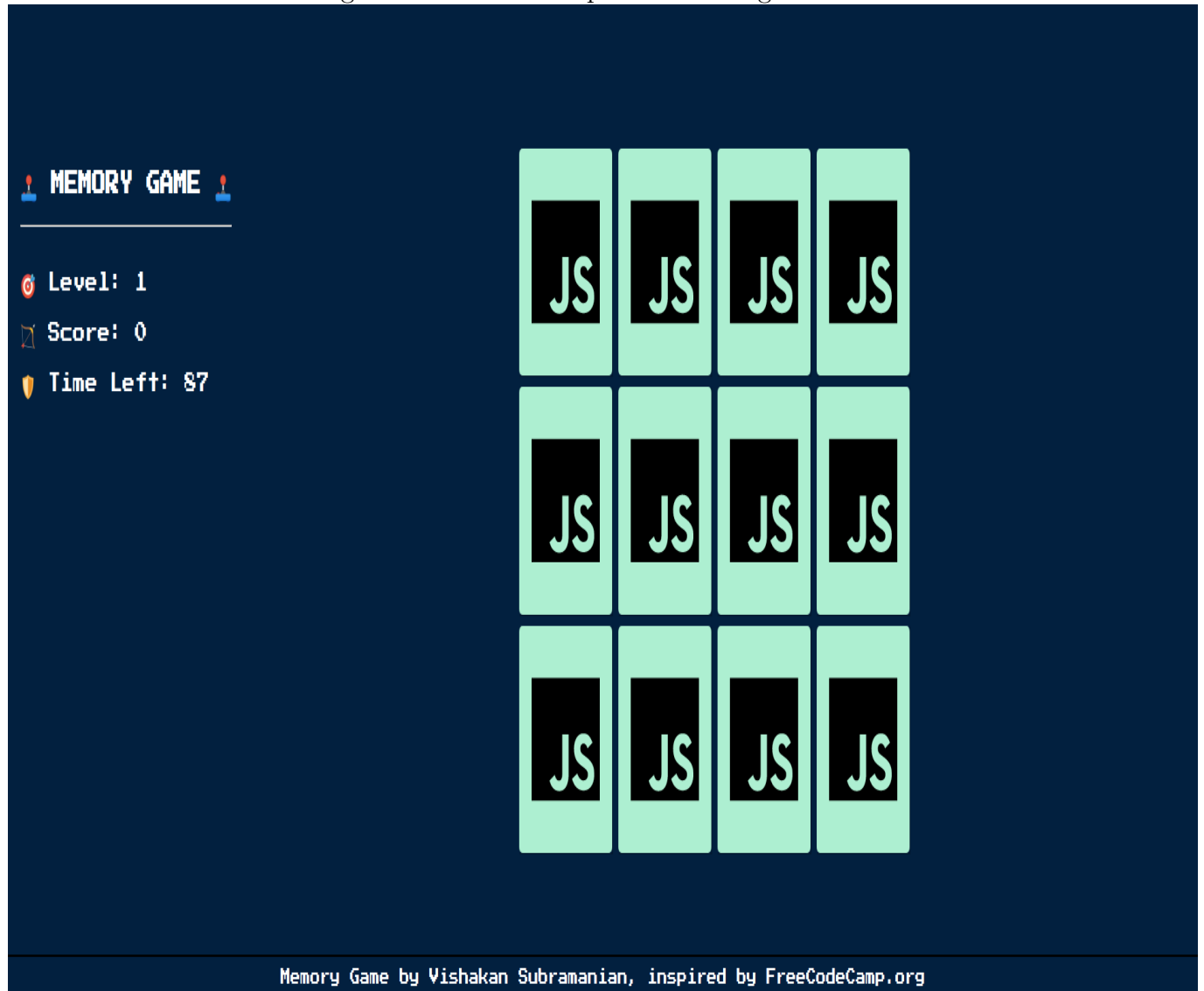
---

Patient Details

First Name	John
Last Name	Doe
Date of Birth	2000-03-22
Age	20
Gender	Male
Marital Status	Married
Addictions	Gaming Drugs
Address	12, Villa Apts., Chevrolet Lane, Sunset Blvd., CA-29
Phone	1234567890
E-Mail	john.doe@email.com

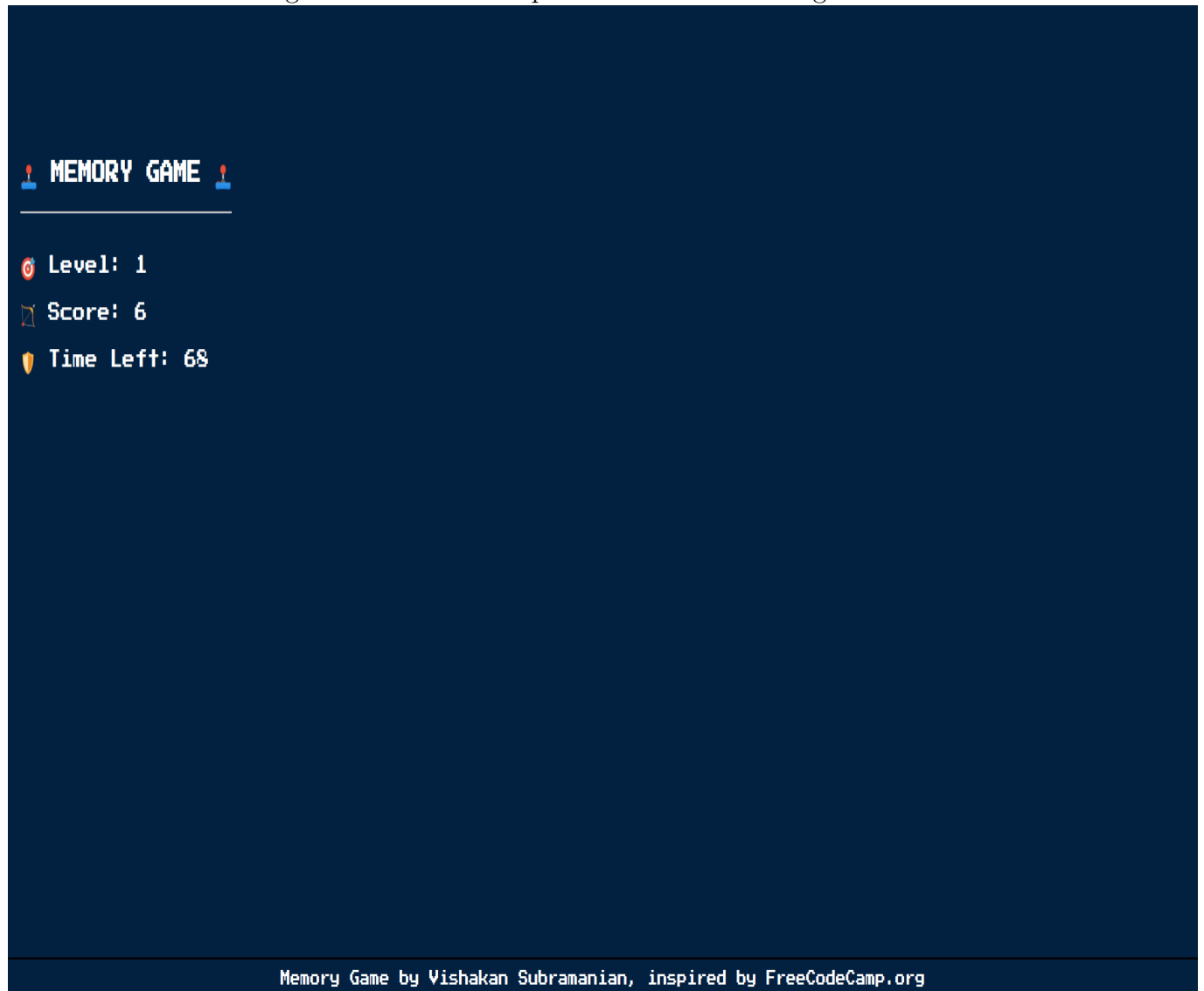
## Output - Game Page:

Figure 4: Browser Output: Game Page.



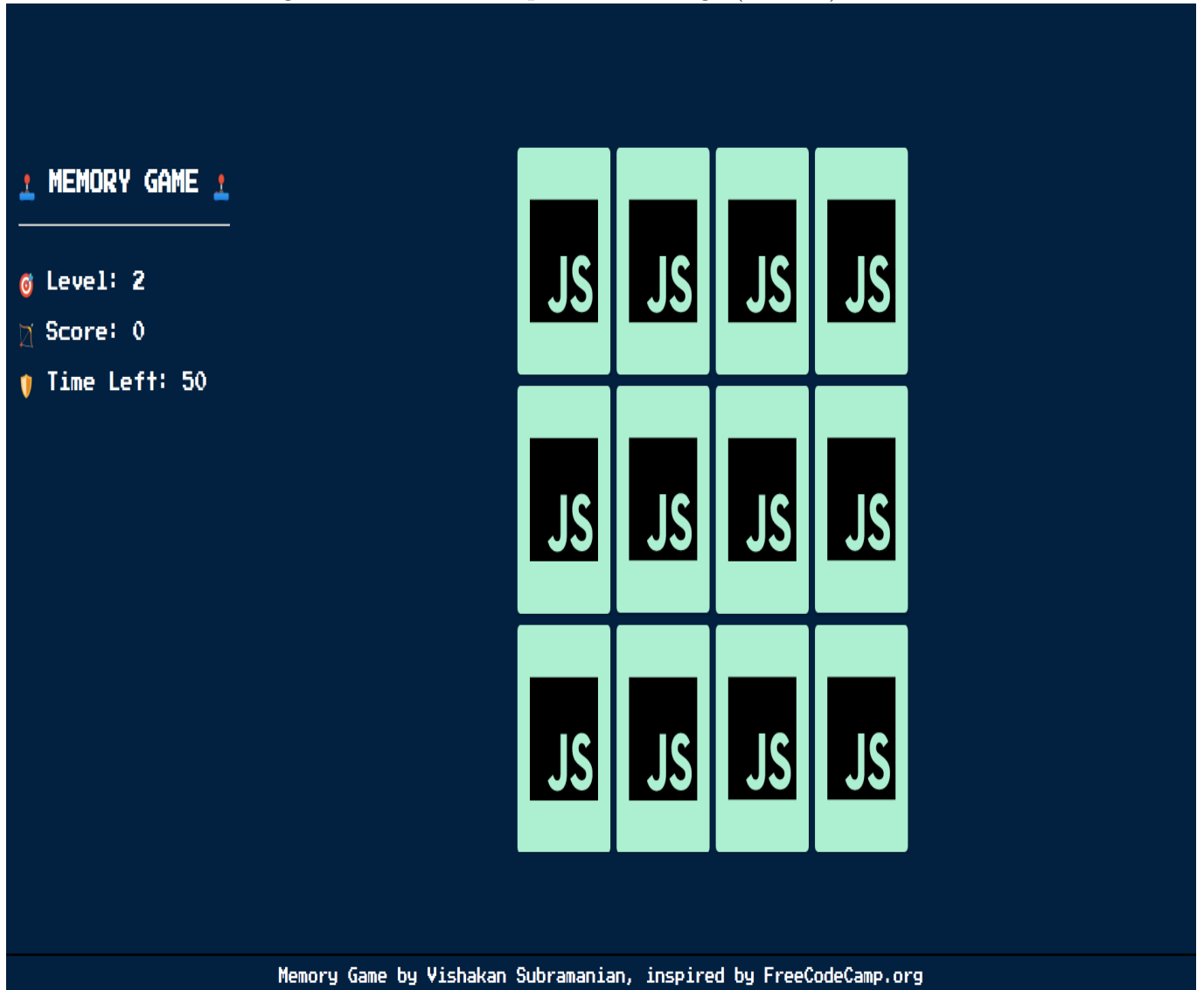
## Output - Game Finished:

Figure 5: Browser Output: Game Finished Page.



## Output - Game Page (Level 2):

Figure 6: Browser Output: Game Page (Level 2).



## Learning Outcome:

- From the experiment, I learnt to implement a detailed form.
- I learnt about basic JavaScript syntax.
- I learnt basic DOM manipulation with methods such as getElementById(), querySelectorAll(), etc.
- I was able to implement a simple drag-and-drop element using JavaScript.
- I learnt how to deliver form data to another webpage using the POST method and URLSearchParams object.
- I was able to implement actions for different events like onfocus, onblur, oninvalid etc.
- I implemented a simple memory game using JavaScript.
- I learnt to implement timers in JavaScript.
- I understood about removeEventListener() and addEventListener() methods.
- I was able to implement level hierarchy in the game using JavaScript.
- I learnt how to add a class to an HTML element through JavaScript using classList.
- I learnt how to shuffle elements in the HTML page using the CSS order property and Math.random() in JavaScript.
- I learnt how to implement user-defined functions in JavaScript.
- I was able to manipulate the values of HTML content like the game's score and time remaining using JavaScript.