**SSN College of Engineering,
Kalavakkam Department of Computer
Science and Engineering VI Semester
- CSE 'C'
UCS1611 INTERNET PROGRAMMING LAB**

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Exercise 3: JavaScript event handling mechanisms, DOM

ExpDate:09/03/2021

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Learning Objective:

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

Code:

Index.html

```
<!DOCTYPE html>
<html>

<head>
    <title>
        Hospital Registration
    </title>
    <script src="script.js"></script>
    <link rel="stylesheet" href="style.css">
    </rel>
</head>

<body onload="startTime()">
    <nav>
        <h2 style="text-align: center;padding-top: 15px;">Hospital
Patient Registration</h2>
        <h2 id="time"></h2>
    </nav>
    <div class="form">
        <form name="hospitalform" id="hospitalform" method="post"
onsubmit="return validateform()">
            <div class="colorform">
                <h2 style="text-align: center;">Please fill the form
carefully!!!</h2>
            </div>
            <div class="forminner">
                <label for="fname">First Name:
                    <small id="namerequired"> Mandatory
field</small>
                </label>
                <br>
                <input style="width:70%" id="fname" name="fname"
placeholder="Enter Name" type="text" onblur="focusclear(this)"
onfocus="focuscolor(this)" oninvalid="namerequired(this)" required>
                <br>
                <label for="Age">Age:</label>
                <input id="Age" name="age" type="number" min="0"
max="110" onkeypress="ageEntered(this)" required>
                <label for="dob" style="margin-left:
30px;">DOB:</labek>
                    <input type="date" id="dob" name="dob" required>
                    <br>
                    <label for="gender">Gender:</label>
                <input type="radio" id="male" value="male"
name="gender" onchange="GenderChange(this)">
                <label class="gender" for="male">Male</label>
                <input type="radio" id="female" value="female"
name="gender" onchange="GenderChange(this)">
                <label class="gender" for="female">Female</label>
                <br>
                <label for="marital">Marital Status:</label>
                <label style="margin-left:75px" for="contact">Phone
Number:</label>
                <small id="invalidphone"> Mandatory</small>
                <br>
                <select id="marital" name="marital" required
onchange="MaritalChange(this)">
                        <option value="">Choose..</option>
                        <option value="unmarried">Unmarried</option>
                        <option value="married">Married</option>
                    </select>
                <input style="margin-left:15px" type="tel"
id="contact" name="contact" required oninvalid="InvalidPhone(this)">
                <br>
                <br>
                <label for="address">Address:</label>
                <br>
                <textarea id="address" name="address" cols="50"
onselect="selectText()" placeholder="Enter Address"
required></textarea>
                <div id="addictiondiv">
                    <label for="addiction">Addiction:</label>
                    <br>
                    <textarea id="dragtarget" name="addiction"
placeholder="Enter Addiction" required class="droptarget"
ondrop="drop(event)" ondragover="allowDrop(event)"></textarea>
                    <ul>
                        <li id="dragWebseries"
ondragstart="dragStart(event)" draggable="true">Webseries</li>
                        <li id="dragMobile"
ondragstart="dragStart(event)" draggable="true">dragMobile</li>
                        <li id="dragDrug"
ondragstart="dragStart(event)" draggable="true">Drugs</li>
                        <li id="dragAlcohol"
ondragstart="dragStart(event)" draggable="true">Alcohol</li>
                        <li id="dragFood"
ondragstart="dragStart(event)" draggable="true">Food</li>
                </div>
                </ul>
            </div>
            <div class="center colorform">
```

```
                <input style="margin-left:9em" type="submit"
value="Submit" onClick="newPage()" style="margin-right: 10%;">
                <input type="reset" value="Reset">
            </div>
        </form>
    </div>
    <br>
    <br>
</body>

</html>
```

Response.html:

```
<!DOCTYPE html>
<html>

<head>
    <title>Hospital Registration</title>
    <script src="script.js"></script>
    <link rel="stylesheet" href="style.css" />
    <link rel="stylesheet" href="style2.css" />
</head>

<body onload="displayTable()">
    <table id="hospitaldata">
        <tbody>
            <caption>
                <h2>Form response</h2>
            </caption>
            <tr>
                <th>Name</th>
                <td id="name"></td>
            </tr>
            <tr>
                <th>Address</th>
                <td id="address"></td>
            </tr>
            <tr>
                <th>Age</th>
                <td id="age"></td>
            </tr>
            <tr>
                <th>DOB</th>
                <td id="dob"></td>
            </tr>
            <tr>
```

```html
                <th>Gender</th>
                <td id="gender"></td>
            </tr>
            <tr>
                <th>Marital Status</th>
                <td id="marital"></td>
            </tr>
            <tr>
                <th>Phone Number</th>
                <td id="phone"></td>
            </tr>
            <tr>
                <th>Addiction</th>
                <td id="addiction"></td>
            </tr>
        </tbody>
    </table>
</body>

</html>
```

Script.js:

```javascript
//onfocus for name
function focuscolor(x) {
    x.style.background = "#99e6ff";
}

//onblur for name
function focusclear(x) {
    x.style.background = "#ffffff";
}

//oninvalid for name
function namerequired(x) {
    document.getElementById("namerequired").style.display =
"inline";
}

//onselect for address
function selectText() {
    alert("Text selected!");
}

//onkeypress for age
function ageEntered(x) {
    x.style.background = "aqua";
```

```
}

function InvalidPhone(x) {
    document.getElementById("invalidphone").style.display =
"inline";
}

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

//for clock
function addZero(i) {
    if (i < 10) {
        i = "0" + i;
    }
    return i;
}

//displaying the table on a new page
function displayTable() {
    const url_string = window.location.href;
    var url = new URL(url_string);
    document.getElementById("name").innerHTML =
url.searchParams.get("name");
    document.getElementById("address").innerHTML =
url.searchParams.get(
        "address"
    );
    document.getElementById("age").innerHTML =
url.searchParams.get("age");
    document.getElementById("dob").innerHTML =
url.searchParams.get("dob");
    document.getElementById("gender").innerHTML =
url.searchParams.get("gender");
    document.getElementById("marital").innerHTML =
url.searchParams.get(
        "marital"
    );
    document.getElementById("phone").innerHTML =
url.searchParams.get("phone");
    document.getElementById("addiction").innerHTML =
url.searchParams
        .get("addiction")
        .replace(/%20/g, " ");
}

//check validity of the form data
function validateform() {
    var formelements = document.hospitalform;
    var letters = /^[A-Za-z]+$/;
    var alphanum = /^[A-Za-z0-9 \,\-]+$/;
    var valid = true;
    if (!formelements.fname.value.match(letters)) {
        alert("Name can have only letters");
        valid = false;
    }
    if (!formelements.address.value.match(alphanum)) {
        alert("Address can have only letters and numbers!");
        valid = false;
    }
    if (valid) {
        var genders = document.getElementsByName("gender");
        for (var i = 0; i < genders.length; i++) {
            if (genders[i].checked) {
                var selectedGender = genders[i].value;
                break;
            }
        }
        var queryString =
            "?name=" +
            formelements.fname.value +
            "&address=" +
            formelements.address.value +
            "&age=" +
            formelements.age.value +
            "&dob=" +
            formelements.dob.value +
            "&gender=" +
            selectedGender +
            "&marital=" +
            formelements.marital.value +
            "&phone=" +
            formelements.contact.value +
            "&addiction=" +
            formelements.addiction.value;
        window.open("response.html" + queryString);
    }
    return valid;
}

//drag and drop for addiction
function dragStart(event) {
    console.log(event);
    event.dataTransfer.setData("Text", event.target.id);
    console.log(event.dataTransfer.getData("Text"));
}

function allowDrop(event) {
    event.preventDefault();
}

function drop(event) {
    event.preventDefault();
    var data = event.dataTransfer.getData("Text");
    console.log(document.getElementById(data));
    event.target.value += document.getElementById(data).innerHTML;
}
```

Style.css

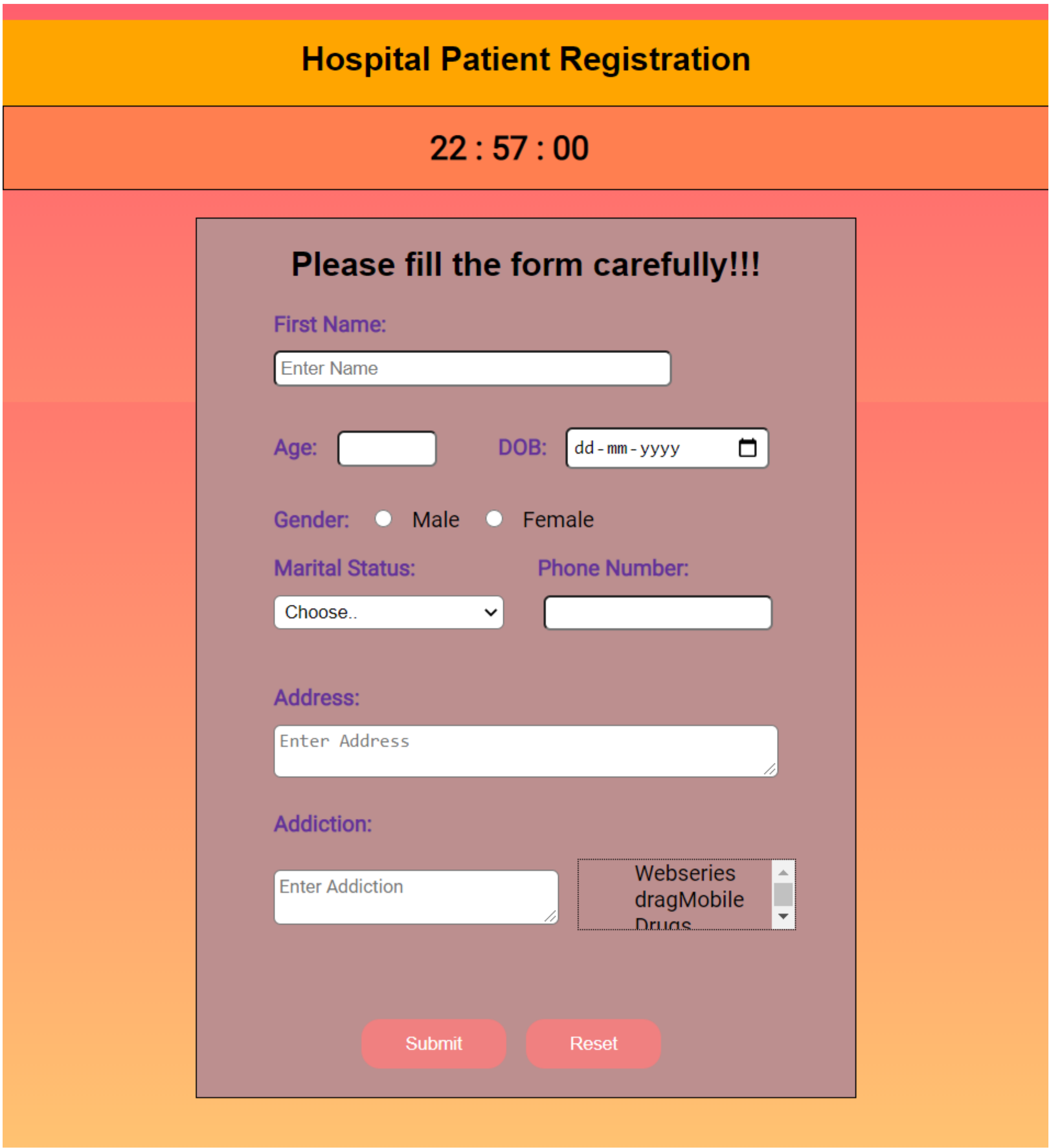
```
html {
    height: 100%;
}

body {
    margin-left: auto;
    margin-right: auto;
    background-color: orange;
    background-image: linear-gradient(#ff5f6d, #ffc371);
    font-family: sans-serif;
    height: 100%;
    margin: 0;
    background-repeat: no-repeat;
    background-attachment: fixed;
}

.form {
    margin-left: auto;
    margin-right: auto;
    width: 30rem;
    border: 1px solid black;
    background: rosybrown;
    margin-top: 5em;
```

```css
}

.forminner {
    margin-left: auto;
    margin-right: auto;
    width: 25rem;
    padding-left: 3em;
    padding-right: 1em;
    padding-bottom: 1em;
}

.formheader {
    margin-left: 5em;
    font-family: "Roboto", sans-serif;
}

label {
    text-align: left;
    font-size: 12pt;
    color: rebeccapurple;
    font-family: "Roboto", sans-serif;
    margin-right: 10px;
    font-weight: 900;
}

input,
textarea,
select {
    margin-top: 10px;
    margin-bottom: 20px;
    padding: 3px;
    margin-right: 10px;
    border-radius: 5px;
}

select {
    width: 10.5rem;
}

input[type="submit"],
input[type="reset"] {
    background-color: lightcoral;
    border: none;
    color: white;
    padding: 10px 32px;
    text-decoration: none;
    cursor: pointer;
    border-radius: 1em;
```

```
}

input[type="date"] {
    margin-left: 10px;
}

.gender {
    color: black;
    font-weight: 200;
}

textarea {
    width: 90%;
}

.colorform {
    /* background-color:     #00cccc; */
    width: 100%;
    height: 100%;
}

small {
    color: rgb(8, 8, 8);
    display: none;
}

#time {
    text-align: center;
    padding-right: 1em;
    padding-top: 15px;
    padding-bottom: 15px;
    color: black;
    border: 1px solid black;
    background: coral;
    font-family: "Roboto", sans-serif;
    margin: 0;
    margin-top: 5px;
}

nav {
    background-color: orange;
    margin-top: -8px;
    height: 4em;
}

#addictiondiv ul {
    height: 50px;
    list-style-type: none;
```

```css
    display: inline-block;
    padding-right: 20px;
    border: 1px dotted black;
}

#addictiondiv ul {
    overflow: hidden;
    overflow-y: scroll;
}

#dragtarget {
    width: 50%;
    display: inline-block;
    color: black;
    font-weight: 200;
    font-family: "Roboto", sans-serif;
}

li {
    color: black;
    font-weight: 200;
}

.gameButton {
    background-color: blue;
    border: none;
    color: white;
    padding: 10px 32px;
    text-decoration: none;
    cursor: pointer;
    border-radius: 1em;
}

#hospitaldata th {
    text-align: left;
    font-size: 14pt;
    border: 3px solid brown;
    padding: 15px;
}

#hospitaldata td {
    padding: 15px;
    font-size: 14pt;
    padding-left: 25px;
    border: 3px solid brown;
}

#hospitaldata {
    margin-left: auto;
    margin-right: auto;
    margin-top: 5em;
    border: 3px solid brown;
}
```

Output Screenshots:



Hospital Patient Registration

22 : 57 : 00

Please fill the form carefully!!!

First Name: Enter Name

Age: DOB: dd-mm-yyyy

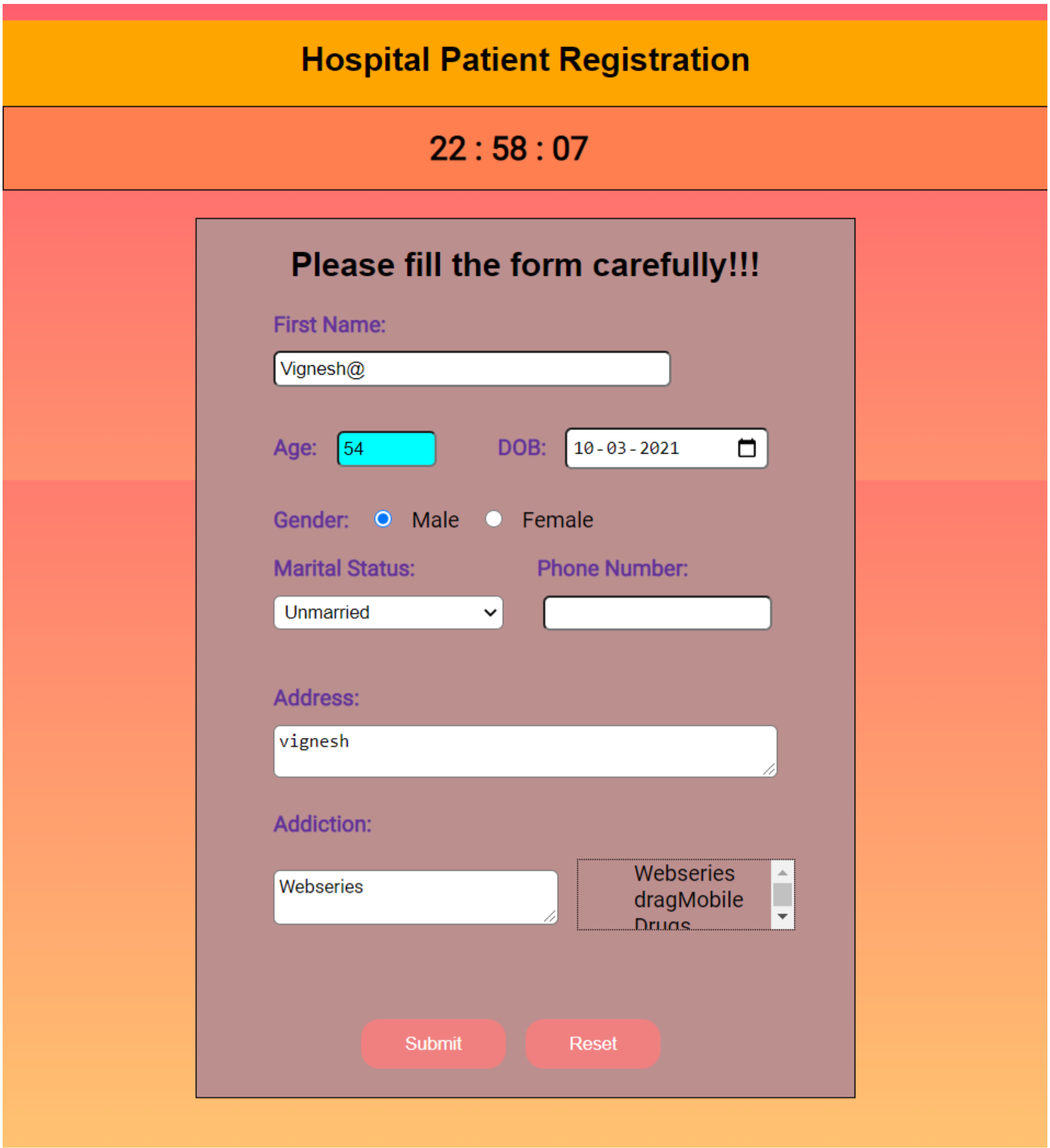
Gender: ○ Male ○ Female

Marital Status: Choose.. Phone Number:

Address: Enter Address

Addiction: Enter Addiction

Webseries
dragMobile
Drugs



Hospital Patient Registration

22 : 58 : 07

Please fill the form carefully!!!

First Name: Vignesh@

Age: 54 DOB: 10-03-2021

Gender: ● Male ○ Female

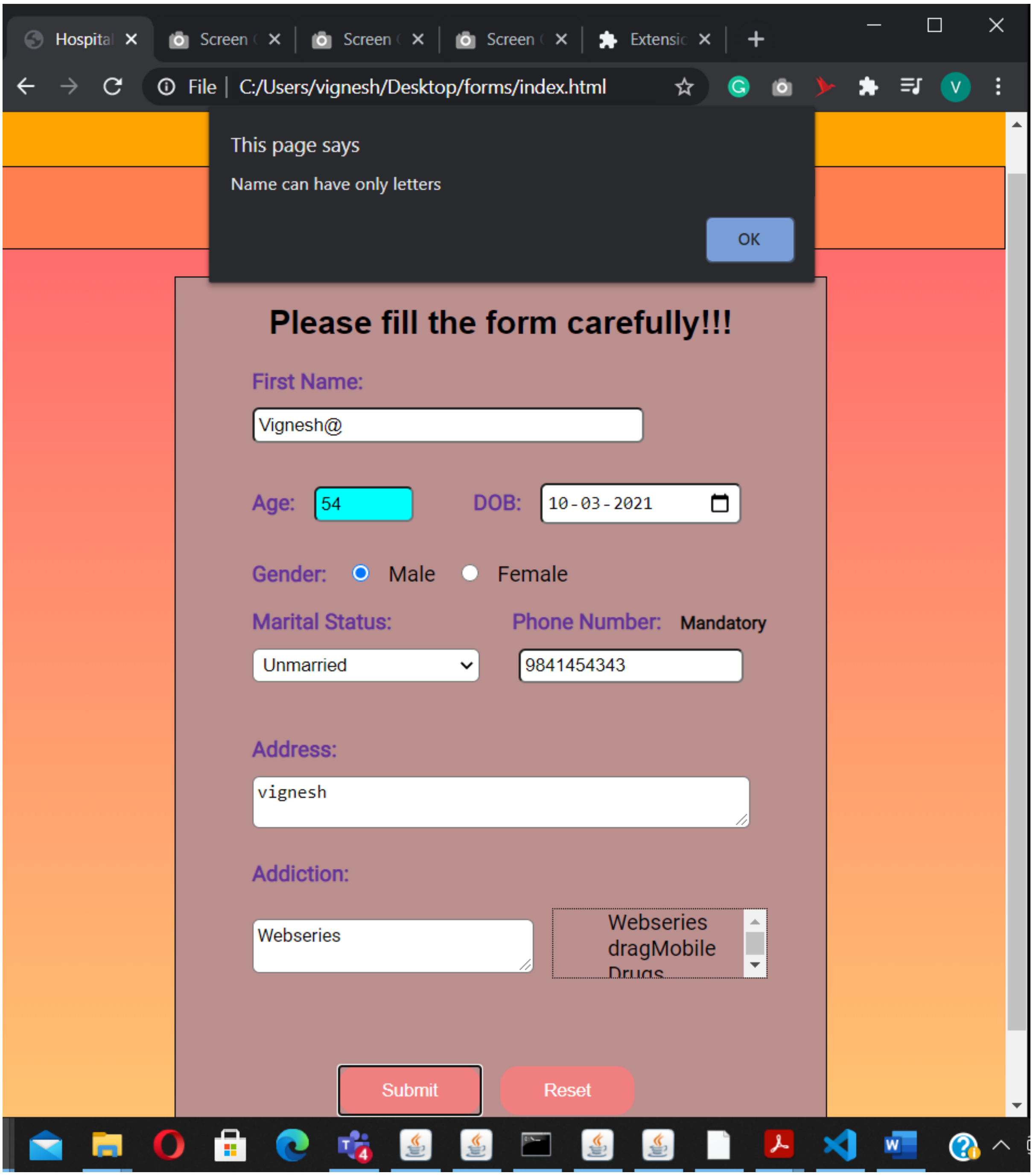
Marital Status: Unmarried

Phone Number:

Address: vignesh

Addiction: Webseries

Webseries
dragMobile
Drugs



This page says

Name can have only letters

Please fill the form carefully!!!

First Name: Vignesh@

Age: 54 DOB: 10-03-2021

Gender: ● Male ○ Female

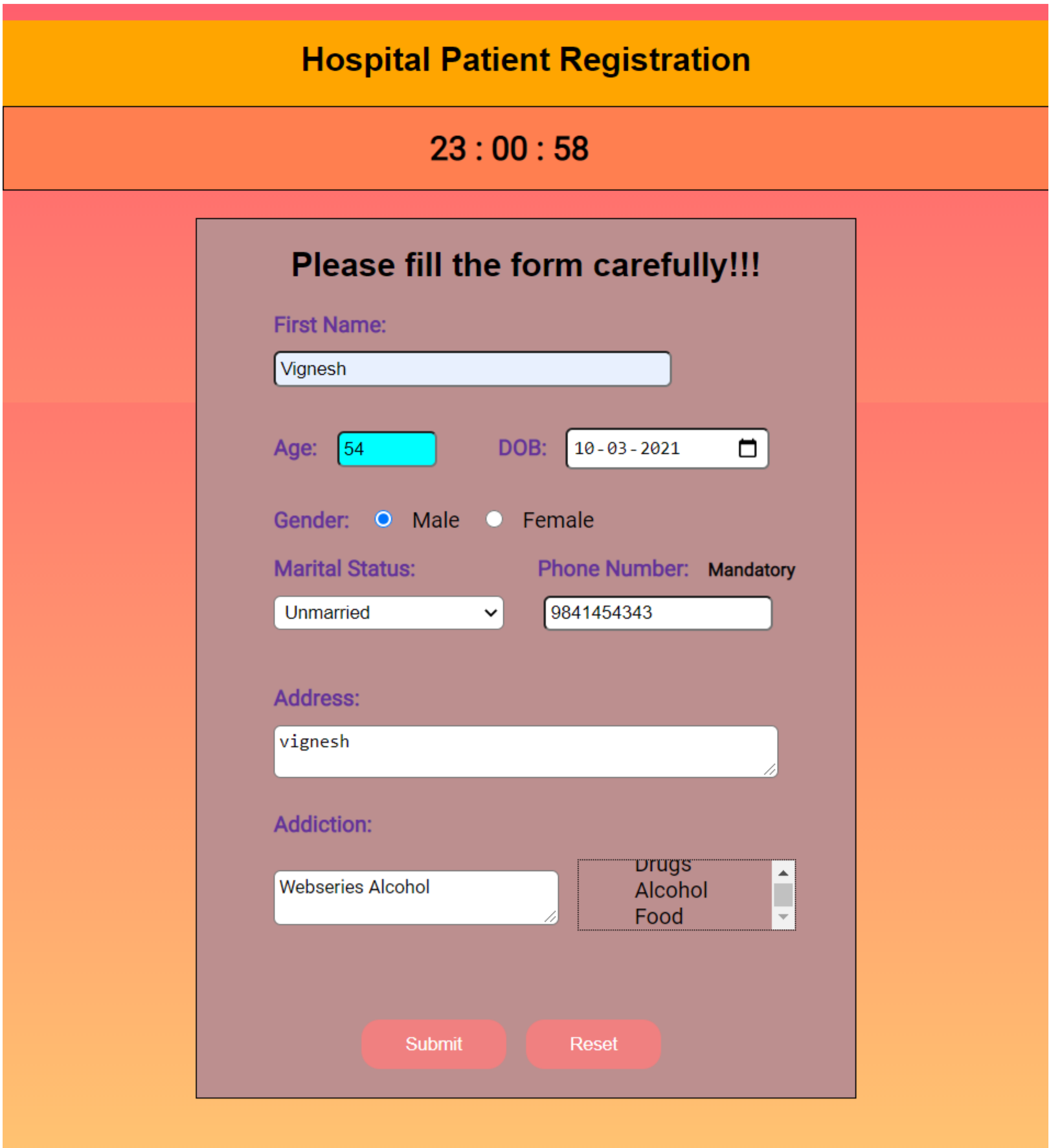
Marital Status: Unmarried

Phone Number: Mandatory 9841454343

Address: vignesh

Addiction: Webseries

Webseries
dragMobile
Drugs



Hospital Patient Registration

23 : 00 : 58

Please fill the form carefully!!!

First Name: Vignesh

Age: 54 DOB: 10-03-2021

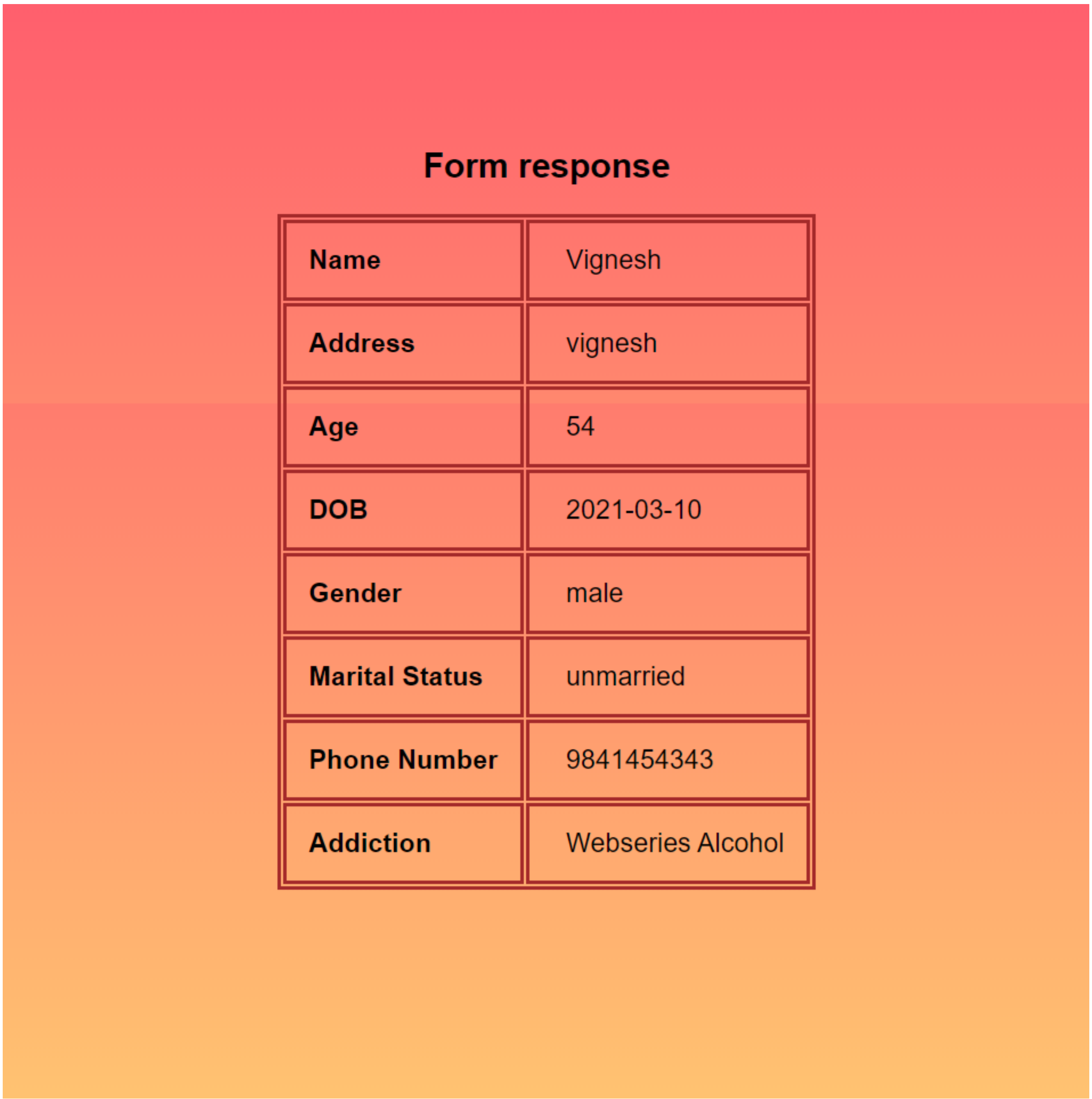
Gender: ● Male ○ Female

Marital Status: Unmarried

Phone Number: Mandatory 9841454343

Address: vignesh

Addiction: Webseries Alcohol



Form response

Name	Vignesh
Address	vignesh
Age	54
DOB	2021-03-10
Gender	male
Marital Status	unmarried
Phone Number	9841454343
Addiction	Webseries Alcohol

Question 1. 3b.

Learning Objective:

To Write a JS program to develop a memory matching game.

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

Program:

Index.html :

```
<!DOCTYPE html>
<html>

<head>
    <meta charset="utf-8" />
    <meta name="viewport" content="width=device-width" />
    <title>repl.it</title>
    <link href="style.css" rel="stylesheet" type="text/css">
</head>

    <script src="script.js">

    </script>

    <body onload="initial()">

        <div>
            <h1><heading>Memory Game</heading></h1>
        </div>
```

```html
        <div class="scoreCard" >
            <span id="msg"></span>
            <br>
            <h2>Level: <span id="level"></span></h2><br>
            <h2>Score: <span id="score"></span></h2><br>
            <h2>Time : <span id="timer"></span></h2>
            <br>

            <button
onclick="gameStart();style.display='none';">Start Game</button>
        </div>

        <br>

        <div class="memory-game">
            <div class="memory-card" onclick="onCardClick(this)"
data-cardname="flag1">
                <img class="front-face"
src="https://www.worldometers.info/img/flags/small/tn_au-flag.gif"
alt="front">
                <img class="back-face" src="./img/back.jpg"
alt="back">
            </div>

            <div class="memory-card" onclick="onCardClick(this)"
data-cardname="flag1">
                <img class="front-face"
src="https://www.worldometers.info/img/flags/small/tn_au-flag.gif"
alt="front">
                <img class="back-face" src="./img/back.jpg"
alt="back">
            </div>

            <div class="memory-card" onclick="onCardClick(this)"
data-cardname="flag2">
                <img class="front-face"
src="https://www.worldometers.info/img/flags/small/tn_cu-flag.gif"
alt="front">
                <img class="back-face" src="./img/back.jpg"
alt="back">
            </div>

          <div class="memory-card" onclick="onCardClick(this)" data-
cardname="flag2">
          <img class="front-face"
src="https://www.worldometers.info/img/flags/small/tn_cu-flag.gif"
alt="front">
```

```
          <img class="back-face" src="./img/back.jpg" alt="back">
          </div>
          <div class="memory-card" onclick="onCardClick(this)" data-
cardname="flag3">
          <img class="front-face"
src="https://www.worldometers.info/img/flags/small/tn_fr-flag.gif"
alt="front">
          <img class="back-face" src="./img/back.jpg" alt="back">
          </div>
          <div class="memory-card" onclick="onCardClick(this)" data-
cardname="flag3">
          <img class="front-face"
src="https://www.worldometers.info/img/flags/small/tn_fr-flag.gif"
alt="front">
          <img class="back-face" src="./img/back.jpg" alt="back">
          </div>
          <div class="memory-card" onclick="onCardClick(this)" data-
cardname="flag4">
          <img class="front-face"
src="https://www.worldometers.info/img/flags/small/tn_in-flag.gif"
alt="front">
          <img class="back-face" src="./img/back.jpg" alt="back">
          </div>
          <div class="memory-card" onclick="onCardClick(this)" data-
cardname="flag4">
          <img class="front-face"
src="https://www.worldometers.info/img/flags/small/tn_in-flag.gif"
alt="front">
          <img class="back-face" src="./img/back.jpg" alt="back">
          </div>
          <div class="memory-card" onclick="onCardClick(this)" data-
cardname="flag5">
          <img class="front-face"
src="https://www.worldometers.info/img/flags/small/tn_ks-flag.gif">
          <img class="back-face" src="./img/back.jpg" alt="back">
          </div>
          <div class="memory-card" onclick="onCardClick(this)" data-
cardname="flag5">
          <img class="front-face"
src="https://www.worldometers.info/img/flags/small/tn_ks-flag.gif"
alt="front">
          <img class="back-face" src="./img/back.jpg" alt="back">
          </div>
          <div class="memory-card" onclick="onCardClick(this)" data-
cardname="flag6">
          <img class="front-face"
src="https://www.worldometers.info/img/flags/small/tn_us-flag.gif"
alt="front">
```

```
          <img class="back-face" src="./img/back.jpg" alt="back">
          </div>
          <div class="memory-card" onclick="onCardClick(this)" data-
cardname="flag6">
          <img class="front-face"
src="https://www.worldometers.info/img/flags/small/tn_us-flag.gif"
alt="front">
          <img class="back-face" src="./img/back.jpg" alt="back">
          </div>

      </div>
   </body>
</html>
```

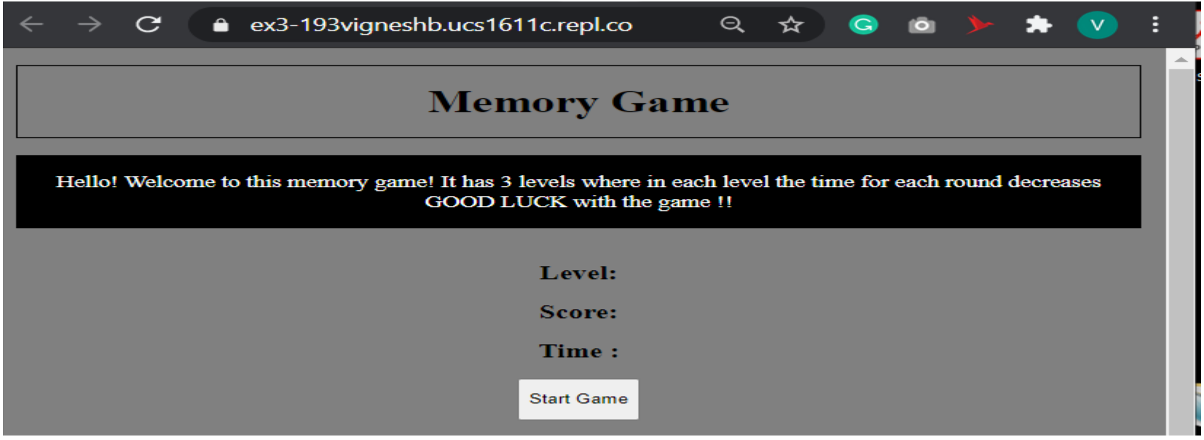
Script.js:

```
var isFirstCard=true;
var firstCard,secondCard;
var lockBoard = false;
var level=1;
function onCardClick(element) {
    if(lockBoard==true){
        return;
    };
    if(isFirstCard == true){
        element.classList.add('flip');
        isFirstCard=false;
        firstCard=element;
    }
    else{
        secondCard=element;
        element.classList.add('flip');
        lockBoard=true;
        if(firstCard.dataset.cardname ==
secondCard.dataset.cardname){

            setTimeout(
                function(){
                    firstCard.classList.remove('flip');
                    secondCard.classList.remove('flip');
                    firstCard.style.visibility ="hidden";
            secondCard.style.visibility ="hidden";

            document.getElementById("score").innerHTML++;
            var cur= document.getElementById("score").innerHTML;
            if( cur == 6){
                nextLevel();
            }
            resetBoard();
            },1000);


        }
        else{
            //Didnt match
            isFirstCard=true;
            setTimeout(
                function(){
                    firstCard.classList.remove('flip');
                    secondCard.classList.remove('flip');
                    resetBoard();
            },1000);
        }
    }
}

function nextLevel(){
    document.getElementById("msg").innerHTML= "Well Done! You DID IT
!Next Level started";
    myTimerObj.end();

    level++;
    if( level == 4){
        document.getElementById("msg").innerHTML= "You have mastered
this game!"+"\n"+
        "Thank you for playing";
        gameEnd();
    }
    else{
        gameStart();
    }

}

function initial(){
    var rules="Hello! Welcome to this memory game!"+"\n"+" It has 3
levels where in"+
    " each level the time for each round decreases GOOD LUCK with
the game !!";
    document.getElementById("msg").innerHTML=rules;
    document.querySelector('.memory-game').style.visibility=
'hidden';
}

function gameStart(){
    var time=75-(level*15);
    document.getElementById("score").innerHTML=0;
    document.getElementById("timer").innerHTML=time;
    document.getElementById("level").innerHTML=level;
    document.getElementById("msg").innerHTML="Game Start";
    shuffle();
    myTimerObj.start(time);
}

function gameEnd(){
    myTimerObj.end();
    document.querySelector('.memory-game').style.display= 'none';
}

function shuffle(){

    var allCards = document.querySelectorAll('.memory-card');

    allCards.forEach(function(card){
        var randPos = Math.floor(Math.random()*12);
        card.style.order=randPos;
        card.style.visibility='visible';
    })

    document.querySelector('.memory-game').style.visibility=
'visible';
}

var myTimerObj = (function(document){
    var myTimer;

    function start(timerVar) {
        myTimer = setInterval(myClock, 1000);
        var count = timerVar;

        function myClock() {
            document.getElementById("timer").innerHTML = --count;
            document.getElementById("msg").innerHTML="Game going On
!";
            if (count == 0) {
                var cur= document.getElementById("score").innerHTML;
                if( cur != 6){
                    document.getElementById("msg").innerHTML="Time
Up! Good Try";
                    gameEnd();
                }
            }
        }
    }

    function gap(timerVar) {
        alert('Gap');

    }

    function end()
    {
       clearInterval(myTimer);
    }

    return {start:start, end:end};
})(document);


function resetBoard(){
    [isFirstCard,lockBoard] = [true,false];
    [firstCard,secondCard] = [null,null];
}
```

Style.css:

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

}

body, html {
    height: 100%;
    margin: 0;
}

body{
    height:100vh;
    background-color: #808080;
}

heading{
    display: flex;
    justify-content: center;
    align-items: center;
    font-size: 120%;
    margin: 20px;
    padding: 20px;
    border: 2px solid black;
}

#msg{
    display: flex;
    justify-content: center;
    align-items: center;
    font-size: 20px;
    color : white;
    background-color:black;
    margin: 20px;
    padding: 20px;
}

button{
    height: 50px;
    width: 100px;
    font-size: 100%;
    display: flex;
    margin:auto;
    flex-direction: column;
    justify-content: center;
    align-items: center;

}
.details{
  display: flex;
  margin:auto;
  flex-direction: column;
  justify-content: center;
  text-align: center;
  background-color: #808080
}

.scoreCard{
    text-align: center;
}

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

.memory-card{
    width:calc(25% - 10px);
    height:calc(33.33% - 10px);
    margin:5px;
    position:relative;
    transform:scale(1);

    transform-style:preserve-3d;
    transition: tansform .5s;
    box-shadow: 1px;
    box-shadow: 1px 1px 1px rgba(0,0,0,.3);
}
.memory-card:active{
    transform: scale(0.97);
    transition: transform .5s;
}

.memory-card.flip{
    transform : rotateY(180deg);
}
.front-face,.back-face{
    width:100%;
    height:100%;
    position:absolute;
    border-radius : 5px;
    background-color:red;
    backface-visibility: hidden;
}
.memory-card > img {
    width:100%;
}
.front-face{
    transform : rotateY(180deg);
}
```

Output:



ex3-193vigneshb.ucs1611c.repl.co

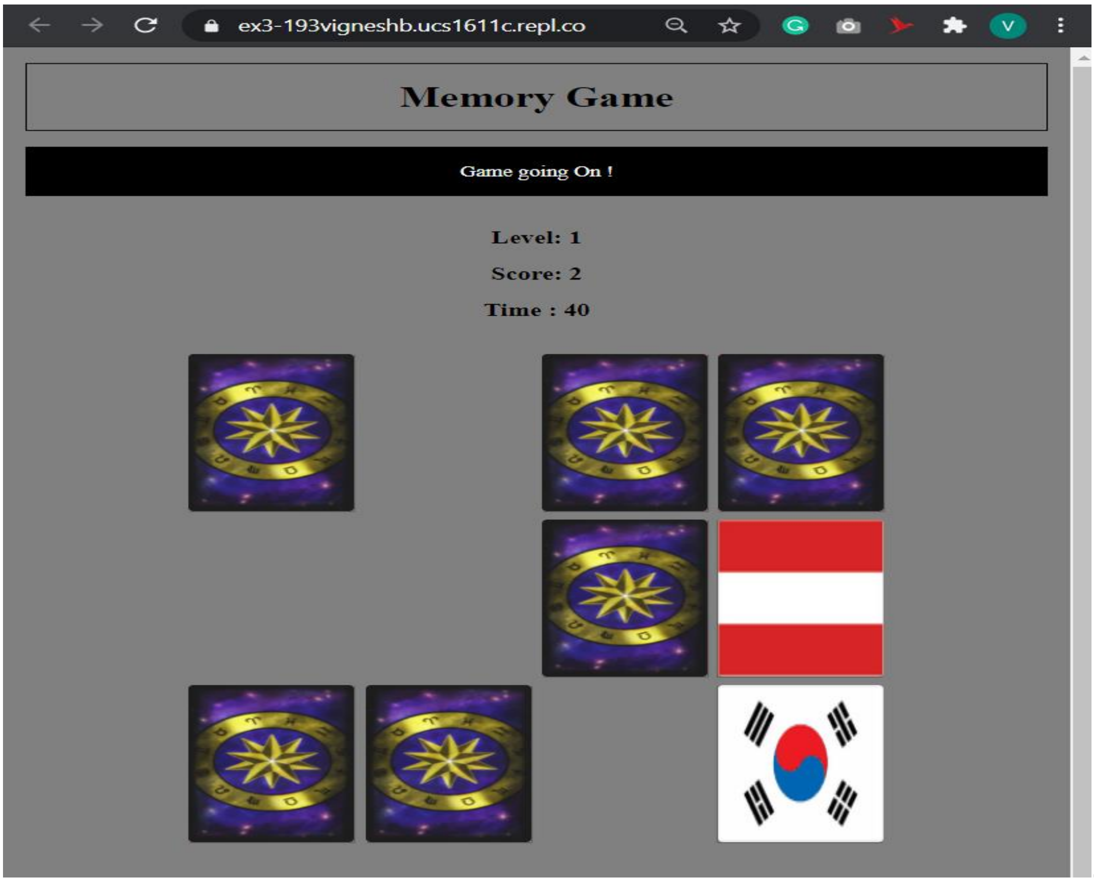
Memory Game

Hello! Welcome to this memory game! It has 3 levels where in each level the time for each round decreases
GOOD LUCK with the game !!

Level:

Score:

Time :



Memory Game

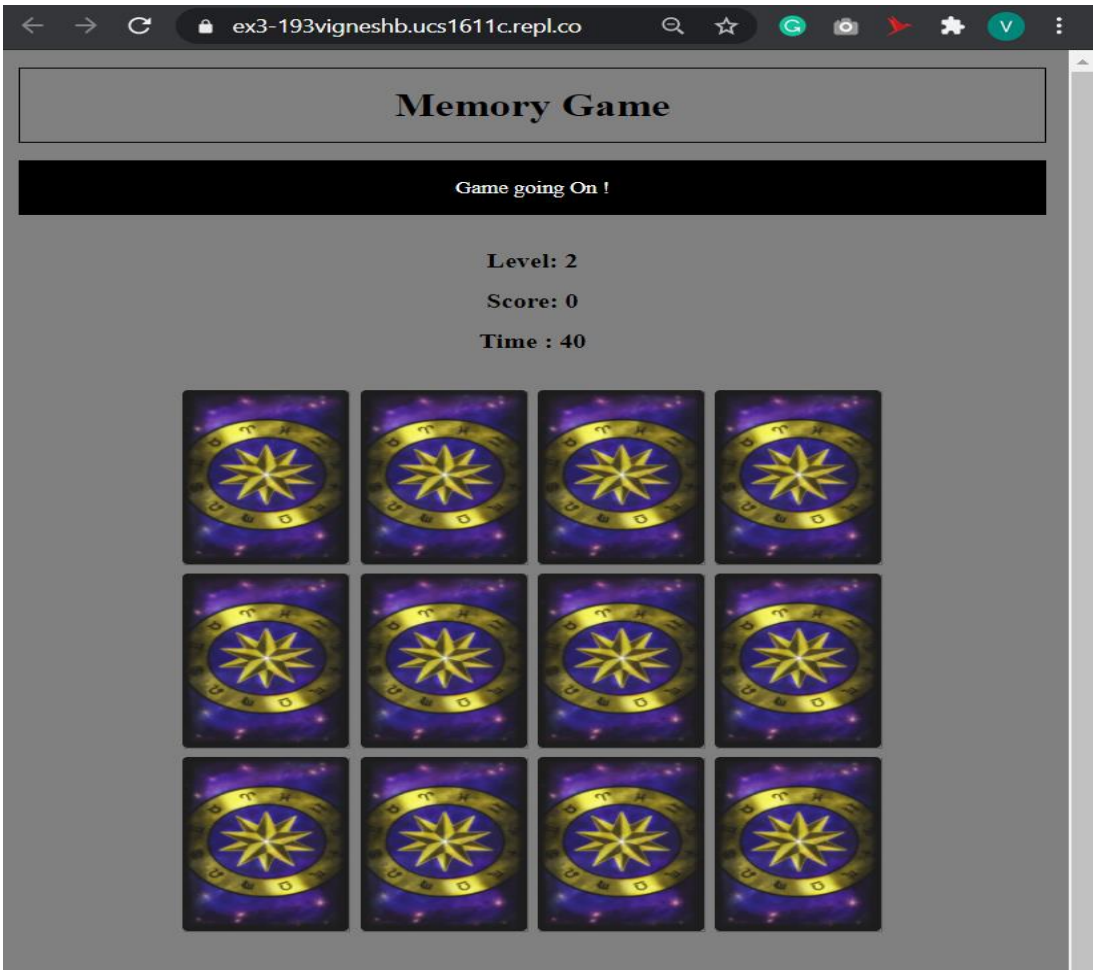
Game going On !

Level: 1

Score: 2

Time : 40

level1



Memory Game

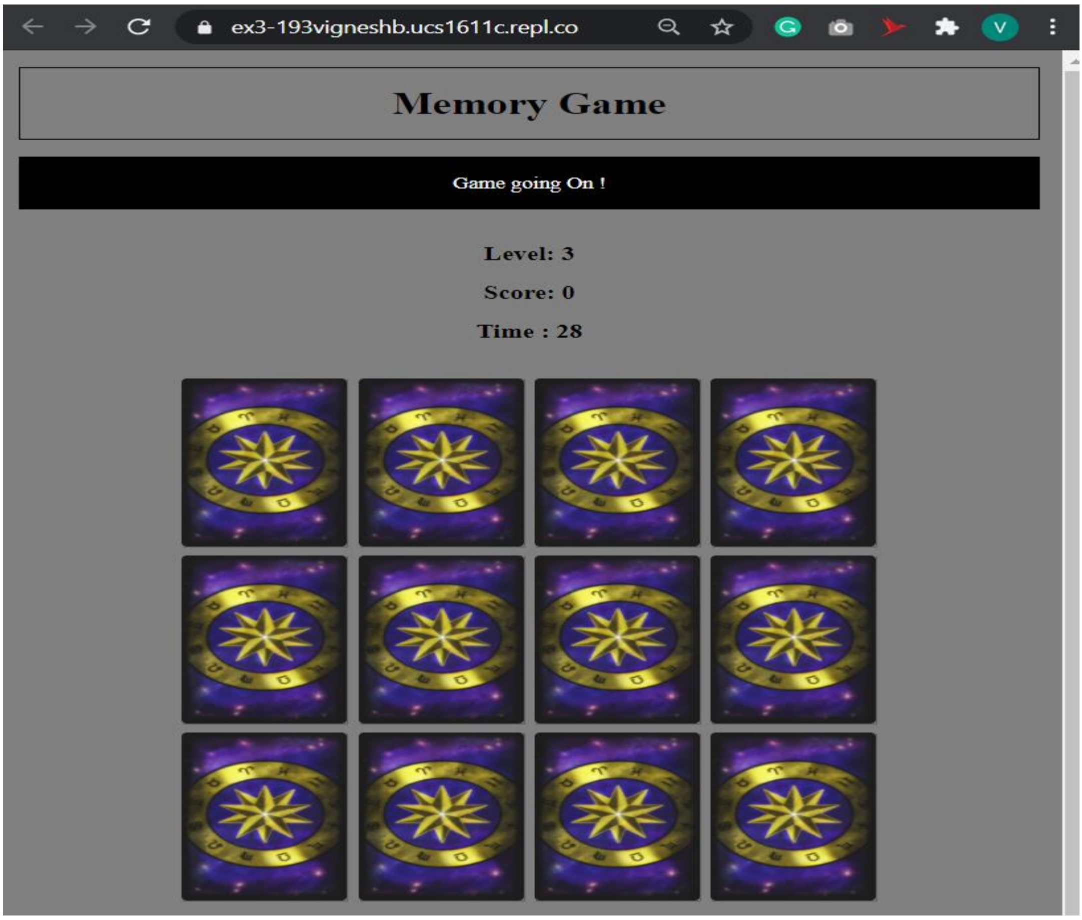
Game going On !

Level: 2

Score: 0

Time : 40

level2



Memory Game

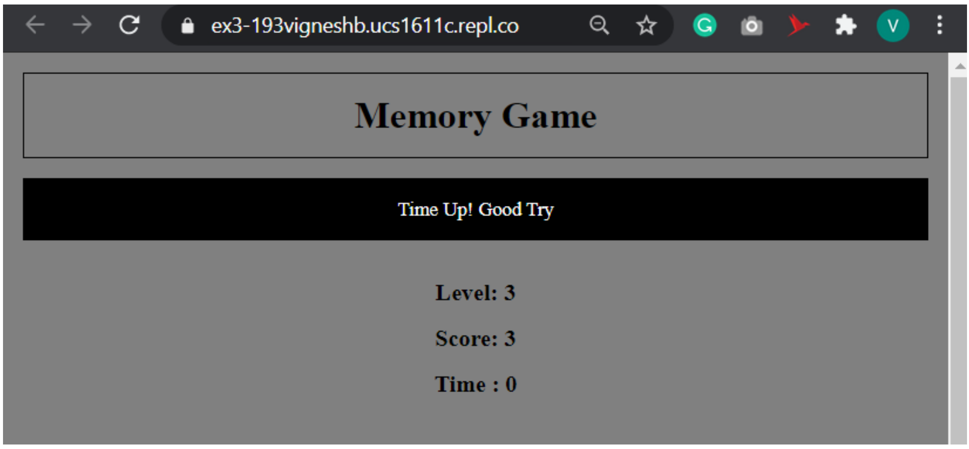
Game going On !

Level: 3

Score: 0

Time : 28

level3



Memory Game

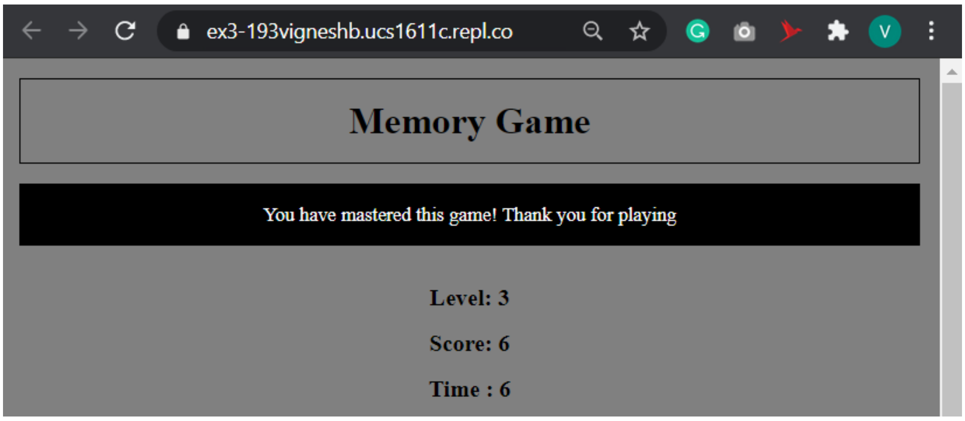
Time Up! Good Try

Level: 3

Score: 3

Time : 0

failure



Memory Game

You have mastered this game! Thank you for playing

Level: 3

Score: 6

Time : 6

success