LAB ASSIGNMENT 1 NAME:JEEVANKUMAR S

ROLLNO:23BCS064

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8" />

<meta name="viewport" content="width=device-width, initial-scale=1" />

<title>All Projects Collection</title>

<style>

body {

font-family: Arial, sans-serif;

background: #e8f5e9;

color: #2a5d2a;

margin: 0;

padding-bottom: 60px;

}

header {

background: #2a5d2a;

color: white;

padding: 15px;

text-align: center;

font-weight: 700;

font-size: 2rem;

}

section {

max-width: 480px;

background: white;

margin: 30px auto;

padding: 25px 30px;

border-radius: 15px;

box-shadow: 0 0 15px rgba(42, 93, 42, 0.3);

}

section h2 {

margin-top: 0;

margin-bottom: 15px;

border-bottom: 2px solid #2a5d2a;

padding-bottom: 5px;

}

input, button, select, textarea {

font-family: inherit;

font-size: 1.1rem;

padding: 10px;

border-radius: 8px;

border: 2px solid #2a5d2a;

outline: none;

}

button {

background: #2a5d2a;

color: white;

cursor: pointer;

border: none;

}

button:hover {

background: #1b3e1b;

}

#copyright {

position: fixed;

right: 15px;

bottom: 15px;

font-weight: 700;

font-size: 1.3rem;

color: #2a5d2a;

user-select: none;

}

.centered {

text-align: center;

}

/\* Specific input width for guessing game \*/

#numberGuessing input {

width: 120px;

margin-right: 10px;

}

/\* Calculator \*/

.calculator {

display: grid;

grid-template-columns: repeat(4, 70px);

gap: 10px;

justify-content: center;

}

.calculator input {

grid-column: span 4;

text-align: right;

font-size: 1.5rem;

}

/\* Color picker preview \*/

#colorPickerPreview {

width: 100%;

height: 80px;

margin-top: 15px;

border-radius: 12px;

border: 2px solid #2a5d2a;

}

/\* Quotes \*/

#quoteDisplay {

font-style: italic;

font-size: 1.2rem;

min-height: 60px;

margin-top: 15px;

}

/\* Countdown \*/

#countdownDisplay {

font-size: 1.5rem;

font-weight: 600;

margin-top: 15px;

}

/\* Dice Roller \*/

#diceContainer {

display: flex;

justify-content: center;

gap: 20px;

margin-top: 15px;

}

.dice {

width: 80px;

height: 80px;

}

#diceResult {

margin-top: 15px;

font-weight: 600;

font-size: 1.3rem;

text-align: center;

}

/\* Rock Paper Scissors \*/

#rpsChoices button {

margin: 0 8px;

padding: 10px 18px;

font-weight: 600;

}

#rpsResult {

margin-top: 20px;

font-size: 1.2rem;

font-weight: 600;

}

</style>

</head>

<body>

<header>All Projects Collection</header>

<section id="numberGuessing">

<h2>1. Number Guessing Game</h2>

<input type="number" id="guess-input" placeholder="Enter 1-100" min="1" max="100" />

<button id="guess-btn">Guess</button>

<div id="result"></div>

</section>

<section id="digitalClock" class="centered">

<h2>2. Digital Clock</h2>

<div id="clock" style="font-size:3rem; font-weight:700;"></div>

</section>

<section id="simpleCalculator" class="centered">

<h2>4. Simple Calculator</h2>

<div class="calculator">

<input type="text" id="calcDisplay" readonly />

<button class="calc-btn">7</button>

<button class="calc-btn">8</button>

<button class="calc-btn">9</button>

<button class="calc-btn">/</button>

<button class="calc-btn">4</button>

<button class="calc-btn">5</button>

<button class="calc-btn">6</button>

<button class="calc-btn">\*</button>

<button class="calc-btn">1</button>

<button class="calc-btn">2</button>

<button class="calc-btn">3</button>

<button class="calc-btn">-</button>

<button class="calc-btn">0</button>

<button class="calc-btn">.</button>

<button id="clearBtn">C</button>

<button class="calc-btn">+</button>

<button id="equalBtn" style="grid-column: span 4; background:#1b3e1b;">=</button>

</div>

</section>

<section id="colorPickerApp" class="centered">

<h2>5. Color Picker App</h2>

<input type="color" id="colorPicker" />

<div id="colorPickerPreview"></div>

</section>

<section id="formValidation" style="max-width: 480px;">

<h2>6. Form Validation</h2>

<form id="validationForm" novalidate>

<label>Email:<br /><input type="email" id="email" required /></label><br /><br />

<label>Password:<br /><input type="password" id="password" required /></label><br /><br />

<button type="submit">Submit</button>

<div id="formMessage" style="margin-top:10px; font-weight:600;"></div>

</form>

</section>

<section id="randomQuote" class="centered">

<h2>7. Random Quote Generator</h2>

<button id="quoteBtn">Get Quote</button>

<div id="quoteDisplay"></div>

</section>

<section id="countdownTimer" class="centered">

<h2>8. Countdown Timer</h2>

<input type="datetime-local" id="countdownInput" />

<button id="startCountdownBtn">Start Countdown</button>

<div id="countdownDisplay"></div>

</section>

<section id="diceRoller" class="centered">

<h2>9. Dice Roller</h2>

<button id="rollDiceBtn">Roll Dice</button>

<div id="diceContainer">

<canvas class="dice" id="dice1" width="80" height="80"></canvas>

<canvas class="dice" id="dice2" width="80" height="80"></canvas>

</div>

<div id="diceResult"></div>

</section>

<section id="rockPaperScissors" class="centered">

<h2>10. Rock-Paper-Scissors Game</h2>

<div id="rpsChoices">

<button data-choice="rock">Rock</button>

<button data-choice="paper">Paper</button>

<button data-choice="scissors">Scissors</button>

</div>

<div id="rpsResult"></div>

</section>

<div id="copyright">© jeevankumar23bcs064</div>

<script>

// 1 Number Guessing Game

const randomNumber = Math.floor(Math.random() \* 100) + 1;

const guessInput = document.getElementById('guess-input');

const guessBtn = document.getElementById('guess-btn');

const result = document.getElementById('result');

guessBtn.addEventListener('click', () => {

const guess = Number(guessInput.value);

if (!guess || guess < 1 || guess > 100) {

result.textContent = 'Please enter a valid number between 1 and 100.';

return;

}

if (guess === randomNumber) {

result.textContent = 'Correct! You guessed the number!';

} else if (guess > randomNumber) {

result.textContent = 'Too High';

} else {

result.textContent = 'Too Low';

}

});

// 2 Digital Clock

const clock = document.getElementById('clock');

function updateTime() {

const now = new Date();

const h = String(now.getHours()).padStart(2,'0');

const m = String(now.getMinutes()).padStart(2,'0');

const s = String(now.getSeconds()).padStart(2,'0');

clock.textContent = `${h}:${m}:${s}`;

}

setInterval(updateTime, 1000);

updateTime();

// 4 Simple Calculator

const calcDisplay = document.getElementById('calcDisplay');

const calcButtons = document.querySelectorAll('.calc-btn');

const clearBtn = document.getElementById('clearBtn');

const equalBtn = document.getElementById('equalBtn');

let expression = '';

calcButtons.forEach(btn => {

btn.addEventListener('click', () => {

expression += btn.textContent;

calcDisplay.value = expression;

});

});

clearBtn.addEventListener('click', () => {

expression = '';

calcDisplay.value = '';

});

equalBtn.addEventListener('click', () => {

try {

expression = eval(expression).toString();

calcDisplay.value = expression;

} catch {

calcDisplay.value = 'Error';

expression = '';

}

});

// 5 Color Picker App

const colorPicker = document.getElementById('colorPicker');

const colorPreview = document.getElementById('colorPickerPreview');

colorPicker.addEventListener('input', () => {

colorPreview.style.backgroundColor = colorPicker.value;

});

// 6 Form Validation

const form = document.getElementById('validationForm');

const emailInput = document.getElementById('email');

const passwordInput = document.getElementById('password');

const formMessage = document.getElementById('formMessage');

function validateEmail(email) {

return /^[^\s@]+@[^\s@]+\.[^\s@]+$/.test(email);

}

function validatePassword(pw) {

return /^(?=.\*[A-Za-z])(?=.\*\d)[A-Za-z\d]{6,}$/.test(pw);

}

form.addEventListener('submit', e => {

e.preventDefault();

const email = emailInput.value.trim();

const password = passwordInput.value.trim();

if (!validateEmail(email)) {

formMessage.textContent = 'Invalid email address.';

formMessage.style.color = 'red';

return;

}

if (!validatePassword(password)) {

formMessage.textContent = 'Password must be at least 6 characters, including letters and numbers.';

formMessage.style.color = 'red';

return;

}

formMessage.textContent = 'Form submitted successfully!';

formMessage.style.color = 'green';

});

// 7 Random Quote Generator

const quotes = [

"The only limit to our realization of tomorrow is our doubts of today.",

"Do what you can, with what you have, where you are.",

"Success is not final, failure is not fatal: It is the courage to continue that counts.",

"You miss 100% of the shots you don’t take.",

"Believe you can and you're halfway there."

];

const quoteBtn = document.getElementById('quoteBtn');

const quoteDisplay = document.getElementById('quoteDisplay');

quoteBtn.addEventListener('click', () => {

const idx = Math.floor(Math.random() \* quotes.length);

quoteDisplay.textContent = quotes[idx];

});

// 8 Countdown Timer

const countdownInput = document.getElementById('countdownInput');

const startCountdownBtn = document.getElementById('startCountdownBtn');

const countdownDisplay = document.getElementById('countdownDisplay');

let countdownInterval;

function formatTime(num) {

return String(num).padStart(2, '0');

}

startCountdownBtn.addEventListener('click', () => {

clearInterval(countdownInterval);

const targetTime = new Date(countdownInput.value).getTime();

if (isNaN(targetTime)) {

countdownDisplay.textContent = 'Please select a valid date and time.';

return;

}

countdownInterval = setInterval(() => {

const now = Date.now();

const diff = targetTime - now;

if (diff <= 0) {

clearInterval(countdownInterval);

countdownDisplay.textContent = "Time's up!";

return;

}

const days = Math.floor(diff / (1000 \* 60 \* 60 \* 24));

const hours = Math.floor((diff / (1000 \* 60 \* 60)) % 24);

const minutes = Math.floor((diff / (1000 \* 60)) % 60);

const seconds = Math.floor((diff / 1000) % 60);

countdownDisplay.textContent = `${days}d ${formatTime(hours)}h ${formatTime(minutes)}m ${formatTime(seconds)}s`;

}, 1000);

});

// 9 Dice Roller

const rollDiceBtn = document.getElementById('rollDiceBtn');

const dice1 = document.getElementById('dice1').getContext('2d');

const dice2 = document.getElementById('dice2').getContext('2d');

const diceResult = document.getElementById('diceResult');

function drawDice(ctx, number) {

ctx.clearRect(0, 0, 80, 80);

ctx.fillStyle = '#2a5d2a';

ctx.fillRect(5, 5, 70, 70);

ctx.fillStyle = '#e8f5e9';

const dot = 10;

const positions = {

1: [[35,35]],

2: [[20,20],[50,50]],

3: [[20,20],[35,35],[50,50]],

4: [[20,20],[20,50],[50,20],[50,50]],

5: [[20,20],[20,50],[35,35],[50,20],[50,50]],

6: [[20,20],[20,35],[20,50],[50,20],[50,35],[50,50]]

};

positions[number].forEach(pos => {

ctx.beginPath();

ctx.arc(pos[0], pos[1], dot, 0, Math.PI \* 2);

ctx.fill();

});

}

rollDiceBtn.addEventListener('click', () => {

const num1 = Math.floor(Math.random() \* 6) +1;

const num2 = Math.floor(Math.random() \* 6) +1;

drawDice(dice1, num1);

drawDice(dice2, num2);

diceResult.textContent = `You rolled ${num1} and ${num2} (Total: ${num1 + num2})`;

});

// 10 Rock-Paper-Scissors Game

const rpsChoices = document.querySelectorAll('#rpsChoices button');

const rpsResult = document.getElementById('rpsResult');

function getComputerChoice() {

const choices = ['rock','paper','scissors'];

return choices[Math.floor(Math.random() \* choices.length)];

}

function getWinner(user, computer) {

if(user === computer) return "It's a tie!";

if(

(user === 'rock' && computer === 'scissors') ||

(user === 'paper' && computer === 'rock') ||

(user === 'scissors' && computer === 'paper')

) return 'You win!';

return 'Computer wins!';

}

rpsChoices.forEach(button => {

button.addEventListener('click', () => {

const userChoice = button.getAttribute('data-choice');

const computerChoice = getComputerChoice();

const winner = getWinner(userChoice, computerChoice);

rpsResult.textContent = `You chose ${userChoice}. Computer chose ${computerChoice}. ${winner}`;

});

});

</script>

</body>

</html>







