JavaScript

1) Write a JavaScript program to perform an online quiz.

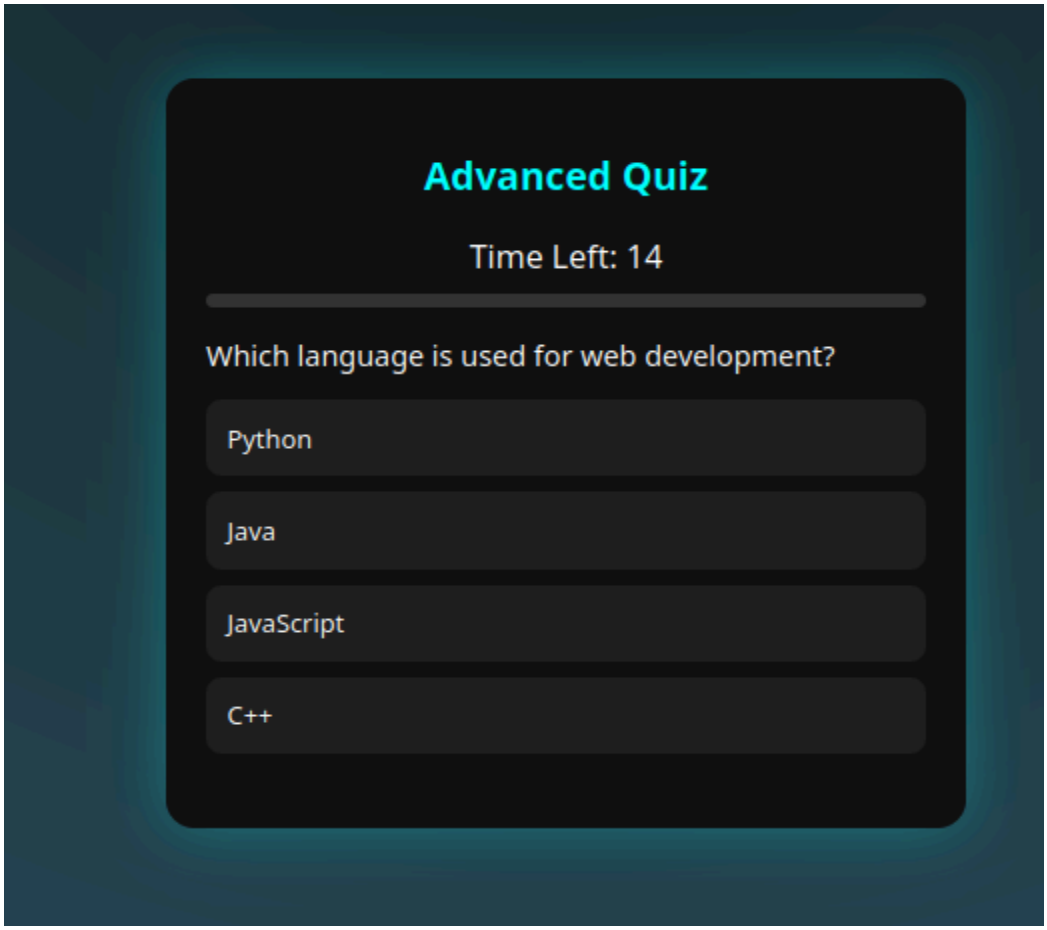
```
<!DOCTYPE html>
<html>
<head>
   <title>Online Quiz </title>
   <style>
       body {
           margin: 0;
           height: 100vh;
           background: radial-gradient(circle at top, #0f2027, #203a43, #2c5364);
           display: flex;
           justify-content: center;
           align-items: center;
           font-family: 'Segoe UI', sans-serif;
           overflow: hidden;
       }

       .quiz-box {
           width: 450px;
           background: #111;
           color: #fff;
           border-radius: 18px;
           padding: 25px;
           box-shadow: 0 0 40px rgba(0,255,255,0.3);
           animation: pop 0.6s ease;
       }

       h2 {
           text-align: center;
           color: #00ffff;
           margin-bottom: 10px;
       }

       #timer {
           text-align: center;
           font-size: 20px;
           margin-bottom: 10px;
       }

       .pulse {
           animation: pulse 1s infinite;
           color: #ff4757;
       }

       .progress {
```

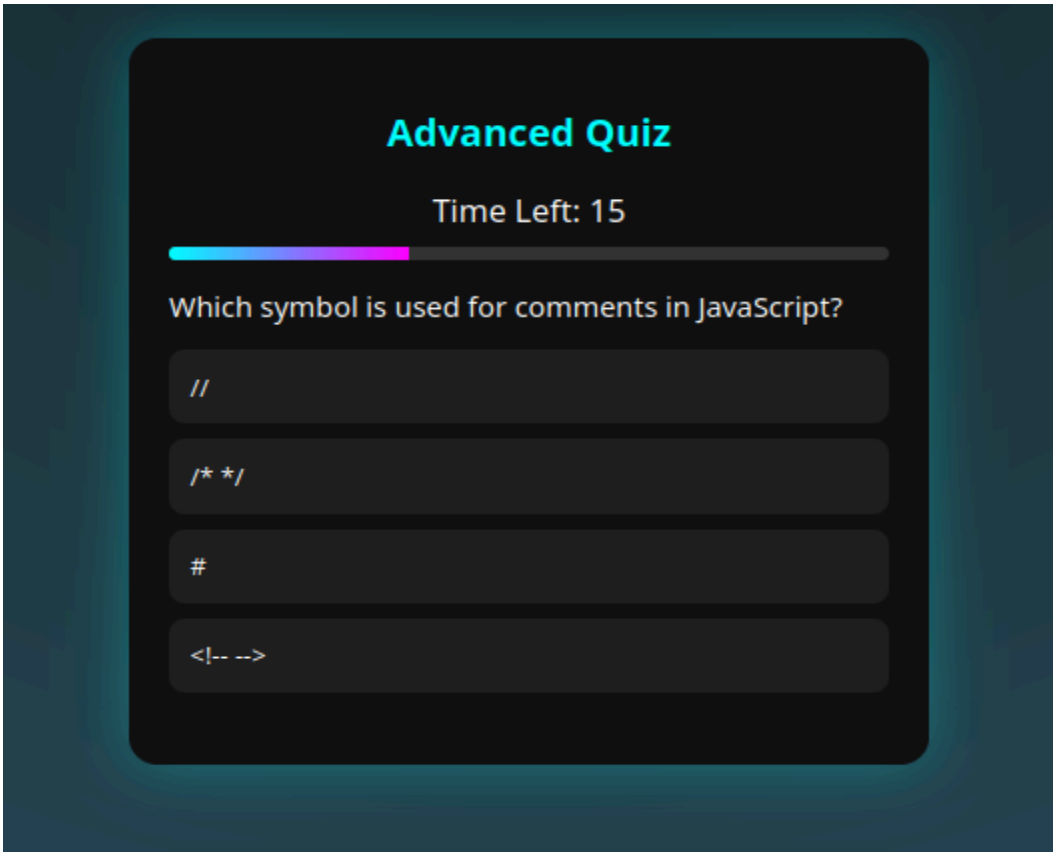
```
        height: 8px;
        background: #333;
        border-radius: 20px;
        overflow: hidden;
        margin-bottom: 15px;
    }

    .progress-bar {
        height: 100%;
        width: 100%;
        background: linear-gradient(90deg, #00ffff, #ff00ff);
        transition: width 0.5s;
    }

    #question {
        font-size: 18px;
        margin-bottom: 15px;
    }

    .option {
        background: #1e1e1e;
        padding: 12px;
        border-radius: 10px;
        margin-bottom: 10px;
        cursor: pointer;
        transition: 0.3s;
        border: 1px solid transparent;
    }

    .option:hover {
        border-color: #00ffff;
        transform: scale(1.05);
    }

    .correct {
        background: #2ed573 !important;
    }

    .wrong {
        background: #ff4757 !important;
        animation: shake 0.4s;
    }

    #result {
        text-align: center;
        font-size: 22px;
        margin-top: 15px;
        color: #00ffcc;
    }
```

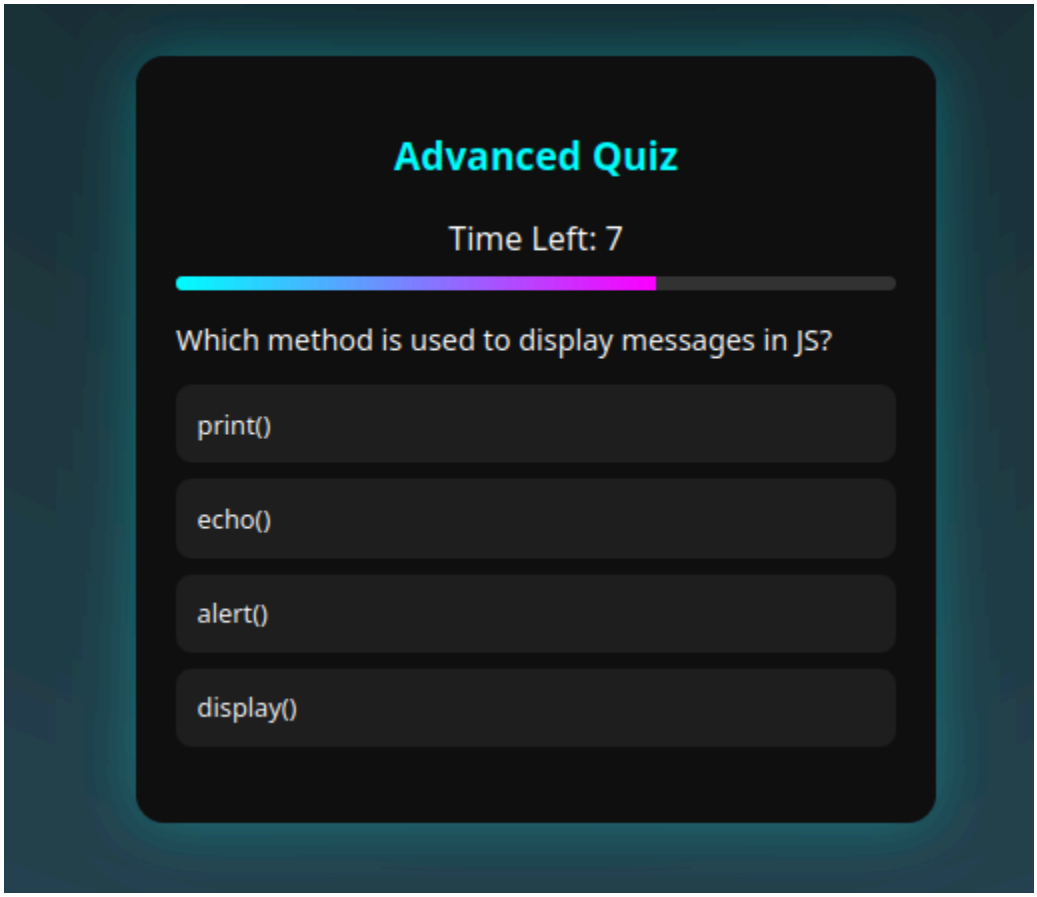
```
        @keyframes shake {
            0% { transform: translateX(0); }
            25% { transform: translateX(-5px); }
            50% { transform: translateX(5px); }
            75% { transform: translateX(-5px); }
            100% { transform: translateX(0); }
        }

        @keyframes pop {
            from { transform: scale(0.8); opacity: 0; }
            to { transform: scale(1); opacity: 1; }
        }

        @keyframes pulse {
            0% { transform: scale(1); }
            50% { transform: scale(1.1); }
            100% { transform: scale(1); }
        }
    </style>
</head>
<body>

<div class="quiz-box">
    <h2>Advanced Quiz</h2>
    <p id="timer">Time Left: 30</p>

    <div class="progress">
        <div class="progress-bar" id="progressBar"></div>
    </div>

    <p id="question"></p>
    <div id="options"></div>

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

<script>
const quiz = [
    {
        question: "Which language is used for web development?",
        options: ["Python", "Java", "JavaScript", "C++"],
        correct: 2
    },
    {
        question: "Which symbol is used for comments in JavaScript?",
        options: ["//", "/* */", "#", "<!-- -->"],
        correct: 0
    },
```

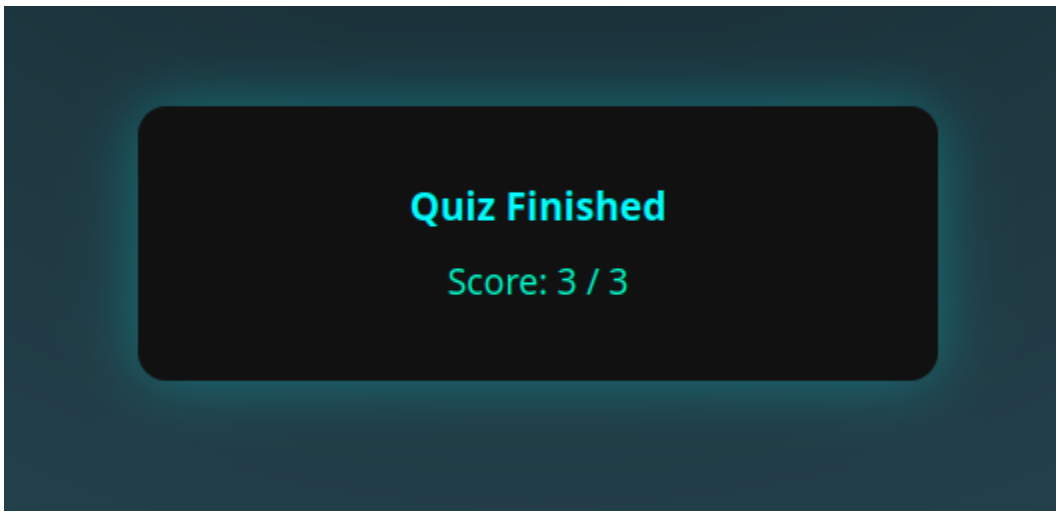
```
    {
        question: "Which method is used to display messages in JS?",
        options: ["print()", "echo()", "alert()", "display()"],
        correct: 2
    }
];

let index = 0;
let score = 0;
let timeLeft = 30;
let timer;
let locked = false;

function loadQuestion() {
    locked = false;
    const q = quiz[index];
    document.getElementById("question").innerText = q.question;

    const optionsDiv = document.getElementById("options");
    optionsDiv.innerHTML = "";

    q.options.forEach((opt, i) => {
        const div = document.createElement("div");
        div.className = "option";
        div.innerText = opt;
        div.onclick = () => selectOption(div, i);
        optionsDiv.appendChild(div);
    });

    updateProgress();
}

function selectOption(element, selected) {
    if (locked) return;
    locked = true;

    const correctIndex = quiz[index].correct;
    const options = document.querySelectorAll(".option");

    if (selected === correctIndex) {
        element.classList.add("correct");
        score++;
    } else {
        element.classList.add("wrong");
        options[correctIndex].classList.add("correct");
    }

    setTimeout(() => {
        index++;
```

```
        index < quiz.length ? loadQuestion() : endQuiz();
    }, 1000);
}

function startTimer() {
    timer = setInterval(() => {
        timeLeft--;
        const timerEl = document.getElementById("timer");
        timerEl.innerText = "Time Left: " + timeLeft;

        if (timeLeft <= 5) timerEl.classList.add("pulse");

        if (timeLeft === 0) endQuiz();
    }, 1000);
}

function updateProgress() {
    const percent = (index / quiz.length) * 100;
    document.getElementById("progressBar").style.width = percent + "%";
}

function endQuiz() {
    clearInterval(timer);
    document.querySelector(".quiz-box").innerHTML =
        "<h2>Quiz Finished</h2><p id='result'>Score: " +
        score + " / " + quiz.length + "</p>";
}

loadQuestion();
startTimer();
</script>

</body>
</html>
```


Advanced Quiz
Time Left: 14
Which language is used for web development?
Python
Java
JavaScript
C++


Advanced Quiz
Time Left: 15
Which symbol is used for comments in JavaScript?
//
/* */
#
<!-- -->


Advanced Quiz
Time Left: 7
Which method is used to display messages in JS?
print()
echo()
alert()
display()

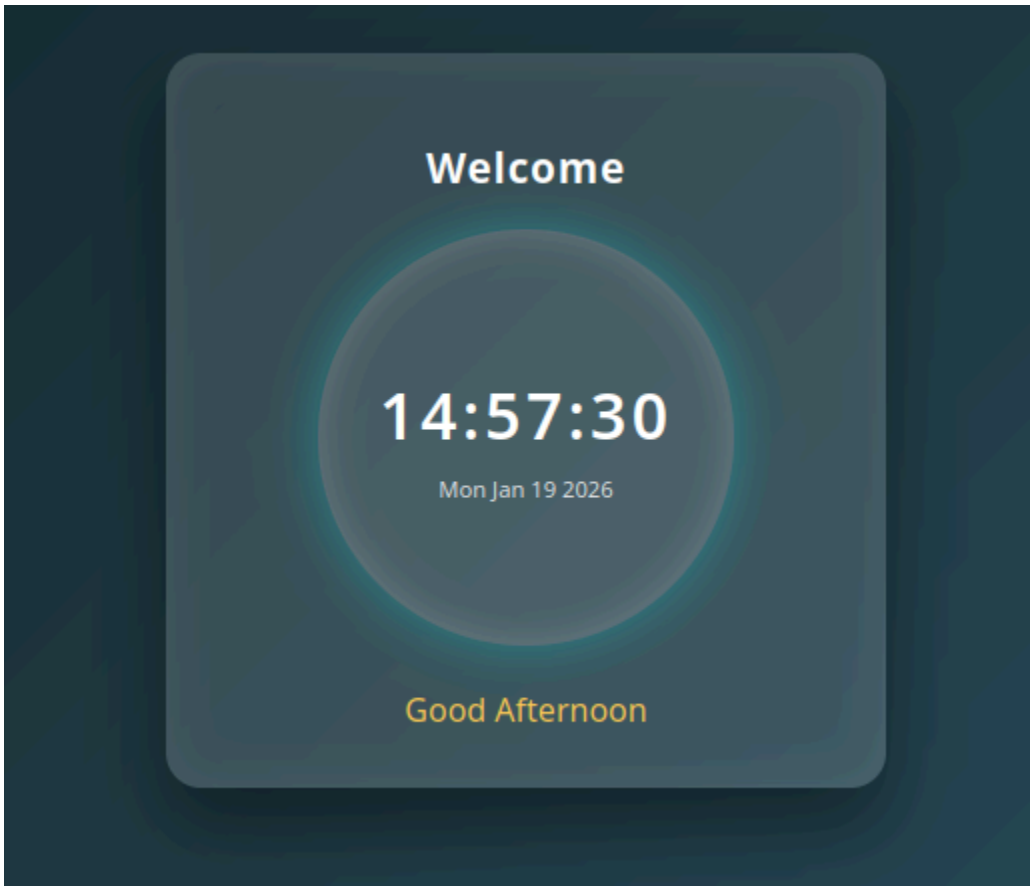

Quiz Finished
Score: 3 / 3

2) Write a JavaScript program to Wish a user at different hours of a day. Use appropriate dialog boxes for wishing the user. Display the dynamic clock on the web page. Make use of CSS and HTML5 elements for creative and attractive design.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>Time Greeting Clock</title>

<style>
body{
   margin:0;
   height:100vh;
   background:linear-gradient(135deg,#0f2027,#203a43,#2c5364);
   display:flex;
   justify-content:center;
   align-items:center;
   font-family:Segoe UI,sans-serif;
   color:white
}
main{
   width:380px;
   padding:35px;
   text-align:center;
   background:rgba(255,255,255,0.12);
   backdrop-filter:blur(18px);
   border-radius:22px;
   box-shadow:
       0 25px 45px rgba(0,0,0,.4),
       inset 0 0 30px rgba(255,255,255,.08)
}
h1{
   font-size:26px;
   letter-spacing:1px;
   margin-bottom:15px
}
.clock-glass{
   margin:20px auto;
   width:260px;
   height:260px;
   border-radius:50%;
   display:flex;
   flex-direction:column;
   justify-content:center;
   align-items:center;
   background:rgba(255,255,255,0.08);
```

```
   box-shadow:
       inset 0 0 25px rgba(255,255,255,.2),
       0 0 35px rgba(0,255,255,.3)
}
time{
   font-size:40px;
   letter-spacing:3px;
   font-weight:600
}
#date{
   margin-top:8px;
   font-size:14px;
   opacity:.85
}
#greet{
   margin-top:25px;
   font-size:20px;
   color:#feca57;
   animation:fade .8s ease
}
@keyframes fade{
   from{opacity:0;transform:translateY(10px)}
   to{opacity:1;transform:translateY(0)}
}
</style>
</head>

<body onload="startClock();setTimeout(wish,200)">

<main>
<h1>Welcome</h1>

<div class="clock-glass">
   <time id="clock"></time>
   <div id="date"></div>
</div>

<div id="greet"></div>
</main>

<script>
function updateClock(){
   const d=new Date()
   let h=d.getHours(),m=d.getMinutes(),s=d.getSeconds()
   h=h<10?"0"+h:h
   m=m<10?"0"+m:m
   s=s<10?"0"+s:s
   document.getElementById("clock").innerText=h+":"+m+":"+s
   document.getElementById("date").innerText=d.toDateString()
```

```
}

function startClock(){
   updateClock()
   setInterval(updateClock,1000)
}

function wish(){
   const h=new Date().getHours()
   let g=""
   if(h>=5&&h<12)g="Good Morning"
   else if(h>=12&&h<17)g="Good Afternoon"
   else if(h>=17&&h<21)g="Good Evening"
   else g="Good Night"
   alert(g)
   document.getElementById("greet").innerText=g
}
</script>

</body>
</html>
```

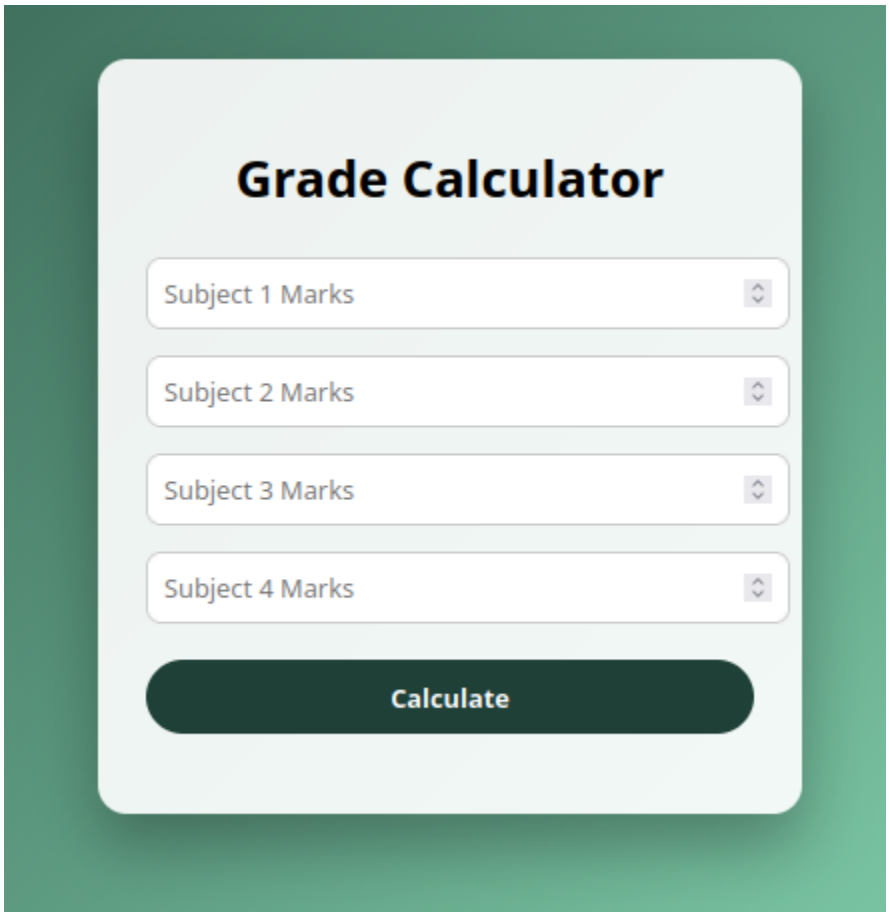


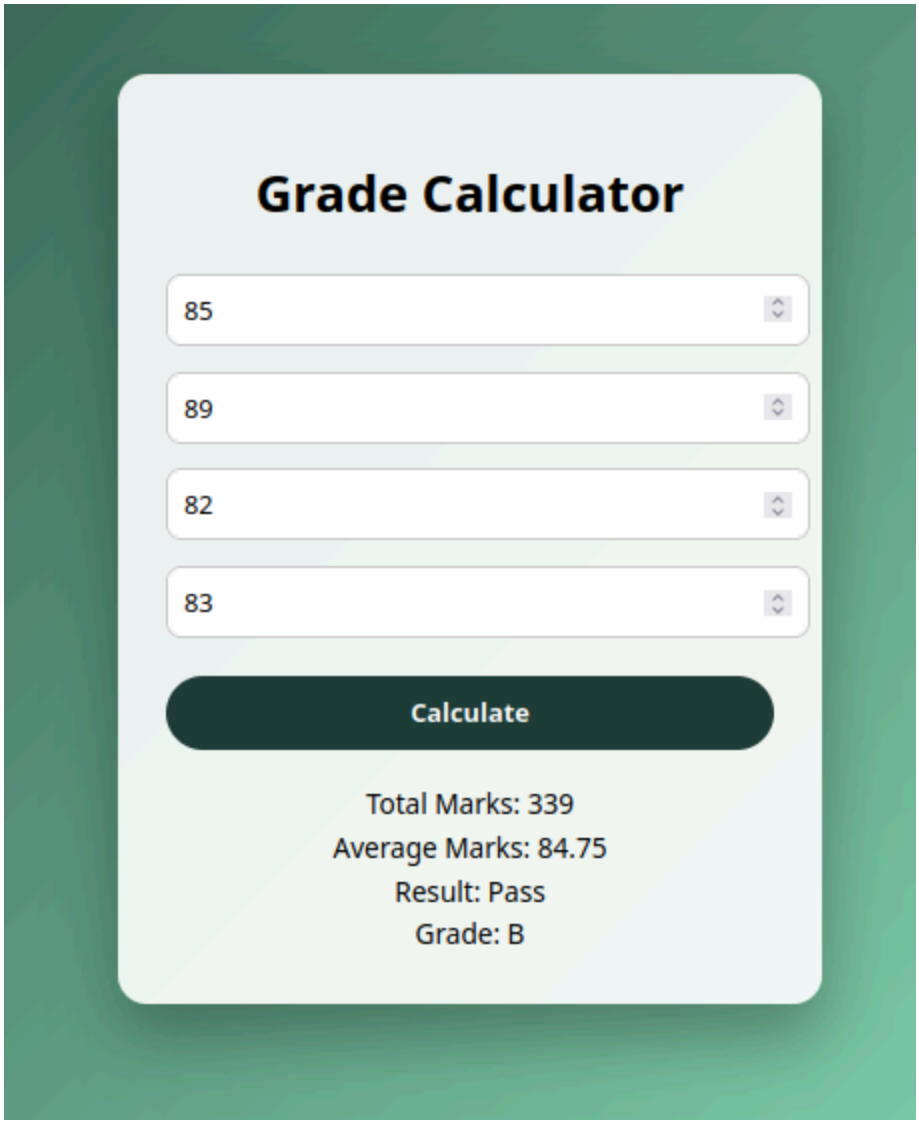
3) Write the java script program to display the grade [A, B,C,D] based on the marks entered by student(take the input into text boxes). Enter the marks of 4 subjects and calculate the average(using button). If the avg>90 then A, avg>80 then B, if avg>70 then C, if avg>60 then D.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>Student Grade Calculator</title>

<style>
body{
   margin:0;
   height:100vh;
   background:linear-gradient(135deg,#1f4037,#99f2c8);
   display:flex;
   justify-content:center;
   align-items:center;
   font-family:Segoe UI,sans-serif
}
main{
   width:380px;
   padding:30px;
   background:rgba(255,255,255,0.9);
   border-radius:18px;
   box-shadow:0 20px 40px rgba(0,0,0,.3);
   text-align:center
}
h1{
   margin-bottom:20px
}
input{
   width:100%;
   padding:10px;
   margin:8px 0;
   border-radius:8px;
   border:1px solid #ccc;
   font-size:16px
}
button{
   width:100%;
   padding:12px;
   margin-top:15px;
   border:none;
   border-radius:25px;
   background:#1f4037;
   color:white;
   font-size:16px;
```

```
   font-weight:bold;
   cursor:pointer
}
button:hover{
   opacity:.9
}
.result{
   margin-top:20px;
   font-size:17px;
   line-height:1.6
}
</style>
</head>

<body>

<main>
<h1>Grade Calculator</h1>

<input type="number" id="m1" placeholder="Subject 1 Marks">
<input type="number" id="m2" placeholder="Subject 2 Marks">
<input type="number" id="m3" placeholder="Subject 3 Marks">
<input type="number" id="m4" placeholder="Subject 4 Marks">

<button onclick="calculate()">Calculate</button>

<div class="result" id="output"></div>
</main>

<script>
function calculate(){
   let m1=Number(document.getElementById("m1").value)
   let m2=Number(document.getElementById("m2").value)
   let m3=Number(document.getElementById("m3").value)
   let m4=Number(document.getElementById("m4").value)

   let total=m1+m2+m3+m4
   let avg=total/4
   let grade=""
   let status=""

   if(avg>90) grade="A"
   else if(avg>80) grade="B"
   else if(avg>70) grade="C"
   else if(avg>60) grade="D"
   else grade="Nil"

   status = avg>60 ? "Pass" : "Fail"
```

```
   document.getElementById("output").innerHTML =
   "Total Marks: " + total + "<br>" +
   "Average Marks: " + avg.toFixed(2) + "<br>" +
   "Result: " + status + "<br>" +
   "Grade: " + grade;

}
</script>

</body>
</html>
```





4) Write the JavaScript program to show the below output.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>Color Selector</title>

<style>
body{
   font-family:Arial, sans-serif;
   padding:20px
}
.box{
   width:300px;
   height:150px;
```

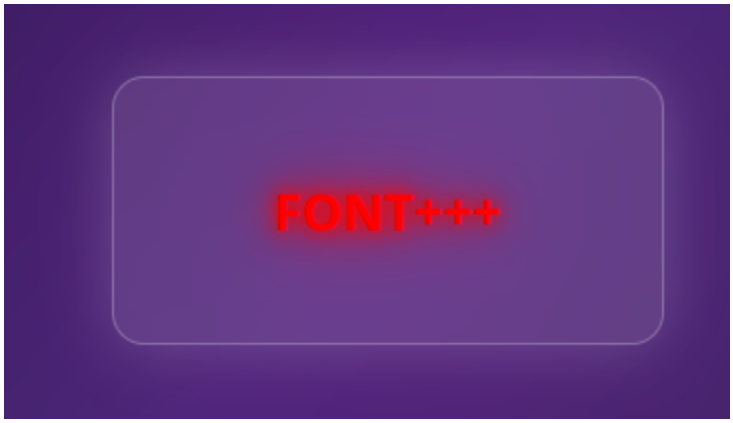
```
   border:2px solid #000;
   margin-top:20px;
   background:red
}
</style>
</head>

<body>

<form>
<input type="radio" name="color" onclick="changeColor('red')" checked> Red<br>
<input type="radio" name="color" onclick="changeColor('green')"> Green<br>
<input type="radio" name="color" onclick="changeColor('blue')"> Blue
</form>

<div class="box" id="colorBox"></div>

<script>
function changeColor(color){
   document.getElementById("colorBox").style.backgroundColor = color
}
</script>

</body>
</html>
```

ADDITIONAL QUESTIONS

1) Write a JavaScript code that displays text “FONT+++” with increasing font size in the interval of 200ms in RED COLOR, when the font size reaches 40pt it displays “FONT---” in BLUE color. Then the font size decreases to 5pt.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>FONT GLOW</title>

<style>
   * {
       margin: 0;
       padding: 0;
       box-sizing: border-box;
       font-family: 'Segoe UI', sans-serif;
   }

   body {
       height: 100vh;
       display: flex;
       justify-content: center;
       align-items: center;
       background: linear-gradient(135deg, #0f0c29, #302b63, #24243e);
       overflow: hidden;
   }

   body::before {
       content: "";
       position: absolute;
       width: 200%;
       height: 200%;
       background: radial-gradient(circle, rgba(255,0,255,0.2), transparent 40%);
       animation: spin 10s linear infinite;
   }

   @keyframes spin {
       from { transform: rotate(0deg); }
       to { transform: rotate(360deg); }
   }

   .glass {
       position: relative;
       padding: 60px 100px;
       border-radius: 20px;
```

```
        background: rgba(255, 255, 255, 0.12);
        backdrop-filter: blur(20px);
        border: 1px solid rgba(255, 255, 255, 0.25);
        box-shadow: 0 0 40px rgba(255,255,255,0.2);
        z-index: 1;
    }

    #text {
        font-size: 5pt;
        font-weight: bold;
        color: red;
        text-shadow:
            0 0 10px currentColor,
            0 0 20px currentColor,
            0 0 40px currentColor;
        transition: color 0.3s;
    }
</style>
</head>

<body>

<div class="glass">
    <div id="text">FONT+++</div>
</div>

<script>
    let size = 5;
    let growing = true;
    const text = document.getElementById("text");

    setInterval(() => {
        if (growing) {
            size++;
            text.textContent = "FONT+++";
            text.style.color = "red";
            if (size >= 40) growing = false;
        } else {
            size--;
            text.textContent = "FONT---";
            text.style.color = "deepskyblue";
            if (size <= 5) growing = true;
        }
        text.style.fontSize = size + "pt";
    }, 200);
</script>

</body>
</html>
```



2) Write a JavaScript to design a simple calculator to perform the following operations: sum, product, difference and quotient.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title> Calculator</title>

<style>
   * {
       margin: 0;
       padding: 0;
       box-sizing: border-box;
       font-family: Arial, Helvetica, sans-serif;
   }

   body {
       height: 100vh;
       display: flex;
       justify-content: center;
       align-items: center;
       background: linear-gradient(135deg, #020024, #090979, #00d4ff);
       overflow: hidden;
```

```
}

body::before {
    content: "";
    position: absolute;
    width: 200%;
    height: 200%;
    background: radial-gradient(circle, rgba(255,0,255,0.25), transparent 40%);
    animation: rotate 12s linear infinite;
}

@keyframes rotate {
    from { transform: rotate(0deg); }
    to { transform: rotate(360deg); }
}

.calculator {
    position: relative;
    width: 320px;
    padding: 30px;
    border-radius: 20px;
    background: rgba(255, 255, 255, 0.15);
    backdrop-filter: blur(20px);
    border: 1px solid rgba(255,255,255,0.3);
    box-shadow: 0 0 40px rgba(0,255,255,0.6);
    z-index: 1;
    text-align: center;
}

.calculator h2 {
    color: white;
    margin-bottom: 20px;
    text-shadow: 0 0 10px cyan;
}

input {
    width: 100%;
    padding: 12px;
    margin: 10px 0;
    border: none;
    outline: none;
    border-radius: 10px;
    font-size: 16px;
    background: rgba(255,255,255,0.2);
    color: white;
    box-shadow: 0 0 10px rgba(0,255,255,0.4);
}

input::placeholder {
```

```
        color: #ddd;
    }

    .buttons {
        display: grid;
        grid-template-columns: repeat(2, 1fr);
        gap: 10px;
        margin-top: 15px;
    }

    button {
        padding: 12px;
        border: none;
        border-radius: 12px;
        font-size: 16px;
        cursor: pointer;
        color: white;
        background: linear-gradient(135deg, #ff00cc, #3333ff);
        box-shadow: 0 0 15px rgba(255,0,255,0.7);
        transition: transform 0.2s, box-shadow 0.2s;
    }

    button:hover {
        transform: scale(1.05);
        box-shadow: 0 0 25px rgba(0,255,255,1);
    }

    .result {
        margin-top: 20px;
        padding: 12px;
        font-size: 18px;
        color: cyan;
        border-radius: 10px;
        background: rgba(0,0,0,0.3);
        box-shadow: 0 0 20px cyan;
        min-height: 40px;
    }
</style>
</head>

<body>

<div class="calculator">
    <h2>Calculator</h2>

    <input type="number" id="num1" placeholder="Enter first number">
    <input type="number" id="num2" placeholder="Enter second number">

    <div class="buttons">
```

```
        <button onclick="sum()">Sum</button>
        <button onclick="difference()">Difference</button>
        <button onclick="product()">Product</button>
        <button onclick="quotient()">Quotient</button>
    </div>

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

<script>
    function getValues() {
        const a = parseFloat(document.getElementById("num1").value);
        const b = parseFloat(document.getElementById("num2").value);
        return { a, b };
    }

    function sum() {
        const { a, b } = getValues();
        document.getElementById("result").textContent = "Sum = " + (a + b);
    }

    function difference() {
        const { a, b } = getValues();
        document.getElementById("result").textContent = "Difference = " + (a - b);
    }

    function product() {
        const { a, b } = getValues();
        document.getElementById("result").textContent = "Product = " + (a * b);
    }

    function quotient() {
        const { a, b } = getValues();
        document.getElementById("result").textContent =
            b !== 0 ? "Quotient = " + (a / b) : "Cannot divide by zero";
    }
</script>

</body>
</html>
```


Calculator
Enter first number
Enter second number
Sum
Difference
Product
Quotient
Result


Calculator
2
3
Sum
Difference
Product
Quotient
Sum = 5


Calculator
2
3
Sum
Difference
Product
Quotient
Difference = -1


Calculator
2
3
Sum
Difference
Product
Quotient
Product = 6


Calculator
2
3
Sum
Difference
Product
Quotient
Quotient =
0.6666666666666666