WEB-BASED INTERFACE DESIGN

(CSF 3133)


LAB REPORT 6

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DATE   **: 3 DECEMBER 2025**

GROUP   **: K4**

**PROGRAMME**   **: COMPUTER SCIENCE (SOFTWARE ENGINEERING)**

6.3 Basic Javascript
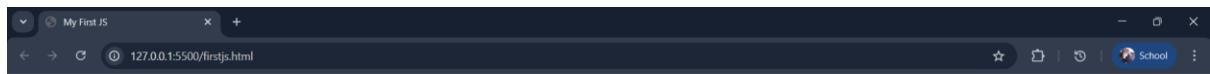
6.4 getElementById()
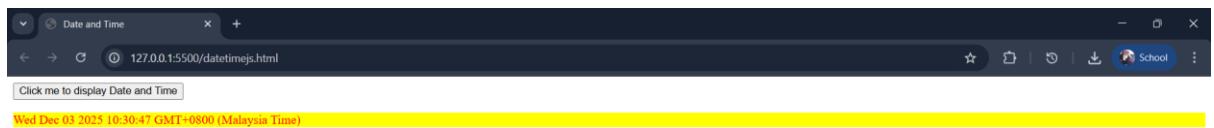
6.5 Date and Time

Wed Dec 03 2025 10:18:59 GMT+0800 (Malaysia Time)

After add scripts

Wed Dec 03 2025 10:30:47 GMT+0800 (Malaysia Time)
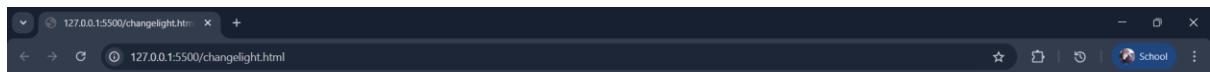
6.6 Change HTML Attribute Values
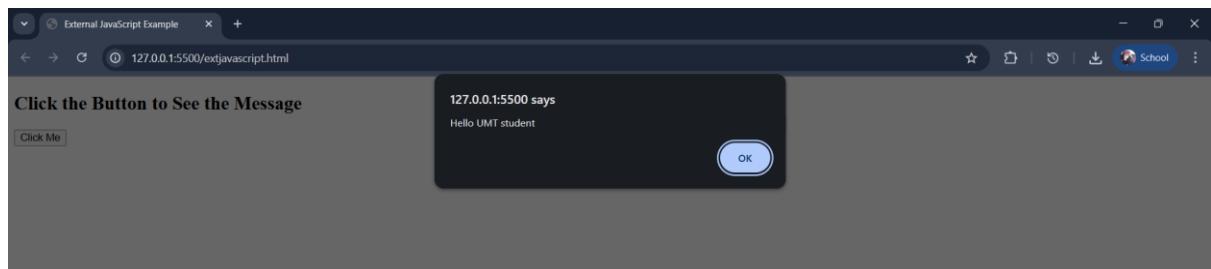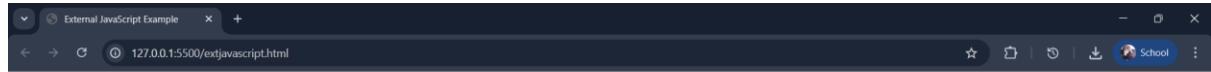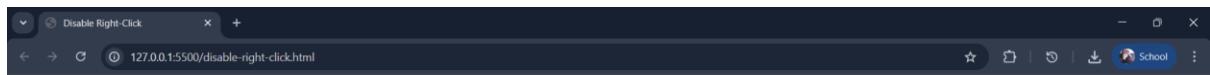
6.7 Link to file Javascript (*.js)

6.7.3 External References
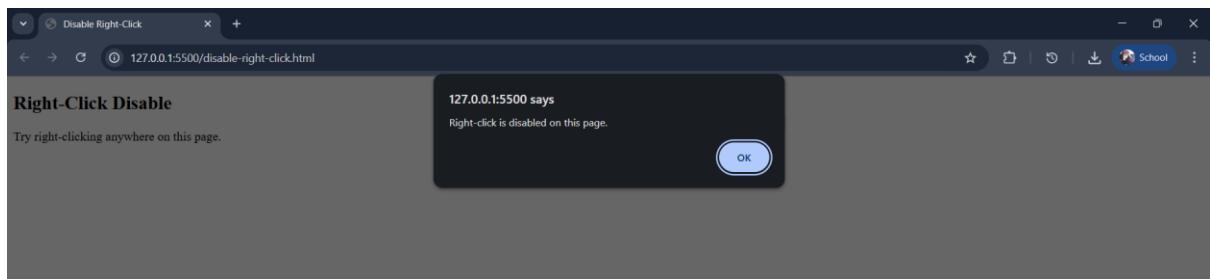
6.8 Working with events

6.9 Multiplication Table

Multiplication Table Generator

Enter number of rows: 3
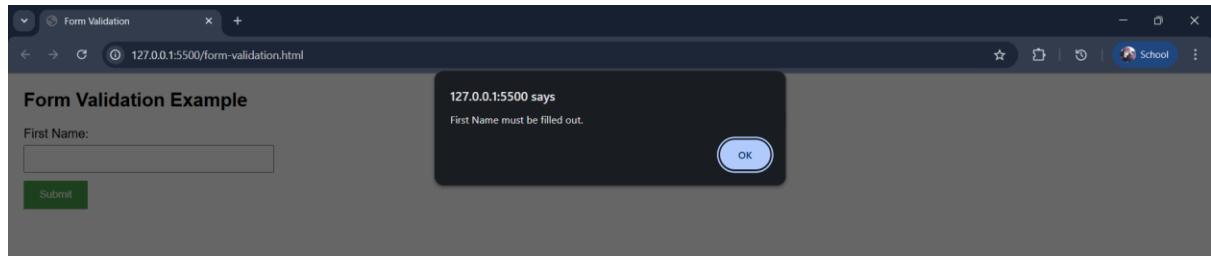
Enter number of columns: 5

Generate Table

1	2	3	4	5
2	4	6	8	10
3	6	9	12	15

6.10 Client-side validation

6.10.1 Form Validation

Case 1:
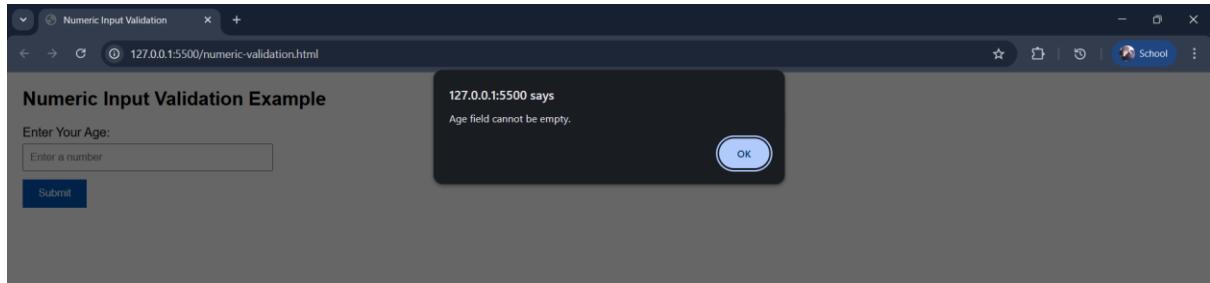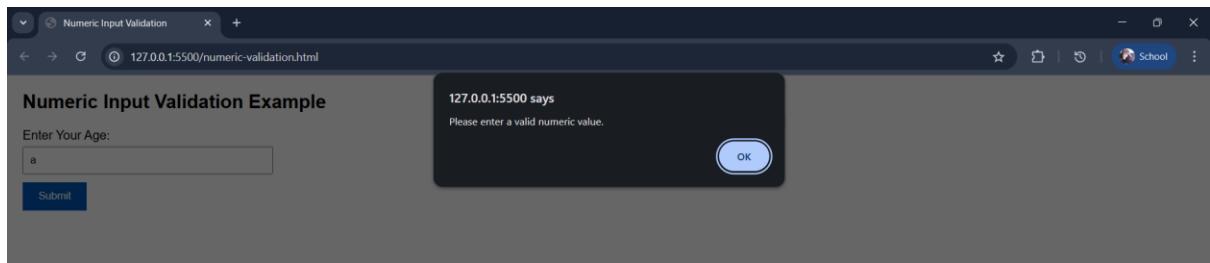
Case 2:

6.10.2 Numeric Input Validation
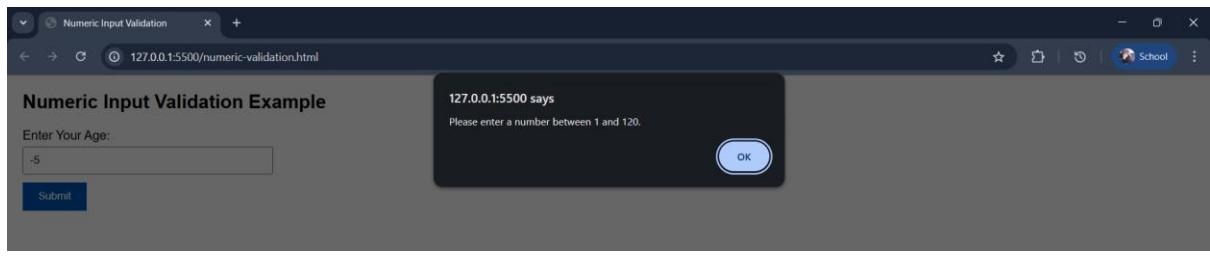
Case 1:
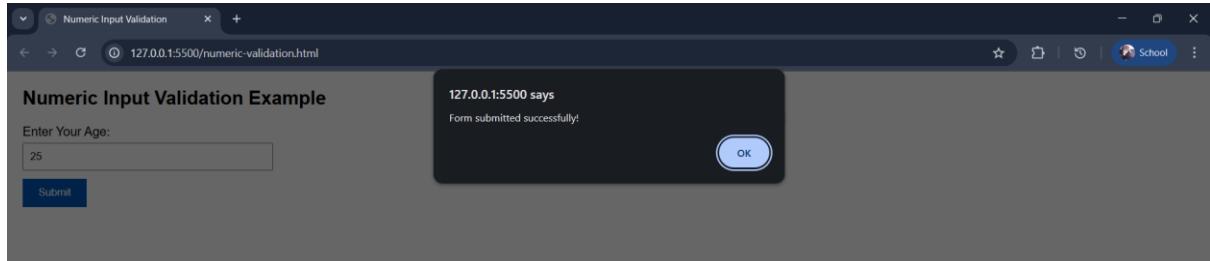
Case 2:

Case 3:
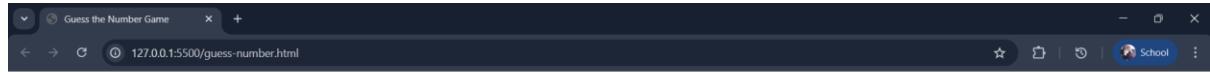
Case 4:

6.11 Math Function
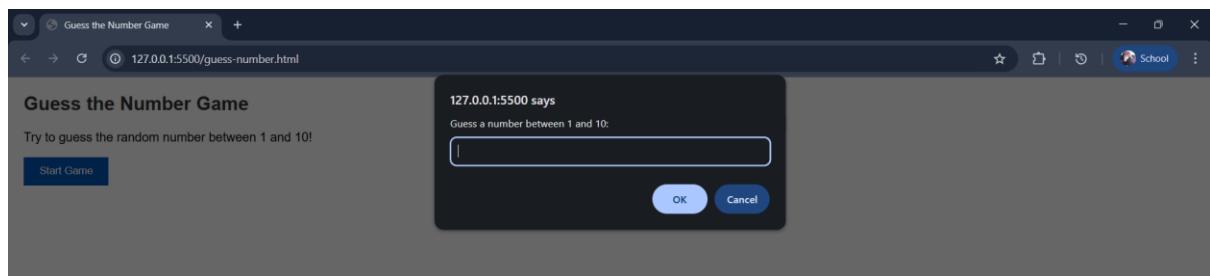
6.11.1 Guess a Number
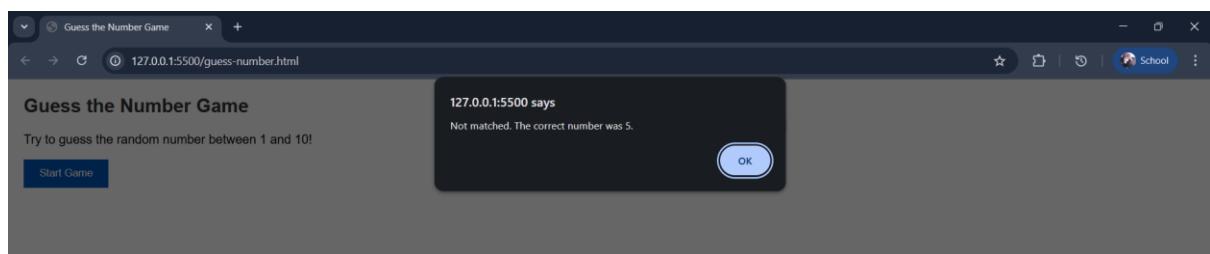
6.12 Lab Exercise 6

index.html

```html
<> index.html > ...
  1  <!DOCTYPE html>
  2  <html lang="en">
  3
  4  <head>
  5      <meta charset="UTF-8">
  6      <meta name="viewport" content="width=device-width, initial-scale=1.0">
  7      <title>Quiz Application</title>
  8      <link rel="stylesheet" href="style.css">
  9  </head>
 10
 11  <body>
 12      <!-- header that introduces quiz -->
 13      <header>
 14          Welcome to Quiz!
 15      </header>
 16
 17      <!-- Start Screen -->
 18      <div id="start-screen" style="text-align:center; margin-top:40px;">
 19          <button id="start-btn" style="
 20          padding: 15px 30px;
 21          font-size: 20px;
 22          background:█#4a76e5;
 23          color:█white;
 24          border:none;
 25          border-radius:10px;
 26          cursor:pointer;">
 27              Start Quiz
 28          </button>
 29      </div>
 30
 31      <!-- section to display questions, answer options, and timer -->
 32      <div id="content" style="display:none;">
 33
 34          <div id="quiz-container">
 35
 36              <div id="timer">
 37                  Time Left: <span id="time">10</span>s
```

```html
 38              </div>
 39
 40              <div id="question"></div>
 41
 42              <div id="options"></div>
 43
 44              <!-- section to show feedback (correct/incorrect) after each answer -->
 45              <div id="feedback"></div>
 46              <!-- button to submit answer and navigate between questions -->
 47              <button id="next-btn" disabled>Next Question</button>
 48
 49          </div>
 50
 51          <!-- footer to display user's score after finishing the quiz -->
 52          <footer>
 53              <div id="score"></div>
 54          </footer>
 55
 56          <script src="script.js"></script>
 57
 58  </body>
 59
 60  </html>
```

style.css

```css
# style.css > ...
 1   body {
 2       font-family: Arial, sans-serif;
 3       background: #f4f6f9;
 4       margin: 0;
 5       padding: 0;
 6   }
 7
 8   /* Header */
 9   header {
10       background-color: #4a76e5;
11       color: white;
12       text-align: center;
13       padding: 20px 0;
14       font-size: 28px;
15       font-weight: bold;
16   }
17
18   /* ---------------------------------
19      START SCREEN
20   --------------------------------- */
21   #start-screen {
22       text-align: center;
23       margin-top: 80px;
24   }
25
26   #start-btn {
27       padding: 15px 35px;
28       font-size: 22px;
29       background: #4a76e5;
30       color: white;
31       border: none;
32       border-radius: 10px;
33       cursor: pointer;
34       transition: 0.25s;
35       font-weight: bold;
36       box-shadow: 0 4px 10px rgba(0, 0, 0, 0.12);
37   }
```

```css
38
39   #start-btn:hover {
40       background: #3b5ec3;
41       transform: translateY(-2px);
42   }
43
44   /* Hide quiz before start */
45   #content {
46       display: none;
47   }
48
49   /* ---------------------------------
50      QUIZ CONTENT
51   --------------------------------- */
52   #content {
53       width: 80%;
54       max-width: 700px;
55       margin: 30px auto;
56       background: #ffffff;
57       padding: 25px;
58       border-radius: 12px;
59       box-shadow: 0 4px 12px rgba(0, 0, 0, 0.1);
60   }
61
62   /* Timer */
63   #timer {
64       font-size: 20px;
65       margin-bottom: 15px;
66       text-align: right;
67       color: #444;
68       font-weight: bold;
69   }
70
71   /* Question */
72   #question {
73       font-size: 22px;
74       font-weight: bold;
```

```css
 75        margin-bottom: 20px;
 76    }
 77
 78    /* Options */
 79    .option {
 80        padding: 12px 15px;
 81        margin: 10px 0;
 82        background: #eaeaea;
 83        border-radius: 8px;
 84        cursor: pointer;
 85        transition: 0.25s;
 86        font-size: 18px;
 87    }
 88
 89    .option:hover {
 90        background: #dcdcdc;
 91    }
 92
 93    /* Highlighting */
 94    .correct {
 95        background-color: #c8f7c5 !important;
 96        border-left: 6px solid #36b44c;
 97    }
 98
 99    .incorrect {
100        background-color: #f7c5c5 !important;
101        border-left: 6px solid #d93025;
102    }
103
104    /* Disabled options */
105    .option.disabled {
106        pointer-events: none;
107        opacity: 0.55;
108    }
109
110    /* Feedback text */
```

```css
111    #feedback {
112        margin-top: 15px;
113        font-size: 20px;
114        font-weight: bold;
115    }
116
117    /* Buttons */
118    #next-btn,
119    #finish-btn {
120        width: 100%;
121        padding: 12px;
122        font-size: 18px;
123        margin-top: 20px;
124        border: none;
125        border-radius: 8px;
126        cursor: pointer;
127        transition: 0.25s;
128    }
129
130    /* Next button */
131    #next-btn:disabled {
132        background: #b1b1b1;
133        color: #eee;
134        cursor: not-allowed;
135    }
136
137    #next-btn:not(:disabled) {
138        background: #4a76e5;
139        color: white;
140    }
141
142    #next-btn:not(:disabled):hover {
143        background: #3b5ec3;
144    }
145
146    /* Score section */
147    footer {
```

```css
148        margin-top: 25px;
149        text-align: center;
150        font-size: 20px;
151        font-weight: bold;
152    }
```

script.js

```javascript
// Questions Array
let questions = [
    {
        question: "What is 2 + 2?",
        options: ["3", "4", "5"],
        answer: "4"
    },
    {
        question: "Capital of France?",
        options: ["Paris", "London", "Berlin"],
        answer: "Paris"
    },
    {
        question: "Which planet is known as the Red Planet?",
        options: ["Mars", "Jupiter", "Venus"],
        answer: "Mars"
    },
    {
        question: "Who wrote 'Romeo and Juliet'?",
        options: ["William Shakespeare", "Charles Dickens", "Leo Tolstoy"],
        answer: "William Shakespeare"
    },
    {
        question: "What is the largest ocean on Earth?",
        options: ["Atlantic Ocean", "Indian Ocean", "Pacific Ocean"],
        answer: "Pacific Ocean"
    },
    {
        question: "Which element has the chemical symbol 'O'?",
        options: ["Oxygen", "Gold", "Iron"],
        answer: "Oxygen"
    },
    {
        question: "What is the square root of 64?",
        options: ["6", "8", "10"],
        answer: "8"
    },
    {
        question: "Which country is famous for the kangaroo?",
        options: ["Australia", "India", "Brazil"],
        answer: "Australia"
    },
    {
        question: "What is the smallest prime number?",
        options: ["1", "2", "3"],
        answer: "2"
    },
    {
        question: "How many continents are there on Earth?",
        options: ["5", "6", "7"],
        answer: "7"
    }
];

let currentQuestion = 0;
let score = 0;
let timer;
let timeLeft = 10;

// HTML elements
const questionEl = document.getElementById("question");
const optionsEl = document.getElementById("options");
const feedbackEl = document.getElementById("feedback");
const nextBtn = document.getElementById("next-btn");
const timeEl = document.getElementById("time");
const scoreEl = document.getElementById("score");

// Start button + screen
const startScreen = document.getElementById("start-screen");
const startBtn = document.getElementById("start-btn");
const content = document.getElementById("content");

// shuffleQuestions()
```
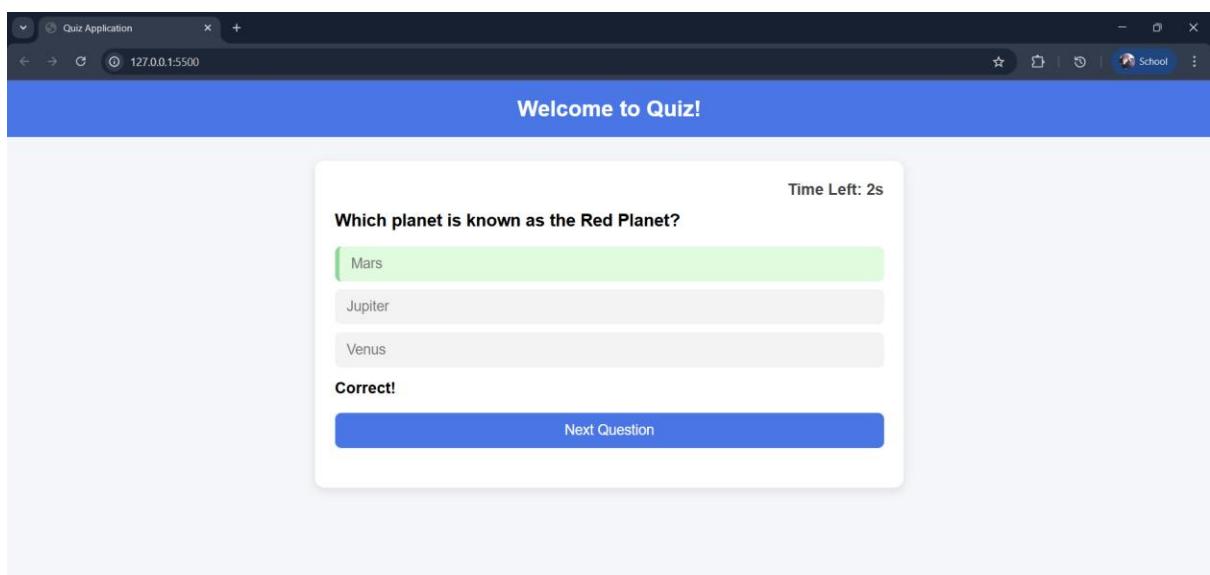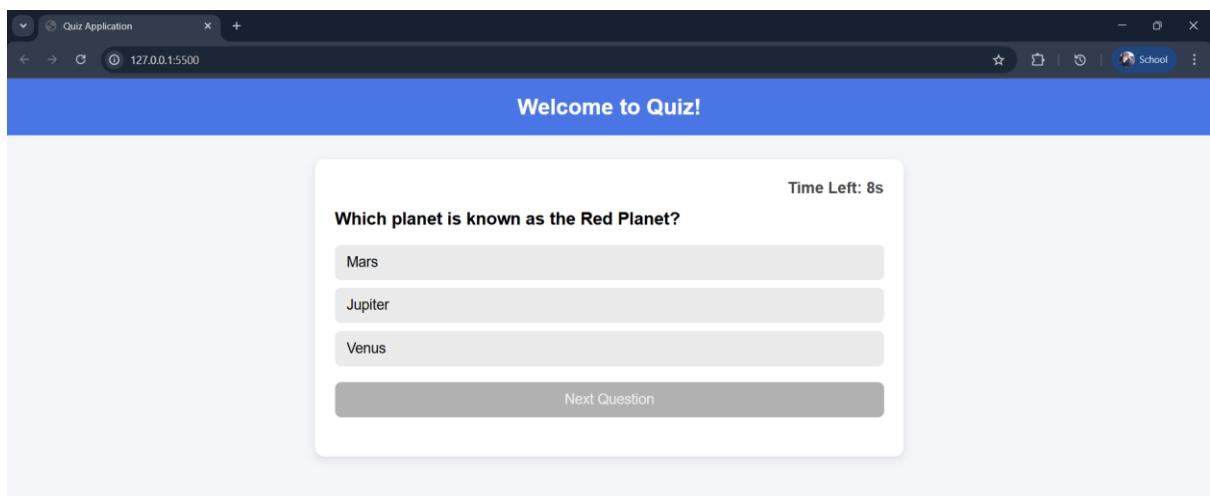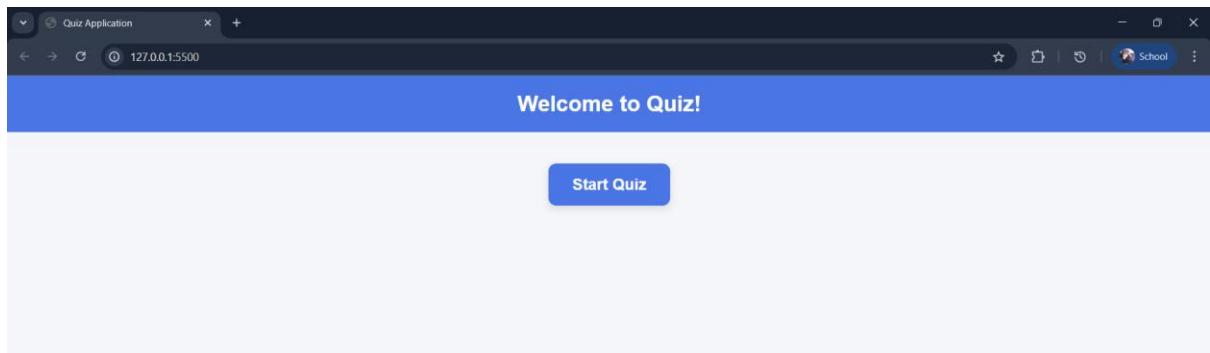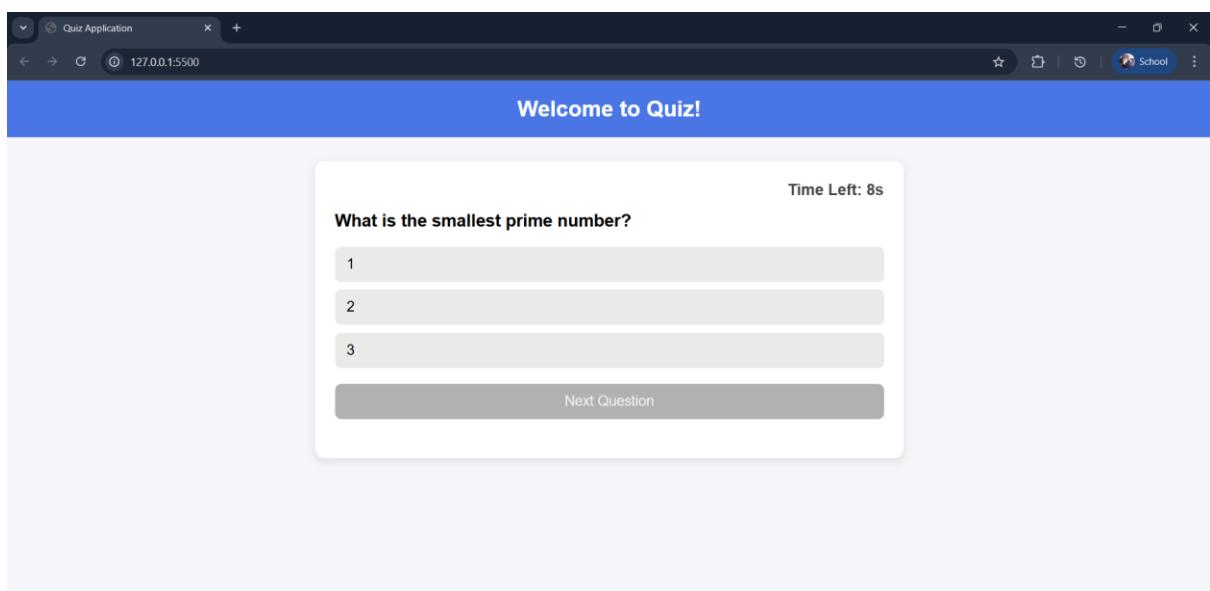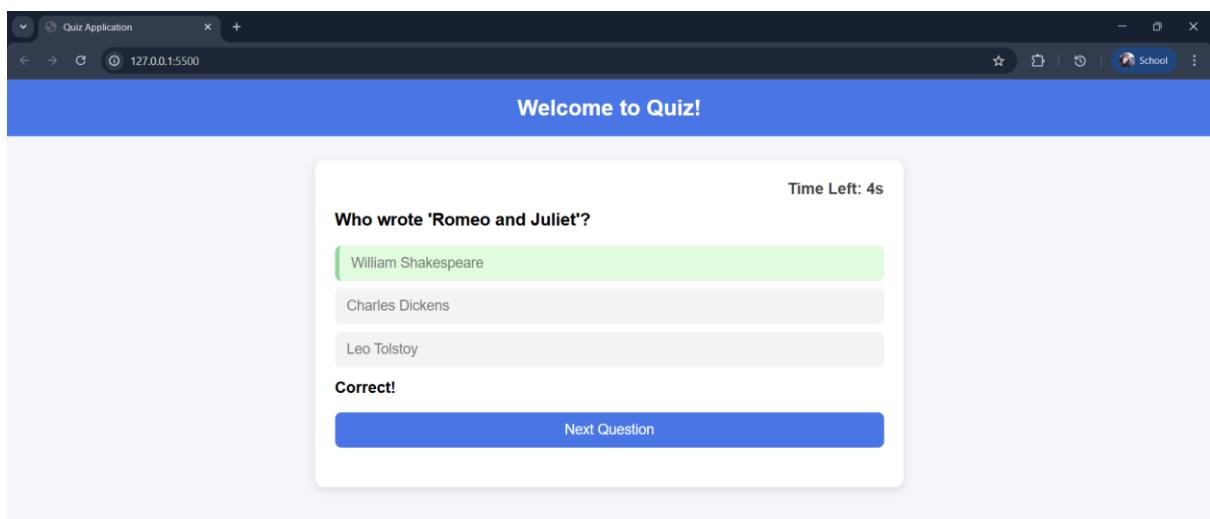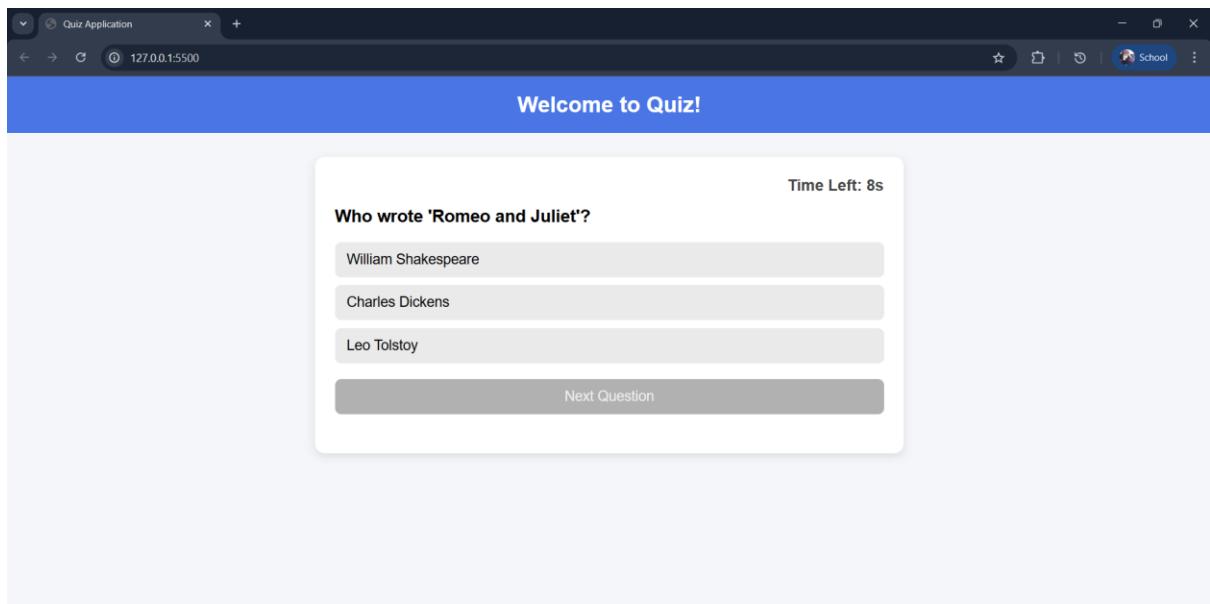
```javascript
74   function shuffleQuestions() {
75       questions = questions.sort(() => Math.random() - 0.5);
76   }
77
78   // startTimer()
79   function startTimer() {
80       timeLeft = 10;
81       timeEl.textContent = timeLeft;
82
83       timer = setInterval(() => {
84           timeLeft--;
85           timeEl.textContent = timeLeft;
86
87           if (timeLeft <= 0) {
88               clearInterval(timer);
89               lockOptions();
90               feedbackEl.textContent = "Time's up!";
91               nextBtn.disabled = false;
92           }
93       }, 1000);
94   }
95
96   // displayQuestion()
97   function displayQuestion() {
98       resetState();
99
100      const q = questions[currentQuestion];
101      questionEl.textContent = q.question;
102
103      q.options.forEach(opt => {
104          let btn = document.createElement("div");
105          btn.textContent = opt;
106          btn.classList.add("option");
107          btn.onclick = () => checkAnswer(btn, q.answer);
108          optionsEl.appendChild(btn);
109      });
110
```
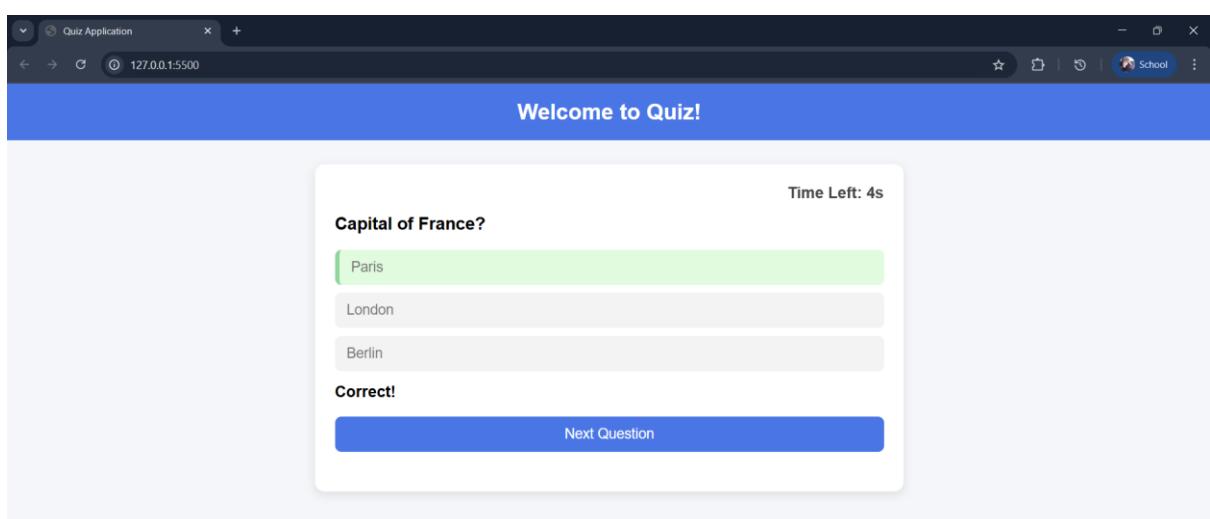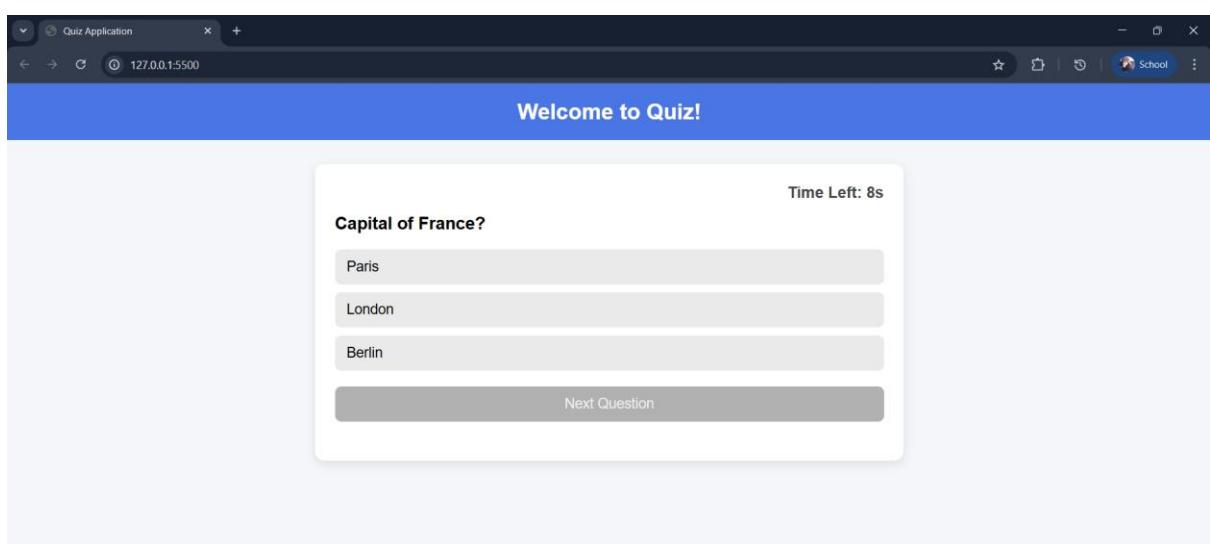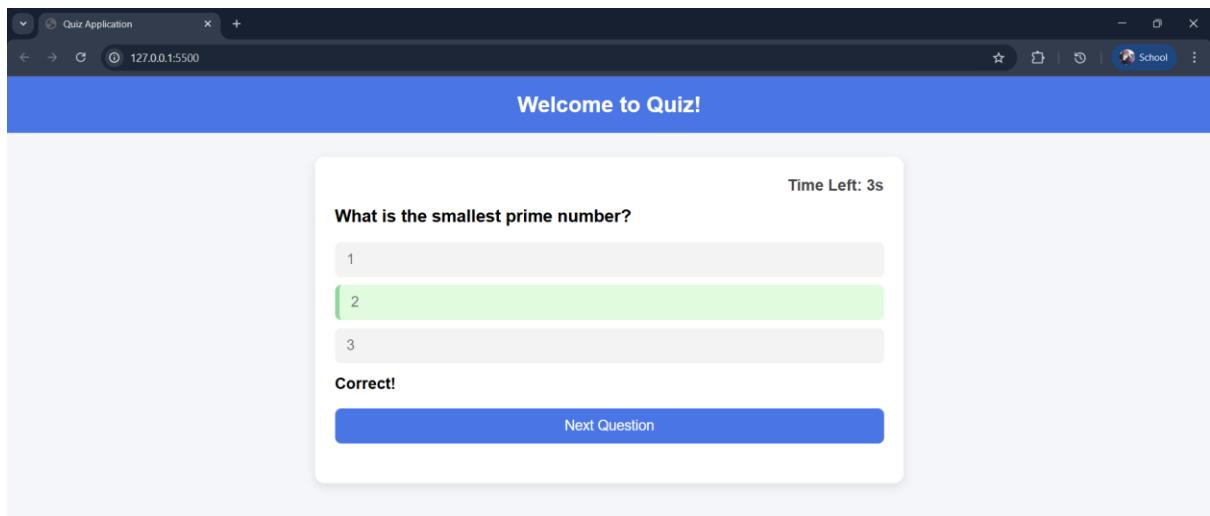
```javascript
111      startTimer();
112  }
113
114  // checkAnswer()
115  function checkAnswer(selectedBtn, correctAnswer) {
116      clearInterval(timer);
117      lockOptions();
118
119      if (selectedBtn.textContent === correctAnswer) {
120          selectedBtn.classList.add("correct");
121          feedbackEl.textContent = "Correct!";
122          score++;
123      } else {
124          selectedBtn.classList.add("incorrect");
125          feedbackEl.textContent = "Incorrect!";
126      }
127
128      nextBtn.disabled = false;
129  }
130
131  // nextQuestion()
132  function nextQuestion() {
133      currentQuestion++;
134
135      if (currentQuestion < questions.length) {
136          displayQuestion();
137      } else {
138          endQuiz();
139      }
140  }
141
142  // startQuiz()
143  function startQuiz() {
144      shuffleQuestions();
145      currentQuestion = 0;
146      score = 0;
```

```javascript
147
148        startScreen.style.display = "none"; // hide start page
149        content.style.display = "block"; // show quiz
150
151        nextBtn.style.display = "block";
152        scoreEl.textContent = "";
153
154        displayQuestion();
155    }
156
157    // Helper functions
158    function resetState() {
159        clearInterval(timer);
160        feedbackEl.textContent = "";
161        optionsEl.innerHTML = "";
162        nextBtn.disabled = true;
163    }
164
165    function lockOptions() {
166        const opts = document.querySelectorAll(".option");
167
168        opts.forEach(btn => {
169            btn.classList.add("disabled");
170
171            if (btn.textContent === questions[currentQuestion].answer) {
172                btn.classList.add("correct");
173            }
174        });
175    }
176
177    // End Quiz
178    function endQuiz() {
179        questionEl.textContent = "Quiz Finished!";
180        optionsEl.innerHTML = "";
181        feedbackEl.textContent = "";
182
183        nextBtn.style.display = "none";
184        scoreEl.textContent = `Your Score: ${score} / ${questions.length}`
185    }
186
187    // Event listeners
188    nextBtn.onclick = nextQuestion;
189    startBtn.onclick = startQuiz;
```

Welcome to Quiz!

Time Left: 8s

Who wrote 'Romeo and Juliet'?

William Shakespeare

Charles Dickens

Leo Tolstoy

Next Question

Welcome to Quiz!

Time Left: 4s

Who wrote 'Romeo and Juliet'?

William Shakespeare

Charles Dickens

Leo Tolstoy

Correct!

Next Question

Welcome to Quiz!

Time Left: 8s

What is the smallest prime number?

1

2

3

Next Question

Welcome to Quiz!

Time Left: 3s

What is the smallest prime number?

1

2

3

Correct!

Next Question

Welcome to Quiz!

Time Left: 8s

Capital of France?

Paris

London

Berlin

Next Question

Welcome to Quiz!

Time Left: 4s

Capital of France?

Paris

London

Berlin

Correct!

Next Question

Welcome to Quiz!

Time Left: 8s

Which element has the chemical symbol 'O'?

Oxygen

Gold

Iron

Next Question

Welcome to Quiz!

Time Left: 4s

Which element has the chemical symbol 'O'?

Oxygen

Gold

Iron

Correct!

Next Question
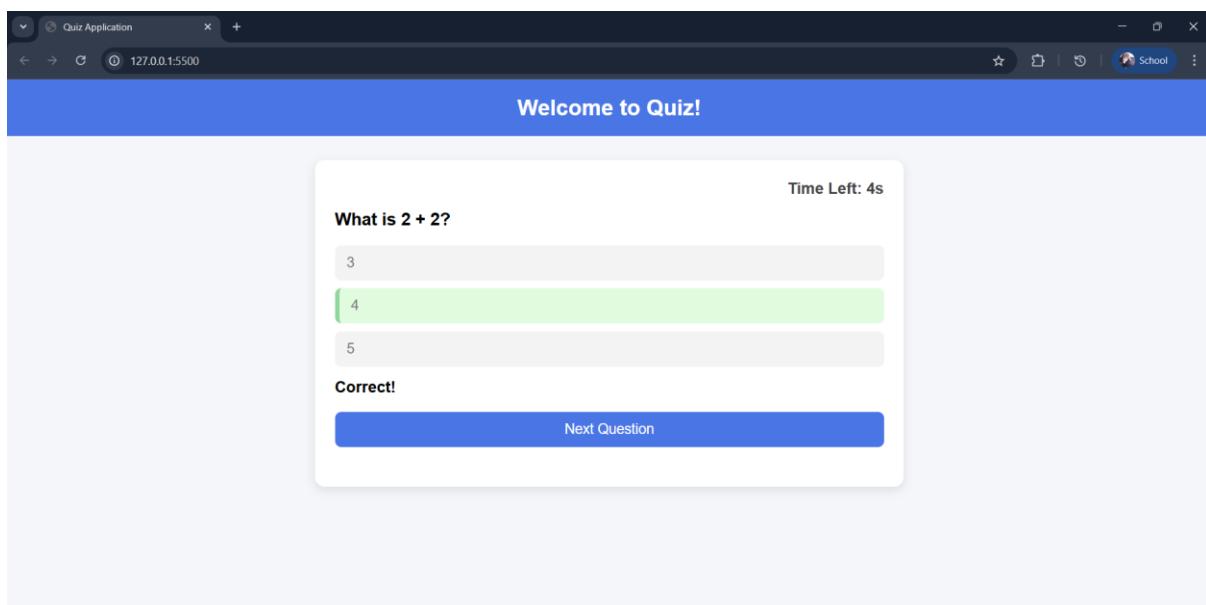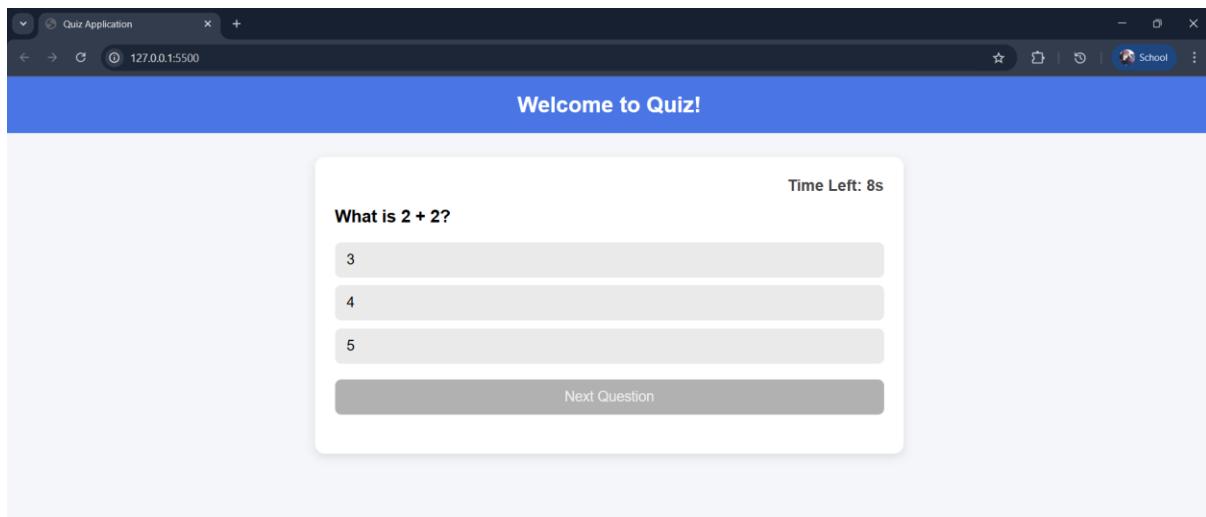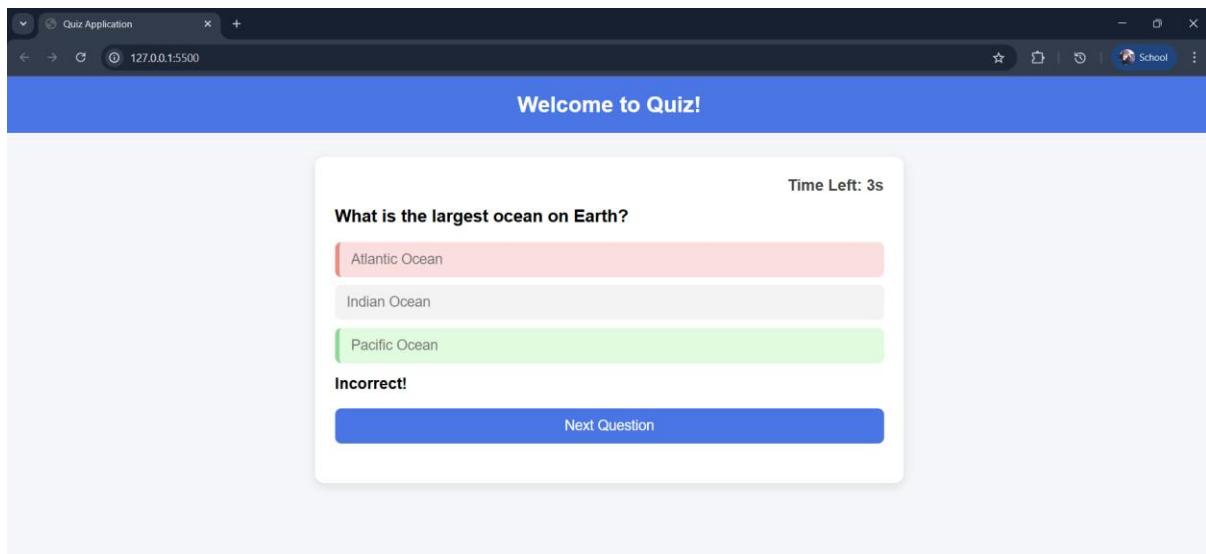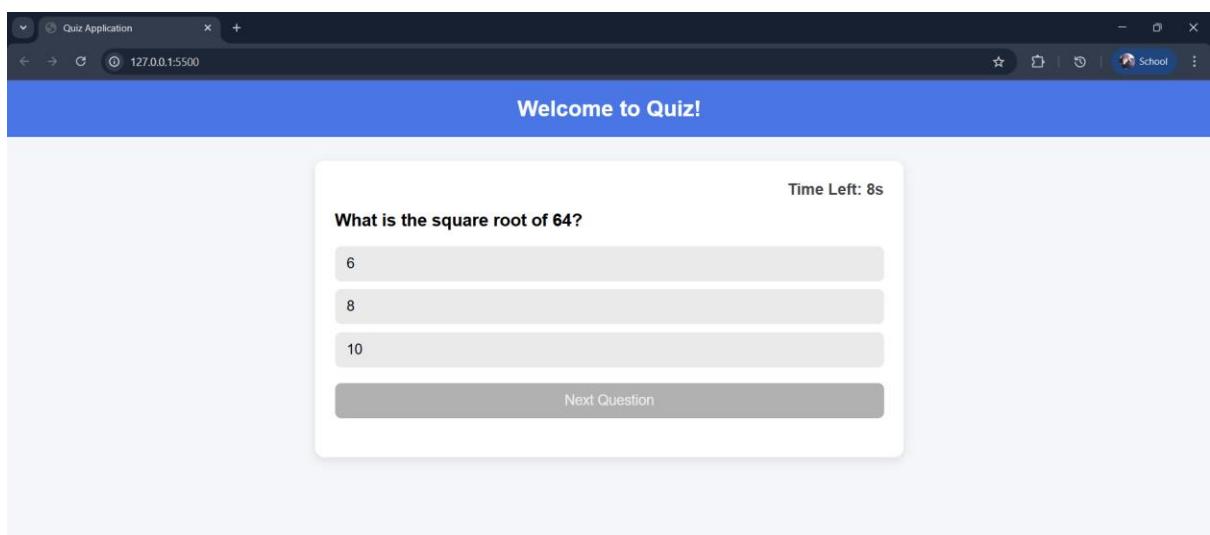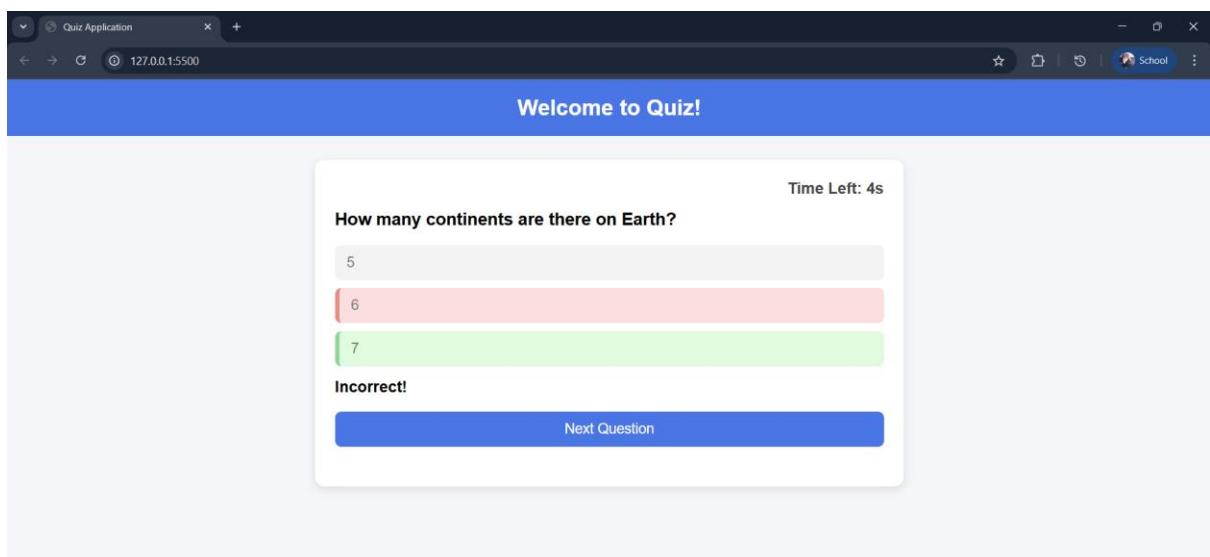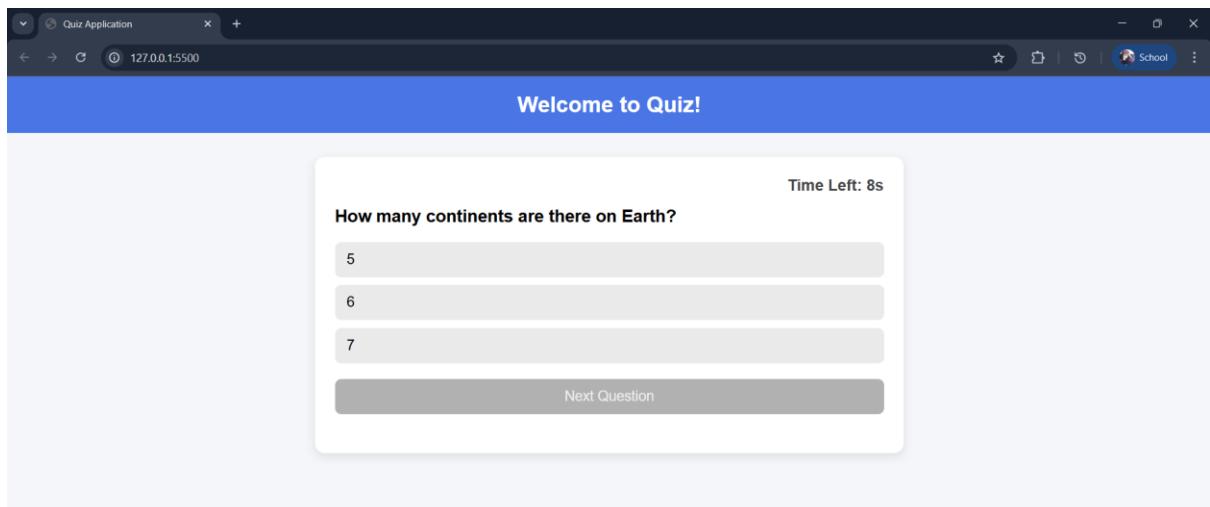
Welcome to Quiz!

Time Left: 8s

What is the largest ocean on Earth?

Atlantic Ocean

Indian Ocean

Pacific Ocean

Next Question

Welcome to Quiz!

Time Left: 3s

What is the largest ocean on Earth?

Atlantic Ocean

Indian Ocean

Pacific Ocean

Incorrect!

Next Question

Welcome to Quiz!

Time Left: 8s

What is 2 + 2?

3

4

5

Next Question

Welcome to Quiz!

Time Left: 4s

What is 2 + 2?

3

4

5

Correct!

Next Question

Welcome to Quiz!

Time Left: 8s

How many continents are there on Earth?

5

6

7

Next Question

Welcome to Quiz!

Time Left: 4s

How many continents are there on Earth?

5

6

7

Incorrect!

Next Question

Welcome to Quiz!

Time Left: 8s

What is the square root of 64?

6

8

10

Next Question

Quiz Application

Welcome to Quiz!

Time Left: 5s

What is the square root of 64?

6

8

10

Correct!

Next Question

Quiz Application

Welcome to Quiz!

Time Left: 8s

Which country is famous for the kangaroo?

Australia

India

Brazil

Next Question

Quiz Application

Welcome to Quiz!

Time Left: 1s

Which country is famous for the kangaroo?

Australia

India

Brazil

Correct!

Next Question

Quiz Application

Welcome to Quiz!

Time Left: 1s

Quiz Finished!

Your Score: 8 / 10