SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

Winter Semester 2024-25

Practice Problem Set 3

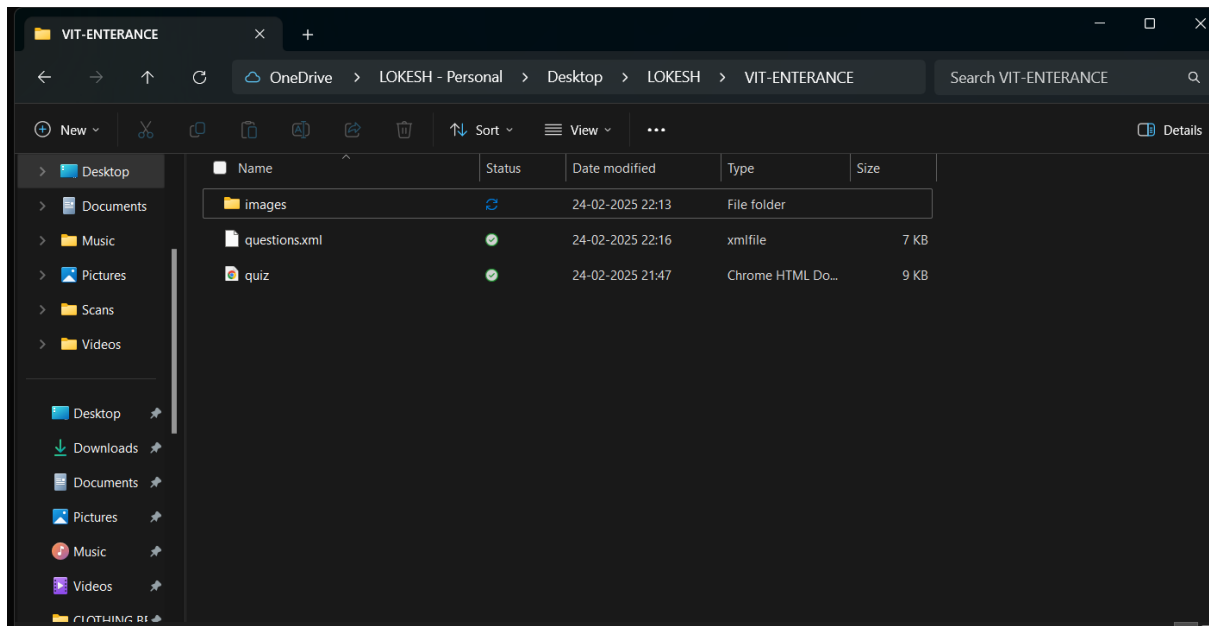|			
SLOT	: L3+L4		
Course Code	: CBS3014	**Programme :** B.Tech.	
Course Name	: Modern Web Applications	**Class Number(s)** : VL2024250505183	
Faculty Name (s)	: Dr Ramesh C		

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## REG.NO: ==22BBS0223==

Question 1:

The quiz is a type of game in which contestants attempt to answer questions as quickly as possible. The quiz is not about arbitrary topics, but rather specific ones. Teachers can organize quiz competitions to assess students' knowledge outside of the curriculum or on any topic. JavaScript is a programming language that facilitates the execution of complex tasks on web pages.

It is a scripting language that facilitates the creation of rich, up-to-date content, such as multimedia, animated images, and graphics. Develop a QUIZ interactive application for VIT entrance test for new budding engineers who wish to join VIT, which supports both PC and mobile interfaces with the following conditions.

- The medium of the questions will be only English.
- The student should use VIT mail id's only can be able to attend the quiz once received from institution, they can login via this email.
- **The First round** will be based upon General Science in which 10 questions will displayed. The duration of this round will be 15 minutes (20 marks).
- **The second round** will be based upon General Knowledge, in which 5 questions will be displayed. The duration of this round will be 15 minutes (10 marks).
- **The Third round** will be of Logo Identification in which 5 logos will be displayed. The duration of this round will be 8 minutes (20).
- Cumulative scores above 9.5 can get admission in Vellore, above 7.5 to 9.4 admitted in Chennai campus, above 6.5 to 7.4 admitted in Amravati campus and below 6 will not be admitted.
- Design an interactive application using HTML, CSS (Bootstrap optional), JavaScript to validate the answers and form inputs and XML.
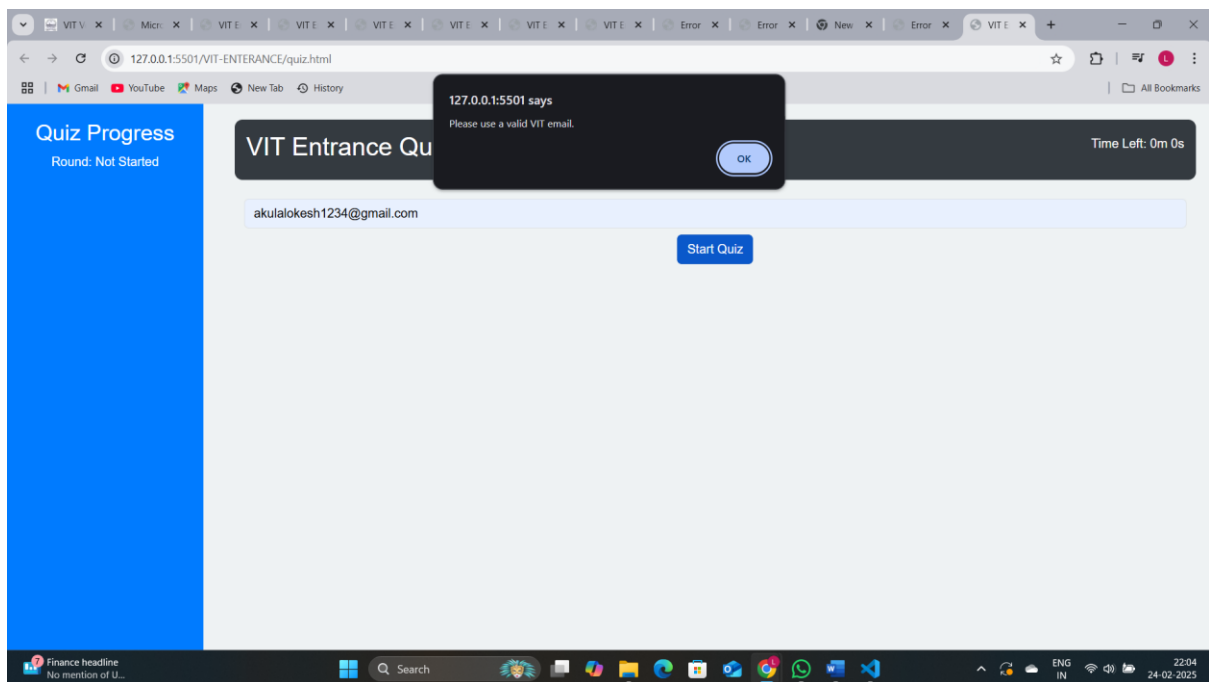
VIT-ENTERANCE REGISTRATION PAGE:
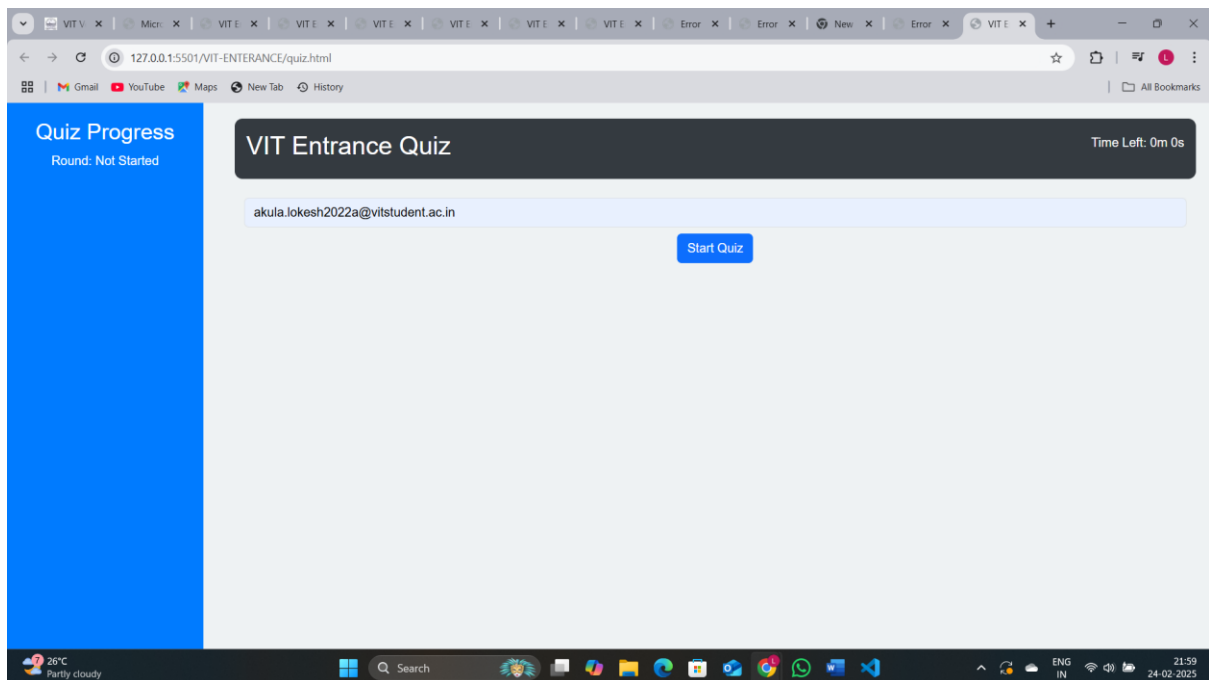
SUCCESSFUL VIT-ENTRANCE COMPLETION PAGE:
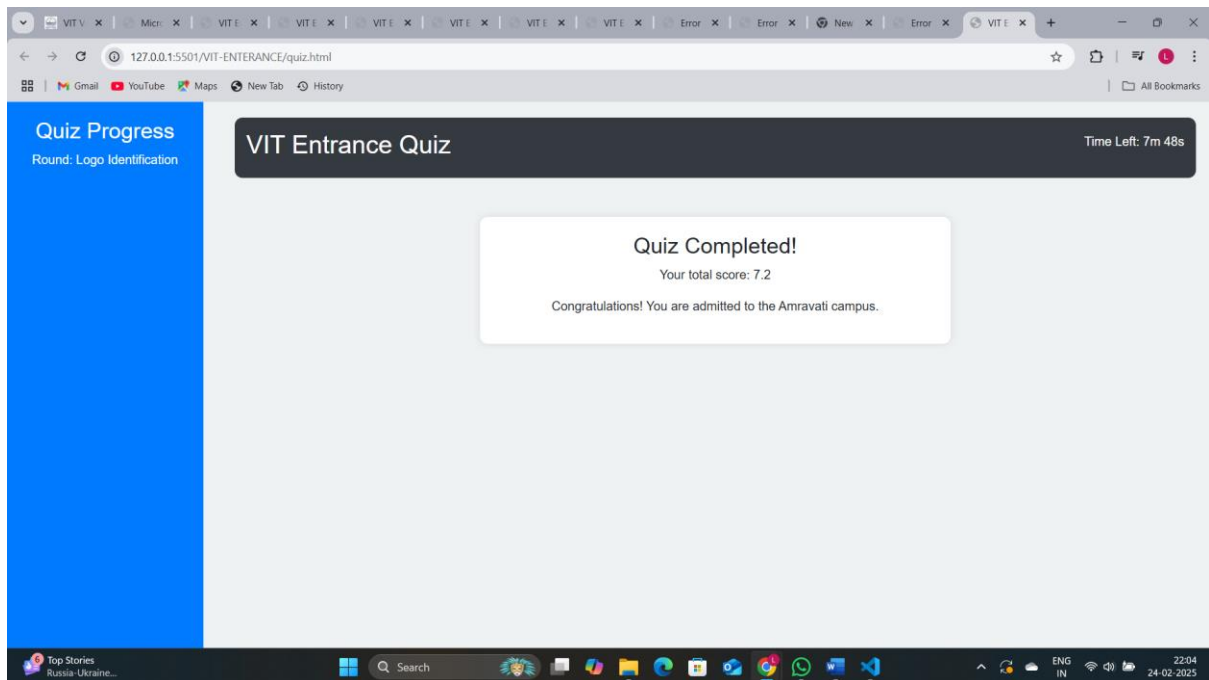
INVALID VIT-ENTRANCE REGISTRATION FORM 1:

DriveLink:

CODE SCREENSHOTS:
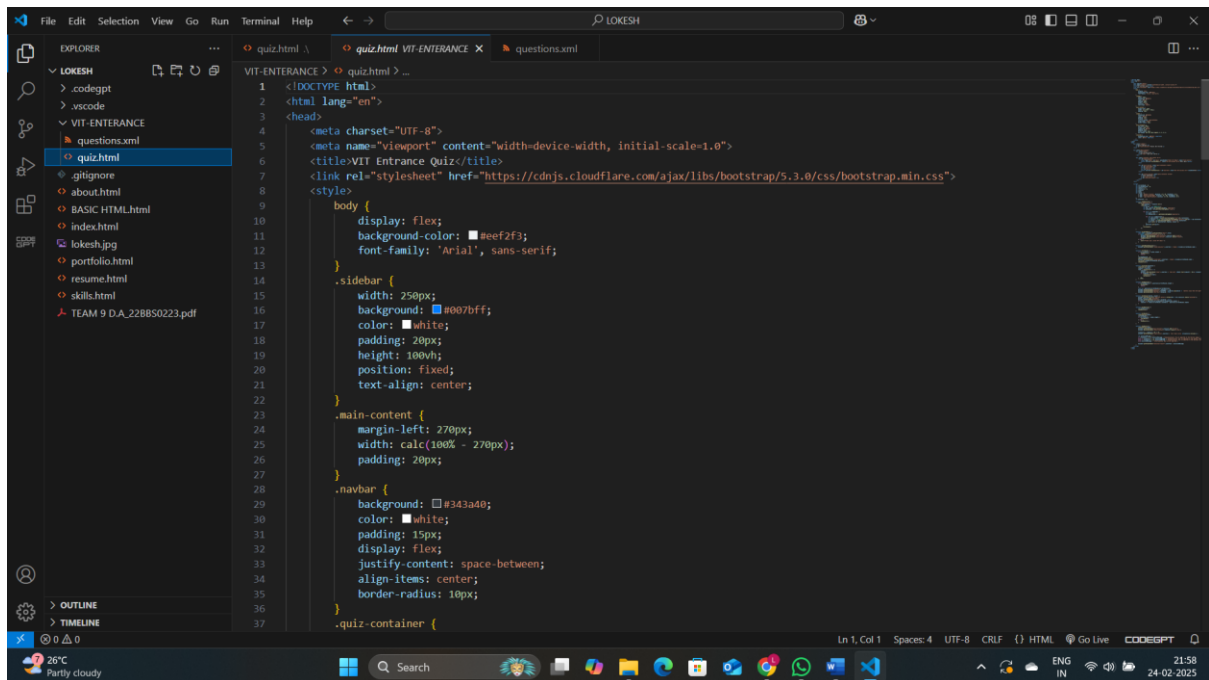
CODES:

Quiz.html:

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>VIT Entrance Quiz</title>
    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/bootstrap/5.3.0/css/bootstrap.min.css">
    <style>
        body {
            display: flex;
            background-color: #eef2f3;
            font-family: 'Arial', sans-serif;
        }
        .sidebar {
            width: 250px;
            background: #007bff;
```

```
            color: white;
            padding: 20px;
            height: 100vh;
            position: fixed;
            text-align: center;
          }
          .main-content {
            margin-left: 270px;
            width: calc(100% - 270px);
            padding: 20px;
          }
          .navbar {
            background: #343a40;
            color: white;
            padding: 15px;
            display: flex;
            justify-content: space-between;
            align-items: center;
            border-radius: 10px;
          }
          .quiz-container {
            max-width: 600px;
            margin: 50px auto;
            background: white;
            padding: 20px;
            border-radius: 10px;
            box-shadow: 0px 0px 10px rgba(0, 0, 0, 0.1);
          }
          .selected {
            background-color: #007bff !important;
            color: white !important;
          }
      </style>
   </head>
   <body>
      <div class="sidebar">
        <h3>Quiz Progress</h3>
        <p id="round-indicator">Round: Not Started</p>
      </div>

      <div class="main-content">
        <div class="navbar">
          <h2>VIT Entrance Quiz</h2>
          <p id="timer">Time Left: 0m 0s</p>
        </div>
```

```html
    <div class="container text-center mt-4">
        <div id="login-section">
            <input type="email" id="email" placeholder="Enter VIT Email" class="form-control">
            <button onclick="validateEmail()" class="btn btn-primary mt-2">Start Quiz</button>
        </div>

        <div id="quiz-section" class="quiz-container d-none">
            <h3 id="round-name"></h3>
            <h4 id="question"></h4>
            <div id="options"></div>
            <button onclick="nextQuestion()" id="next-btn" class="btn btn-success mt-3" disabled>Next</button>
        </div>

        <div id="result-section" class="quiz-container d-none">
            <h3>Quiz Completed!</h3>
            <p id="final-score"></p>
            <p id="selection-result"></p>
        </div>
    </div>
</div>

<script>
    let currentRound = 0;
    let currentQuestion = 0;
    let rawScore = 0;
    let finalScore = 0;
    let timeLeft;
    let timer;
    let rounds = [
        { name: "General Science", duration: 15 * 60, totalMarks: 20 },
        { name: "General Knowledge", duration: 15 * 60, totalMarks: 10 },
        { name: "Logo Identification", duration: 8 * 60, totalMarks: 20 }
    ];
    let questions = [];

    function loadQuestions() {
        fetch('questions.xml')
            .then(response => response.text())
            .then(data => {
                let parser = new DOMParser();
                let xml = parser.parseFromString(data, "text/xml");
                let xmlRounds = xml.getElementsByTagName("round");
```

```javascript
            for (let r of xmlRounds) {
               let qList = [];
               let xmlQuestions = r.getElementsByTagName("question");

               for (let q of xmlQuestions) {
                  let questionText = q.getElementsByTagName("text")[0].textContent;
                   let options = Array.from(q.getElementsByTagName("option")).map(opt =>
opt.textContent);
                     let answer = q.getElementsByTagName("answer")[0].textContent;
                  qList.push({ q: questionText, options, answer });
               }
               questions.push(qList);
            }
          startRound();
        });
     }

     function validateEmail() {
        const email = document.getElementById("email").value;
        if (email.endsWith("@vitstudent.ac.in")) {
           document.getElementById("login-section").classList.add("d-none");
           document.getElementById("quiz-section").classList.remove("d-none");
           loadQuestions();
        } else {
           alert("Please use a valid VIT email.");
        }
     }

     function updateRoundIndicator() {
                    document.getElementById("round-indicator").innerText   =   `Round:
${rounds[currentRound].name}`;
     }

     function startRound() {
        if (currentRound >= rounds.length) {
           showResults();
           return;
        }
        currentQuestion = 0;
        updateRoundIndicator();
                    document.getElementById("round-name").innerText   =   `Round:
${rounds[currentRound].name}`;
        startTimer(rounds[currentRound].duration);
        showQuestion();
     }
```

```javascript
function startTimer(duration) {
  clearInterval(timer);
  timeLeft = duration;
  timer = setInterval(() => {
    timeLeft--;
    document.getElementById("timer").innerText = `Time Left: ${Math.floor(timeLeft / 60)}m ${timeLeft % 60}s`;
    if (timeLeft <= 0) {
      clearInterval(timer);
      nextRound();
    }
  }, 1000);
}

function showQuestion() {
  if (currentQuestion >= questions[currentRound].length) {
    nextRound();
    return;
  }
  const q = questions[currentRound][currentQuestion];
  document.getElementById("question").innerText = q.q;
  document.getElementById("options").innerHTML = q.options.map(option => `<button class='btn btn-light d-block mt-2' onclick='checkAnswer(this, "${option}")'>${option}</button>`).join('');
  document.getElementById("next-btn").disabled = true;
}

function checkAnswer(button, answer) {
  document.querySelectorAll('#options button').forEach(btn => btn.classList.remove("selected"));
  button.classList.add("selected");
  document.getElementById("next-btn").disabled = false;
  if (answer === questions[currentRound][currentQuestion].answer) {
    rawScore += rounds[currentRound].totalMarks / questions[currentRound].length;
  }
}

function nextQuestion() {
  currentQuestion++;
  showQuestion();
}

function nextRound() {
  clearInterval(timer);
  currentRound++;
  if (currentRound < rounds.length) {
```

```
            startRound();
        } else {
          showResults();
        }
      }

    function showResults() {
        clearInterval(timer);
        document.getElementById("quiz-section").classList.add("d-none");
        document.getElementById("result-section").classList.remove("d-none");

        finalScore = (rawScore / 50) * 10;
                document.getElementById("final-score").innerText = `Your total score:
${finalScore.toFixed(1)}`;

        let selectionMessage = "";
          if (finalScore > 9.5) selectionMessage = "Congratulations! You are admitted to the
Vellore campus.";
        else if (finalScore > 7.5) selectionMessage = "Congratulations! You are admitted to the
Chennai campus.";
        else if (finalScore > 6.5) selectionMessage = "Congratulations! You are admitted to the
Amravati campus.";
        else selectionMessage = " Unfortunately, you are not admitted.";

        document.getElementById("selection-result").innerText = selectionMessage;
      }
    </script>
</body>
</html>
```

Rivera-styles.css:
```
<?xml version="1.0" encoding="UTF-8"?>
<quiz>


  <round name="General Science">
    <question>
      <text>1.What is the chemical symbol for water?</text>
      <option>O2</option>
      <option>H2O</option>
      <option>CO2</option>
      <option>NaCl</option>
      <answer>H2O</answer>
    </question>
    <question>
      <text>2.Which planet is known as the Red Planet?</text>
      <option>Earth</option>
      <option>Mars</option>
```

```xml
    <option>Jupiter</option>
    <option>Venus</option>
    <answer>Mars</answer>
</question>
<question>
    <text>3.What gas do plants absorb from the atmosphere?</text>
    <option>Oxygen</option>
    <option>Nitrogen</option>
    <option>Carbon Dioxide</option>
    <option>Hydrogen</option>
    <answer>Carbon Dioxide</answer>
</question>
<question>
    <text>4.What is the powerhouse of the cell?</text>
    <option>Nucleus</option>
    <option>Mitochondria</option>
    <option>Ribosome</option>
    <option>Endoplasmic Reticulum</option>
    <answer>Mitochondria</answer>
</question>
<question>
    <text>5.Which metal is liquid at room temperature?</text>
    <option>Iron</option>
    <option>Mercury</option>
    <option>Gold</option>
    <option>Silver</option>
    <answer>Mercury</answer>
</question>
<question>
    <text>6.What is the speed of light?</text>
    <option>3,000 km/s</option>
    <option>300,000 km/s</option>
    <option>30,000 km/s</option>
    <option>3,000,000 km/s</option>
    <answer>300,000 km/s</answer>
</question>
<question>
    <text>7.What part of the body produces insulin?</text>
    <option>Liver</option>
    <option>Pancreas</option>
    <option>Kidney</option>
    <option>Heart</option>
    <answer>Pancreas</answer>
</question>
<question>
    <text>8.What is the study of fungi called?</text>
    <option>Botany</option>
    <option>Zoology</option>
    <option>Mycology</option>
    <option>Ecology</option>
    <answer>Mycology</answer>
</question>
<question>
    <text>9.What is the main gas found in Earth's atmosphere?</text>
    <option>Oxygen</option>
    <option>Nitrogen</option>
```

```xml
        <option>Carbon Dioxide</option>
        <option>Hydrogen</option>
        <answer>Nitrogen</answer>
    </question>
    <question>
        <text>10.Which vitamin is produced in the human body when exposed to sunlight?</text>
        <option>Vitamin A</option>
        <option>Vitamin B</option>
        <option>Vitamin C</option>
        <option>Vitamin D</option>
        <answer>Vitamin D</answer>
    </question>
</round>


<round name="General Knowledge">
    <question>
        <text>1.Who was the first Prime Minister of India?</text>
        <option>Indira Gandhi</option>
        <option>Narendra Modi</option>
        <option>Jawaharlal Nehru</option>
        <option>Dr. Rajendra Prasad</option>
        <answer>Jawaharlal Nehru</answer>
    </question>
    <question>
        <text>2.Which is the largest ocean in the world?</text>
        <option>Atlantic Ocean</option>
        <option>Indian Ocean</option>
        <option>Arctic Ocean</option>
        <option>Pacific Ocean</option>
        <answer>Pacific Ocean</answer>
    </question>
    <question>
        <text>3.What is the capital of France?</text>
        <option>Rome</option>
        <option>Paris</option>
        <option>Berlin</option>
        <option>Madrid</option>
        <answer>Paris</answer>
    </question>
    <question>
        <text>4.Who wrote the national anthem of India?</text>
        <option>Rabindranath Tagore</option>
        <option>Bankim Chandra Chatterjee</option>
        <option>Mahatma Gandhi</option>
        <option>Subhas Chandra Bose</option>
        <answer>Rabindranath Tagore</answer>
    </question>
    <question>
        <text>5.What currency is used in Japan?</text>
        <option>Dollar</option>
        <option>Rupee</option>
        <option>Euro</option>
        <option>Yen</option>
        <answer>Yen</answer>
    </question>
```

```xml
    </round>


    <round name="Logo Identification">
      <question>
        <text>1.Which company's logo features a partially eaten apple?</text>
        <option>Microsoft</option>
        <option>Apple</option>
        <option>Samsung</option>
        <option>Google</option>
        <answer>Apple</answer>
      </question>
      <question>
        <text>2.Which automobile company has a prancing horse in its logo?</text>
        <option>Ferrari</option>
        <option>Lamborghini</option>
        <option>Bugatti</option>
        <option>McLaren</option>
        <answer>Ferrari</answer>
      </question>
      <question>
        <text>3.Which fast-food chain has a clown mascot named Ronald?</text>
        <option>Burger King</option>
        <option>KFC</option>
        <option>McDonald's</option>
        <option>Subway</option>
        <answer>McDonald's</answer>
      </question>
      <question>
        <text>4.Which tech company's logo is a blue bird?</text>
        <option>Facebook</option>
        <option>Twitter</option>
        <option>LinkedIn</option>
        <option>Instagram</option>
        <answer>Twitter</answer>
      </question>
      <question>
        <text>5.Which brand uses a swoosh logo?</text>
        <option>Adidas</option>
        <option>Nike</option>
        <option>Puma</option>
        <option>Reebok</option>
        <answer>Nike</answer>
      </question>
    </round>

</quiz>
```