

BCSE203E - Web Programming

Digital Assignment – II

Winter Semester 2023 – 2024

Topic: Develop Your Own JavaScript-Based Project

Objective:

Enhance your web development and programming skills by conceptualizing and creating a unique project using JavaScript. This assignment aims to foster your creativity, problem-solving abilities, and technical knowledge in a practical setting.

Assignment Instructions:

1. **Project Selection:**
Select a project that interests you and aligns with your learning goals. Ensure that your project idea challenges your skill and allows you to learn new aspects of JavaScript.
2. **Proposal Submission:**
Submit a brief proposal outlining your project idea. Include the following:
 - **Project Title:** A concise and descriptive name for your project.
 - **Objective:** What will your project accomplish? What problem does it solve or what need does it fulfill?
 - **Features:** List the key features and functionalities you plan to implement.
 - **Technologies:** Mention any additional technologies or tools you plan to use alongside JavaScript.
3. **Development:**
Once your proposal is approved, start developing your project. Keep the following in mind:
 - **Code Quality:** Write clean, readable, and well-commented code.
 - **User Interface:** Ensure your project is user-friendly and has an intuitive design.
 - **Testing:** Test your application thoroughly to ensure all features work as expected.
4. **Documentation:**
Document your development process, challenges faced, and how you overcame them. Include any resources or tutorials used.

Assignment Submission Data:

- GitHub Repository: [Link to your repository]
- Documented Steps: [Attach your step-by-step documentation]
- Learning Reflections: [Attach your 10 learning points]
- Importance of your project: [Your written reflection]
- Screenshots: [Attach screenshots of your webpage]

Evaluation Criteria:

- Creativity and Originality: How unique and innovative is your project idea?
- Functionality: Does the project work as intended without errors?
- Design and User Experience: Is the project visually appealing and easy to use?
- Code Quality: Is your code well-organized, commented, and adhering to best practices?

Submission of Assignment:

- Due Date: Check VTOP
- Must upload in GitHub, Moodle and VTOP

Note:

- No plagiarism.
- The assignment must be on your own if you copied it from anywhere else. The marks will be awarded zero.
- While submitting the digital assignment, must follow the details.
 - On the first page your details
 - Second page GitHub Repo Link and GitHub Pages (github.io) link.
 - Third-page table of the content

LIVE WEBPAGE LINK: https://jharshith.github.io/online_quiz/project%20quiz.html

GitHub Repository Link: <https://github.com/jharshith?tab=repositories>

PROJECT TITLE : ONLINE LEARNING PLATFORM

OBJECTIVE: It is used to take online quizzes which uses html,css, javascript

Features:

- Multiple-choice quiz with 10 questions.
- Timer functionality to limit the duration of the quiz.
- Ability to save answers and move to the next question.
- Option to clear selected answers.

- Finish button to end the quiz manually.
- Review answers feature to see correct and user-selected answers after the quiz ends.

Technologies:

- JavaScript for quiz logic and interactivity.
- HTML and CSS for structure and styling.
- Additional libraries or frameworks could be used for enhanced UI/UX, such as Bootstrap or Materialize CSS.

Development Process:

- Initially, I outlined the structure of the quiz, including HTML elements for questions, options, timer, and result section.
- Implemented JavaScript functions to handle quiz logic, such as displaying questions, saving answers, calculating score, and managing the timer.
- Styled the quiz using CSS to improve visual appeal and user experience.
- Tested the functionality of the quiz across different browsers and devices to ensure compatibility and responsiveness.
- Faced challenges in synchronizing the timer with quiz actions and managing user-selected answers.
- Overcame challenges by debugging code, referring to online resources, and experimenting with different approaches.
- Utilized resources like MDN Web Docs, Stack Overflow, and online tutorials to enhance understanding and solve specific issues.

Learning Reflections:

1. Understanding Event Handling: Learned how to handle user interactions such as button clicks and radio button selections using JavaScript event listeners.
2. Manipulating HTML Elements: Improved skills in dynamically modifying HTML elements, such as updating text content and appending child elements.
3. Time Management: Practiced managing time-related functionality, like implementing timers and handling countdowns effectively.
4. Array Manipulation: Enhanced knowledge of array manipulation techniques, including iterating over arrays and accessing specific elements.

5. Conditional Statements: Strengthened understanding of conditional statements to implement logic for checking answers and calculating scores.
6. DOM Manipulation: Explored techniques for manipulating the Document Object Model (DOM) to update webpage content dynamically.
7. Debugging Skills: Developed proficiency in debugging JavaScript code using browser developer tools and console logging.
8. User Interface Design: Explored principles of user interface design to create an intuitive and visually appealing quiz interface.
9. Code Organization: Learned the importance of organizing code into reusable functions and modules to improve maintainability.
10. Project Workflow: Gained experience in planning, implementing, and testing a small-scale web application, improving project management skills.

Importance of the Project:

Creating an online learning platform with interactive quizzes serves as a valuable educational tool for learners to test their knowledge and reinforce learning outcomes. By implementing features like timers and answer review, the project enhances user engagement and provides a comprehensive learning experience. Additionally, developing such projects hones programming skills, reinforces core concepts, and fosters creativity in solving real-world challenges. Overall, the project underscores the importance of practical application in learning and contributes to the advancement of web development skills.

SCREEN SHOTS:

Online Learning Platform

Time Left:

Instructions:

- This quiz consists of 10 multiple-choice questions.
- You have a total of 1 minute to complete the quiz.
- Each question has multiple options, and you need to select the correct one.
- Once you start the quiz, the timer will begin counting down.
- Once you have answered all the questions or when the time runs out, the quiz will automatically end.
- You can also end the quiz manually by clicking the "Finish" button.
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Good Luck!

Start Quiz

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Time Left: 0:54

1. What is the sum of first 10 natural numbers?

☐ A. 66

☐ B. 55

☒ C. 44

☐ D. 45

Save & Next

Clear

Finish

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2. Which of the following is a noble gas?

- ☐ A. Nitrogen
- ☐ B. Oxygen
- ☒ C. Argon
- ☐ D. Hydrogen

Save & Next

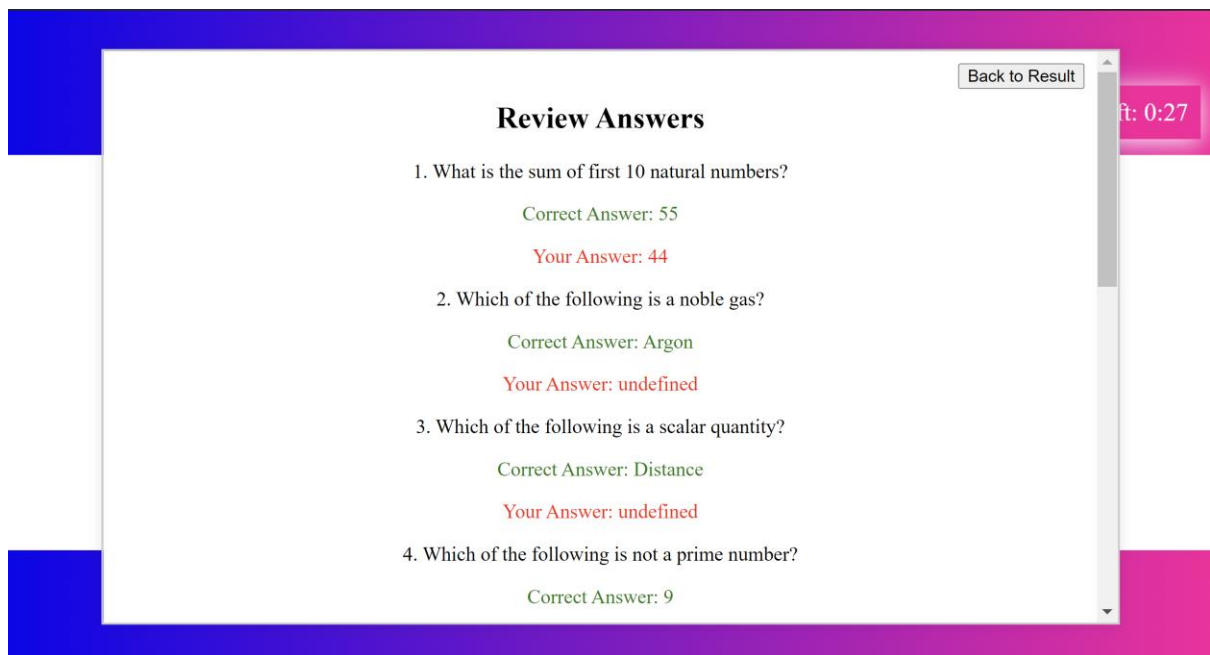
Clear

Finish

Your Score

Score: 0

Review Answers



HTML,CSS, JAVA SCRIPT CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Quiz</title>
<style>
  /* CSS styles */
  body {
    text-align: center;
    display: flex;
    flex-direction: column;
    align-items: center;
    justify-content: center;
    height: 100vh;
    margin: 0;
  }

  header {
    background: linear-gradient(to right, #0d05ef, #fe039e);
    color: #fff;
    padding: 20px 0;
    text-align: center;
    width: 100%;
    position: fixed;
    top: 0;
  }
```

```

    left: 0;
}

footer {
    background: linear-gradient(to right, #0d05ef, #fe039e);
    color: #fff;
    padding: 20px 0;
    text-align: center;
    width: 100%;
    position: fixed;
    bottom: 0;
    left: 0;
}

#timer {
    position: fixed;
    top: 60px; /* Adjust the top position to prevent overlapping with
header */
    right: 10px;
    box-shadow: 0px 2px 20px white;
}

header h1 {
    font-size: 36px;
    margin-bottom: 10px;
}

.question-container {
    display: none;
    text-align: left; /* Align text to the left */
}

.correct-answer {
    color: green;
}

.wrong-answer {
    color: red;
}

footer{
    background: linear-gradient(to right, #0d05ef, #fe039e);
    color: #fff;
    padding: 20px 0;
    text-align: center;
    width: 100%;
    margin-top: auto; /* Push the footer to the bottom */
}

#options {
    text-align: left; /* Align options to the left */
}

```



```

<div id="instructions">
  <h3 style="text-align:left;">Instructions:</h3>
  <ul style="text-align:left;">
    <li>This quiz consists of 10 multiple-choice questions.</li>
    <li>You have a total of 1 minute to complete the quiz.</li>
    <li>Each question has multiple options, and you need to select the
correct one.</li>
    <li>Once you start the quiz, the timer will begin counting down.</li>
    <li>Once you have answered all the questions or when the time runs
out, the quiz will automatically end.</li>
    <li>You can also end the quiz manually by clicking the "Finish"
button.</li>
    <li>Once you have answered all the questions or when the time runs
out, the quiz will automatically end.</li>
    <li>You can also end the quiz manually by clicking the "Finish"
button.</li>
  </ul>
  <h4>Good Luck!</h4>
</div>
<button id="start">Start Quiz</button>
<div id="quiz">
  <div class="question-container">
    <h2 id="question">Question 1</h2>
    <div id="options"></div>
    <button id="saveNext">Save & Next</button>
    <button id="clear">Clear</button>
  </div>
  <button id="finish" style="display: none;">Finish</button>
</div>
<div id="result" style="display: none;">
  <h2>Your Score</h2>
  <p id="score"></p>
  <button id="review">Review Answers</button>
</div>
<div id="review-section" style="display: none;">
  <button id="backToResult">Back to Result</button> <!-- New button added --
>
  <h2>Review Answers</h2>
  <div id="review-content"></div>
</div>
<footer>
  <p>&copy; 2024 Online Learning Platform. All rights reserved.</p>
</footer>

<script>
  let questions = [
    {
      question: "What is the sum of first 10 natural numbers?",

```

```

    options: ["66", "55", "44", "45"],
    correctAnswer: 1 // Index of correct answer in options array
  },
  {
    question: "Which of the following is a noble gas?",
    options: ["Nitrogen", "Oxygen", "Argon", "Hydrogen"],
    correctAnswer: 2
  },
  {
    question: "Which of the following is a scalar quantity?",
    options: ["Velocity", "Distance", "Force", "Acceleration"],
    correctAnswer: 1
  },
  {
    question: "Which of the following is not a prime number?",
    options: ["9", "5", "7", "11"],
    correctAnswer: 0
  },
  {
    question: "What is the chemical symbol for water?",
    options: ["H2O", "CO2", "NaCl", "O2"],
    correctAnswer: 0
  },
  {
    question: "What is the atomic number of carbon?",
    options: ["5", "6", "7", "8"],
    correctAnswer: 1
  },
  {
    question: "Which of the following is a prime number?",
    options: ["10", "15", "21", "7"],
    correctAnswer: 3
  },
  {
    question: "What is the SI unit of temperature?",
    options: ["Kelvin", "Celsius", "Fahrenheit", "Joule"],
    correctAnswer: 0
  },
  {
    question: "What is the chemical symbol for gold?",
    options: ["Au", "Ag", "Fe", "Hg"],
    correctAnswer: 0
  },
  {
    question: "What is the capital of india?",
    options: ["Chennai", "Hyderabad", "Mumbai", "Delhi"],
    correctAnswer: 3
  }
}

```

```

];
let answers = [];
let currentQuestion = 0;
let score = 0;
let timeLeft = 60; // in seconds
let timerInterval;

document.getElementById("start").addEventListener("click", function() {
    document.getElementById("start").style.display = "none";
    document.getElementById("instructions").style.display = "none";
    document.querySelector(".question-container").style.display = "block";
    document.getElementById("finish").style.display = "block"; // Show the
finish button
    displayQuestion();
    startTimer();
});

document.getElementById("saveNext").addEventListener("click", function() {
    saveAnswer();
    currentQuestion++;
    if (currentQuestion < questions.length) {
        displayQuestion();
    } else {
        endQuiz();
    }
});

document.getElementById("clear").addEventListener("click", function() {
    document.querySelectorAll('input[type="radio"]').forEach(radio =>
radio.checked = false);
});

document.getElementById("finish").addEventListener("click", function() {
    endQuiz();
});

document.getElementById("review").addEventListener("click", function() {
    reviewAnswers();
});

document.getElementById("backToResult").addEventListener("click",
function() {
    document.getElementById("review-section").style.display = "none";
    document.getElementById("result").style.display = "block";
});

```

```

function displayQuestion() {
    let questionObj = questions[currentQuestion];
    document.getElementById("question").textContent = `${currentQuestion +
1}. ${questionObj.question}`;
    let optionsDiv = document.getElementById("options");
    optionsDiv.innerHTML = "";
    let optionLetters = ['A', 'B', 'C', 'D'];
    questionObj.options.forEach((option, index) => {
        let optionInput = document.createElement("input");
        optionInput.type = "radio";
        optionInput.name = "option";
        optionInput.value = index;
        optionsDiv.appendChild(optionInput);
        let optionLabel = document.createElement("label");
        optionLabel.textContent = optionLetters[index] + ". " + option; //
Add option letters
        optionsDiv.appendChild(optionLabel);
        optionsDiv.appendChild(document.createElement("br"));
    });
}

function saveAnswer() {
    let selectedOption =
document.querySelector('input[name="option"]:checked');
    answers[currentQuestion] = selectedOption ?
parseInt(selectedOption.value) : null;
}

function endQuiz() {
    clearInterval(timerInterval);
    calculateScore();
    document.getElementById("quiz").style.display = "none";
    document.getElementById("result").style.display = "block";
    document.getElementById("score").textContent = `Score: ${score}`;
    document.getElementById("start").style.display = "none";
}

function calculateScore() {
    for (let i = 0; i < questions.length; i++) {
        if (answers[i] === questions[i].correctAnswer) {
            score++;
        }
    }
}

function startTimer() {
    timerInterval = setInterval(function() {

```

```

        timeLeft--;
        document.getElementById("time").textContent =
formatTime(timeLeft);
        if (timeLeft <= 0) {
            clearInterval(timerInterval);
            endQuiz();
        }
    }, 1000);
}

function formatTime(seconds) {
    let minutes = Math.floor(seconds / 60);
    let remainingSeconds = seconds % 60;
    return `${minutes}:${remainingSeconds < 10 ? '0' :
''}${remainingSeconds}`;
}

function reviewAnswers() {
    let reviewContent = document.getElementById("review-content");
    reviewContent.innerHTML = "";
    for (let i = 0; i < questions.length; i++) {
        let reviewItem = document.createElement("div");

        // Display question number and question text inline
        let questionNumber = document.createElement("span");
        questionNumber.textContent = `${i + 1}.`;
        questionNumber.classList.add("question-number");
        reviewItem.appendChild(questionNumber);

        let questionText = document.createElement("span");
        questionText.textContent = questions[i].question;
        reviewItem.appendChild(questionText);

        // Display correct answer
        let correctAnswerText = document.createElement("p");
        correctAnswerText.textContent = "Correct Answer: " +
questions[i].options[questions[i].correctAnswer];
        correctAnswerText.classList.add("correct-answer");
        reviewItem.appendChild(correctAnswerText);

        // Display user's answer if available
        if (answers[i] !== null) {
            let userAnswerText = document.createElement("p");
            userAnswerText.textContent = "Your Answer: " +
questions[i].options[answers[i]];
            userAnswerText.classList.add(answers[i] ===
questions[i].correctAnswer ? "correct-answer" : "wrong-answer");
            reviewItem.appendChild(userAnswerText);

```

```
    } else {
        let noAnswerText = document.createElement("p");
        noAnswerText.textContent = "No answer provided";
        noAnswerText.classList.add("wrong-answer");
        reviewItem.appendChild(noAnswerText);
    }

    reviewContent.appendChild(reviewItem);
}
document.getElementById("review-section").style.display = "block";
}

</script>
</body>
</html>
```