Module 1: HTML, CSS, JavaScript, jQuery & Bootstrap

Project

Title: Course Web Page with a Quiz

1. Introduction

This report outlines the development of "TheCourseHub," a client-side online learning platform designed to provide an engaging and user-friendly experience for browsing courses and testing knowledge. The project focuses on a modern, responsive web interface.

2. Project Goal

The primary objective was to create a functional and aesthetically pleasing front-end for an online course platform, demonstrating key web development concepts including dynamic content display, user authentication flow, and API integration.

3. Key Features Implemented

The project successfully implemented the following core functionalities:

- **Responsive Header with Dynamic User Status:**

    o A sticky header (initially, then changed to a standard scrolling header with a "Back to Top" button for better screen real estate management).

    o Brand name "TheCourseHub" with a custom icon.

    o Navigation links (Courses, Highlights, Quiz).

    o Dynamic "Login/Signup" button that transforms into "Hi, [Username]! Logout" upon successful client-side authentication.

- **Client-Side User Authentication (Login/Signup):**

    o Separate, responsive login and signup pages (login.html, signup.html).

    o User registration and login functionality using localStorage for client-side data persistence.

    o Basic input validation for username and password.

    o Seamless redirection between authentication pages and the main Project.html page.

    o (Note: Password handling is simplified for demonstration purposes and is not production-ready secure.)

- **Course Highlights Carousel:**

- An attractive, responsive image carousel showcasing key course highlights.

- Includes titles, short descriptions, and call-to-action buttons.

- Customizable sizing for visual appeal.

- **Dynamic Course Grid with Carousel Navigation:**

    - A dedicated section displaying a grid of course cards.

    - Course data is fetched dynamically from a *simulated* API endpoint (using JavaScript Promise and setTimeout for realism).

    - Courses are displayed in a responsive grid, showing 4 cards per row on larger screens.

    - Implemented as a carousel, allowing users to navigate through "pages" of 4 course cards at a time.

    - Each course card includes an image, title, description, instructor, duration, and price (in Indian Rupees).

    - Interactive "popping" hover effects on course cards for enhanced user engagement.

- **Interactive Quiz Section:**

    - Integration with the Open Trivia Database (OpenTDB) API to fetch quiz questions.

    - A configurable quiz settings form allowing users to select the number of questions, category, difficulty, and type.

    - Dynamic display of questions and shuffled answer options.

    - Real-time feedback (correct/incorrect) upon answering.

    - Score tracking and a final results display with a "Play Again" option.

    - HTML entity decoding for question and answer text.

- **"Back to Top" Button:**

    - A compact, floating button that appears on scroll.

    - Provides smooth scrolling back to the top of the page, enhancing navigation without occupying persistent header space.

4. Technologies Used

- **HTML5:** For structuring the web pages.

- **CSS3:** For styling and visual presentation.

- **Bootstrap 5.3:** A popular front-end framework used for responsive design, pre-built components (Navbar, Carousel, Cards, Grid System, Forms, Buttons, Utilities), and consistent styling.

- **JavaScript (Vanilla JS):** For all dynamic functionalities, including DOM manipulation, event handling, client-side data storage (localStorage), API integration (fetch), and interactive quiz logic.

5. Project Structure

The project is organized into distinct HTML and JavaScript files for modularity:

- Project.html: The main landing page for the online course platform.

- login.html: Dedicated page for user login.

- signup.html: Dedicated page for new user registration.

- style.css: Contains custom CSS rules to override Bootstrap defaults and apply unique styling.

- script.js: Handles general page-level JavaScript, including header dynamics and the "Back to Top" button.

- courseData.js: Manages the fetching and rendering of course information, including the course cards carousel.

- quiz.js: Contains all the logic for the interactive quiz, including API calls to OpenTDB.

6. Future Enhancements

- **Backend Integration:** Implement a server-side backend for secure user authentication, persistent course data storage, and quiz result tracking.

- **Course Details Pages:** Develop dedicated pages for each course (course-details-*.html) to provide more in-depth information.

- **Advanced Quiz Features:** Add a timer, question review, different question types, and user progress tracking.

- **Search and Filtering:** Implement search and filtering capabilities for courses.

- **User Dashboard:** Create a personalized dashboard for logged-in users to view enrolled courses, progress, and quiz history.

-

Code:

```html
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>TheCourseHub</title>

  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css" rel="stylesheet">

  <link href="https://fonts.googleapis.com/css2?family=Pacifico&display=swap" rel="stylesheet">

  <link rel="stylesheet" href="style.css">

</head>

<style>

.webpage-name {

  font-family: 'Pacifico', cursive;

  font-size: 1.8rem;

  color: #007bff;

}


.navbar-brand img {

  height: 150px;

  width: 150px;


}

#welcomeMessage {

  font-weight: bold;

  color: #28a745;

  font-size: 1.1rem;
```

```html
        }
    </style>
<body>
    <section id="header_1">
    <header>
        <nav class="navbar navbar-expand-lg navbar-light bg-light py-3 ">
            <div class="container-fluid">
                <a class="navbar-brand d-flex align-items-center" href="Project.html">
                    <img src="1.png" alt="The Course Hub Icon" class="me-2">
                    <span class="webpage-name">TheCourseHub</span>
                </a>


                <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-target="#navbarNav" aria-controls="navbarNav" aria-expanded="false" aria-label="Toggle navigation">
                    <span class="navbar-toggler-icon"></span>
                </button>


                <div class="collapse navbar-collapse" id="navbarNav">
                    <ul class="navbar-nav me-auto mb-0 mb-lg-0"> <li class="nav-item">
                        <a class="nav-link active" aria-current="page" href="#courses-section">Courses</a> </li>
                            <li class="nav-item">
                                <a class="nav-link" href="#highlights-carousel">Highlights</a> </li>
                            <li class="nav-item">
                                <a class="nav-link" href="#quiz-section">Quiz</a> </li>
                        </ul>


                        <ul class="navbar-nav"> <li class="nav-item">
```

```html
            <a id="authButton" class="btn btn-primary"
href="login.html">Login/Signup</a>

                <span id="welcomeMessage" class="navbar-text ms-3 d-
none"></span>              </li>

          </ul>

        </div>

      </div>

    </nav>

  </header>

</section>


<main class="container-fluid my-5 ">


  <h1 class="text-center mt-1">Welcome to TheCourseHub!</h1>

  <p class="text-center">Explore our wide range of courses.</p>


  <section id="highlights-carousel" class="mb-5">

<h2 class="text-center mb-4">Top Course Highlights</h2>


<div id="courseHighlightsCarousel" class="carousel slide" data-bs-ride="carousel">

  <div class="carousel-indicators">

    <button type="button" data-bs-target="#courseHighlightsCarousel" data-bs-
slide-to="0" class="active" aria-current="true" aria-label="Slide 1"></button>

    <button type="button" data-bs-target="#courseHighlightsCarousel" data-bs-
slide-to="1" aria-label="Slide 2"></button>

    <button type="button" data-bs-target="#courseHighlightsCarousel" data-bs-
slide-to="2" aria-label="Slide 3"></button>

  </div>

  <div class="carousel-inner">
```

```html
<div class="carousel-item active">

  <img src="5.jpg" class="d-block w-100" alt="Web Development Basics">

  <div class="carousel-caption d-none d-md-block">

    <h3 class="display-5 fw-bold">Master Web Development</h3>

    <p class="lead">Build stunning websites from scratch with HTML, CSS, and JavaScript. Start your coding journey today!</p>

    <a href="#" class="btn btn-lg btn-success mt-3">Explore Now</a>

  </div>

</div>

<div class="carousel-item">

  <img src="4.jpg" class="d-block w-100" alt="Data Visualization Course">

  <div class="carousel-caption d-none d-md-block">

    <h3 class="display-5 fw-bold">Deep Dive into Data Science</h3>

    <p class="lead">Uncover insights from data using Python and R. Become a data-driven expert.</p>

    <a href="#" class="btn btn-lg btn-primary mt-3">Learn More</a>

  </div>

</div>

<div class="carousel-item">

  <img src="3.jpg" class="d-block w-100" alt="Art & Crafts">

  <div class="carousel-caption d-none d-md-block"> <h3 class="display-5 fw-bold">Unlock Your Creative Potential</h3>

    <p class="lead">Learn the principles of graphic design, UI/UX, and visual communication.</p>

    <a href="#" class="btn btn-lg btn-success mt-3">View Course</a>

  </div>

</div>

</div>
```

```html
        <button class="carousel-control-prev" type="button" data-bs-
target="#courseHighlightsCarousel" data-bs-slide="prev">

            <span class="carousel-control-prev-icon" aria-hidden="true"></span>

            <span class="visually-hidden">Previous</span>

        </button>

        <button class="carousel-control-next" type="button" data-bs-
target="#courseHighlightsCarousel" data-bs-slide="next">

            <span class="carousel-control-next-icon" aria-hidden="true"></span>

            <span class="visually-hidden">Next</span>

        </button>

    </div>

</section>


    <section id="courses-section" class="mb-5">

        <h2 class="text-center mb-4">Explore Our Courses</h2>

        <div id="courseCardsCarousel" class="carousel slide" data-bs-ride="false"> <div
class="carousel-indicators" id="courseCarouselIndicators">

            </div>

        <div class="carousel-inner" id="courseCardsCarouselInner">

            </div>

        <button class="carousel-control-prev" type="button" data-bs-
target="#courseCardsCarousel" data-bs-slide="prev" style="color: #c6c8ca;">

            <span class="carousel-control-prev-icon" aria-hidden="false"></span>

            <span class="visually-hidden">Previous</span>

        </button>

        <button class="carousel-control-next" type="button" data-bs-
target="#courseCardsCarousel" data-bs-slide="next">

            <span class="carousel-control-next-icon" aria-hidden="false"></span>

            <span class="visually-hidden">Next</span>
```

```html
        </button>
      </div>
    </section>
    <section id="quiz-section" class="py-5">
      <h2 class="text-center mb-4">Test Your Knowledge!</h2>
      <div class="container">
        <div class="row justify-content-center">
          <div class="col-md-8">


            <div id="quiz-settings" class="card p-4 shadow-sm mb-4">
              <h4 class="mb-3">Quiz Configuration</h4>
              <form id="quizSettingsForm">
                <div class="mb-3">
                  <label for="quizAmount" class="form-label">Number of Questions (1-10)</label>
                  <input type="number" class="form-control" id="quizAmount" value="5" min="1" max="10" required>
                </div>
                <div class="mb-3">
                  <label for="quizCategory" class="form-label">Category</label>
                  <select class="form-select" id="quizCategory" required>
                    <option value="any">Any Category</option>
                    </select>
                </div>
                <div class="mb-3">
                  <label for="quizDifficulty" class="form-label">Difficulty</label>
                  <select class="form-select" id="quizDifficulty" required>
                    <option value="any">Any Difficulty</option>
                    <option value="easy">Easy</option>
```

```html
                    <option value="medium">Medium</option>

                    <option value="hard">Hard</option>

                  </select>

                </div>

                <div class="mb-4">

                  <label class="form-label">Question Type</label>

                  <div>

                    <div class="form-check form-check-inline">

                      <input class="form-check-input" type="radio" name="quizType"
id="typeAny" value="any" checked>

                        <label class="form-check-label" for="typeAny">Any Type</label>

                      </div>

                    <div class="form-check form-check-inline">

                      <input class="form-check-input" type="radio" name="quizType"
id="typeMultiple" value="multiple">

                        <label class="form-check-label" for="typeMultiple">Multiple
Choice</label>

                      </div>

                    <div class="form-check form-check-inline">

                      <input class="form-check-input" type="radio" name="quizType"
id="typeTrueFalse" value="boolean">

                        <label class="form-check-label" for="typeTrueFalse">True /
False</label>

                      </div>

                    </div>

                </div>

                <button type="submit" class="btn btn-primary w-100"
id="startQuizBtn">Start Quiz</button>

                <p id="quizSettingsMessage" class="text-center mt-3 d-none text-
danger"></p>
```

```
        </form>

      </div>


      <div id="quiz-display" class="card p-4 shadow-sm d-none">

        <h4 class="mb-3">Question <span
id="currentQuestionNumber">1</span> of <span id="totalQuestions">5</span></h4>

        <p id="questionText" class="lead mb-4"></p>

        <div id="answerOptions" class="d-grid gap-2">

          </div>

        <div class="d-flex justify-content-between align-items-center mt-4">

          <span id="quizFeedback" class="text-muted"></span>

          <button id="nextQuestionBtn" class="btn btn-success d-none">Next
Question</button>

        </div>

      </div>


      <div id="quiz-results" class="card p-4 shadow-sm text-center d-none">

        <h4 class="mb-3">Quiz Complete!</h4>

        <p class="h3">Your Score: <span id="finalScore">0</span> / <span
id="maxScore">0</span></p>

        <button id="playAgainBtn" class="btn btn-primary mt-3">Play
Again</button>

      </div>


    </div>

   </div>

  </div>

 </section>
```

```html
    </main>

<a href="#header_1"><button id="backToTopBtn" class="btn btn-primary rounded-
circle shadow">

    &#9650; </button></a>

  <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/bootstrap.bundle.min.js"></
script>

  <script src="script.js"></script>

  <script src="courseData.js"></script>

  <script src="quiz.js"></script>

</body>

</html>
```

```javascript
document.addEventListener('DOMContentLoaded', () => {

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

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


  function updateHeader() {

    const loggedInUser = localStorage.getItem('loggedInUser');


    if (loggedInUser) {

      authButton.classList.add('d-none');

      welcomeMessage.classList.remove('d-none');

      welcomeMessage.innerHTML = `Hi, ${loggedInUser}! <a href="#" id="logoutLink"
class="btn btn-sm btn-outline-danger ms-2">Logout</a>`;


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

      if (logoutLink) {

        logoutLink.addEventListener('click', (event) => {
```

```
                event.preventDefault();

                localStorage.removeItem('loggedInUser');

                updateHeader();

            });

        }


    } else {


        authButton.classList.remove('d-none');

        welcomeMessage.classList.add('d-none');

        welcomeMessage.innerHTML = '';

    }


    updateHeader();




}


});




Snapshots:
```

Login

Username

Password

Login

Don't have an account? [Create an account](#)

Sign Up

Username

Password

Sign Up

Already have an account? [Sign In](#)

Welcome to TheCourseHub!

Explore our wide range of courses.

Top Course Highlights

Deep Dive into Data Science

Uncover insights from data using Python and R. Become a data-driven expert.

Learn More

Explore Our Courses

Full Stack Web Development (MERN)

Build robust web applications using MongoDB, Express.js, React, and Node.js. Industry-ready skills for the Indian market.

Instructor: Arjun Reddy

Duration: 16 weeks

Price: ₹ 25,000

View Details

Applied Data Science with Python

Master data analysis, machine learning, and visualization. Real-world case studies and projects relevant to Indian industries.

Instructor: Priya Sharma

Duration: 14 weeks

Price: ₹ 22,500

View Details
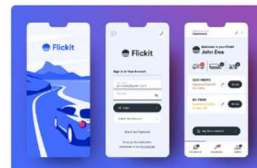
UX/UI Design Fundamentals

Create intuitive and user-friendly interfaces. Learn design principles, wireframing, and prototyping in a practical approach.

Instructor: Rohan Gupta

Duration: 10 weeks

Price: ₹ 18,000

View Details

Android App Development with Kotlin

Develop native Android applications from scratch using Kotlin. Learn to publish your app on Google Play India.

Instructor: Sneha Patel

Duration: 12 weeks

Price: ₹ 20,000

View Details

Test Your Knowledge!

Quiz Configuration

Number of Questions (1-10)

5

Category

Any Category

Difficulty

Any Difficulty

Question Type

● Any Type ○ Multiple Choice ○ True / False

Start Quiz