Coursega – Online Education Website

ABSTRACT

The project **"Coursega – Online Education Website"** is a web-based application developed to provide a platform for online learning and course management. It aims to simplify access to educational materials, enabling users to browse and enroll in various online courses. The system provides functionalities for students to register, log in, view available courses, and access course details. An admin panel allows administrators to manage users and course content.

This project has been developed using **PHP** as the server-side scripting language, **MySQL** for database management, and **HTML, CSS, Bootstrap, and JavaScript** for the front-end interface. The system ensures dynamic data handling, responsive design, and user-friendly interaction suitable for both learners and administrators.

INTRODUCTION

The growing demand for online learning platforms has made it essential to create web-based systems that offer easy access to educational resources. The **Coursega** platform was designed to fill this need by providing a structured and interactive online education experience.

The website allows students to:

- Create an account and log in securely.

- Explore available courses and view course details.

- Contact the institution or instructors via a contact form.

Administrators can:

- Manage user records.

- Add, update, and delete course information through a dedicated admin panel.

Thus, **Coursega** bridges the gap between learners and educators through a simple and intuitive web application.

OBJECTIVES

The main objectives of the Coursega project are:

- To develop an interactive online education website for students and administrators.

- To allow students to register, log in, and access available courses.

- To provide administrators with tools to manage course details and user information.

- To ensure a user-friendly, responsive, and visually appealing interface.

- To implement secure authentication using PHP sessions.

- To store and retrieve data dynamically from a MySQL database.

TOOLS AND TECHNOLOGIES USED

Technology / Tool	Purpose
PHP (v8.0+)	Server-side scripting language
MySQL	Database management system
HTML5, CSS3	Web structure and styling
Bootstrap	Front-end framework for responsive design
JavaScript	Client-side interactivity
XAMPP	Local server environment
Visual Studio Code / Sublime	Code editor
phpMyAdmin	Database management tool

SYSTEM DESIGN

The **Coursega** website follows a **client–server architecture**, where the client interacts with the web interface and the server processes PHP scripts and communicates with the MySQL database.

System Architecture Overview

1. **Frontend (Client Layer)**
   - Built using HTML, CSS, Bootstrap, and JavaScript.
   - Provides forms and navigation for users.
2. **Backend (Application Layer)**
   - Handles business logic written in PHP.
   - Manages authentication, data retrieval, and display.
3. **Database Layer (Data Storage)**

- o MySQL stores user and course information.
- o Ensures data integrity and persistence.

DATABASE DESIGN

Database Name: education

Tables:

1. **User Table (user)**

Field	Type	Description
id	INT (Auto Increment)	Primary Key
fname	VARCHAR(50)	First Name
lname	VARCHAR(50)	Last Name
email	VARCHAR(100)	User's email address
password	VARCHAR(100)	Password
cpassword	VARCHAR(100)	Confirm password

2. **Course Table (course)**

Field	Type	Description
c_id	INT (Auto Increment)	Primary Key
c_image	VARCHAR(255)	Path to course image
c_name	VARCHAR(100)	Course name
c_author	VARCHAR(100)	Instructor name
rating	VARCHAR(10)	Course rating

The database structure ensures smooth user management and course data retrieval for both the student and admin interfaces.

MODULE DESCRIPTION

Login and Registration Module (login.php)

- Allows new users to register by entering personal details.

- Existing users can log in with valid credentials.
- Admin login uses fixed credentials (admin@gmail.com / admin1234).
- PHP session management maintains user login state.

2. Home Page (index.php)

- Displays featured courses, instructors, testimonials, and contact information.
- Includes dynamic navigation and footer using navbar.php and footer.php.

3. About Page (about.php)

- Describes the purpose, vision, and benefits of Coursega.
- Provides statistics on available courses and instructors.

4. Course Module (course.php)

- Fetches and displays all available courses from the database.
- Each course includes image, author, and rating.
- Allows navigation to detailed course information (single_course.php).

5. Course Details Module (single_course.php)

- Displays full course information, including image, author, and rating.
- Includes a "Buy" option to simulate course purchase.

6. Contact Module (contact.php)

- Provides a contact form for students to send messages or feedback.
- Displays contact details such as address, phone, and email.

7. Admin Module (admin.php, user_view.php, course_view.php)

- Restricted access to admin users only.
- Enables management of:
  - o **User accounts:** View and delete users.
  - o **Courses:** Insert, update, or delete courses.
- Each action interacts directly with the MySQL database.

8. Logout Module (logout.php)

- Ends the user or admin session and redirects to the homepage.

IMPLEMENTATION

The system was implemented in PHP using the **XAMPP** local environment.

Key implementation highlights include:

- Modular PHP files for easy maintenance (navbar.php, footer.php).

- Secure session management for both users and admins.
- Bootstrap-based UI ensuring mobile responsiveness.
- Dynamic content loading from MySQL for courses and users.
- Use of mysqli_query() for database interaction.

TESTING

Testing Methods Used
- **Unit Testing:** Individual PHP pages tested for functionality.
- **Integration Testing:** Verified smooth data flow between modules.
- **User Acceptance Testing:** Ensured user-friendly navigation and design.
- **Database Testing:** Checked query accuracy, insertion, and deletion.

Sample Test Cases:

Test Case	Input	Expected Output	Result
User Login	Valid email & password	Redirect to home page	Passed
Admin Login	Admin credentials	Redirect to admin panel	Passed
Course Insert	New course data	Course added successfully	Passed
Logout	Click logout	Redirect to login/index page	Passed

All test cases were executed successfully without critical errors.

CONCLUSION

The **Coursega – Online Education Website** successfully provides a functional and user-friendly online platform for students and administrators. It allows learners to explore educational opportunities, while administrators can easily manage the platform's content. The system demonstrates the integration of web technologies with a relational database to create a dynamic, interactive, and scalable online education solution.

FUTURE SCOPE
- Enable real-time payment and enrollment systems.
- Add video lecture support for each course.
- Implement user feedback and rating mechanisms.
- Introduce instructor registration and course upload functionality.

- Enhance security with password hashing and validation.

REFERENCES

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