



## Post Graduate Diploma in Advanced Computing (PG-DAC)

March 2024 Batch

Group Number: Group - 2

### Guide:

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### Group Members

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### Title

E-Learning Web Application

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### Objective

1. **Enhance Course Accessibility:** Provide users with easy access to a wide range of online courses, categorized by subject, level, and popularity.
  2. **Connect Students with Tutors:** Enable students to find and connect with qualified tutors for personalized instruction and support.
  3. **Simplify Course Management:** Allow instructors to create, update, and manage courses efficiently through an intuitive interface.
  4. **Improve Learning Experience:** Facilitate interactive learning with features like quizzes, assessments, and instant feedback.
  5. **Ensure Secure Data Handling:** Protect user data, including personal information and course progress, by implementing robust security measures in the application.
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### Abstract

The E-Learning Web Application is an innovative platform designed to transform the traditional learning experience into a dynamic and accessible online environment. The application offers two core functionalities: course exploration and tutor discovery. By enabling users to easily find and enroll in courses, and connect with experienced tutors, the platform aims to enhance the overall learning experience. Developed using Spring Boot for the backend and Thymeleaf for the frontend,

this application provides a seamless user interface and secure data management. The platform supports instructors in managing their courses and students in accessing educational resources, making it a comprehensive solution for modern education.

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### Project Architecture

- **Frontend:** Thymeleaf, HTML, CSS, Bootstrap
  - **Backend:** Spring Boot, Spring Data JPA, Spring Security
  - **Database:** MySQL
  - **APIs:** RESTful APIs for interaction between frontend and backend
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### Application

1. **Course Exploration:** Users can browse, search, and filter courses by various criteria, view detailed course information, and enroll in their chosen courses.
  2. **Tutor Discovery:** Students can search for tutors based on subject expertise, view detailed tutor profiles, and schedule tutoring sessions directly through the platform.
  3. **Instructor Tools:** Instructors can create and manage courses, upload study materials, and track student progress.
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### Technologies Used

- **Frontend:** Thymeleaf, HTML, CSS, Bootstrap
  - **Backend:** Spring Boot, Spring Data JPA, Spring Security
  - **Database:** MySQL/Workbench
  - **IDE:** Visual Studio Code, Spring Tool Suite 4
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### Scope of Work

1. **Library Integration:** Add a Library Portal feature to provide students with information about available books and resources.
2. **Mock Tests and Quizzes:** Incorporate a feature that allows students to take mock tests and quizzes to assess their readiness for exams.
3. **Mobile Application Expansion:** Expand the system into a mobile application to ensure continuous engagement and learning outside the traditional classroom environment.
4. **Real-Time Communication:** Integrate real-time communication features like chat, video conferencing, and discussion forums to foster better interaction and collaboration between students and tutors.

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**Project Timelines (Total: 120 hours)****Time Plan of the Project:**

1. Abstract (5 hours)
2. Collection of Information and Data (15 hours)
3. Applying Software Engineering Methodologies (20 hours)
4. ER Diagram and Database Design (20 hours)
5. Coding (40 hours)
6. Code Testing (15 hours)
7. Project Report (5 hours)