REPORT OF LAB ORIENTED PROJECT

(LoP) ON

Learnio

Submitted in partial fulfilment of the requirements for the award of degree of

BACHELOR OF ENGINEERING

In

COMPUTER SCIENCE AND ENGINEERING

Submitted by:
Harshita
2110990583
Harshita
2110990585
Manav Gupta
2110990844
Mehvish Aggarwal
2110990882

Supervised By:
Dr. Arzoo Miglani

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CHITKARA UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY
CHITKARA UNIVERSITY, PUNJAB, INDIA

Abstract

The **Learnio** project aims to develop a dynamic educational marketplace where users can upload, share, and monetize their educational materials. Built with the MERN stack (MongoDB, Express.js, React, Node.js), the platform emphasizes secure data handling, user-friendly interfaces, and robust payment integration.

Key features include:

- Customizable content upload and management options.
- Secure payment gateways (Credit Cards, PayPal, Stripe).
- Advanced search capabilities and personalized recommendations.
- Social media integration and user engagement tools (ratings, reviews).

The project aspires to foster a collaborative educational ecosystem connecting educators and learners, enhancing resource accessibility, and enabling monetization of quality content.

Introduction

In the era of digital education, **Learnio** seeks to bridge the gap between content creators and learners. The platform empowers educators to monetize their content while providing learners with categorized, high-quality materials.

Security and seamless user experience are focal points, achieved via:

- Secure authentication mechanisms (JWT, OAuth).
- Categorization for enhanced discoverability.
- Advanced analytics for educators to optimize content.

The platform facilitates a collaborative environment that supports continuous learning and professional growth.

Methodology

1. Requirements Gathering

Key Features:

- User profiles with secure login options.
- Content upload and management for PDFs, videos, etc.
- Monetization through pricing options or free access.
- Payment integration with multiple gateways.
- Subscription plans and advanced search tools.

2. **Design**

UI/UX Prototyping:
Wireframes for key pages and feedback loops refine the interface, ensuring intuitive navigation.

3. **Development**

Backend:

- MongoDB for database management.
- RESTful APIs using Express.js.
- Payment gateway integration.

Frontend:

- React.js for dynamic UI.
- State management for seamless functionality

4. **Testing**

Thorough testing phases include:

- Unit and integration tests for core modules.
- User acceptance testing for feedback-driven improvements.

5. **Deployment**

Hosting:

Deployment on a scalable cloud platform (AWS, Azure). Continuous Integration/Continuous Deployment (CI/CD) ensures smooth updates and maintenance.

Tools and Technologies

1. **MongoDB**: NoSQL database for scalable data storage.
2. **Express.js**: Backend framework for API development.
3. **React.js**: Frontend library for responsive UI.
4. **Node.js**: JavaScript runtime for backend development.
5. **Payment Gateways**: Stripe, PayPal for secure transactions.
6. **Authentication Libraries**: JWT, Passport.js, and OAuth for user authentication.

Project Plan

Phase 1: Planning and Design

- Conduct market research to gather user requirements.
- Design wireframes for platform pages.

Phase 2: Development

- Implement core functionalities such as file upload, search, and payment integration.
- Establish subscription-based content access.

Phase 3: Testing and QA

- Conduct unit, system, and performance testing.
- Address user feedback for iterative improvements.

Phase 4: Deployment and Maintenance

- Deploy the platform on a scalable hosting service.
- Continuously monitor performance and update features.

Conclusion

Learnio presents a transformative approach to education, combining a secure marketplace with advanced user engagement features. With its robust design, scalable technology stack, and focus on user-centric features, the project holds the potential to significantly enhance the educational content-sharing ecosystem.