

Learnnet - A MERN-Based E-Learning Platform

Project Synopsys



Academic Year: 2025

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SYNOPSIS

1. Lernet - A MERN-Based E-Learning Platform is designed to revolutionize the way people learn online. Inspired by platforms like Udemy, Lernet provides students and professionals with an interactive and engaging learning experience. It allows users to explore a variety of courses, enroll in them, and make secure payments through Stripe. The platform ensures a seamless and user-friendly interface that makes online learning more accessible and efficient.

2. Statement About the Project: Lernet is an online learning platform aimed at bridging the gap between learners and instructors by offering high-quality educational content. It enables instructors to create and upload courses, while students can browse and enroll in them. The platform supports various multimedia content formats such as video lectures, PDFs, and quizzes. Additionally, a secure payment gateway powered by Stripe ensures smooth financial transactions. The goal is to make learning more accessible, efficient, and engaging for users worldwide.

3. Objectives and Scope of the Project: The objective of Lernet is to develop a fully functional and scalable e-learning platform that offers a seamless learning experience. The project aims to provide a structured course management system, an interactive user interface, and secure payment processing. The platform will include user authentication, role-based access control, and features such as course tracking, quizzes, and progress monitoring. The scope extends to enabling instructors to monetize their courses and students to gain knowledge at their own pace. Future enhancements may include AI-powered course recommendations and live discussions.

4. Why This Particular Topic Was Chosen: This project was chosen as an opportunity to gain hands-on experience in MERN stack development. Since this is my first full-stack project, it allows me to explore different aspects of web development, including frontend and backend integration, database management, and API handling. Implementing Stripe for payment processing adds real-world application experience. The project serves as a practical learning experience while also contributing to the growing demand for online education platforms.

5. Methodology: To develop Lernet, a structured development approach is followed. The process begins with research and planning to define key functionalities. The design phase involves creating an intuitive user interface and structuring the database schema. The development phase follows, where the frontend is built using React with Vite for enhanced performance, while the backend is developed using Node.js and Express.js. MongoDB is used for efficient data management. The next step involves integrating essential functionalities such as user authentication, payment processing via Stripe, and course management. Testing is conducted at various levels, including unit testing and user acceptance testing, to ensure platform reliability. Finally, the platform is deployed using cloud hosting services like Vercel or Heroku to ensure scalability and accessibility.

6. Hardware and Software Used:

- **Hardware:**
 - A system with at least 8GB RAM, Intel i5 or above.
 - Stable internet connection.
 - Cloud-based storage for hosting content.
- **Software:**
 - React with Vite (Frontend Framework)
 - Node.js and Express.js (Backend Framework)
 - MongoDB (Database)
 - Stripe (Payment Gateway)
 - Git & GitHub (Version Control)
 - Postman (API Testing)

7. Contribution of the Project: Learnet will significantly contribute to the e-learning industry by providing an efficient and accessible platform for students and instructors. It empowers instructors by offering them a space to share their expertise while enabling students to learn new skills at their convenience. The project enhances digital education by simplifying course creation, enrolment, and payment processes. Additionally, it serves as an invaluable learning experience for me, helping to strengthen my full-stack development skills and knowledge of real-world application deployment.

8. Conclusion: In conclusion, Learnet aims to be a dynamic and scalable platform that enhances online education. The project bridges the gap between learners and instructors by integrating modern web technologies and prioritizing user experience. The platform holds great potential for future advancements, including AI-driven recommendations, live classes, and community features. As my first project in the MERN stack, Learnet serves as a stepping stone toward mastering full-stack development while contributing to the digital learning revolution.