Student Blog Project Report

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# 1. Introduction

The Student Blog is a full‑stack web application designed to streamline access to academic materials—such as theory, practicals, and previous year question papers—for students. It also incorporates a secure admin panel to manage content efficiently.

# 2. Abstract

This system is built using React.js for the front end, Node.js with Express for the back end, and MongoDB as the database. The application allows students to browse categorized educational content, while administrators can log in to add, update, or delete subjects and units. The deployment is split: backend on Render, frontend on Render or Netlify (for SPA routing support).

# 3. Tools Used

- Frontend: React.js, Vite, Tailwind CSS  
- Backend: Node.js, Express.js  
- Database: MongoDB  
- Deployment: Render (backend) and Netlify or Render (frontend)  
- Others: Git & GitHub for version control

# 4. Steps Involved in Building the Project

1. Defined requirements, designed database schema and project structure.  
2. Created frontend with React and Vite, using react-router for page navigation.  
3. Built backend APIs with Express for CRUD operations on materials and user authentication.  
4. Connected backend to MongoDB for persistent data storage.  
5. Created admin panel for adding and managing subjects, ensuring units can be added or removed with real-time updates.  
6. Handled SPA routing issues using \_redirects or netlify.toml, resolving the 404-on-refresh problem.  
7. Deployed both backend and frontend properly, verifying functionality across all pages.

# 5. Conclusion

The Student Blog provides a user-friendly and scalable platform for managing academic resources. Its modern technology stack, clean architecture, and deployment strategy make it both maintainable and extendable. Future enhancements may include file uploads, user roles, and analytics.