



# PRESIDENCY UNIVERSITY

## ONLINE EDUCATION RESOURCES PLATFORM

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# ONLINE EDUCATION RESOURCES PLATFORM

A centralized web platform designed to allow students to upload, share, and download free educational resources such as PDFs and study materials.

## Explanation:

- Educational resources are scattered across multiple platforms, making them difficult to access efficiently.
- Many online learning platforms require paid subscriptions, limiting accessibility for students.
- Colleges often lack a centralized system for structured academic resource sharing.
- Students waste time searching for reliable study materials instead of focusing on learning.



## Innovation & Uniqueness:

- **Centralized Academic Repository** : Unlike scattered sharing methods (WhatsApp, Drive links), our platform provides a structured, single-point access system within the institution.
- **Admin-Based Quality Control** : Resources are verified before becoming public, ensuring reliability and maintaining academic standards.
- **Role-Based Access Architecture** : Separate User and Admin roles improve system control and prevent misuse.
- **Secure File Validation System** : Restricts uploads to PDF format with size limits, preventing malicious or irrelevant content.

# Proposed Solution

“To solve this problem, we developed a full-stack web application using Next.js and PostgreSQL.”

- **Centralized Web Platform** : Developed a single online platform where students can upload and access study materials in one organized location.
- **Secure User Authentication** : Implemented login and registration system to ensure controlled and secure access to resources.
- **Structured Resource Management** : Resources are categorized subject-wise to improve search efficiency and organization.
- **PDF-Only Upload System** : Restricted file format and size to maintain system consistency and prevent misuse.
- **Role-Based Access Control** : Separate roles for Users and Admin to maintain structured management.
- **Search & Filtering Mechanism** : Students can quickly find resources using subject filters and search functionality.



# Technical Approach

| <b>Layer</b>    | <b>Technology</b>      | <b>Implementation Details</b>           |
|-----------------|------------------------|---|
| <b>Frontend</b> | Next.js TailwindCSS    | Responsive design with react + tailwind |
| <b>Backend</b>  | Node, JWT, Typescript  | REST API's + auth                       |
| <b>Database</b> | PostgreSQL+Drizzle ORM | Store users date in DB                  |
| <b>Storage</b>  | FireBase Storage       | Secure file storage                     |

# IMPACT AND BENEFITS

- **Improved Academic Efficiency** : Students can quickly access organized study materials, reducing time wasted searching for resources.
- **Enhanced Learning Experience** : Easy availability of notes and materials helps students prepare better for exams and assignments.
- **Reduced Administrative Burden** : Centralized management minimizes manual sharing through emails or messaging platforms.
- **Structured Knowledge Repository** : Creates a long-term digital archive of academic materials within the institution.
- **Better Resource Management** : Subject-wise categorization ensures systematic organization of content.
- **Equal Access to Resources** : All students get fair and free access to study materials regardless of background.