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EduVault

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Abstract: *EduVault is a web-based Academic Resource Management Portal developed to simplify the storage, organization, and sharing of academic resources within educational institutions. The system provides a centralized platform where faculty members can upload lecture notes, presentations, laboratory manuals, textbooks, and other study materials, while students can securely search, view, and download resources based on their academic requirements. The application implements JWT-based authentication and role-based access control to ensure secure access for administrators, faculty, and students. Developed using the MERN Stack (MongoDB, Express.js, React.js, and Node.js), EduVault offers advanced search, category-based filtering, responsive user interfaces, and efficient resource management. By replacing traditional methods of file sharing with a centralized digital repository, the system improves resource accessibility, reduces manual effort, enhances collaboration between faculty and students, and supports an efficient digital learning environment.*

Keywords: *Academic Resource Management System, React.js, Node.js, MongoDB, Cloudinary, Resource Sharing, Role-Based Access.*

I. INTRODUCTION

The rapid advancement of digital technologies has significantly transformed the education sector by enabling efficient management and sharing of academic resources. However, many educational institutions still rely on conventional methods such as email, messaging applications, or physical distribution of study materials. These approaches often lead to poor organization, duplication of files, limited accessibility, and difficulty in maintaining updated learning resources. EduVault is a web-based Academic Resource Management Portal designed to address these challenges by providing a centralized platform for storing, organizing, and sharing academic resources. The system enables faculty members to upload lecture notes, presentations, laboratory manuals, textbooks, previous question papers, and other educational materials, while students can securely browse, search, view, and download resources according to their academic requirements. The application implements JWT-based authentication and role-based access control to ensure secure access for different categories of users, including administrators, faculty members, and students. Administrators are responsible for managing users, categories, and system resources, faculty members can upload and maintain academic materials, and students can access learning resources through a simple and user-friendly interface. EduVault is developed using the MERN Stack, which includes MongoDB for data storage, Express.js and Node.js for backend services, and React.js for building a responsive frontend. The application also incorporates advanced search functionality, category-based filtering, secure authentication, and responsive design to enhance usability across multiple devices. By replacing traditional file-sharing methods with a centralized digital repository, EduVault improves academic resource management, minimizes manual effort, enhances collaboration between faculty and students, and supports an efficient digital learning environment.

II. LITERATURE SURVEY

The increasing adoption of digital technologies has encouraged educational institutions to implement Learning Management Systems (LMS) and web-based academic portals for improving resource accessibility and educational efficiency. Existing research highlights the importance of centralized repositories that allow instructors to upload educational content while enabling students to access learning materials remotely.

Several studies emphasize the role of secure authentication, role-based access control, and cloud-supported technologies in improving academic resource management. These systems provide secure access to educational materials while maintaining data integrity and user privacy. Advanced search mechanisms and categorized resource organization further improve the efficiency of locating academic documents.

Recent developments in full-stack web technologies, particularly the MERN Stack (MongoDB, Express.js, React.js, and Node.js), have enabled developers to build scalable, responsive, and secure web applications. These technologies simplify application development while providing flexibility, improved performance, and efficient database management for educational platforms.

Although existing Learning Management Systems provide features such as online examinations, attendance management, and assignment submission, many of them primarily focus on classroom administration rather than centralized academic resource management. Additionally, several systems lack efficient organization of study materials, advanced search capabilities, responsive interfaces, and simplified resource sharing.

EduVault addresses these limitations by providing a centralized Academic Resource Management Portal with JWT-based authentication, role-based access control, category-based resource management, advanced search functionality, responsive user interfaces, and efficient document management. The proposed system offers a secure and user-friendly platform that enhances collaboration between faculty members and students while improving accessibility to academic resources.

III. PROPOSED SYSTEM

The EduVault – Academic Resource Management Portal is a secure and centralized web-based application developed to simplify the management and sharing of academic resources within educational institutions. The system provides a single platform where administrators, faculty members, and students can efficiently manage and access educational materials according to their assigned roles.

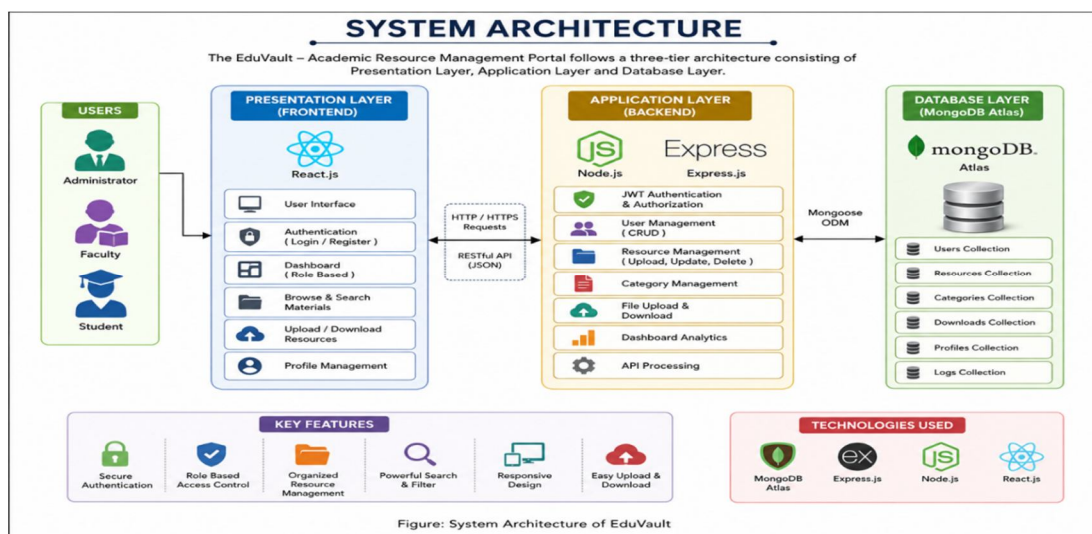
EduVault is developed using the MERN Stack (MongoDB, Express.js, React.js, and Node.js), ensuring high performance, scalability, and maintainability. It implements JWT-based authentication to provide secure login and role-based access control. Administrators can manage users, monitor uploaded resources, and maintain the overall system, while faculty members can upload and organize study materials. Students can browse, search, view, and download resources such as lecture notes, presentations, laboratory manuals, textbooks, and previous question papers.

The system includes advanced search and category-based filtering to help users quickly locate required materials. A responsive user interface ensures seamless access across desktops, laptops, tablets, and mobile devices. By replacing traditional file-sharing methods with a centralized digital repository, EduVault improves resource organization, enhances collaboration, reduces manual effort, and supports a secure and efficient digital learning environment.

Advantages of the Proposed System

- Provides a centralized repository for academic resources.
- Implements secure JWT-based authentication and role-based access control.
- Enables easy upload, download, and management of study materials.
- Supports fast searching and category-based filtering.
- Offers a responsive and user-friendly interface.
- Reduces paperwork and manual file sharing.
- Ensures scalability, security, and easy maintenance using the MERN Stack.

IV. SYSTEM ARCHITECTURE



V. RESULTS

The EduVault – Academic Resource Management Portal was successfully designed and implemented using the MERN Stack (MongoDB, Express.js, React.js, and Node.js). The system was tested to ensure that all modules function correctly and provide a secure, user-friendly, and efficient platform for managing academic resources. The application supports role-based authentication using JWT, enabling secure access for Administrators, Faculty members, and Students. The developed portal successfully achieves the objectives of centralized resource management, secure file handling, and easy accessibility of academic materials.

Live Project:

<https://edu-vault-beta.vercel.app>

Demo Credentials Admin Login

Email : admin@eduvault.com

Password : Admin@123

The following screenshots demonstrate the successful implementation of the developed system.

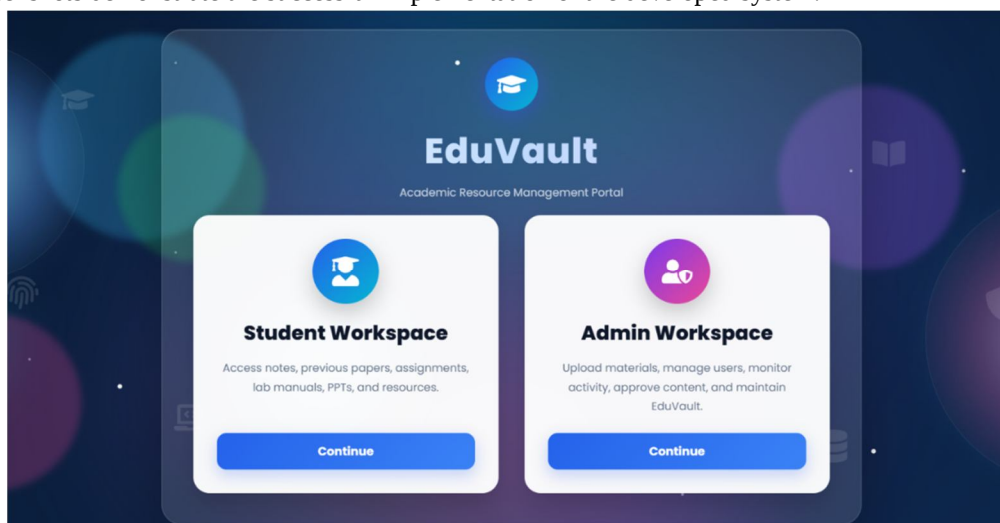


Figure 8.1 Login Portal

The Login Portal allows users to select their workspace (Student or Administrator) and securely log in using their credentials. The system verifies user identity through JWT authentication and redirects users to their respective dashboards.

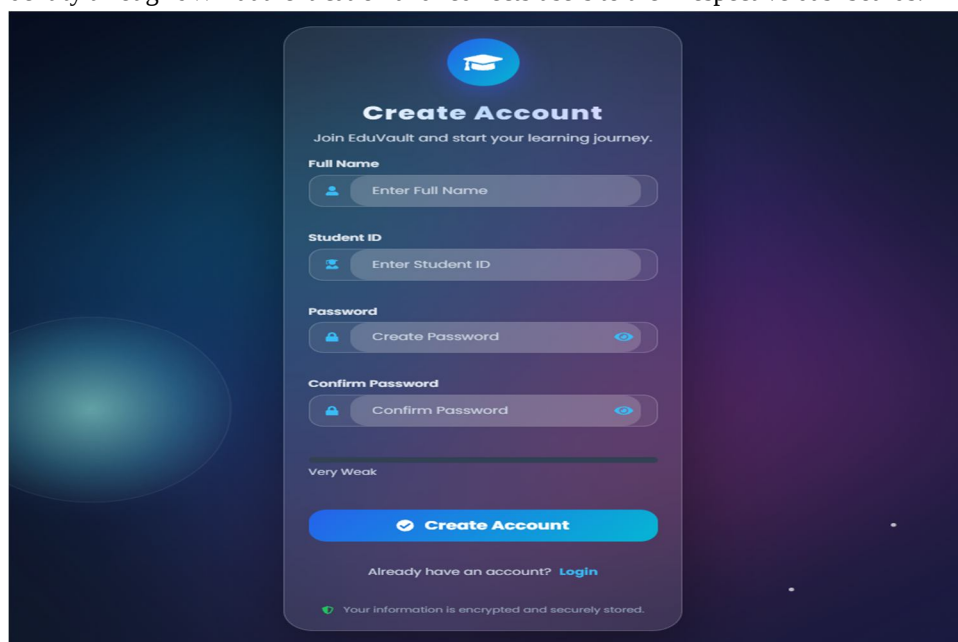


Figure 8.2 User Registration

The Registration module enables new students to create an account by entering the required details. Input validation and secure password handling ensure reliable user registration.

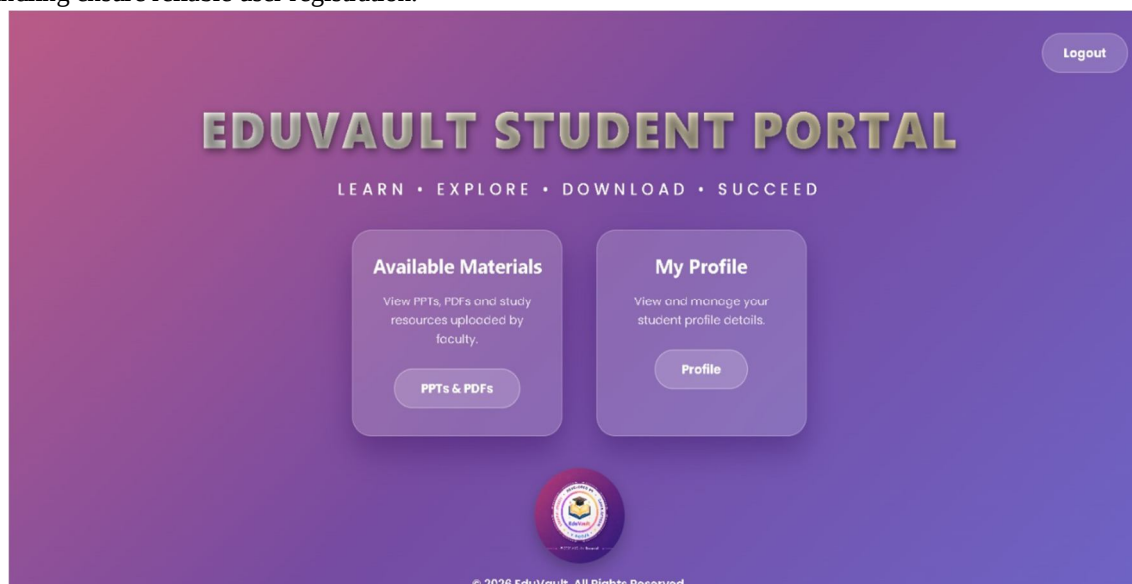


Figure 8.3 Dashboard

The Dashboard provides a personalized interface where users can browse learning materials, manage their profiles, access settings, and navigate to different modules. It offers a clean and responsive design for an improved user experience.

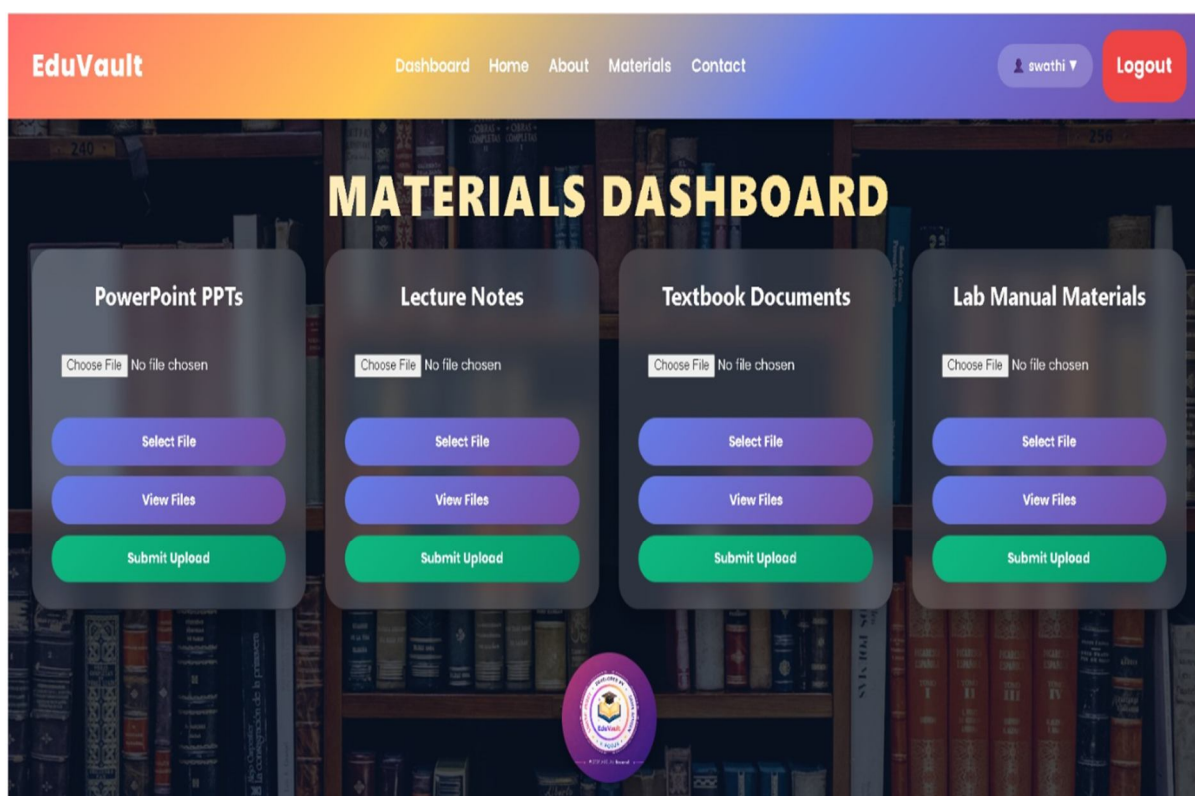


Figure 8.4 Materials Module

The Materials module organizes academic resources into categories such as PowerPoint Presentations, Lecture Notes, Textbook Documents, and Laboratory Manuals. Users can upload, search, browse, view, and download study materials efficiently.

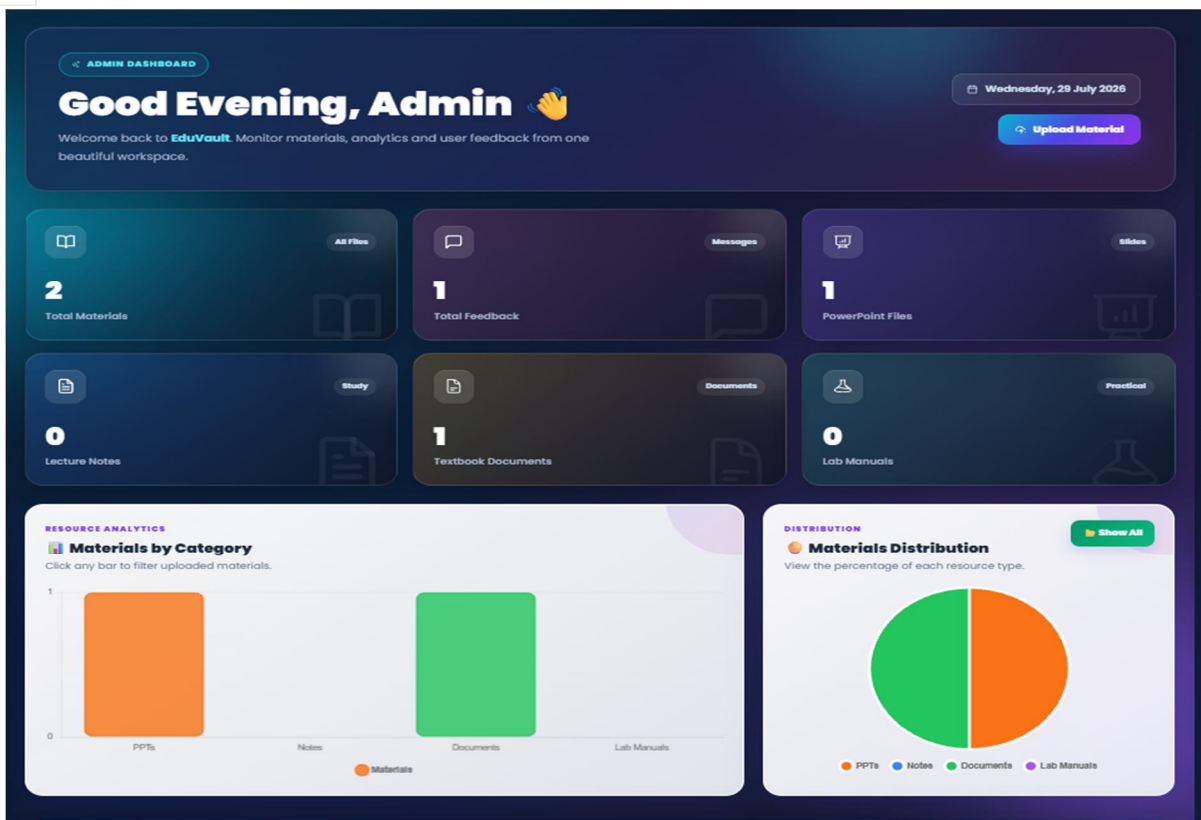


Figure 8.5 Admin Dashboard

The Admin Dashboard displays system statistics, including the total number of uploaded resources, feedback received, and category-wise analytics. It enables administrators to monitor and manage the overall performance of the portal.

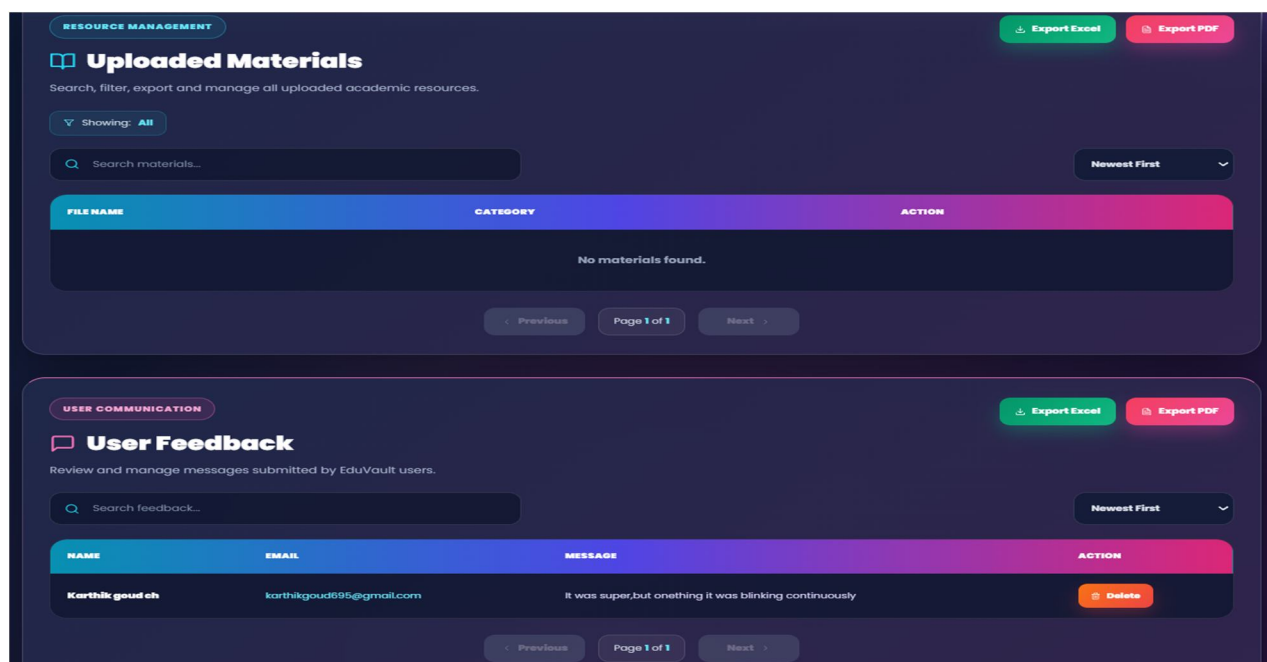


Figure 8.6 Resource Management

The Resource Management module allows administrators to manage uploaded files by performing operations such as searching, filtering, exporting reports, and deleting resources. This helps maintain an organized and up-to-date academic repository.

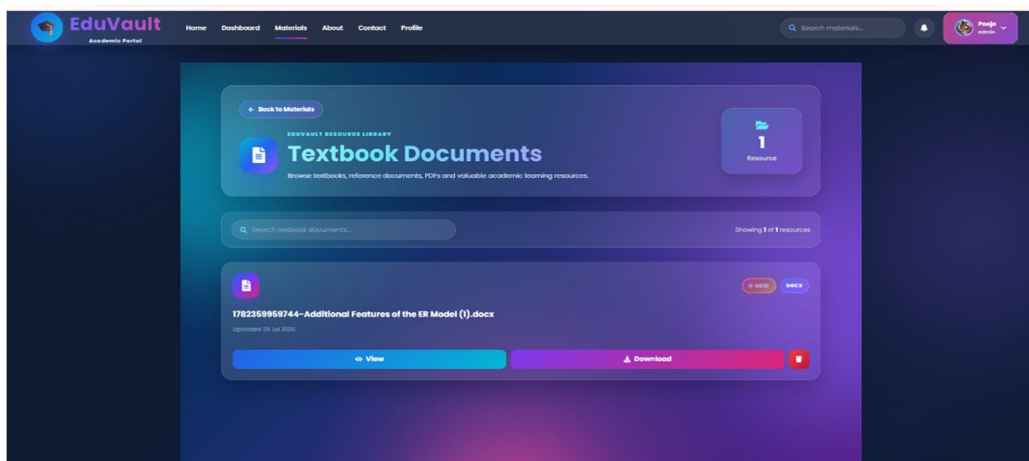


Figure 8.7 Documents Module

The Documents module displays uploaded academic documents with options to view and download files. The search functionality enables users to quickly locate the required study materials.

VI. CONCLUSION

EduVault has been successfully developed as a secure, scalable, and user-friendly Academic Resource Management Portal that simplifies the storage, organization, and sharing of educational resources within academic institutions. The system provides a centralized repository where faculty members can upload and manage study materials, while students can efficiently browse, search, view, and download academic resources according to their learning requirements.

The implementation of JWT-based authentication and role-based access control ensures secure access for administrators, faculty members, and students, thereby protecting sensitive academic information and maintaining appropriate user privileges. The responsive user interface, advanced search functionality, and category-based organization significantly improve user experience and resource accessibility.

Developed using the MERN Stack (MongoDB, Express.js, React.js, and Node.js), EduVault demonstrates the practical application of modern full-stack web technologies in solving real-world educational challenges. The system minimizes manual effort, reduces dependency on traditional file-sharing methods, improves collaboration between faculty and students, and promotes an efficient digital learning environment.

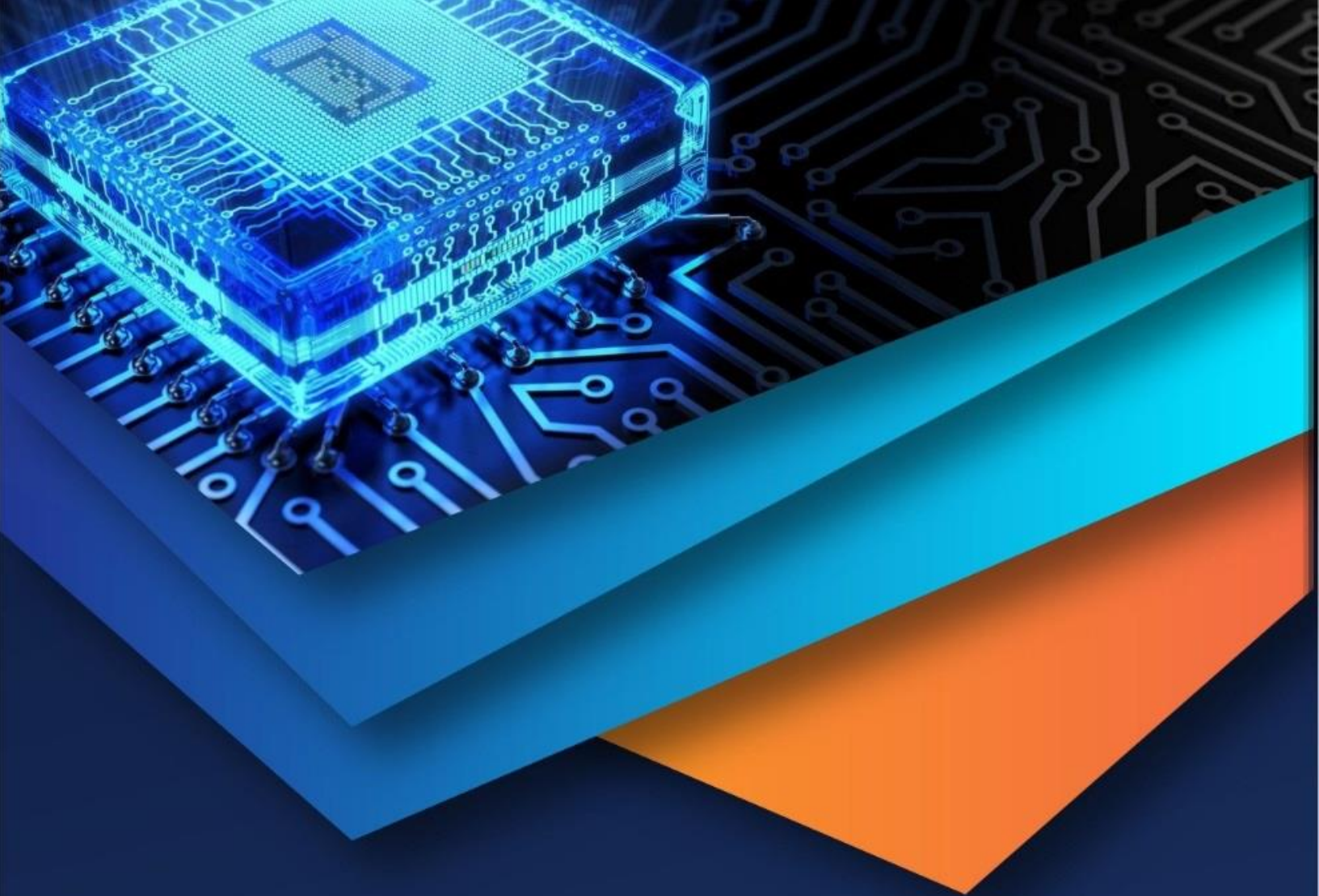
Overall, EduVault successfully achieves its objective of providing a centralized, secure, and efficient platform for academic resource management and establishes a strong foundation for future enhancements in educational technology.

VII. FUTURE SCOPE

EduVault has significant potential for future enhancements to make the platform more efficient, intelligent, and user-friendly. The system can be improved by adding advanced search and filtering options that allow students to quickly find required academic resources based on subjects, categories, file types, and keywords. A real-time notification system can be introduced to notify students whenever new materials, announcements, or important updates are uploaded by faculty members. Security can also be strengthened by implementing advanced authentication methods and rolebased access control for better management of users and resources. In the future, Artificial Intelligence (AI) can be integrated into EduVault to provide smarter learning support. AI-based features such as automatic categorization of documents, intelligent recommendations of study materials, chatbot assistance, and personalized learning suggestions can help students access relevant resources more effectively. The platform can also be enhanced with analytics to track resource usage and user engagement. Furthermore, EduVault can be extended into a mobile application and optimized using cloud technologies to support a larger number of users with better accessibility and reliability. These future improvements will transform EduVault into a more advanced digital learning platform that promotes efficient resource sharing and creates a better learning experience for both students and faculty.

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