

A
Mini Project Report on
CONNECT'SIT
(COLLEGE NOTES APPLICATION)

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BACHELOR OF ENGINEERING
IN
Computer Science & Engineering
Artificial Intelligence and Machine Learning

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Project Report Approval

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We declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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ABSTRACT

The *Connectsit* app is a dynamic platform designed to enhance communication and file sharing among students, teachers, and administrators. It features a secure, role-based login system that tailors access to each user type, making it easy for teachers to upload notes, assignments, and other resources, and for students to access them. The app's intuitive interface ensures that users can navigate seamlessly, while shared preferences allow login states to be stored, enabling quick and easy access without repeated logins.

One of the app's standout features is its real-time file-sharing capability, ensuring that students receive updates even when the app is not actively running.

Administrators also benefit from tools to manage user accounts, creating a secure, organized learning environment. By fostering efficient file management and promoting collaboration, *Connectsit* serves as a comprehensive digital solution for modern education, connecting teachers, students, and administrators with ease.

Keywords : Educational App, Role Based Access , File Sharing , Digital Learning Platform, Collaborative Environment , Digital Learning Platform , Secure Login

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CHAPTER 1

INTRODUCTION

1.INTRODUCTION

"CONNECT'SIT" is an innovative application designed to enhance access to educational resources for students. By leveraging digital technology, it provides a streamlined platform for students to access lecture notes and study materials anytime, anywhere. This solution automates file management processes, allowing teachers to upload materials that the app automatically downloads, compresses, and securely stores in the student's Google Drive, reducing the need for manual organization.

In a rapidly evolving educational landscape, "CONNECT'SIT" represents a transformative approach to learning resources, promoting efficiency and accessibility. This application includes features like subject bifurcation and topic-based organization, enabling students to find relevant materials quickly, especially during exam preparation.

By integrating "CONNECT'SIT" into educational systems, institutions can provide consistent support, reduce the challenges associated with resource management, and foster better study habits. As technology continues to advance, "CONNECT'SIT" holds the potential to revolutionize how students engage with academic content, making quality educational resources more accessible and organized for all.

CONNECT'SIT also serves as a dynamic platform for enhancing communication between students, teachers, and administrators. With its role-based access system, the app offers tailored features to each user, ensuring that students, teachers, and admins can interact seamlessly within a secure digital environment. Teachers can easily upload lecture notes, assignments, and study materials, which are automatically shared with students in real time, minimizing delays and ensuring timely access to important resources. The app's automated file management reduces manual workload and allows students to focus on learning.

The app's real-time notifications keep students informed, even when it's not running, ensuring they never miss important updates. With its secure login and Google Drive integration, *CONNECT'SIT* prioritizes both accessibility and security. By promoting collaboration through easy file sharing, subject bifurcation, and topic-based organization, *CONNECT'SIT* offers a structured, user-friendly solution for managing academic resources efficiently.

By embracing *CONNECT'SIT*, educational institutions can not only modernize their resource management systems but also enhance students' learning experience. The app's intuitive features,

secure file storage, and real-time communication capabilities make it a powerful tool for both educators and students, addressing the growing need for digital solutions in education.

CHAPTER 2

LITERATURE SURVEY

2. LITERATURE SURVEY

2.1 HISTORY

The digital transformation of education reflects the broader evolution of technology in learning environments. Over recent decades, innovations have fundamentally changed how educational resources are delivered, making learning more accessible and efficient. Here's an overview of the key milestones in this transformation:

1. Early Digital Learning Resources:

The 1980s saw the introduction of personal computers, followed by the rise of the internet in the 1990s. Educational materials were initially distributed via CD-ROMs and websites, allowing students to download resources at their convenience. However, this often required cumbersome manual file organization.

2. Mobile Learning Revolution:

The proliferation of smartphones in the 2000s introduced mobile learning (m-learning), enabling students to access materials anytime, anywhere. Platforms like Google Classroom and Moodle became popular, although they still required students to manually manage their files, creating organization challenges.

3. Advent of Cloud Storage:

Cloud services like Google Drive, Dropbox, and OneDrive transformed educational resource management, allowing students to store files online and access them from any device. This reduced reliance on physical storage devices, which were prone to data loss and damage.

4. Automation in File Management:

Despite advancements in cloud storage, many applications required manual downloading and organizing of files, leading to a fragmented user experience. The "CONNECT'SIT" app emerged to address this gap, automating file management and ensuring seamless access to educational resources without manual intervention.

2.2 LITERATURE REVIEW

1. Effectiveness of Mobile Learning Platforms

- a. **Improved Engagement:** A 2020 study by Kearney et al. found that mobile learning applications significantly enhance student engagement and accessibility to learning materials. User-friendly interfaces and seamless cloud integration were highlighted as key factors in improving the learning experience.
- b. **Automation Benefits:** The study indicated that students prefer applications that automate processes like file downloads and organization, reducing cognitive load and allowing them to focus more on their studies.

2. Integration of Cloud Storage:

- a. **Flexibility and Security:** A review by Chen et al. (2019) emphasized that integrating cloud storage into mobile learning applications provides flexibility and ensures data security. However, it noted that many platforms lack features such as automatic file compression and storage optimization, which are essential for managing large data volumes on mobile devices.
- b. **Addressing Limitations:** The development of applications like "CONNECT'SIT" represents a significant advancement by automating the download, compression, and storage of educational files, addressing many limitations identified in previous studies.

3. Scalability and Adaptability:

- a. **Managing Diverse Needs:** The literature underscores the importance of scalability in educational applications. "CONNECT'SIT" is designed to accommodate varying educational levels and increasing volumes of materials, enabling efficient navigation and management of academic resources across subjects and topics.

4. Future Directions and Potential Enhancements :

- a. **Enhanced Collaboration Tools:** Future developments could include features for real-time collaboration among students and teachers, such as shared whiteboards, group chats, and virtual classrooms with video conferencing capabilities.
- b. **Accessibility and Inclusivity:** Offering multilingual support can promote inclusivity and cater to a diverse user base.
- c. **Data Analytics and Insights:** Implementing dashboards for teachers to monitor class performance can help tailor teaching strategies effectively.
- d. **Security and Privacy:** Ongoing enhancements in security measures are essential to

protect user data and ensure compliance with privacy regulations.

"CONNECT'SIT" aims to address the challenges of file management and organization in education. By leveraging cutting-edge technologies and best practices, the app seeks to enhance the student learning experience and provide a comprehensive solution for academic resource management. Through continuous evolution and incorporation of user feedback, "CONNECT'SIT" strives to be an indispensable tool in the educational landscape, fostering a more connected and efficient learning environment.

CHAPTER 3

PROBLEM STATEMENT

3.PROBLEM STATEMENT

The traditional method of distributing academic resources often relies on manual file sharing through emails or learning management systems (LMS) like Google Classroom or Moodle. While useful, these methods can be time-consuming for teachers managing large classes and multiple subjects. Manually sending files can create administrative burdens, such as resending materials and tracking distribution. For students, managing resources across various platforms can be overwhelming, leading to disorganization and lost materials, which can cause missed deadlines and confusion before exams. Additionally, manual downloading and organizing are error-prone, making it hard for students to find what they need.

To address these challenges, we propose "CONNECT'SIT," a mobile app designed to automate the downloading and organizing of educational resources. The app categorizes files by branch, division, subject, and topic, ensuring easy access to materials. By automating file downloads and organization, "CONNECT'SIT" reduces the burden on both students and teachers. It integrates with cloud storage services like Google Drive, allowing students to access their materials from anywhere while ensuring their files are backed up.

With the rise of digital education, there is a growing need for a centralized platform that facilitates seamless sharing and retrieval of resources. A well-designed solution can alleviate the manual process of file distribution, enhancing productivity. This would enable teachers to focus on more interactive aspects of education, while students benefit from a clear, well-structured repository of academic resources. "CONNECT'SIT" automates distribution, freeing educators from repetitive tasks **and** ensuring all students access organized materials

CHAPTER 4

EXPERIMENTAL SETUP

4.EXPERIMENTAL SETUP

4.1 HARDWARE SETUP

1. Overview of the System:

- a. The hardware setup for "CONNECT'SIT" involves standard Android devices:

2. Device Requirements:

- a. Minimum of 2GB RAM
- b. Minimum of 16GB internal storage
- c. Local and Cloud Storage

3. File Management:

- a. Files uploaded by teachers are downloaded to local storage, then compressed and uploaded to cloud storage (e.g., Google Drive).

4. Internet Connection:

- a. A stable internet connection (Wi-Fi or mobile data) is essential for real-time synchronization between the device and the cloud.

5. Accessibility and Battery Performance

- a. The app is optimized for widely available devices, ensuring accessibility across different economic backgrounds.
- b. Battery performance is important for on-the-go use, with optimizations to conserve battery life, though extensive use may require devices with reliable battery capacity.

6. Development Requirements

- a. To build the app, a laptop with:
- b. Android Studio installed
- c. A graphics card to run the application emulator

4.2 SOFTWARE SETUP

1. Overview of the System

- a. The software setup for "CONNECT'SIT" is structured for smooth app performance:

2. Development Environment:

- a. Developed using Android Studio, the official IDE for Android applications.

3. Programming Languages

- a. **Java and Kotlin:** Kotlin is used for its concise syntax and interoperability with Java, enhancing development efficiency. Java's mature ecosystem is utilized for backend

functionalities.

4. User Interface Design

- a. **Jetpack Compose:** The UI is designed using Jetpack Compose, ensuring a clean, intuitive, and responsive layout across various device sizes.

4.3 App Functionality

1. File Management Logic

- a. **Download Process:** Automatically downloads educational resources to local storage.
- b. **Compression and Upload:** Files are compressed and uploaded to the cloud for easy access.

2. User Experience

- a. **Seamless Access:** Integrates with cloud storage to ensure users can access materials from anywhere.
- b. **Structured Organization:** Files are categorized by branch, division, subject, and topic for easy navigation.

3. Additional Considerations

- a. **Accessibility:** The app is designed to be user-friendly for diverse economic backgrounds.
- b. **Data Security:** Ensures that user data is securely managed and backed up in the cloud.

CHAPTER 5
PROPOSED SYSTEM
&
IMPLEMENTATION

5 PROPOSED SYSTEM & IMPLEMENTATION

We are making a system that can be used by students and teachers to connect with each other for academic resources, updates, schedules, managing tasks & for such other purposes. We basically are creating a better form of our college resources website by adding features that we desire that should have been there like notifications.

5.1 BLOCK DIAGRAM OF PROPOSED SYSTEM

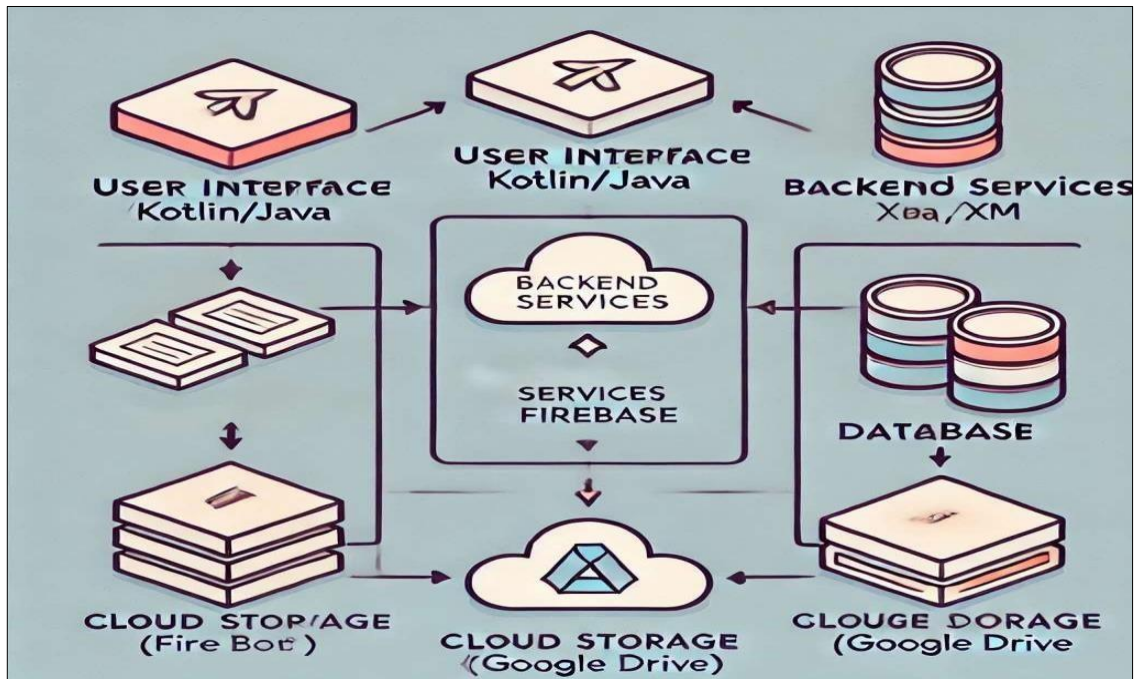


Fig 5.1 Block Diagram showing the backend logic

The block diagram represents the data flow between students, teachers, and the cloud storage system. The system consists of several blocks, such as user authentication, file upload/download, file compression, and cloud storage management. Each block has specific properties that ensure the smooth operation of the app, such as data encryption for security, automated processes for file handling, and an organized structure for subject-wise content storage.

The Connects'it system starts with teachers uploading their notes, which are then automatically compressed and stored in the cloud. The app retrieves these files based on the branch, division, and subject selections made by students. This eliminates the need for manual downloads and organization. The system uses Spring Boot to handle backend processes and ensures that files are always available to students, regardless of their location.

5.2 DESCRIPTION OF BLOCK DIAGRAM

Diagram 1: System Architecture for Cloud-Based Backend Services

- a. **User Interface (UI):** The diagram presents the user interface designed using Kotlin/Java. Two client-facing UIs connect users to the backend system via different services.
- b. **Backend: Services:** It consists of two sets of backend services, possibly running different platforms or protocols, identified as Xba/XM and generalized backend services. These services interact with the database and manage communication between the user interface and data handling.
- c. **Database:** Represents a central database system for storing structured information. Backend services interact with the database for data retrieval and updates, ensuring smooth functionality for users.
- d. **Firebase:** The system leverages. Firebase, a cloud platform, to offer essential services like authentication, cloud messaging, and real-time data synchronization, acting as the core operational service for the app.
- e. **Cloud Storage:** The diagram highlights the use of Google Drive as an external cloud storage solution for document or file uploads that users may need to store outside the core database.
- f. **FireStore:** This appears to reference a secondary cloud storage or file system platform, possibly custom-made or specifically integrated with Firebase for managing and storing files.
- g. **Data Flow:** The flow of data in the diagram demonstrates user actions, which start at the UI and passthrough backend services, eventually leading to the database or external storage solutions. This ensures both data storage and retrieval functionalities.

In summary, this diagram explains the general flow between a user-facing interface, backend service layers, Firebase for app services, cloud storage systems, and a database for a cloud-based infrastructure.

5.3 IMPLEMENTATION

Implementation of proposed system must be included here. Students can explain implementation using screen shots of output:

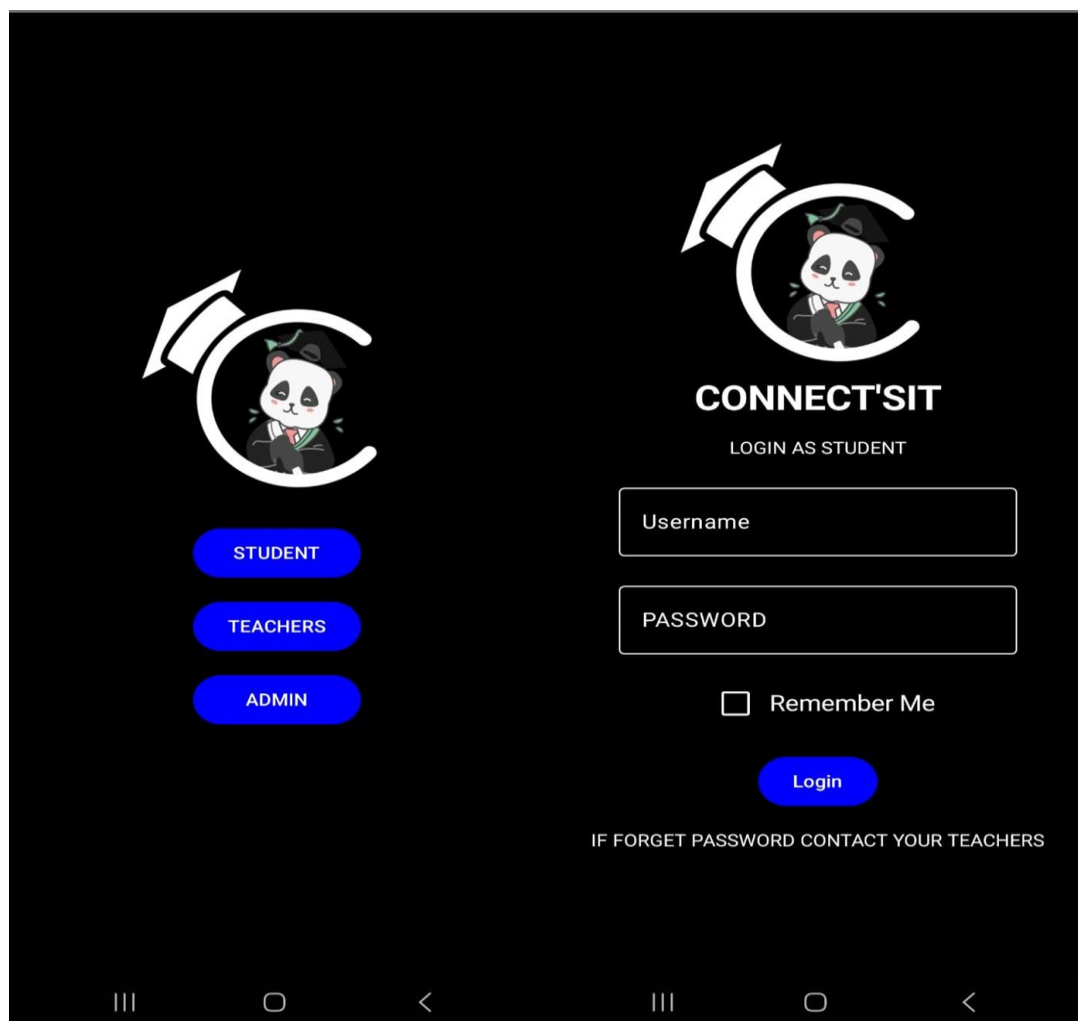


Fig 5.2 : User Roles and Login Screen

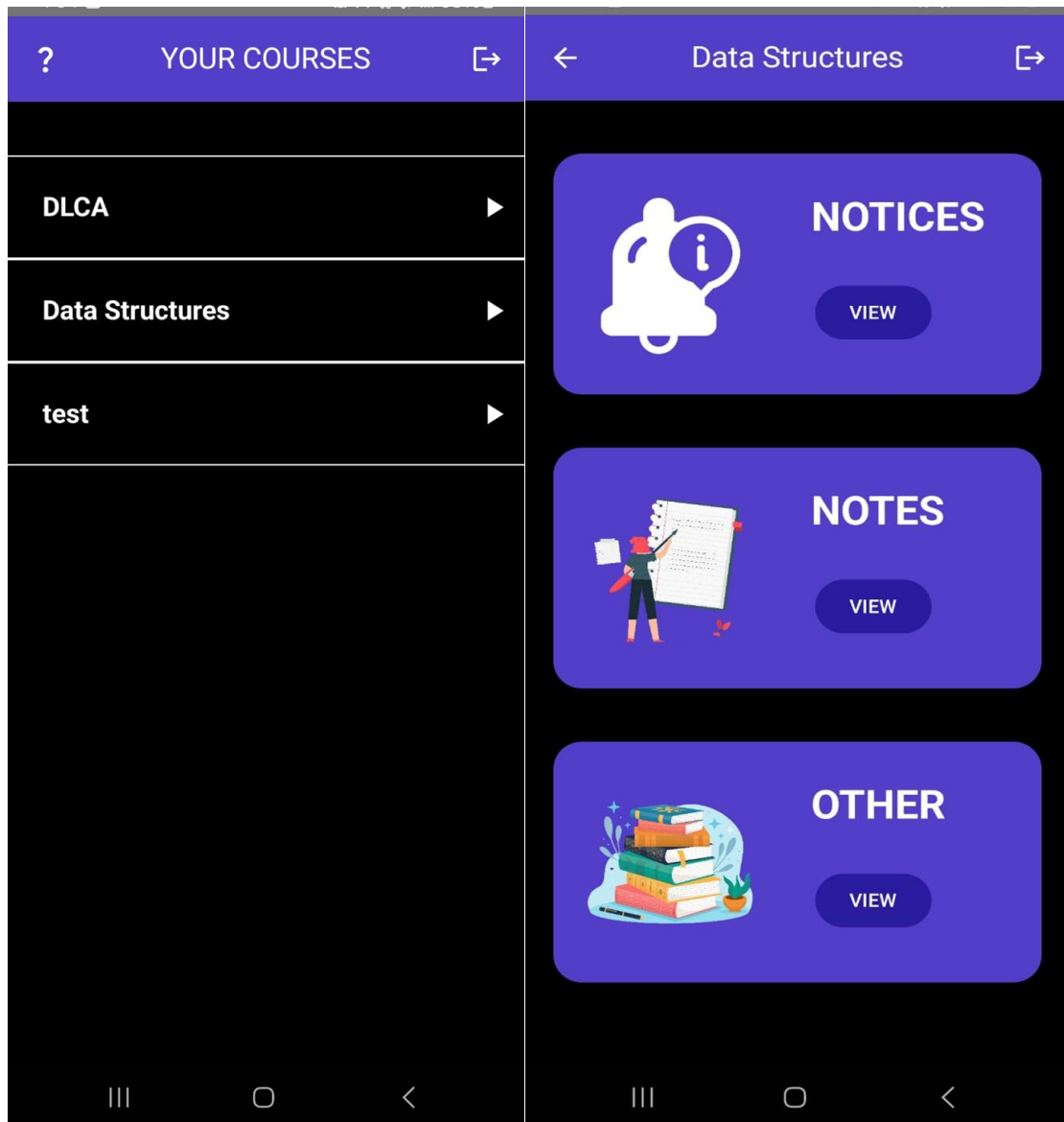


Fig 5.3 : Course Options and their respective choices

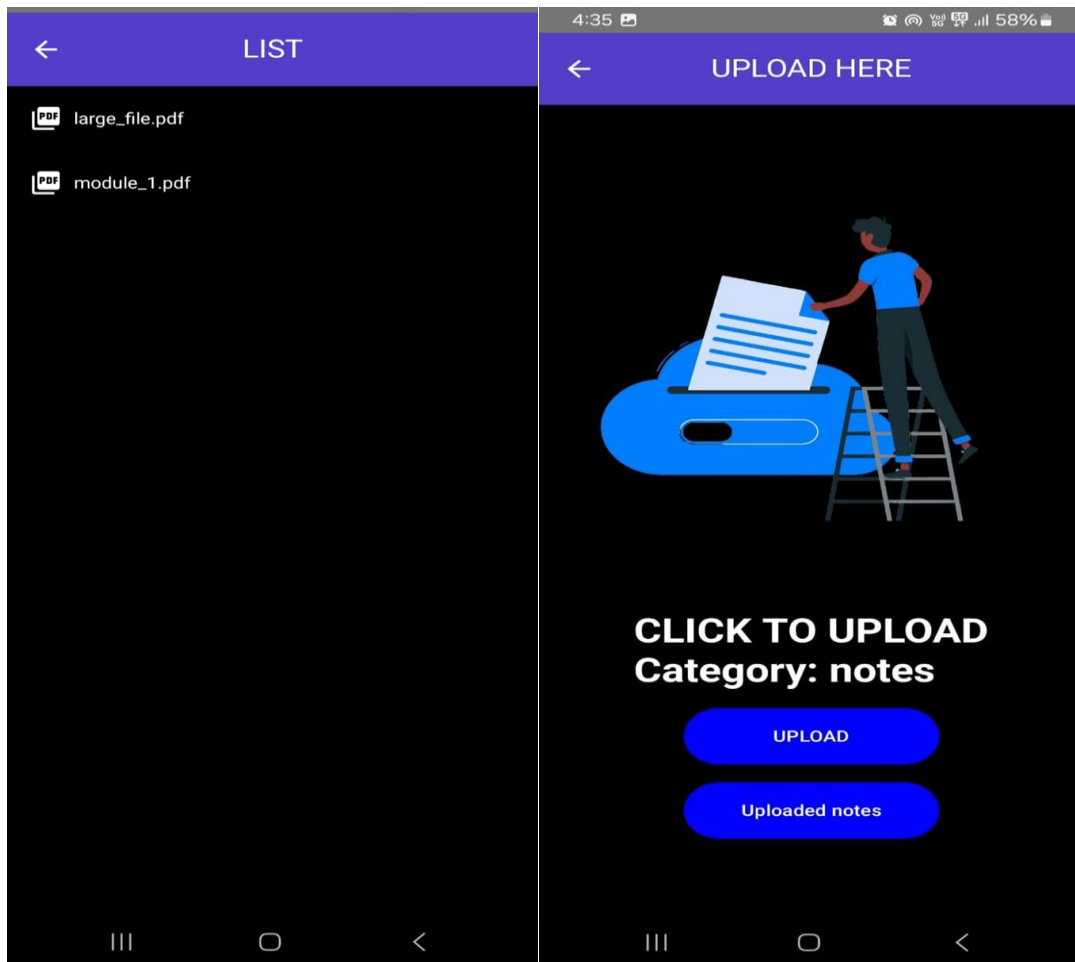


Fig 5.4 Teachers uploading the documents to the cloud

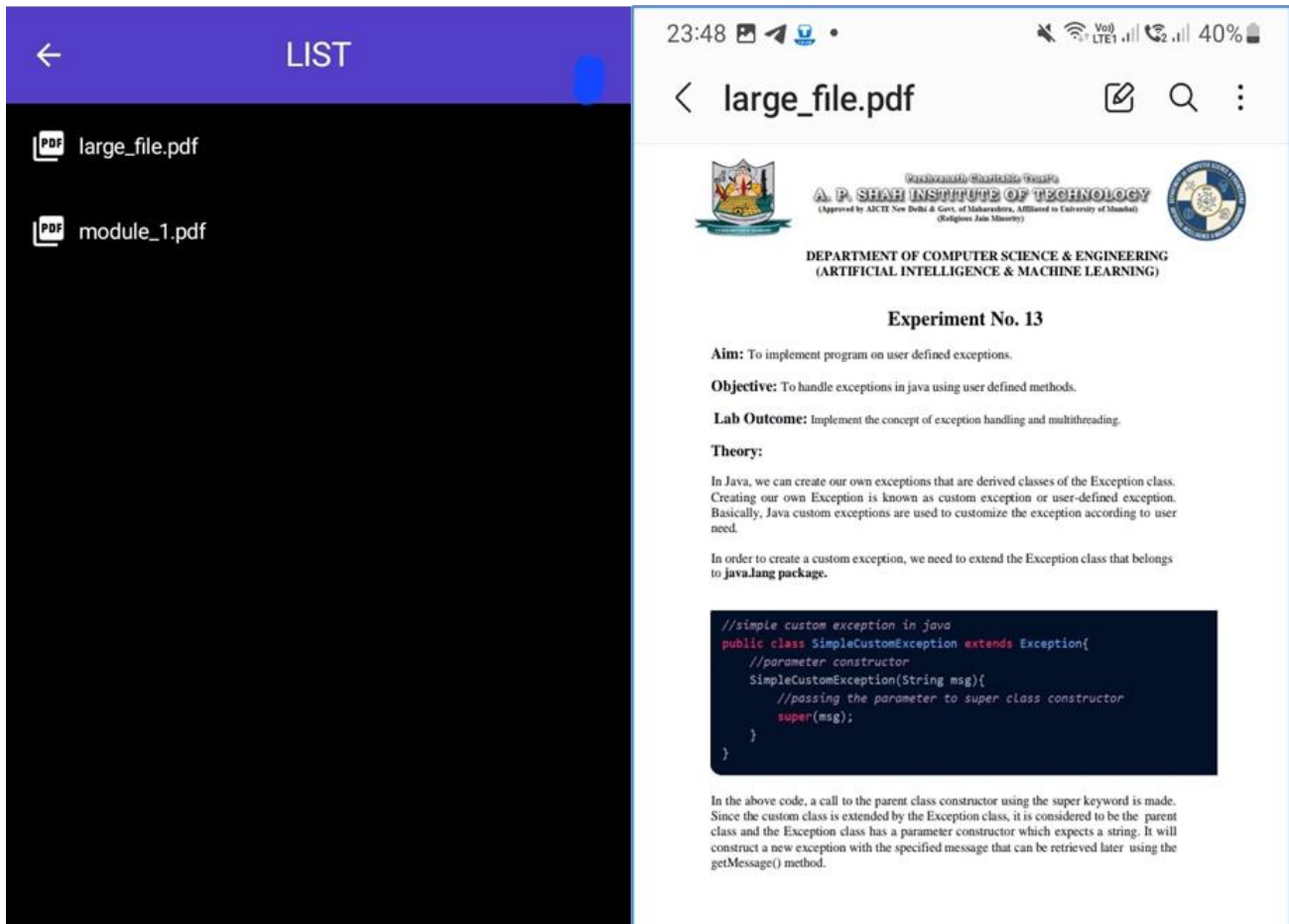


Fig 5.4 Students accessing the documents in the application

5.3 Advantages

- Automation:** The app automates the process of downloading and organizing educational resources, reducing the manual effort required by students and teachers.
 - Efficiency:** Files are compressed before being uploaded to Google Drive, reducing storage space requirements.
 - Accessibility:** The integration with Google Drive ensures that files are accessible from any device, making it easy for students to retrieve their study materials anytime, anywhere.
- **User-Friendly Interface:** The app is designed with a focus on simplicity and ease of use, ensuring that students can navigate through the content without any difficult

CHAPTER 6

CONCLUSION

6.CONCLUSION

In conclusion, Connects'it effectively addresses a critical need in the educational sector by providing an efficient and automated platform for accessing academic resources. Leveraging modern technologies such as Android Studio, Kotlin, Java, Jetpack Compose, and Spring Boot, this app ensures a seamless and user-friendly experience for both students and teachers. The app's implementation of automatic downloads and file compression guarantees that students have organized and timely access to their study materials, significantly enhancing their learning experience. Additionally, the platform's robust architecture supports scalability and reliability, making it a dependable tool for educational institutions.

Future improvements for *Connects'it* could focus on several key areas to enhance user experience and functionality. Expanding cloud storage options by integrating with providers like Google Drive, OneDrive, and Dropbox would offer greater flexibility and increased storage capacity. Additionally, refining the user interface will make it more intuitive and accessible for users of all ages. The app could enable easy access to notes from any device and provide mobile attendance reports for students. Incorporating collaboration features, such as shared workspaces, real-time document editing, and discussion forums, would facilitate interaction between students and teachers. Lastly, expanding functionality to support diverse academic needs, including interactive quizzes, assignment submissions, and progress tracking, would further enhance its utility in education.

By continuously evolving and incorporating user feedback, Connects'it aims to become an indispensable tool in the educational landscape, fostering a more connected and efficient learning environment

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