



Android



College

Application

BY TUSHAR AWALE



TUSHAR .S. AWALE

student of **Computer Technology**

Role: Project Lead, Application Developer , Database Manager , UI/UX Designer

Affiliation: **PRIYADARSHINI COLLEGE OF ENGINEERING**

Email: awaletushar403@gmail.com

LinkedIn: **Tushar Awale** | **LinkedIn**

GitHub: **Tusharawale** (**Tushar Awale**)

Contribution: Designed the application architecture, implemented core functionalities using Java in Android Studio, and managed SQLite database integration and Designed the user interface using XML layouts, improved user experience.



Android



College Application

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Android



◆ Abstract :

This paper presents the development of the "College Application," an Android-based mobile application designed to facilitate seamless interaction between students and teachers in an academic environment. Built using Java in Android Studio, the app leverages SQLite for local data storage to efficiently manage and store academic content. Teachers can upload multiple subjects, syllabus, and course units, with each unit containing lectures, assignments, quizzes, tests, and previous year's questions. Each lecture includes video content and notes, while assignments are available in PDF format. The quiz and test sections allow students to access questions and assess their knowledge. Additionally, the app provides access to previous year's questions for student exam preparation and features a library section containing books and academic resources created by teachers. Students can also upload documents, manage their profiles, and track their academic progress. The use of SQLite ensures fast and reliable storage of educational data, enabling smooth offline access to all materials. The College Application serves as a centralized hub for managing academic resources, enhancing collaboration between teachers and students, and improving overall learning efficiency.

◆ Introduction

In the evolving world of education, technology plays a pivotal role in enhancing the learning experience, both for students and teachers. The traditional classroom model, though still essential, is often limited by physical boundaries and the availability of resources. To address these limitations, digital platforms have emerged to provide a more accessible, organized, and efficient way for managing academic content and communication. This paper introduces the College Application, an Android-based mobile application designed to bridge the gap between students and teachers by offering a centralized platform for academic management.

The primary goal of the College Application is to streamline the academic process, making it easier for teachers to share course materials and resources while enabling students to access, interact with, and submit their academic assignments, tests, and additional learning materials. Teachers can upload subjects, syllabus, and course units, each containing lectures, assignments, quizzes, and previous year's questions. These resources can be enriched with multimedia elements, such as video lectures and notes, to provide a more engaging and comprehensive learning experience. Furthermore, the app offers a library of academic resources, enabling both teachers and students to access and share important learning materials.

In addition to its role as an academic resource platform, the app is designed to foster better communication and collaboration between students and teachers. By utilizing SQLite as a local database, the College Application ensures fast, reliable access to academic materials, both online and offline. The app allows students to track their progress, submit assignments, take quizzes, and interact with the academic content on the go, thus improving learning efficiency and providing teachers with a streamlined way to manage their curriculum.

This paper outlines the development process, features, and benefits of the College Application, showcasing how it contributes to enhancing the educational experience by integrating modern technology into the academic workflow.

◆ Methodology

The development of the **College Application** involved several key phases, including the design, implementation, testing, and deployment of the app. The app was built using **Java** as the programming language and **Android Studio** as the Integrated Development Environment (IDE). The app's architecture was based on the **Model-View-Controller (MVC)** design pattern, which separated the app's data, UI, and logic for better maintainability and scalability.

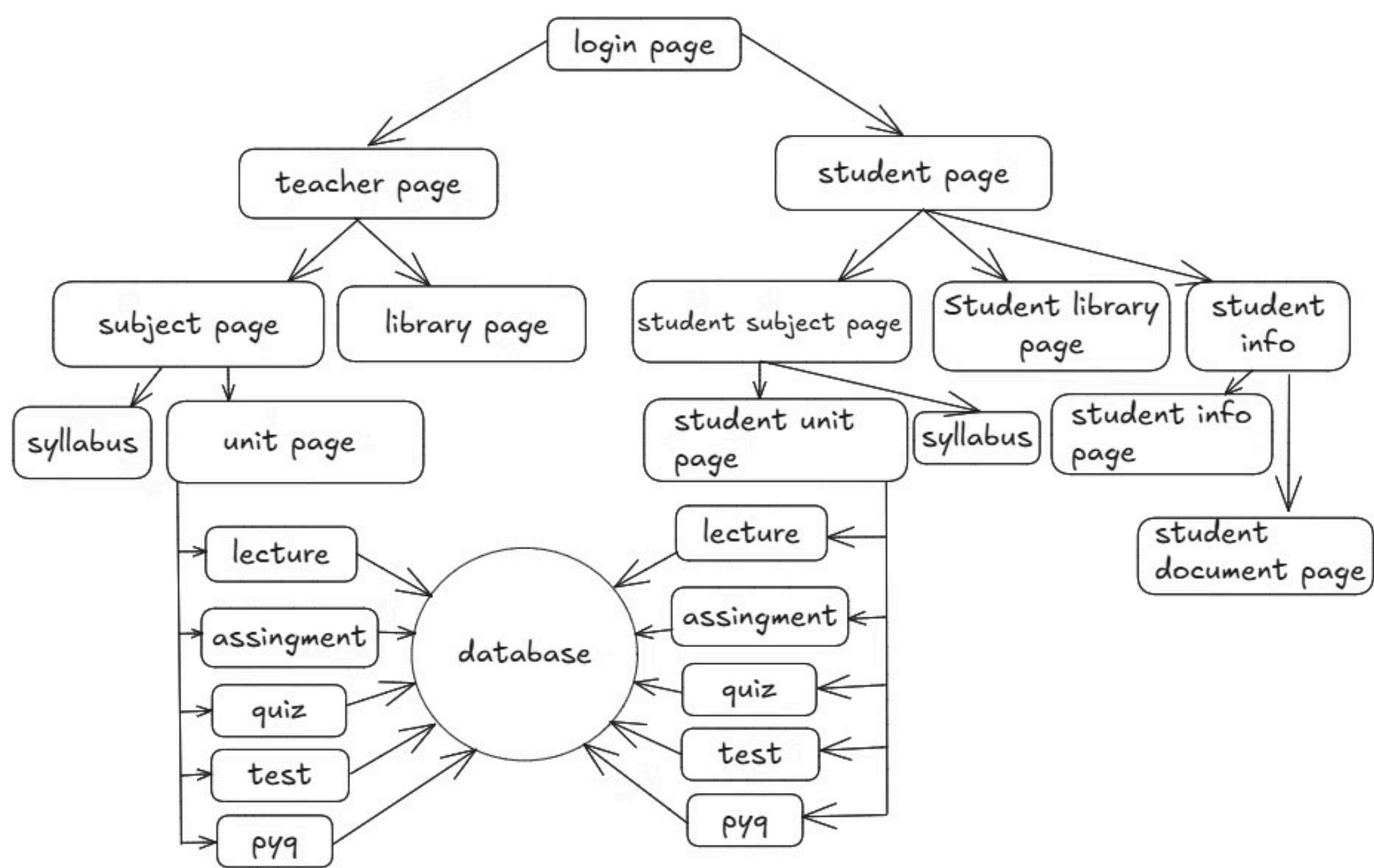
To facilitate efficient data management, the app utilized **SQLite** as its local database solution. SQLite was chosen because of its lightweight nature and ability to store course content, assignments, quizzes, and user data in a structured manner, allowing for offline access to resources. The database schema was designed to handle multiple subjects, units, lectures, and assignments, with relationships between tables to ensure data consistency and accessibility.

The development process followed an **Agile methodology**, where features were incrementally developed and tested. Key features implemented included the ability for teachers to upload subjects, syllabi, and course units, as well as the ability to create and manage lectures, assignments, quizzes, and tests. For students, the app allowed access to lectures (videos and notes), downloading of assignments, participation in quizzes, and submission of documents.

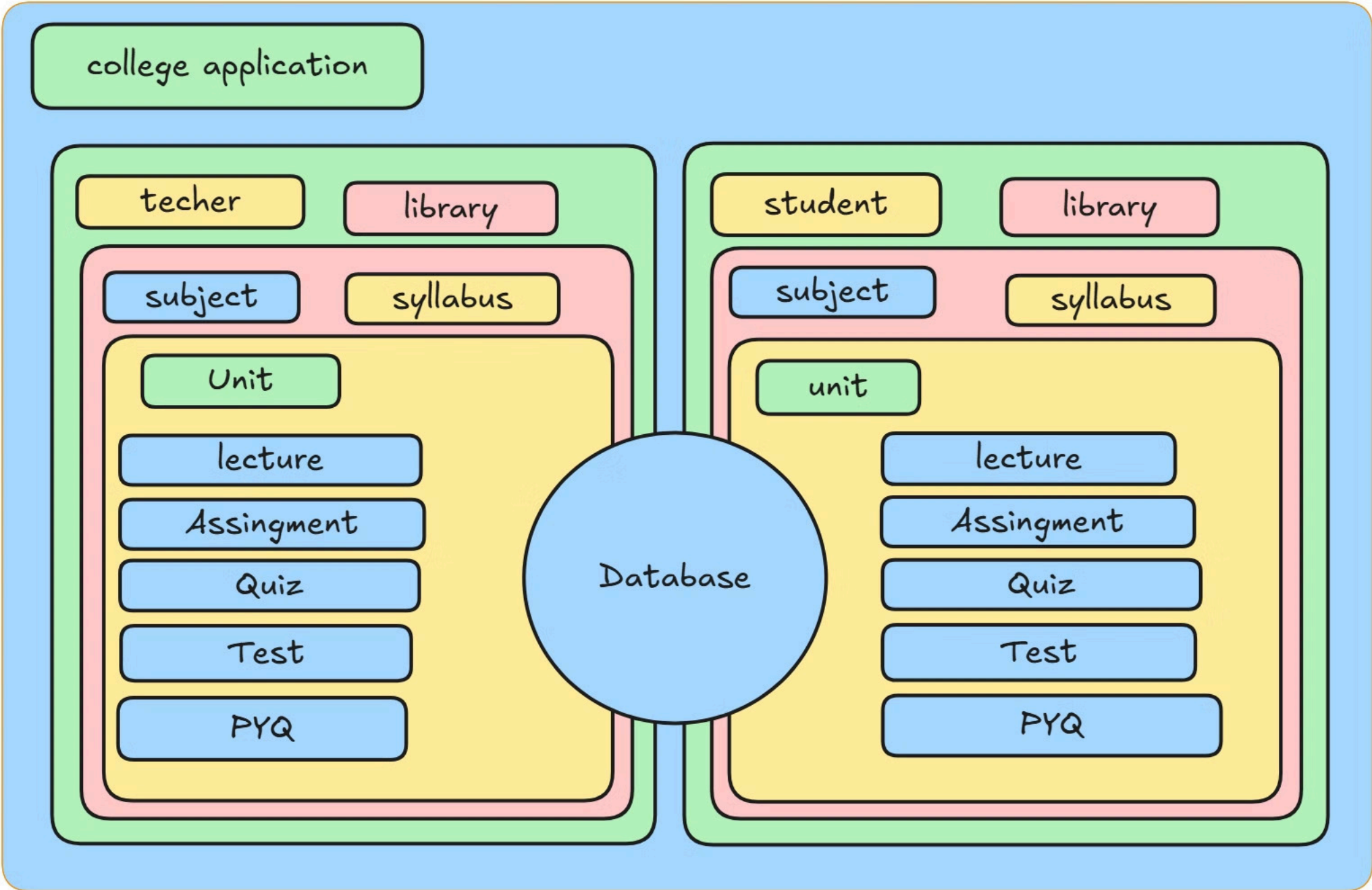
Throughout the development cycle, the app underwent rigorous testing, including unit tests, integration tests, and user acceptance testing (UAT), to ensure its functionality across different Android devices. Additionally, we focused on creating a secure platform, implementing user authentication and data encryption where necessary.

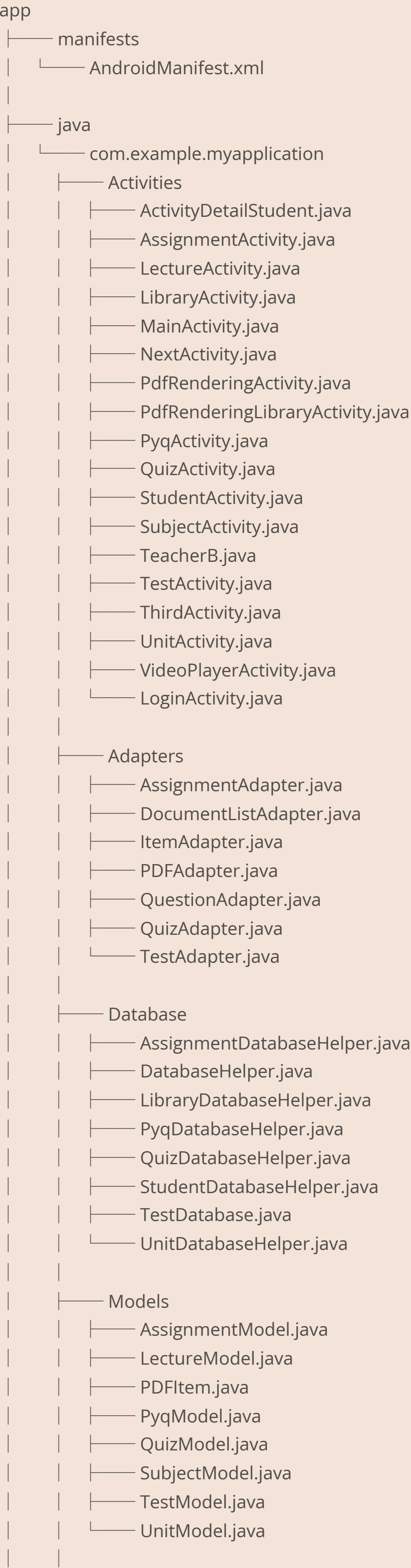
In summary, the **College Application** was developed through a structured and iterative process, utilizing modern tools and technologies, including **Java**, **Android Studio**, and **SQLite**, to create a comprehensive solution for academic management. The app's functionality allows both teachers and students to interact efficiently and effectively, enhancing the overall educational experience.

◆ **System Architecture**



structure of App

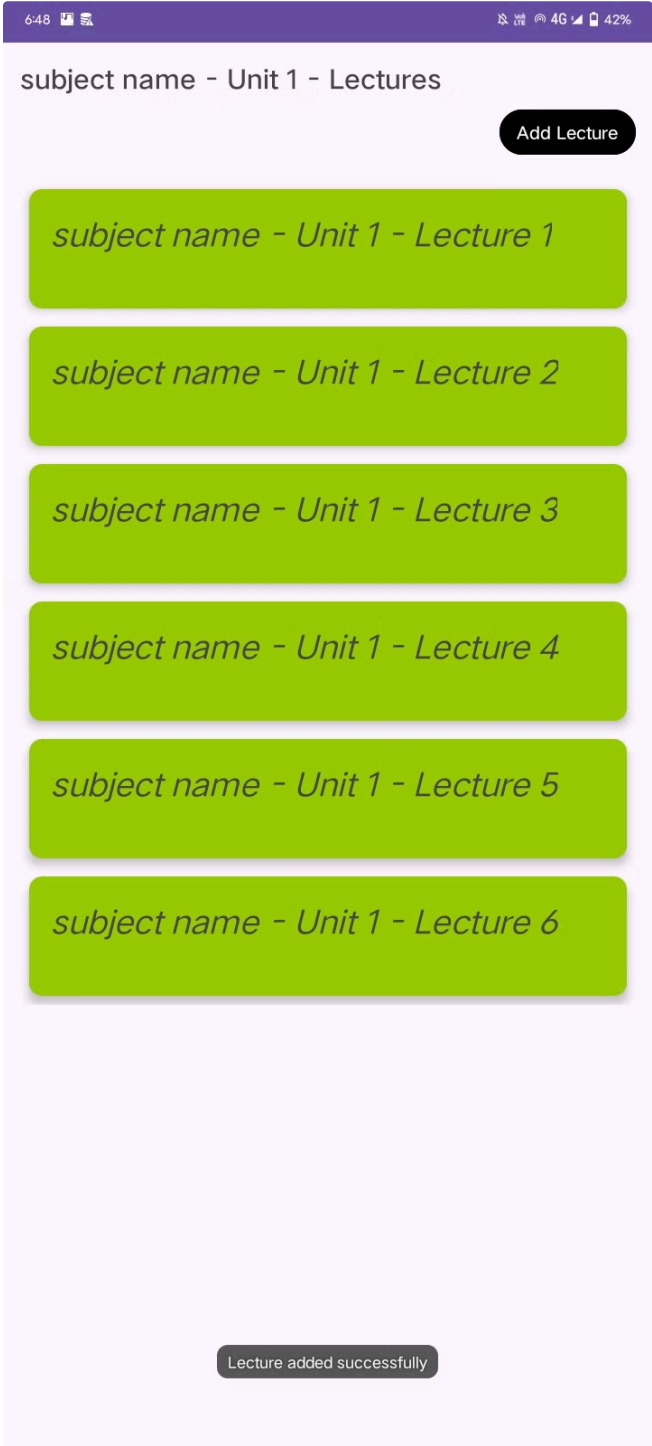
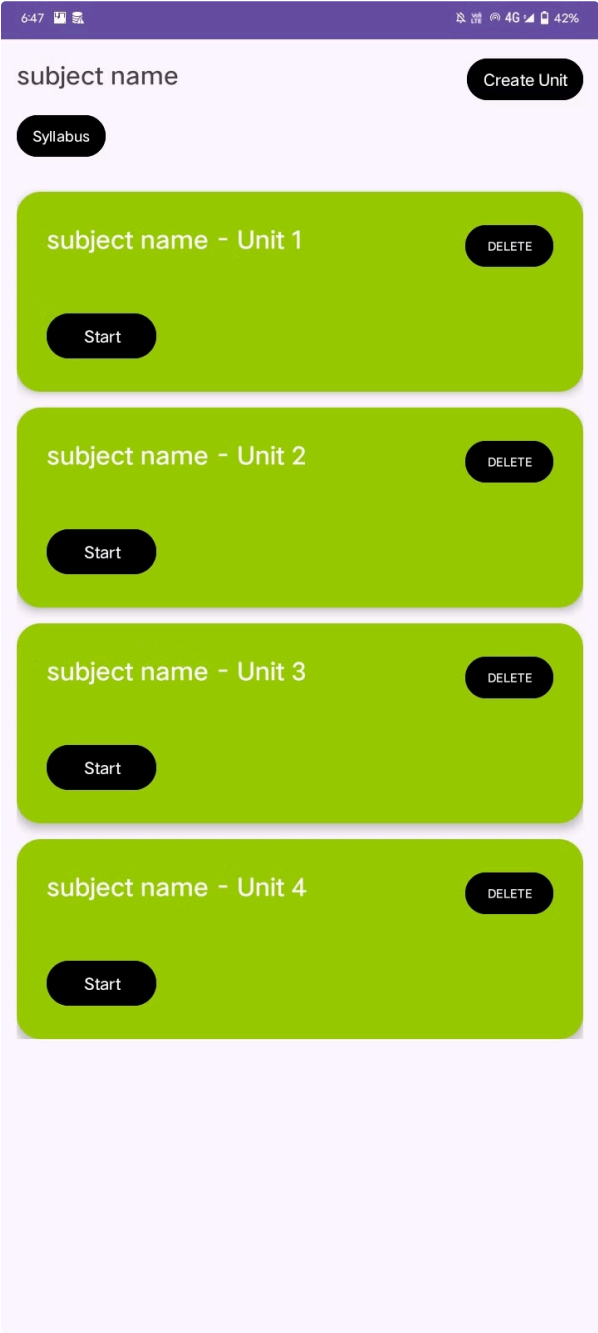
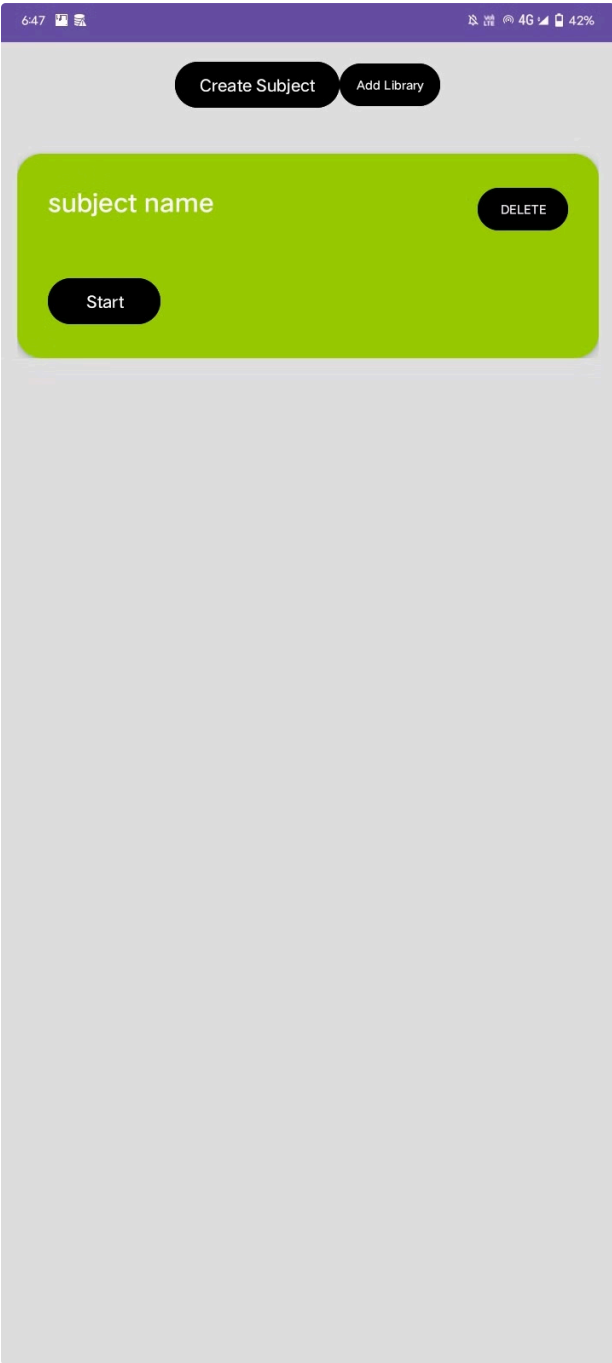
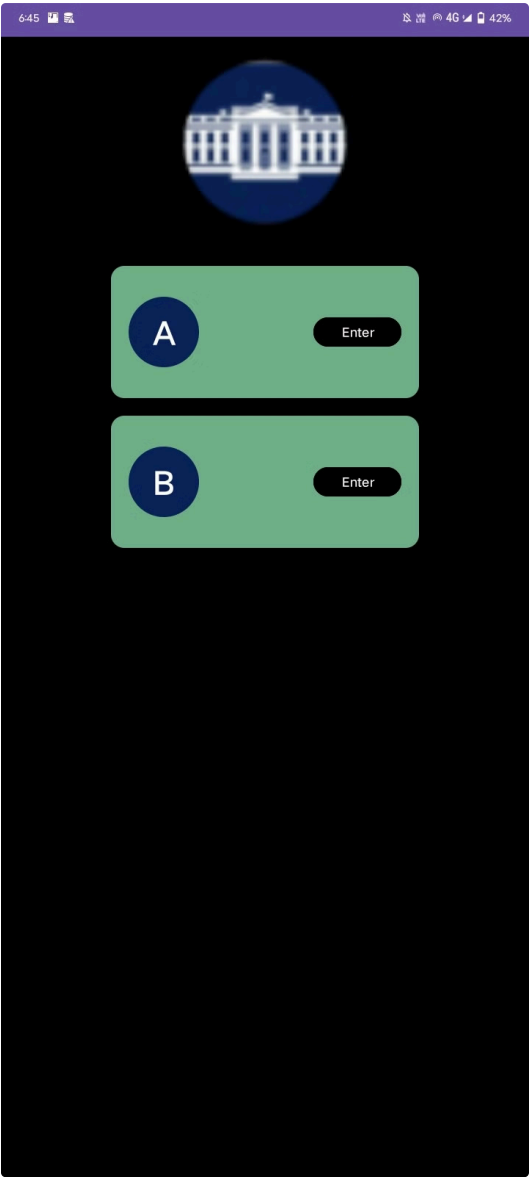
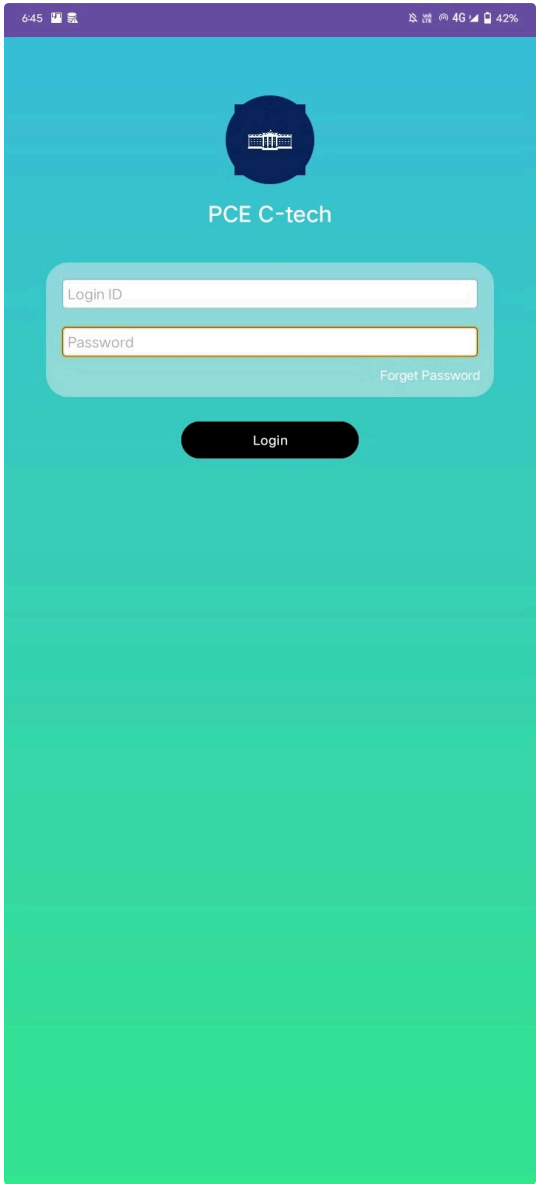




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|       ├── Constants.java
|       ├── DatabaseUtils.java
|       ├── FileUtils.java
|       └── NetworkUtils.java
|
|── res
|   ├── drawable
|   |   ├── applogo.png
|   |   ├── blur_background.xml
|   |   ├── circle_green.xml
|   |   ├── dialog_background.xml
|   |   ├── gradient.xml
|   |   ├── hologram_bg.xml
|   |   ├── ic_launcher_background.xml
|   |   ├── ic_logo_background.xml
|   |   ├── rounded_black_button.xml
|   |   ├── rounded_box.xml
|   |   ├── rounded_button.xml
|   |   ├── rounded_button_delete.xml
|   |   ├── rounded_green_card.xml
|   |   ├── rounded_rectangle.xml
|   |   └── the_white_house_us_logo_png_transparent.png
|   |
|   ├── layout
|   |   ├── activity_assignment.xml
|   |   ├── activity_detail_student.xml
|   |   ├── activity_lecture.xml
|   |   ├── activity_library.xml
|   |   ├── activity_main.xml
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|   |   ├── activity_pyq.xml
|   |   ├── activity_quiz.xml
|   |   ├── activity_student.xml
|   |   ├── activity_subject.xml
|   |   ├── activity_test.xml
|   |   ├── activity_unit.xml
|   |   ├── activity_video_player.xml
|   |   ├── dialog_add_book.xml
|   |   ├── dialog_pdf_view.xml
|   |   ├── item_assignment.xml
|   |   ├── item_lecture.xml
|   |   ├── item_pdf.xml
|   |   ├── item_question.xml
|   |   ├── item_quiz.xml
|   |   ├── item_subject.xml
|   |   ├── item_unit.xml
|   |   ├── pdf_list_item.xml
|   |   └── profile_card.xml
|   |
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|       ├── ic_logo_round.webp (hdpi, mdpi, xhdpi, xxhdpi, xxxhdpi)
|       └── ic_pdf.webp (hdpi, mdpi, xhdpi, xxhdpi, xxxhdpi)
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| | |
| | |   └── values
| | |       ├── colors.xml
| | |       ├── strings.xml
| | |       ├── themes.xml
| | |       └── themes.xml (night)
| | |
| | |   └── xml
| | |       ├── backup_rules.xml
| | |       ├── data_extraction_rules.xml
| | |       └── network_security_config.xml
| |
| └── Gradle Scripts
|     ├── build.gradle.kts (Project)
|     ├── build.gradle.kts (Module: app)
|     ├── proguard-rules.pro
|     ├── gradle.properties
|     ├── gradle-wrapper.properties
|     ├── libs.versions.toml
|     ├── local.properties
|     └── settings.gradle.kts
|
└── .gitignore
```

App Design



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Add a Question

TEST Questions

OPTION 1

OPTION 2

OPTION 3

OPTION 4

CORRECT OPTION

Save Question

Question List

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Type the assignment name

Select PDF

Upload Assignment

Assignment 1

Assignment 2

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Create Quiz

Enter Question

Option A

Option B

Option C

Option D

Correct Answer

Save Quiz

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subject name - Unit 1 - Previous Year Questions

Add PYQ

2023

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search any thing

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Tushar Awale


220101665

Sem-6

B.Tech Computer Technology

Skills: Web Dev, Java, C++, C, SQL

awaletushar403@gmail.com




My Class

Info

View Library PDFs

Progress Bar



Attendance

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Latest Activity

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pending

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Welcome to Library

Book

By Author


PDF

View PDF

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Tushar Awale

awaletushar403@gmail.com

Student Information

hello tushar !

Name Tushar Awale

ID NO 220101665

WI-FI 999999

PSW. 999999

Save

Delete

Upload Document

Enter Document Name

Marksheet

Select Document

No file chosen

Uploaded Documents

PDF

adharcard (ID Proof)

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My Subjects

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Assignment

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Quiz

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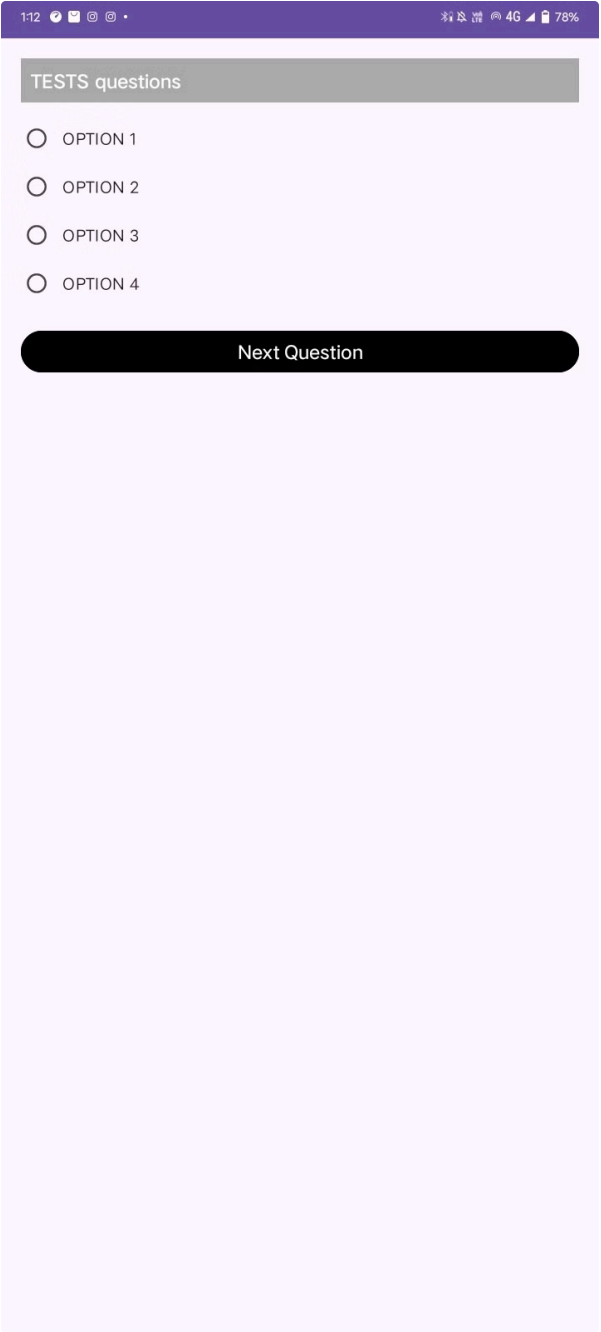
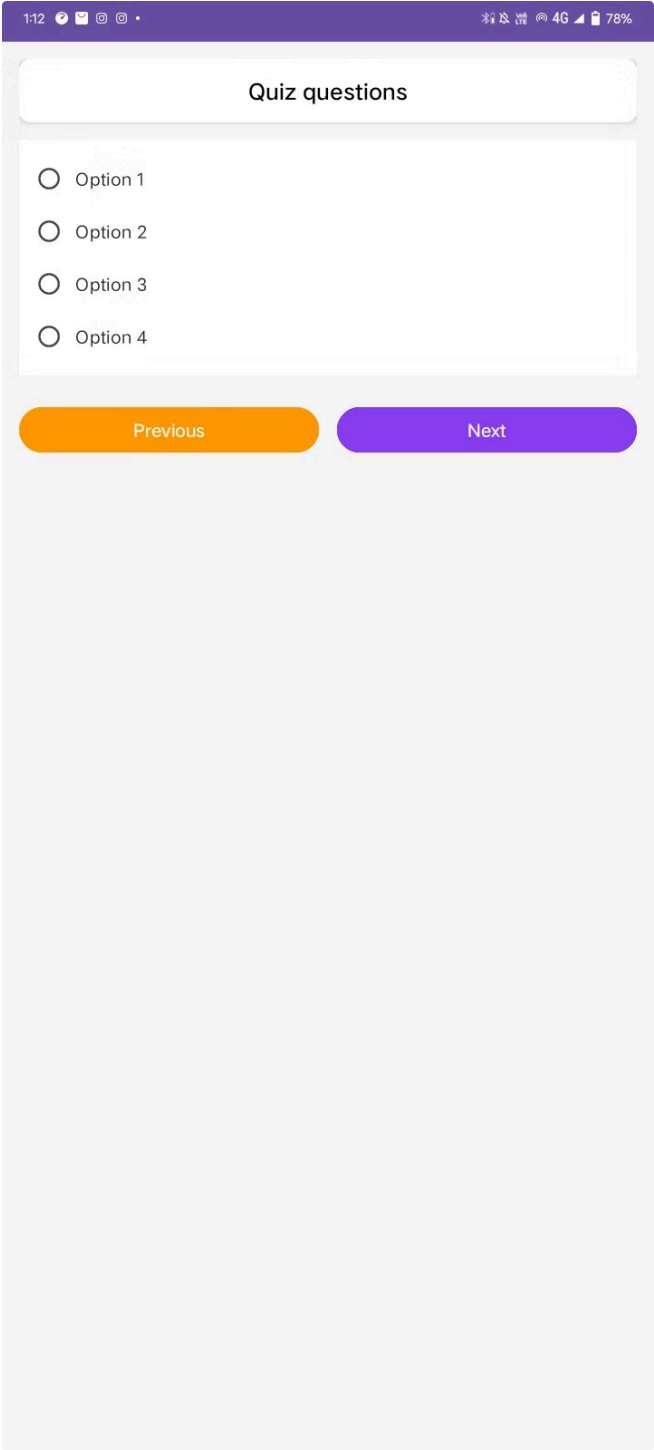
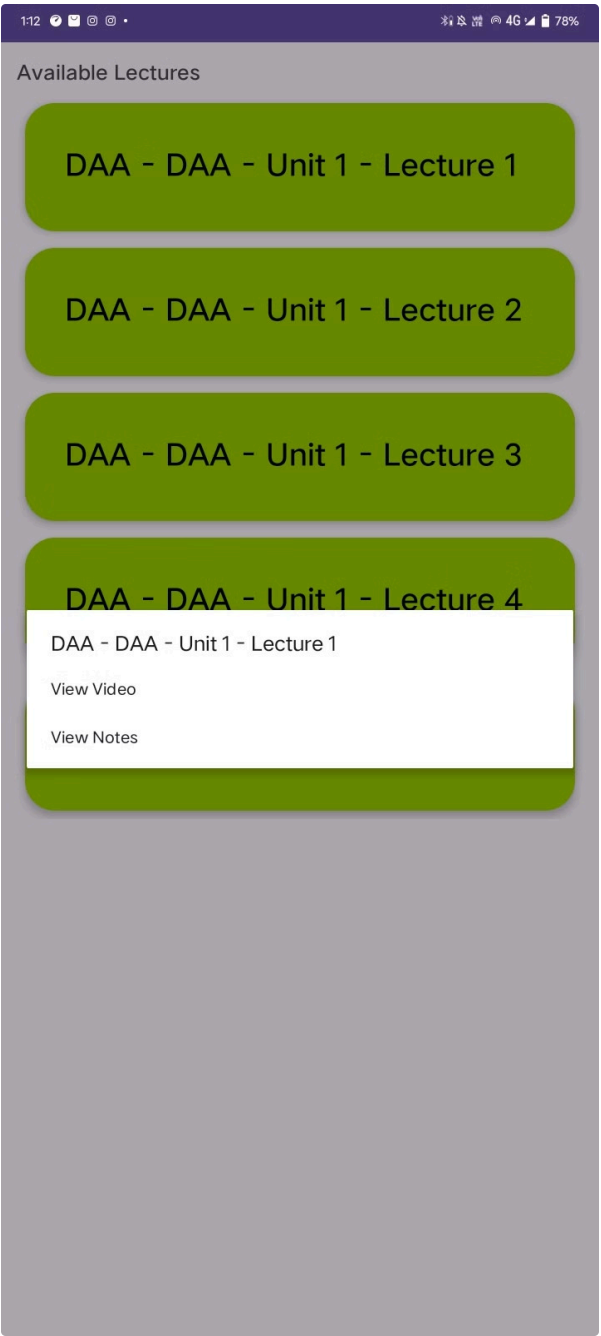
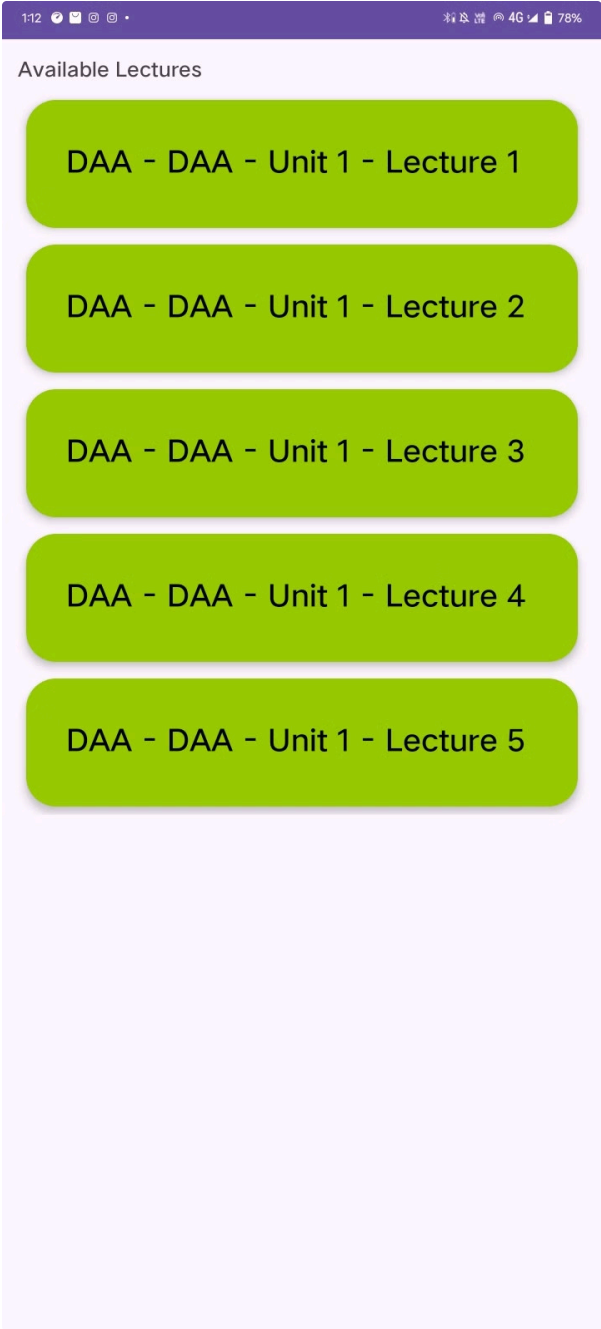
Test

Start

PYQ

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◆ Discussion

The College Application effectively enhances academic collaboration by streamlining content delivery and improving accessibility. Teachers can efficiently manage course materials, while students benefit from organized content and improved exam preparation resources. User feedback highlights improved access to learning materials, reduced reliance on printed content, and better exam preparation strategies.

Despite these strengths, some challenges remain, such as occasional UI navigation difficulties and the need for improved real-time data synchronization. Future updates aim to address these issues to improve overall user satisfaction.

Future Work

To further improve the College Application, the following features are planned for future development:

Enhanced Quiz System: Integration of timed quizzes, automated grading, and performance tracking.

Cloud Integration: Enabling real-time data synchronization for improved accessibility and backup.

Interactive Discussion Forum: A platform for students and teachers to collaborate, share ideas, and resolve queries.

Push Notifications: For reminders about assignments, quizzes, and other academic deadlines.

Attendance Management: Teachers will be able to track student attendance and monitor participation levels.

Student Progress Analysis: The app will include tools for teachers to analyze individual student performance and provide personalized feedback.

Student Data Management: Teachers will have dedicated access to view and manage student profiles, ensuring better academic support.

Platform Integration: The app will provide links to external platforms like **LinkedIn**, **GitHub**, **YouTube**, and other educational resources for enhanced learning opportunities.

◆ Conclusion

Summary of Findings

The development of the College Application successfully addresses the need for an organized and efficient platform for academic management. By incorporating features such as subject creation, syllabus uploads, and unit-based content like lectures, assignments, quizzes, and previous year's questions, the app enhances both teaching and learning experiences. The integration of SQLite ensures reliable offline access, while the modular architecture allows for easy expansion and maintenance.

Significance of the App

The College Application plays a vital role in improving communication between teachers and students. It simplifies content management for educators while providing students with a centralized platform for accessing academic resources. The ability to upload documents, track progress, and access previous exam papers significantly enhances students' preparation strategies.

Final Thoughts

The College Application demonstrates the potential of mobile platforms in transforming traditional educational methods. By streamlining content delivery and enhancing collaboration, the app contributes to improved learning outcomes. Future enhancements such as attendance tracking, student progress analysis, and integration with external platforms will further strengthen its impact, ensuring it remains a valuable tool for both educators and students.

◆ References

◆ Android 📱 App Development Course (Beginner to Advanced) | WsCube Tech 2.0



by WsCube Tech

link : [https://youtube.com/playlist?
list=PLjVLYmrlmjGdDps6HAwOOVoAtBPAGlOXL&si=8CTc3lHpbSa8kayU](https://youtube.com/playlist?list=PLjVLYmrlmjGdDps6HAwOOVoAtBPAGlOXL&si=8CTc3lHpbSa8kayU)

◆ Android SQLite Database Tutorial



by ProgrammingKnowledge

link : [https://youtube.com/playlist?
list=PLS1QulWo1RIaRdy16cOzBO5Jr6kEagA07&si=tYO7EoQKWp4lGA1D](https://youtube.com/playlist?list=PLS1QulWo1RIaRdy16cOzBO5Jr6kEagA07&si=tYO7EoQKWp4lGA1D)

◆ Android Studio

link : [Download Android Studio & App Tools - Android Developers](#)