



CSM 3114 Project 2 Report

Title: E-Course App

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1. Executive Summary

Amidst the dynamic landscape of higher education, the E-Course Management App emerges as a solution crafted to meet the evolving needs of university students. This innovative mobile application prototype is designed to tackle the challenges students face in efficiently managing their academic journey. It serves as a transformative tool, offering a user-friendly and centralized platform for students to check their eligibility for final exams and monitor carry marks.

In the current educational milieu, the demand for digital tools that facilitate remote learning and empower students is more pronounced than ever. The E-Course Management App steps up to this challenge by providing real-time updates on exam eligibility status and presenting a detailed breakdown of carry marks for each subject component.

The prototype's design revolves around simplicity and ease of use, ensuring that students can effortlessly navigate the app. The intuitive user interface guides them through the process of checking exam eligibility and monitoring carry marks for various subjects.

As education technology continues to reshape the academic experience, the E-Course Management App contributes to the transparency and accountability of students' academic progress. It aligns with the ongoing digital transformation in education, offering a valuable tool for students to stay informed and engaged.

This executive summary offers a glimpse into the pivotal role of the E-Course Management App, underscoring its significance in enhancing the educational experience for students. Subsequent documentation will delve into the prototype's design, user interface, potential commercial value, and insights gained during the development process. Positioned within the realm of academic tools, the E-Course Management App has the potential to empower students and contribute to a more transparent and technology-enabled educational landscape.

2. Use Case

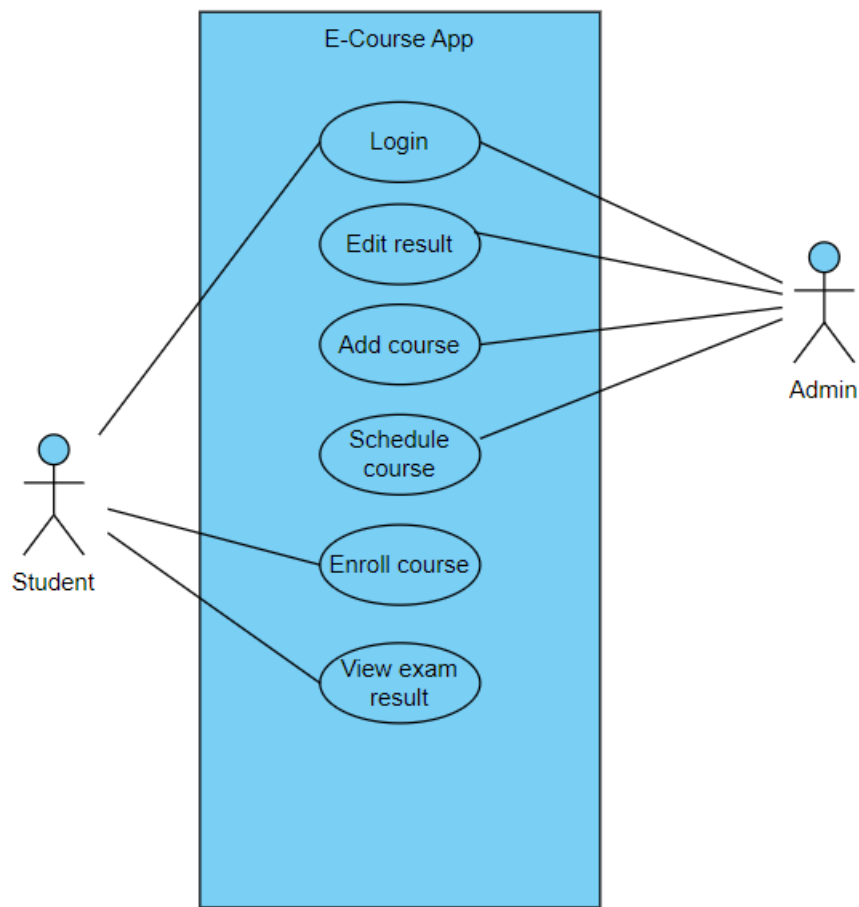
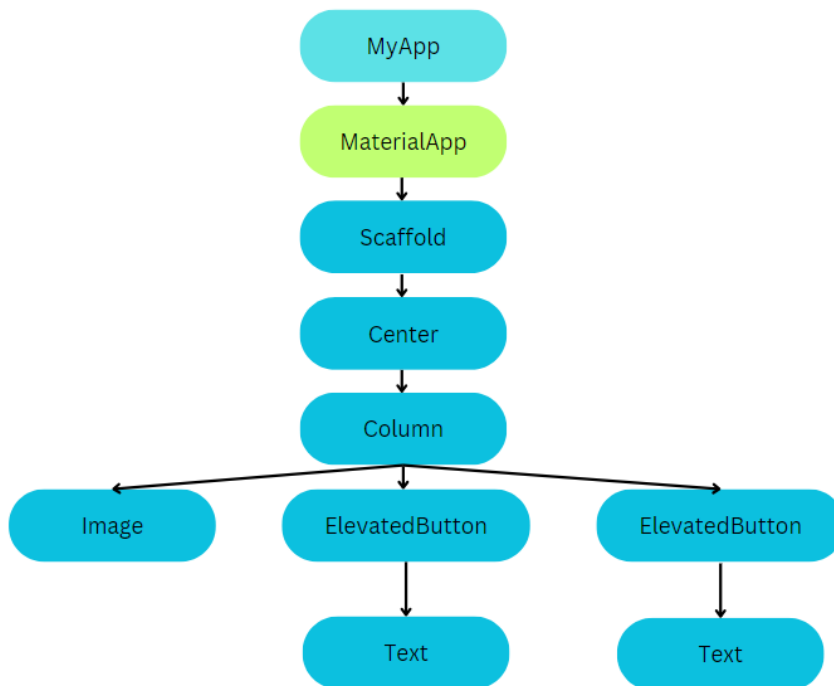


Figure 1: Use case diagram of E-Course App

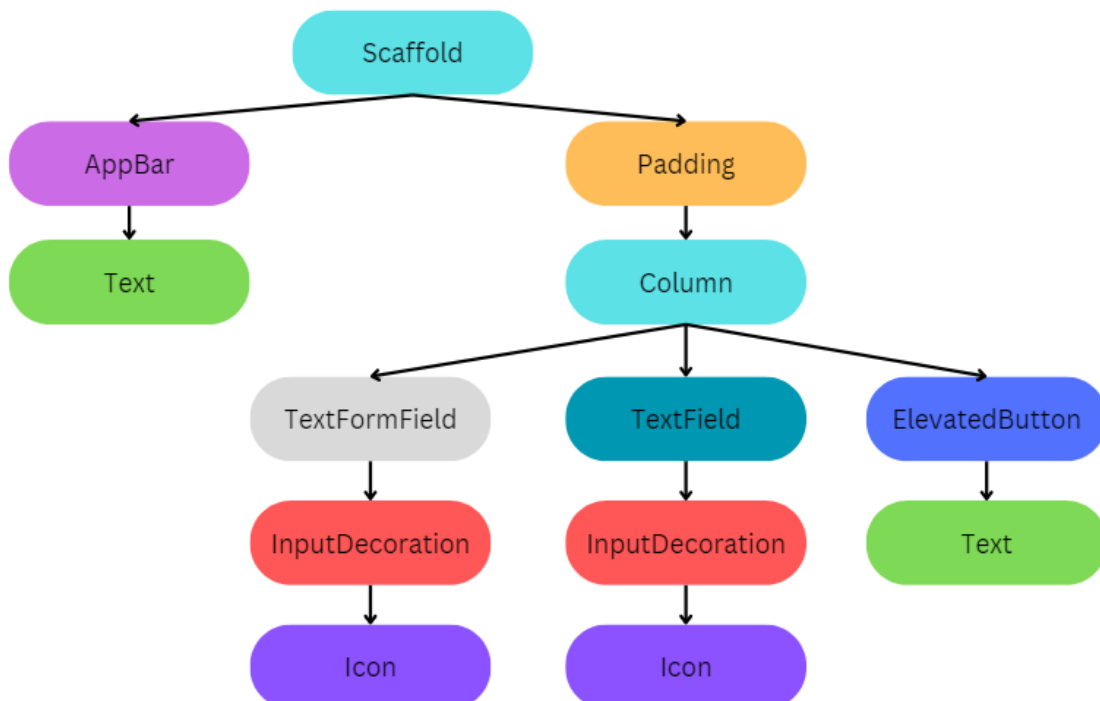
Admin can login to the application to add and schedule courses. Student also can login to the system and enrol the course added by admin. Then, admin can edit the result of the courses enrolled by student. Student also can view exam result for each subject.

3. The common structure of tree widgets

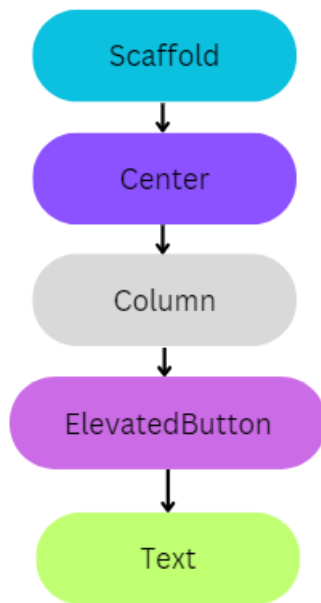
Homepage



Login page



Logout page



4. Flutter widget and features adopted

1. MyApp (class):

- **MaterialApp**: Represents the root widget of the app. It configures the overall structure, theme, and initial screen.
 - **debugShowCheckedModeBanner**: Hides the debug banner.
 - **title**: Sets the title of the app.
 - **theme**: Defines the overall theme for the app.
 - **home**: Specifies the initial screen (**HomeScreen**).

2. HomeScreen (class):

- **Scaffold**: Provides the basic structure of the visual interface.
 - **body**: Contains a **Center** widget with a **Column** to vertically align its children.
 - **Image.asset**: Displays an image with a specified width and height.
 - **ElevatedButton (Admin Login)**: A button that, when pressed, navigates to the **AdminLoginScreen**.
 - **ElevatedButton (Student Login)**: A button that, when pressed, navigates to the **StudentLoginScreen**.

3. AdminLoginScreen (class):

- **Scaffold**: Provides the basic structure.
 - **appBar**: Displays the app bar with the title "Admin Login".
 - **body**: Contains a **Column** with text form fields for username and password.
 - **TextFormField**: Allows the user to input the admin username.
 - **TextField**: Allows the user to input the admin password.
 - **ElevatedButton (Login)**: A button that, when pressed, validates the credentials and navigates to **AdminHomeScreen** if correct.

4. StudentLoginScreen (class):

- **Scaffold**: Provides the basic structure.
 - **appBar**: Displays the app bar with the title "Student Login".
 - **body**: Contains a **Column** with text form fields for username and password.

- **TextFormField:** Allows the user to input the student username.
- **TextField:** Allows the user to input the student password.
- **ElevatedButton (Login):** A button that, when pressed, validates the credentials and navigates to **StudentHomeScreen** if correct.

5. **AdminHomeScreen (class):**

- **Scaffold:** Provides the basic structure with an app bar, body (a list of courses), a floating action button to add a course, and a bottom navigation bar.
 - **ListView.builder:** Dynamically builds a list of courses retrieved from the server.
 - **FloatingActionButton:** Allows the admin to add a new course, navigating to **AddCourseScreen**.
 - **BottomNavigationBar:** Navigates between home, entering scores, and logging out.

6. **StudentHomeScreen (class):**

- **Scaffold:** Provides the basic structure with an app bar, body (a list of courses), and a bottom navigation bar.
 - **ListView.builder:** Dynamically builds a list of courses retrieved from the server.
 - **BottomNavigationBar:** Navigates between home, viewing results, and logging out.

7. **AddCourseScreen (class):**

- **Scaffold:** Provides the basic structure.
 - **body:** Contains a **TextField** for entering the new course name.
 - **ElevatedButton (Add Course):** A button that, when pressed, adds the entered course to the database.

8. **EnterScoreScreen (class):**

- **Scaffold:** Provides the basic structure with an app bar and body (a list of courses).
 - **ListView.builder:** Dynamically builds a list of courses retrieved from the server.
 - **_showScoreDialog:** Displays a dialog to enter scores for selected courses.

9. **LogoutPage (class):**

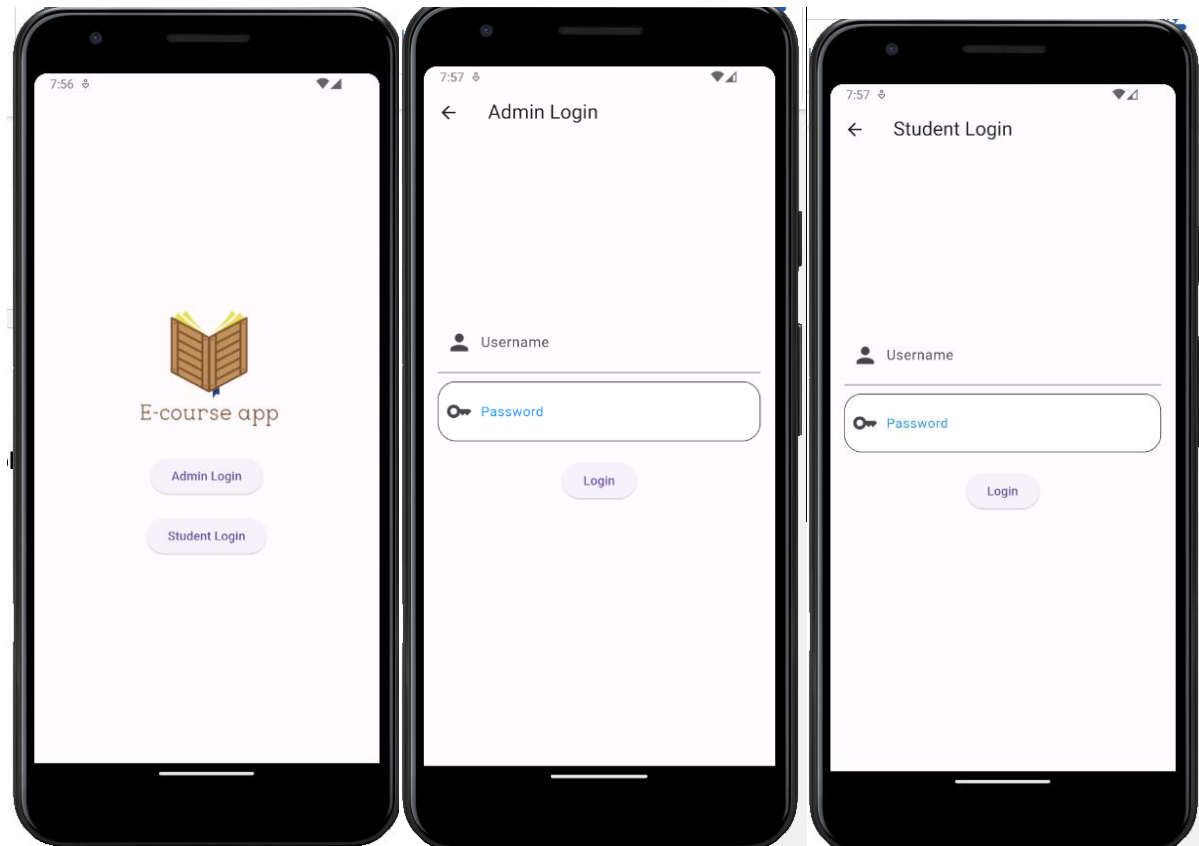
- **Scaffold:** Provides the basic structure.
 - **body:** Contains an **ElevatedButton** to log out, which navigates to **HomeScreen**.

10. **ResultScreen (class):**

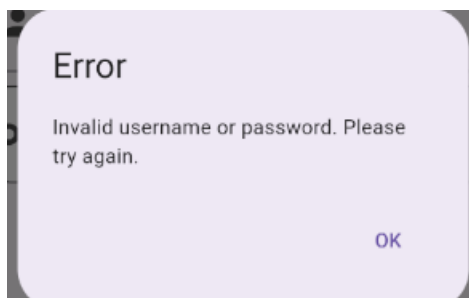
- **Scaffold:** Provides the basic structure.
 - **body:** Contains a **ListView.builder** to dynamically build a list of courses and their corresponding scores.

5. Sample UI and explanation

Main page

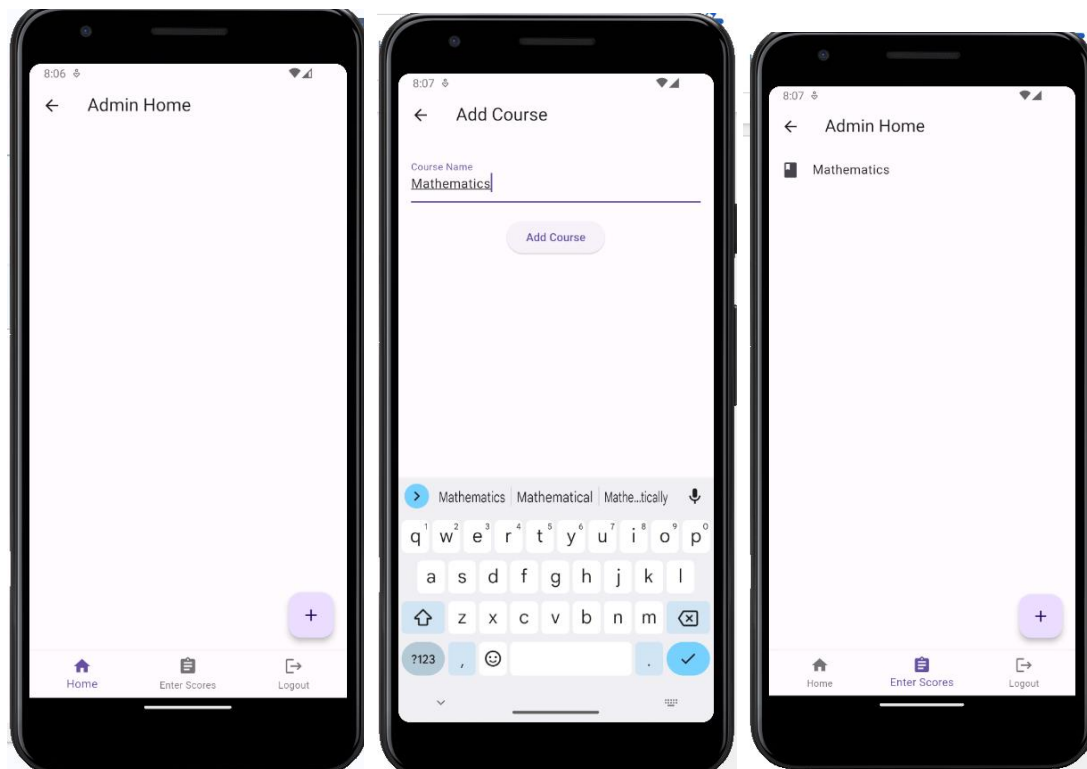


- there are two elevated buttons to login as Admin and Student
- second screenshot is login page for Admin
- third screenshot is login page for student

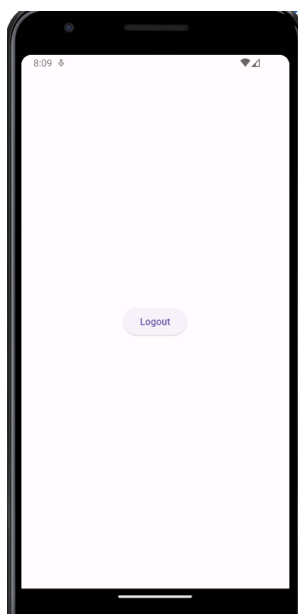
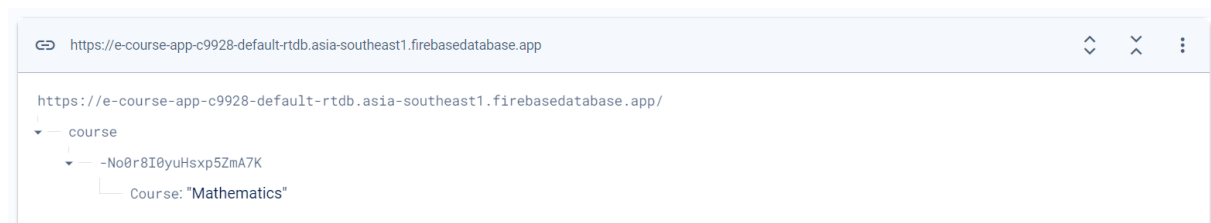


- it will pop out error message when we put the invalid username or password

admin home screen



- after using the add function floating button application will allow admin to add course into firebase



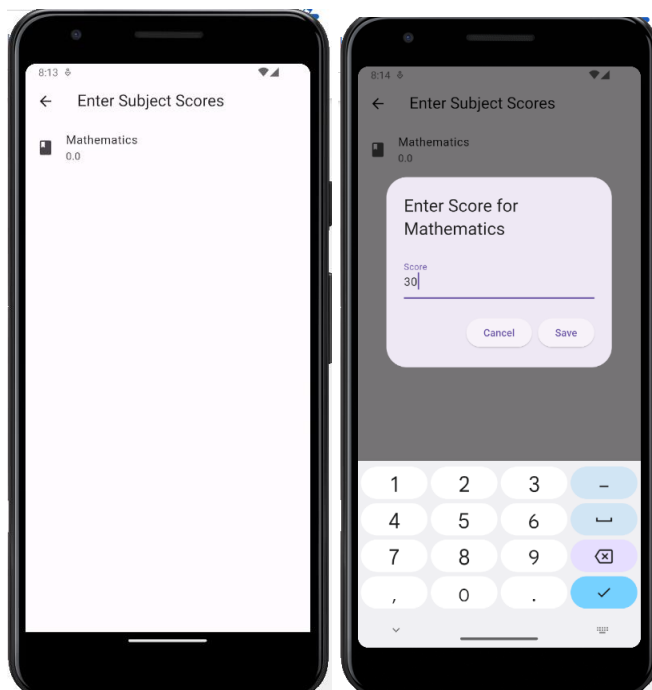
- Press logout button to log out account

Student home page



- we can see the course added by admin in the student home page
- student can press the course to enrol that course

enter score screen



result screen



- Admin can select student enrolled course to edit score
- Student can review their score for each course at result screen

6. Conclusion

In conclusion, the development and deployment of the E-Course App represent a significant advancement in enhancing the educational journey for both students and administrators. This mobile app prototype, crafted to address the challenges associated with accessing course information, exam results, and facilitating administrative tasks, embodies a user-centric design philosophy and harnesses technology to streamline essential aspects of academic life.

The user interface, distinguished by its simplicity and user-friendliness, ensures seamless navigation, enabling students and administrators to effortlessly access and manage course-related data. By providing real-time updates on exam results, enrollment status, and other crucial information, the app empowers users with the tools needed to make informed decisions and take proactive measures in their academic endeavours.

Furthermore, the potential impact and value of the prototype extend beyond its immediate functionality. Positioned as a valuable asset in the realm of educational technology, the app not only reduces administrative burdens but also fosters a culture of efficiency and engagement within the academic community.

In essence, the E-Course App transcends its role as a mere utility; it signifies a commitment to leveraging technology for the enhancement of educational experiences. As it contributes to a more connected, informed, and responsible educational ecosystem, the app aligns with the vision of creating an intelligent educational environment. The journey from conceptualization to implementation has not only yielded a functional prototype but has also laid the groundwork for future advancements in the landscape of digital academic tools.

Looking forward, the E-Course App stands poised to be a transformative force, contributing to the ongoing evolution of education in the digital age. Its potential to foster a dynamic and responsive educational environment positions it as a cornerstone in the continuous improvement of the educational experience for all stakeholders involved.

7. References

1. Biessek, A. (2019). Flutter for Beginners. Mumbai: Packt.
2. Update data over the internet. (n.d.). Flutter. Retrieved from <https://docs.flutter.dev/cookbook/networking/update-data>
3. Widget catalog. (n.d.). Flutter. Retrieved from <https://docs.flutter.dev/ui/widgets>