UNIVERSITI MALAYSIA TERENGGANU
FACULTY OF OCEAN ENGINEERING TECHNOLOGY & INFORMATICS

CSM3114
FRAMEWORK BASED MOBILE APPLICATION DEVELOPMENT

PROJECT 2 : E-COURSE APP

Prepared by:

NAME:ANIS NAZIFFA BINTI MAT DIN

MATRIC NUMBER:S61963

Prepared for:

DR MOHAMAD NOR BIN HASSAN

[BACHELOR OF COMPUTER SCIENCE(MOBILE COMPUTING) WITH HONORS]
SEMESTER I 2023/2024

TABLE OF CONTENT

1.0 Executive Summary

The E-Course App is a cutting-edge educational platform that aims to transform the learning experience. The app prioritizes user ease and security, providing a streamlined login experience that ensures a customized and safe environment for students. The course administration tool gives educators an easy way to develop and organize courses, while the scheduling capability allows users to simply arrange their study sessions using a dynamic calendar connection.

This revolutionary tool goes beyond typical course platforms by providing a more efficient course enrolling procedure. Students may simply enroll in their preferred courses, and an automated waiting list management system assures efficient processing of high-demand sessions. The app's dedication to real-time updates extends to the test result monitoring function, which offers immediate access to performance indicators for students and instructors. This not only increases administrative efficiency, but also promotes a user-friendly and dynamic instructional environment.

By its scalability and data security features, the E-Course App has the potential to alter the education sector. Its user-friendly design appeals to instructors searching for a complete course management solution and students looking for an accessible learning environment. Embrace the future of education with the E-Course App, which combines efficiency, usability, and real-time updates to create a dynamic online learning ecosystem.

2.0 Use Case Diagram

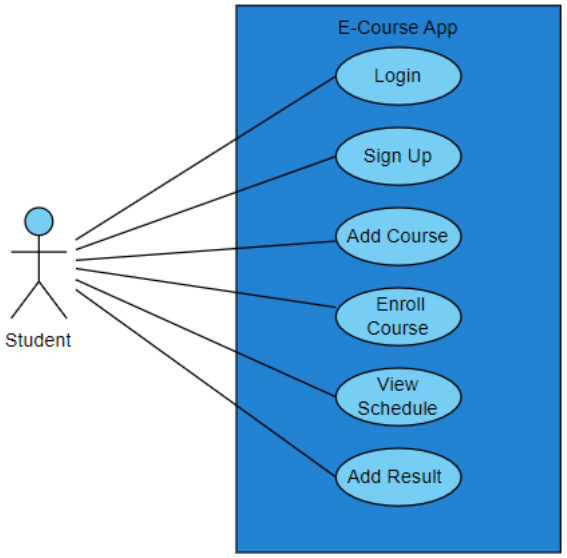

Figure 1:Use Case Diagram

Figure 1 shows use case diagram for the e-course app that depicts the interactions between the main actor, student, and the system. The student may log in, sign up, add courses to their list, enroll in available courses, and check their schedule. The "Login" and "Sign Up" use cases are for user authentication, with the former possibly integrating the latter. Adding a course is a separate procedure, and enrolling in one may cause the process to take longer.Next, the "View Schedule" use case gives students access to their class schedules. Finally the "add result" use case for user to add their result for each subject in the course.

3.0 Common Structure Tree Widgets

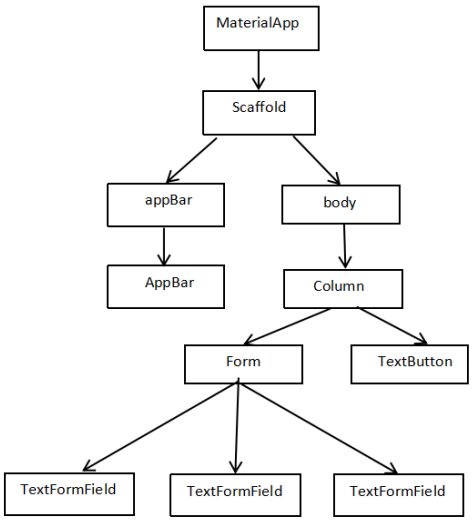

Figure 2:Tree Widget for Login

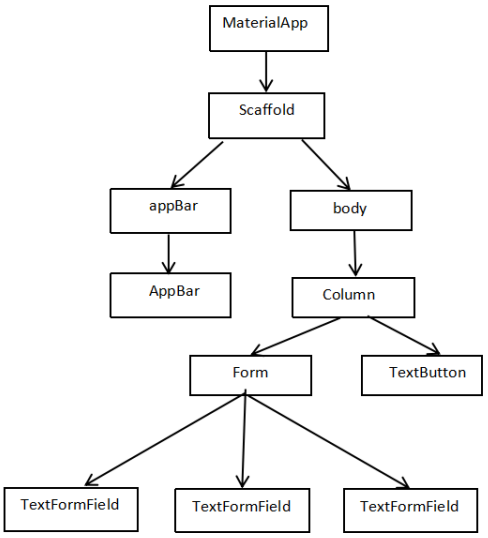

Figure 3:Tree Widget for SignUP

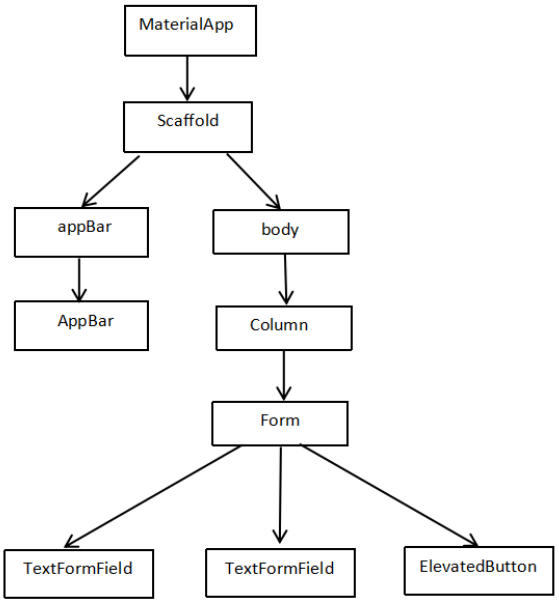

Figure 4:Tree Widget for Add Course

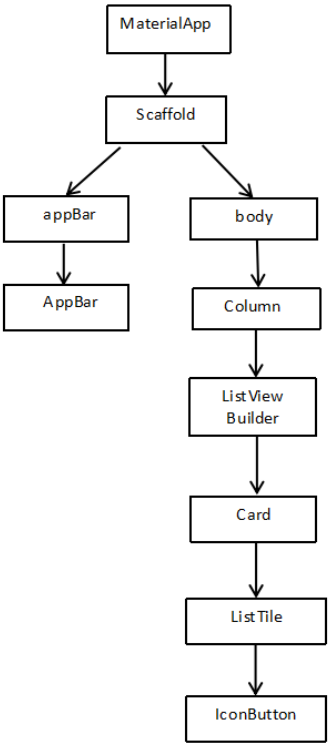

Figure 5:Tree Widget for Enroll Course

4.0 Flutter Widget and Features

In Flutter, a widget is a fundamental building piece used to develop user interfaces. Everything in Flutter is a widget, including the visual and structural parts. Simple widgets like text or buttons might be more complicated like whole screens.

4.1 AppDrawer

A navigation drawer in mobile applications is often implemented using the AppDrawer widget in Flutter. Usually holding options or connections to other program areas or features, this drawer glides in from the left side of the screen. It gives users an easy-to-use method of navigating between the different sections of the program.

4.2 RichText

Text in many styles may be created within a single widget according to the RichText widget. With RichText, you can style individual text paragraphs as opposed to the Text widget, which styles the entire text with a single style. This is accomplished by employing TextSpan objects, each of which specifies a different style, inside the RichText widget's children property.

4.3 SafeSpace

By positioning its child widgets inside the safe regions of the screen, the

SafeArea widget makes sure that they don't overlap with any system components, such as status bars, display cuts, or notches. By keeping content from being hidden by system UI components, it automatically pads its child widgets to make sure they are visible and accessible, improving the user experience overall.

4.4 Spacer

a flexible and adaptable space to a Flutter layout, use the Spacer widget. It's frequently used to divide up available space among its children in Column or Row widgets. Other widgets are pushed toward the edges by the Spacer widget, which occupies whatever available space along its axis. This is very helpful for creating responsive and adaptable layouts.

4.5 InkWell

The InkWell widget shows a Material design ink splash or ripple effect as a touch reaction to its child widget. It's frequently used to create interactive components that react graphically to user taps, such as buttons or pictures. At the point of contact, the ink splash effect appears to provide users with feedback on the encounter.

5.0 User Interface

Figure 6:Welcome Screen

Figure 6 shows the e-course app's welcome page that has a beautiful logo and an easy-to-use interface that encourages users to interact with the "Register" and "Log In" buttons. The buttons make it simple for both new and returning visitors to navigate the page, and the logo acts as an unique identity graphic.

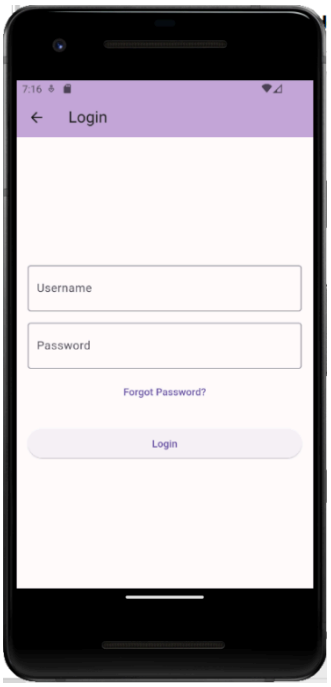

Figure 7:Login Screen

Figure 7 shows the e-course app's login page that offers a simple way to login with fields for inputting a username and password in addition to a large, easily accessible "Login" button. The simple design ensures a safe and easy login procedure. To further improve user convenience, a "Forgot Password" tool is included to help users who might need to reset their login information.

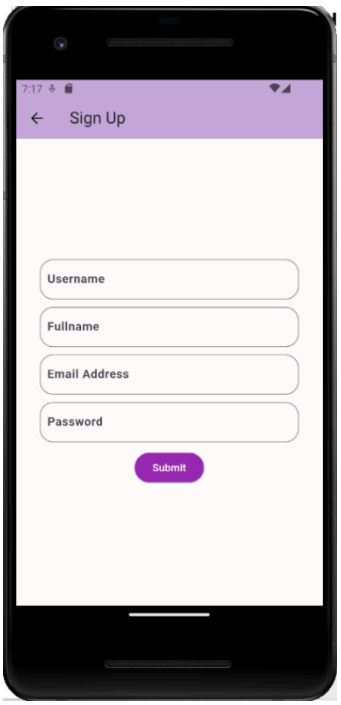

Figure 8:Sign Up Screen

Figure 8 shows e-course app's signup page streamlines the user registration process by gathering necessary information such the user's complete name, email address, password, and username. In order to save and handle user data, the app securely connects to Firebase, a reliable backend service, when you input this information and click the "Submit" button.

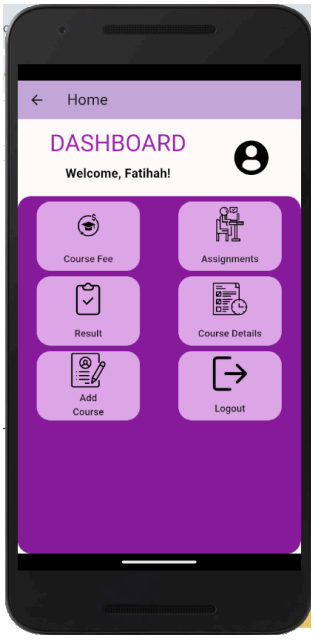

Figure 9:Home Screen

Figure 9 shows home screen for E-Course App that has an app drawer at the appbar that has list tile as it represent each application.Then,the home screen has the list of categories of the course that the apps have it .By tap on the each categories,it will display available course for this current time for you to enroll for each courses.

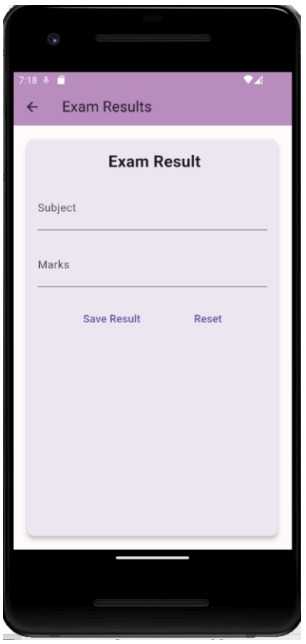

Figure 10:Exam Result Page

Figure 10 shows exam result page where users can input exam results, validates the input, and saves it to a Firebase Realtime Database using HTTP POST requests. It provides feedback to the user about the success or failure of the operation using SnackBars.

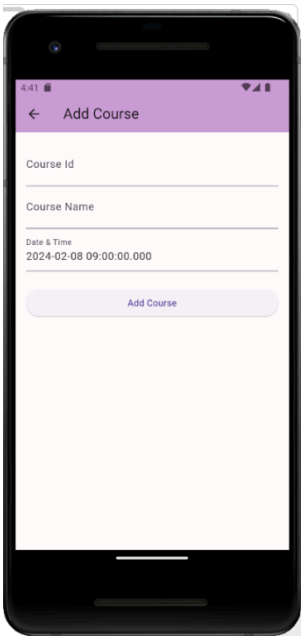

Figure 11: Add Course Page

Figure 11 shows add course page that depicted, showcasing two input fields "Course ID" and "Course Name." The data inputted by the user will be stored in Firebase upon clicking the "Add course" button, and it will be displayed as a list in the course enrollment section.

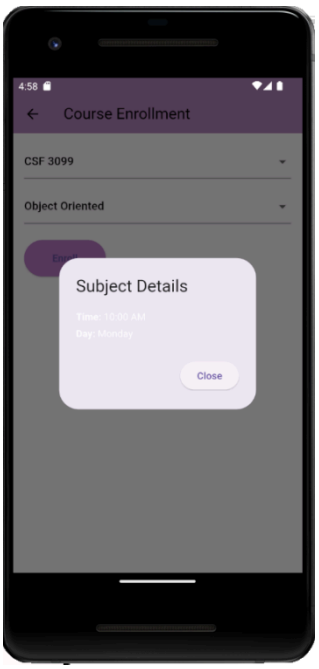

Figure 12: Course Enrollment Page

The course enrollment page contains two lists for selecting the course ID and course name. Once the user chooses both the course ID and course name, the subject details will be displayed in a dialog box before the user enrolls in the subject.

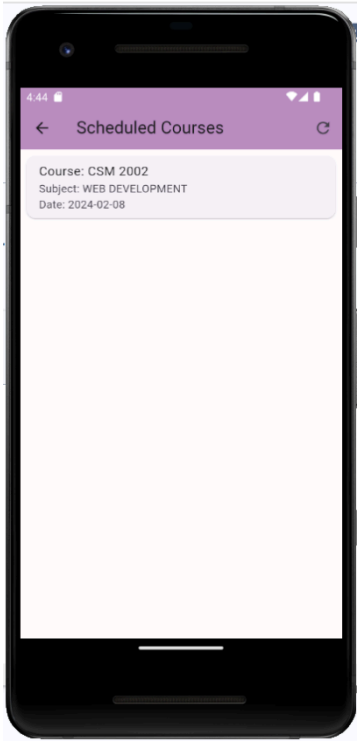

Figure 13: Schedule Course Page

The schedule course page uses a card view to show all the courses the user added. Each card displays details like the course name, ID, and schedule timings, making it easy for the user to manage their schedule.

6.0 Conclusion

In conclusion, the e-course app emerges as a critical instrument in today's educational scene, providing students with a comprehensive and user-centered approach to online learning. Users can easily traverse the platform thanks to its easy design, which includes smooth login and sign-up processes. The app caters to students' different requirements by allowing them to add and enroll in classes as well as view timetables, resulting in a flexible and individualized educational experience. The use case diagram serves as a visual roadmap for these interactions, emphasizing the app's dedication to simplifying access to educational materials and encouraging efficient skill development.

Furthermore, the e-course app's versatility establishes it as a cornerstone of digital education. As technology continues to change traditional learning paradigms, this app is at the vanguard, connecting students with high-quality instructional information. Its user-friendly features not only improve accessibility, but they also foster a dynamic learning environment in which students can take control of their educational path. In summary, the e-course app represents a huge step toward a future in which education is not only instructive but also seamlessly interwoven into students' daily lives, supporting ongoing growth and development.

References

E course App. ChatGPT. (n.d.). https://openai.com/chatgpt

Flutter documentation. Flutter. (n.d.). https://docs.flutter.dev/

Flutter tutorial - online tutorials library. Tutorialspoint. (2019). https://www.tutorialspoint.com/flutter/flutter_tutorial.pdf

Thompson, O. (2023, September 13). *Dart: Sorting and obtaining the length of a list in dart using flutter*. CopyProgramming. https://copyprogramming.com/howto/dart-flutter-sort-list-then-get-length

Dev, U. (2021, November 7). *Flutter e learning app | flutter app development | flutter ecommerce app | flutter education app*. YouTube. https://www.youtube.com/watch?v=djcD2NZwXAc