UNIVERSITI MALAYSIA TERENGGANU
FACULTY OF OCEAN ENGINEERING TECHNOLOGY & INFORMATICS

CSM3114
FRAMEWORK BASED MOBILE APPLICATION DEVELOPMENT

PROJECT 2 : E-COURSE APP

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SEMESTER I 2023/2024

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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
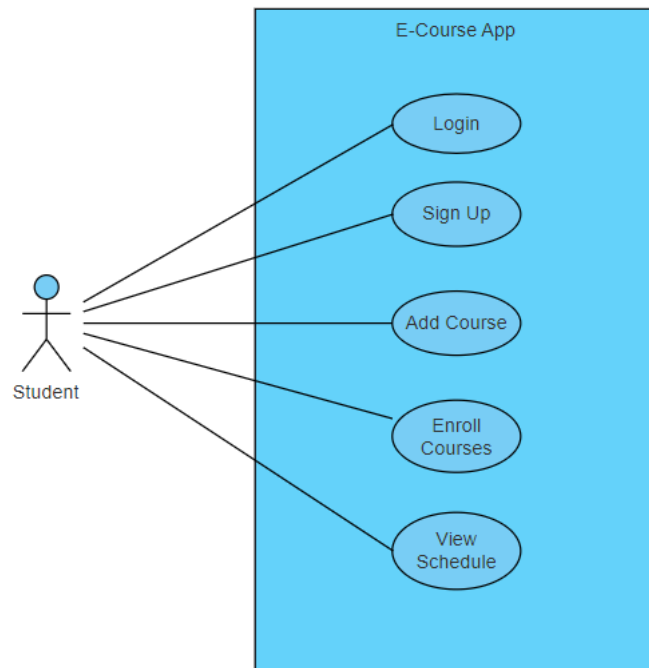
Figure 1:Use Case Diagram

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. Finally, the "View Schedule" use case gives students access to their class schedules. The figure depicts how a student may interact with the e-course software, highlighting the essential features and their interactions within the system.
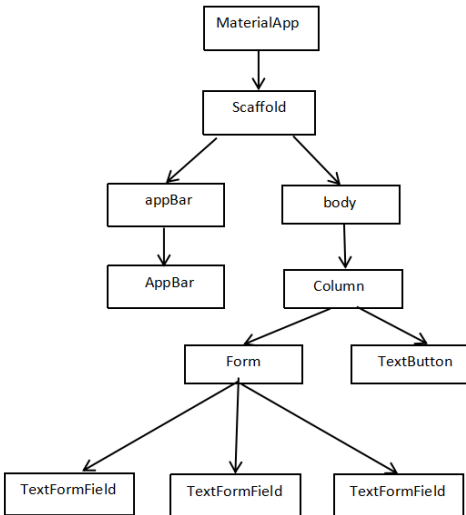
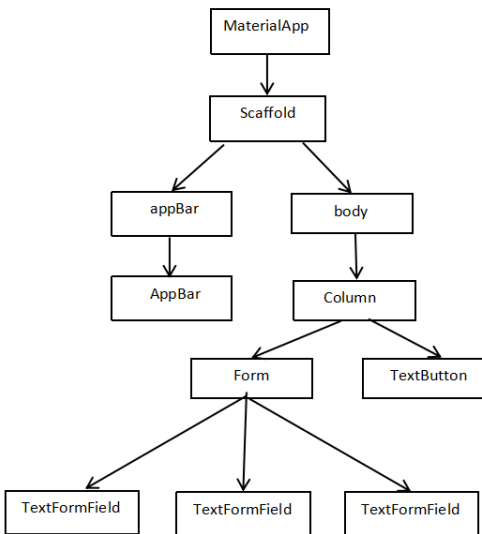## 3.0 Common Structure Tree Widgets

Figure 2:Tree Widget for Login
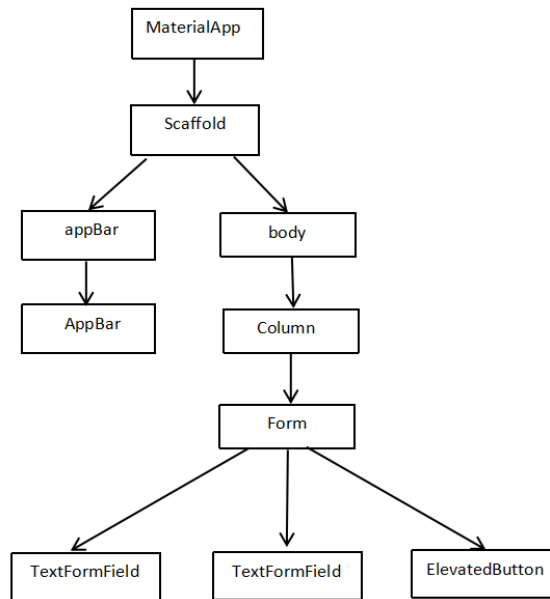

Figure 3:Tree Widget for SignUP

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Figure 4:Tree Widget for Add Course

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                            │  IconButton  │
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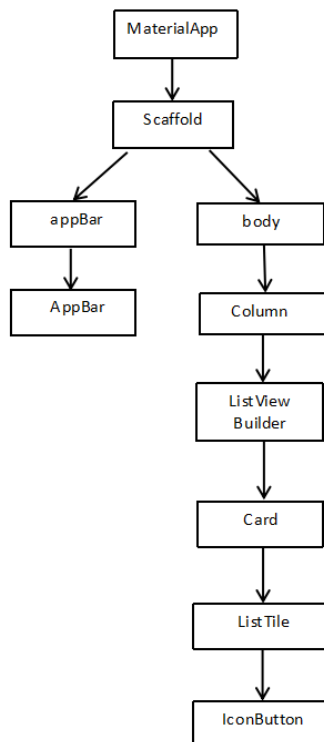
Figure 5:Tree Widget for Enroll Course

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.

4.6 MaterialButton

To create buttons with Material design style, use the MaterialButton widget. This adaptable widget works with several button styles, including raised, flat, and outline buttons. A dependable and aesthetically pleasing method of adding interactive features to the user interface of your program is using MaterialButton.

5.0 User Interface

5.1 Welcome Screen
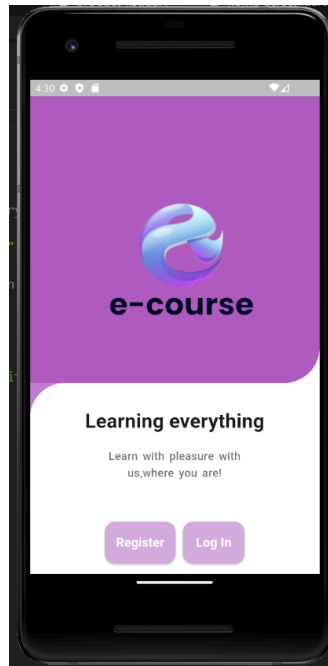
Figure 6:Welcome Screen

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. The app's objective and advantages are succinctly and effectively communicated on the welcome screen, which also sets the framework for a streamlined and engaging user experience.

5.2 Login Screen
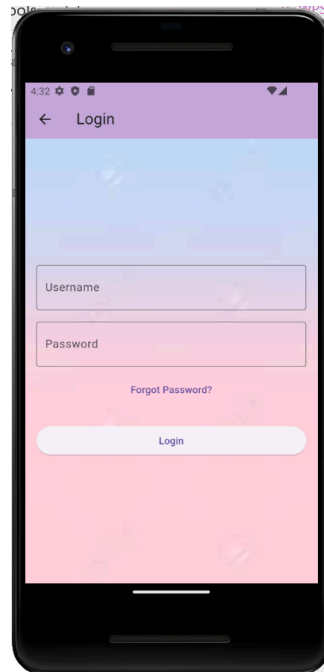
Figure 7:Login Screen

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. The goal of this simple and safe login interface is to make it easier for users to quickly and easily access the e-course app and have a seamless experience.Lastly,when user tap on "login"button it will enter into home page screen.

5.3 Register Screen
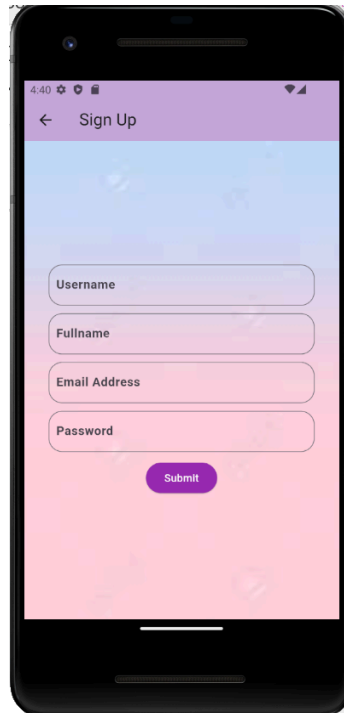
Figure 8:Sign Up Screen

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. A dependable and scalable solution for account creation and data storage is ensured by this seamless connection. The signup page is made with the ease of the user in mind. It walks new users through a simple procedure and makes use of Firebase's features to provide a safe and quick registration process for the e-course app.

5.4 Home Screen
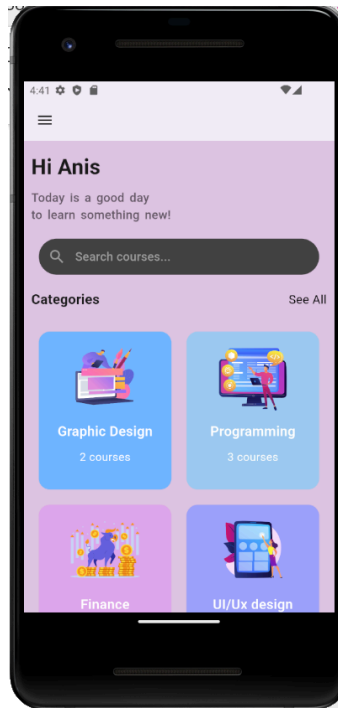
Figure 9:Home Screen

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.Next,it has a search field which is user may locate and launch particular apps or information fast.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.

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.

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