



**UNIVERSITY MALAYSIA TERENGGANU
FACULTY OF OCEAN ENGINEERING TECHNOLOGY & INFORMATICS**

**[CSM3114]
FRAMEWORK BASED MOBILE APPLICATION DEVELOPMENT
(GROUP 1)**

**FINAL REPORT PROJECT 2:
SCHOOL MANAGEMENT APP**

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GitHub Link for -S61891-Project2: <https://github.com/NurAdibahAdnan/CSM3114-S61891-PROJECT-2.git>

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Executive summary

The School Management App (SMA) is an app where it offers a simple and user-friendly interface that begins with users opening the app and will be greeted with a login page, there are three types of users is targeted to use this app which are student, lecturer and admin/staff. The users will be able to login to their respectively accounts and after successful login, a homepage will be appeared. Users could navigate into three pages, which is for student, it will be student profile, discipline list and student marks list. As for lecturer, it will be lecturer profile, discipline form and input student marks form. Last but not least, for the admin/staff, there will be the admin profile, admin student mark list and admin discipline list. All the pages satisfy the CRUD operations which is to summarize, student pages are for read function only, lecturer pages for create and update functions and for admin/staff is for delete function.

Key features of SMA include a seamless discipline list and student marks list that is retrieved for Realtime Database Firebase, smooth explorations, friendly discipline form and student marks form, and interesting user interface. This shows that SMA offers the users of this app a time saving, accurate yet simple design for school management system. The forms are easy to fill in and did not require any long inputs, ensuring a time saving and accurate reports form processes. The list availability can be accessed by all of the user in their respectively.

User who use this app will benefits from SMA'S straightforward discipline form and student marks form, allowing the users to seamlessly create new discipline records, new student marks records which is only viable by lecturers and the data will be shown directly to the students and admin/staff. This will save a lot of time rather than giving hardcopies forms and it could be done anywhere desired. In general, SMA's designs are easy to understand that will greatly enhance the user satisfaction to use a school management system in a mobile app.

Use Case Diagram

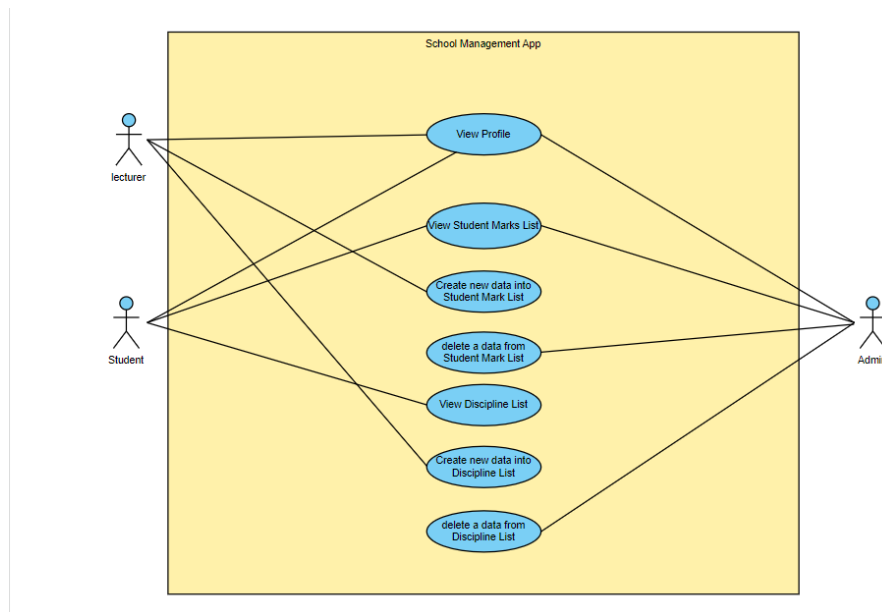


Figure 1: Use Case Diagram For SMA

The figures above show the use case diagram for SMA, where the actors consist of three people, which is Lecturer, Student and Admin.

Lectures will be able to see their profile, creating a new discipline report by filling in a discipline form that need the lectures to fill the name of the student, reasons and the status of the discipline before submitting it by clicking the submit button. The Lectures also could update their student marks by filling an input marks form that consist of studentId, course and marks text field and submit using submit button.

Student will be able to see their profile and only view is allowed for students for all pages required which is Student Mark List and Discipline List.

Admin will be able to see their profile and allowed to delete the current data in Student Mark List and Discipline List by clicking the remove icon next to respective data in both list.

The common structure of tree widgets you used when designing and developing the application

Common structure for tree widget that I have used are three tree widgets which is:

Profile widget tree:

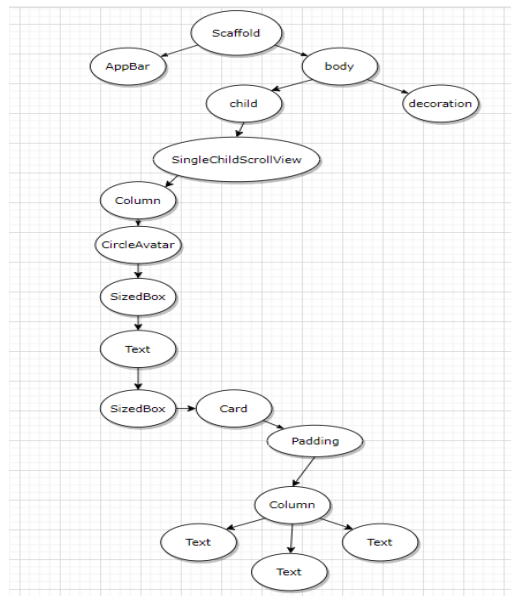


Figure 2: Profile page common widget tree

These widgets are commonly used for the profile pages.

Student Marks List widget tree:

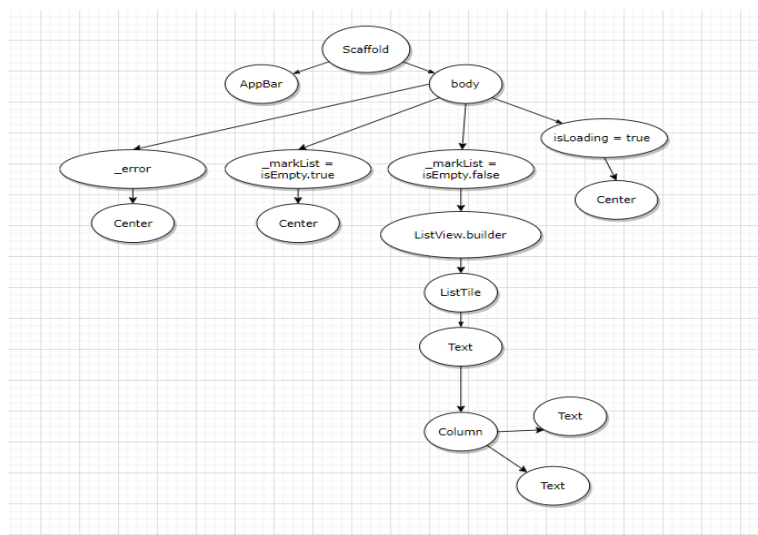


Figure 3: Student Mark page common widget tree

These widgets are commonly used to display Student Mark List page.

Discipline List widget tree:

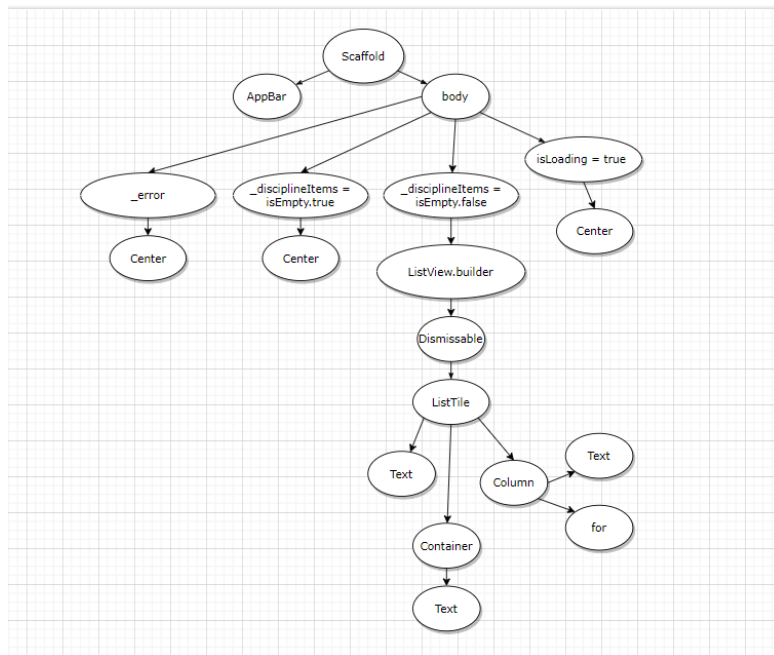


Figure 4: Discipline List common widget tree

These widgets are commonly used to display Discipline List page.

Flutter widget and features adopted in the application

There are some features that have been implemented into SMA which are:

Login Page:

1. Radio Button Widget.
 - Radio button are used to integrate the logic between which user is logging in, whether the user is student, lecturer or admin.
2. signIn Widget
 - signIn Widget is a method widget to implement a logic where a user will have its own email, password and user type uniquely for them, this method will check whether the user inputs is the same or not with the data of the users that have been hardcoded in the app.
3. showDialog Widget.
 - showDialog Widget is used to shows an alert dialog.

Dashboard Page:

4. Carousel Slider widget.
 - Carousel Slider widget is used to make an image slider that will move the chosen local images automatically
 - This widget also uses AssetImage to call for the local images in assets library.
5. Drawer Widget.
 - Drawer widget is used for navigations to different pages and also for logout function.
 - ListTile is integrate into drawer to create a list of navigations.
6. CircleIconButton Widget.
 - CircleIconButton Widget enables user to click on it and navigate to different pages.

Profile Page:

7. CircleAvatar Widget.
 - CircleAvatar widget is used to call a local image in assets library and put it in a circle image holder.
8. Card Widget.
 - Card Widget is used for displaying the information of users.
 - The widget is integrated with Text Widgets and SizedBox widgets to display texts and adjust the position of the Card Widget.

Student Mark List, Input Mark Form, Admin Student Marks List pages:

9. ListView Widget.
 - ListView Widget is used to display the list of student marks with extensions of builder.
10. _loadMarks Widget.
 - _loadMarks Widget is a method to get the data of Student Marks from Firebase.
11. _deleteMarks Widget.
 - _deleteMarks Widget is a method to delete a chosen data of Student Marks from Firebase.

Discipline List, Discipline Form, Admin Discipline List pages:

12. ListView Widget.
 - ListView Widget is used to display the list of student marks with extensions of builder.
13. _loadForm Widget.
 - _loadMarks Widget is a method to get the data of Discipline List from Firebase.
14. _deleteForm Widget.
 - _deleteMarks Widget is a method to delete a chosen data of Discipline List in Firebase.

Sample of Interface with the explanation

Student related pages:

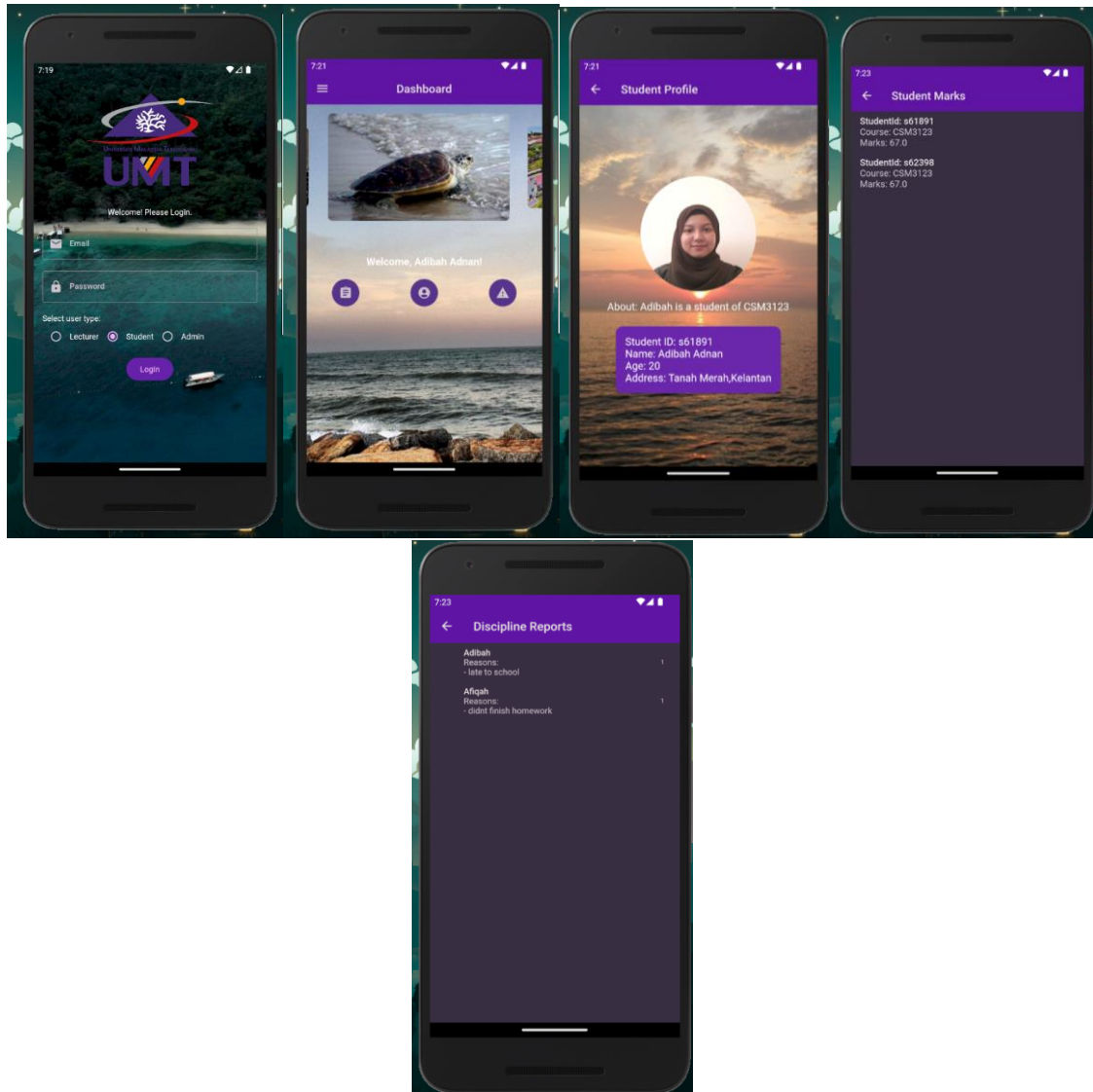


Figure 5: User related pages in SMA

These are the interface of SMA where there will be a login pages for the user to fill in the email and password and choose the user type. After successfully login, the user, which is student to be exact, the student will be greeted with a dashboard that shows an auto play image sliders and welcome message with three icons. Each icon will navigate to the profile pages, Student Marks List and Discipline Reports List.

Lectures related pages:

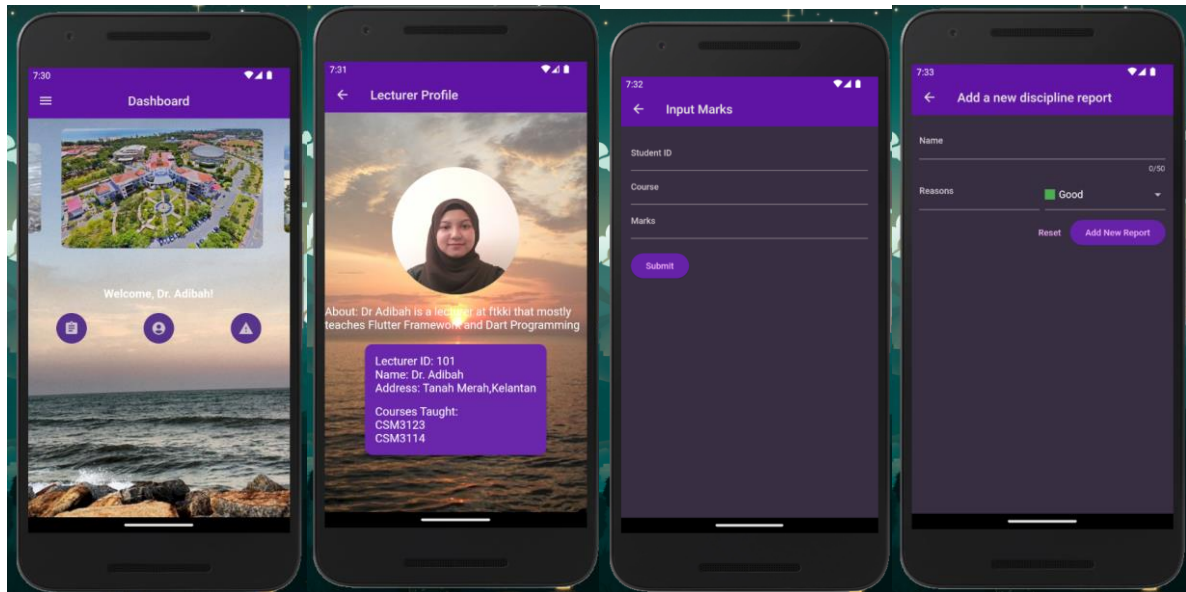


Figure 6: Lecturer related pages in SMA

These are the interface for the Lecturer logins, where after successful login, lecturers will be greeted with the dashboard of the app and each of the icon is navigable to three different pages, which is Lecture profile page, Input Marks form page and Discipline Report form page. The lecturer who wants to update the marks of student and add a new discipline report can fill the forms respectively and click submit. A snack bar will appears after the forms is successfully submitted.

Admin/staff related pages:

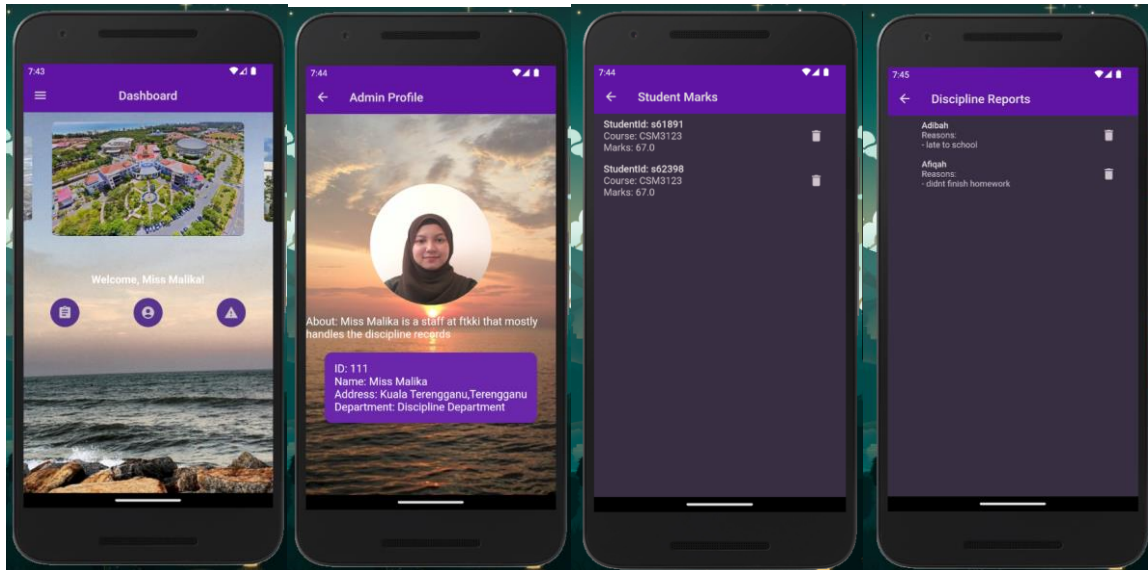


Figure 7: Admin related pages in SMA

These are the interface for Admin logins, where after successful logins, admin/staff will be greeted with the dashboard of the app and its three icons. Each icon will navigate to its respective pages which is Admin Profile page, Student Mark List and Discipline Report pages. The admin feature enables them to delete the data from both list by clicking the remove icon

Conclusion

The School Management App (SMA) emerges as an intuitive and effective solution, addressing the diverse needs of students, lecturers, and admin/staff. With a seamless login process, SMA presents a three-fold interface offering student-centric pages for information retrieval, lecturer-specific pages for data creation and updates, and admin/staff pages for administrative tasks. Key features include integration with the Realtime Database, smooth navigation, user-friendly forms for discipline and student marks, and an engaging interface. SMA not only ensures efficient school management with time-saving and accurate processes but also simplifies intricate tasks, allowing lecturers to effortlessly input and share data, which is then accessible to students and admin/staff. This mobile app surpasses traditional methods, providing a convenient and accessible platform for users to efficiently handle school-related tasks. Overall, SMA's design and functionalities are geared towards enhancing user satisfaction and streamlining the school management experience.

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