CAT 9 INFOCOMM

Group 9-04
PROJECT AUXILIUM

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1   INTRODUCTION

1.1   Abstract

Our project, Project Auxilium, is a project which is based in Hwa Chong Institution. The main programming language which we used for our software development was Java, the IDE that we used was Android Studio, and the database which we used was Firebase. The word 'Auxilium' is Latin for: 'to help, to aid, to assist'. Project Auxilium is aimed at improving the learning environment here in Hwa Chong, and allowing students to clear their academic doubts or assist others academically, through the Project Auxilium app. We understand that many students face academic doubts frequently, and at times do not have anyone to turn to for help, assistance, or clearing of doubts. This in turn results in students being unclear of the respective subject in question, which could be a fatal mistake, causing the students to spiral down a vicious cycle where they increasingly lack understanding in that subject. Project Auxilium hopes to prevent students from slipping into this vicious cycle, through the use of the Project Auxilium app. Our app is a platform where students can enquire about their academically related doubts. Students, more specifically senior students, can also answer those doubts posted by the other students, providing academic assistance. Helping others will garner yourself points. This point system rewards the helpful students, encouraging students to help out more on our platform instead of utilising it fully to ask questions. It will assist us in creating a balanced environment in our app, where one half of the users are asking questions to clear doubt, while the other half are answering questions and rendering assistance. In conclusion, Project Auxilium revolves around the development of the Project Auxilium app, which is an app where Hwa Chong students can clear academic doubt or provide academic assistance to other students.

1.2   Rationale

While this may not seem like a prominent problem, a large number of students, especially in Singapore, are actually not receiving sufficient academic help and support, resulting in them struggling with their studies. Some students may not come from well-to-do families, and both parents may be out working till late. As such, when these students are at home, they have no one to seek academic help from. Some students may also have parents who did not receive a higher education, and their parents are thus unable to provide academic assistance to these students. According to a survey which we conducted, approximately 95% of students have experienced a situation in which they had no one to seek academic assistance from. This shows the prevalence of such a problem. This problem is also common among Hwa Chong students. It will have many serious repercussions, such as leading to students being unable to cope with their academics, which is extremely undesirable for students and the school alike. Thus, there is a need for our project, and a basis for us to build and develop our project on.

1.3   Objectives

Project Auxilium's objectives include:

1. to construct an application where students can clear their academic doubts or reply to others and provide academic assistance on the platform
2. facilitate note sharing between students
3. equip students with the ability to seek academic help when they need it
4. allow students to feel that it is a safe space to ask questions

1.4 Target Audience

Our target audiences are the Secondary 1 to Secondary 4 Hwa Chong students, aged 13 to 16, especially those who receive insufficient academic assistance.
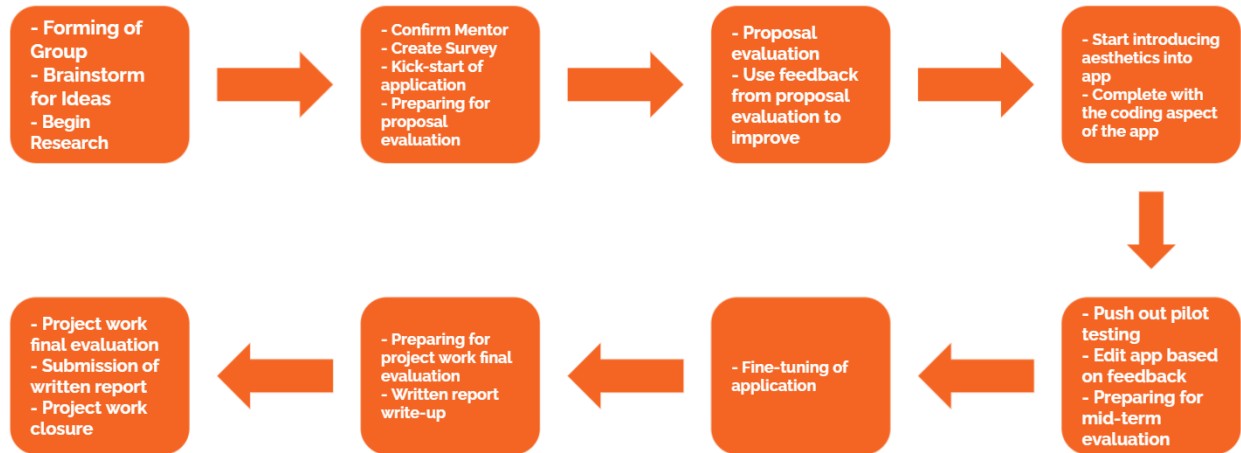
1.5 Resources

The resources which we created for this project include an online application, called the Project Auxilium App, in which students can inquire about their academic questions and doubts, or answer other students' questions. There is also a mini notes sharing platform in the app itself, where students can browse notes made by other students, or upload their notes there for public viewing.

2 REVIEW

There already are existing websites and applications that can also be utilised to ask academically related questions, such as Quora, Snapask, and Photomath. However, such websites/applications are unattractive, inconvenient, and do not provide fully reliable answers. Our target audience, students, may also be easily distracted, and drift off to other irrelevant subjects in the website/application in question. The Project Auxilium app, however, is much more personalised towards Hwa Chong students, has a clean look, and also provides reliable answers from other Hwa Chong students, instead of anonymous users on the internet which students may have to face on the other existing websites/applications.

3   METHODOLOGY

3.1   Timeline

- Forming of Group - Brainstorm for Ideas - Begin Research	→	- Confirm Mentor - Create Survey - Kick-start of application - Preparing for proposal evaluation	→	- Proposal evaluation - Use feedback from proposal evaluation to improve	→	- Start introducing aesthetics into app - Complete with the coding aspect of the app

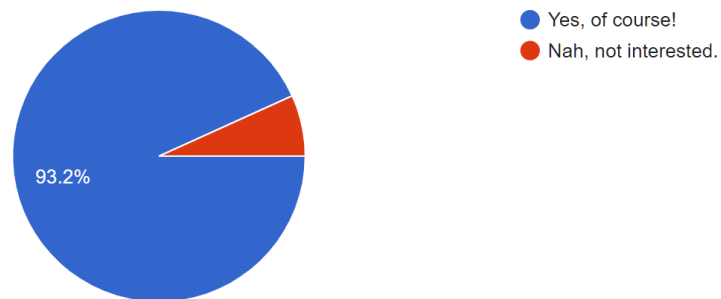| - Project work final evaluation - Submission of written report - Project work closure	←	- Preparing for project work final evaluation - Written report write-up	←	- Fine-tuning of application	←	- Push out pilot testing - Edit app based on feedback - Preparing for mid-term evaluation

3.2   Needs Analysis

At the beginning of the year, we surveyed to find out the feasibility of our project and whether such a project would be relevant in our school. Through the results of this "Needs Analysis" survey, which we have conducted on 59 students from all 4 secondary school levels, we have collected much valuable information, which will be covered in Section 3.2 below.
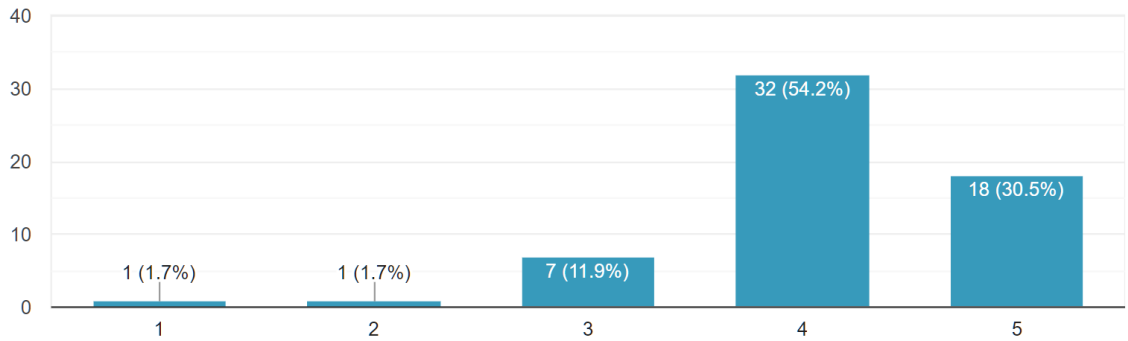
3.3   Survey Results

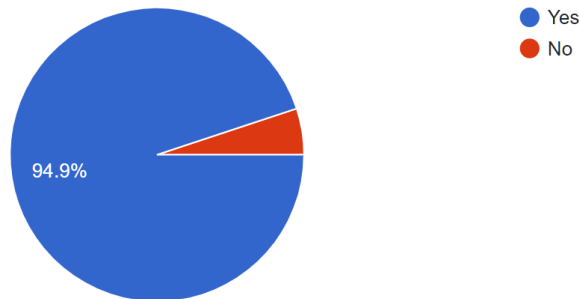After reading the description of our app, would you be interested to try it?

59 responses

- 🔵 Yes, of course!
- 🔴 Nah, not interested.

93.2%

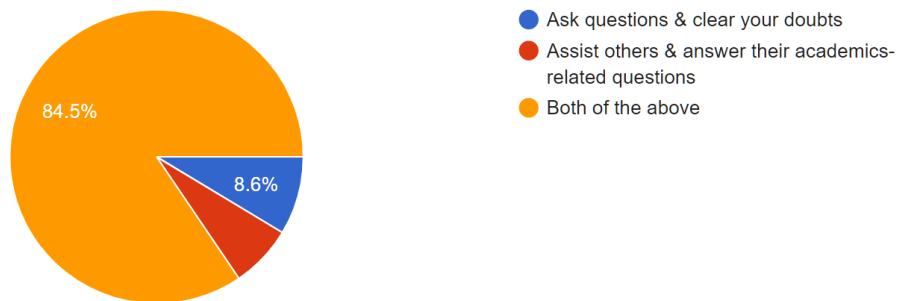## How useful do you think this app would be?

59 responses

Have you ever had that one moment when you really needed help for a question but there was no one there to assist and teach you?

59 responses

- Yes
- No

Which role would you play in our app?

58 responses

- Ask questions & clear your doubts
- Assist others & answer their academics-related questions
- Both of the above

3.4   Development of Resources
1. Software used
    a. Android Studio (IDE)
    b. Java (Language)
    c. Firebase (Database)
2. Source code can be found here (Github link)

3.5   System design
The user firstly registers for an account. He is required to include his username (unique to his account), email, phone number, and a password which will be used for future log in. His login data will be saved in our database. This allows him to log in at any point in time, as long as he is able to produce the correct credentials required. The credentials, required for log in, are the user's email address and account password. Upon logging in, the user is greeted with an interactive home screen. It comprises a user profile interface, a feed, similar to a social media, and buttons on the bottom right corner of the screen, which are the 'filter' and 'post' buttons respectively. The feed, in the home screen, is a data format utilised to provide users with a variety of questions, which were posted by other users on the platform. This keeps the user engaged, and provides him with a constant flow of questions which he can help to answer. This feed can be customised according to the 'filter' function, which is to be adjusted accordingly, by the user himself, based on user preferences.

3.6   Work distribution

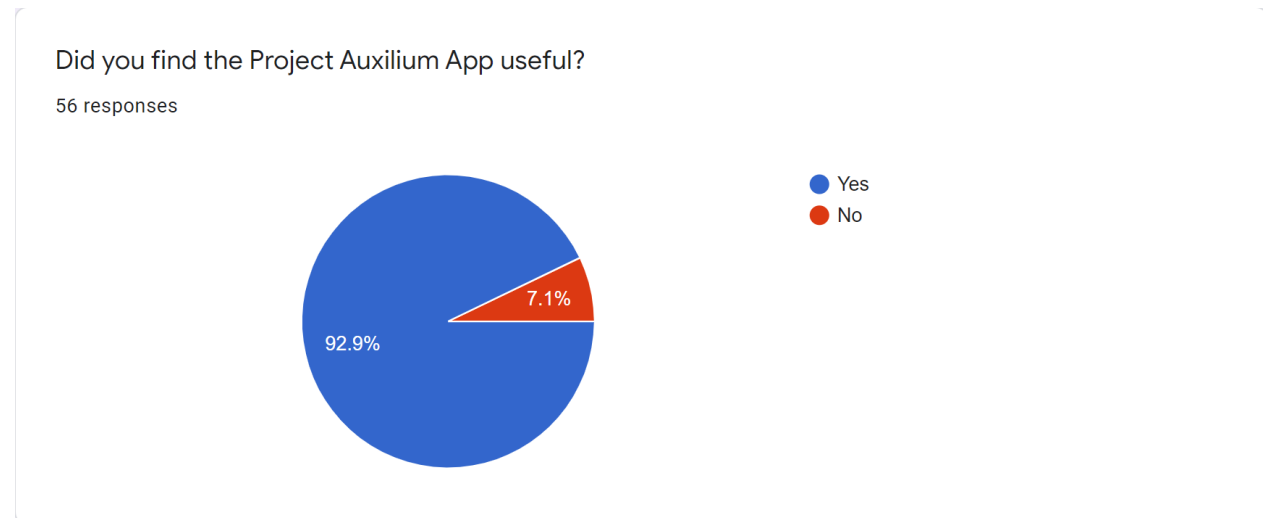Jefferson: Leader

Keith: Programmer

Li Yu: Secretary/Programmer
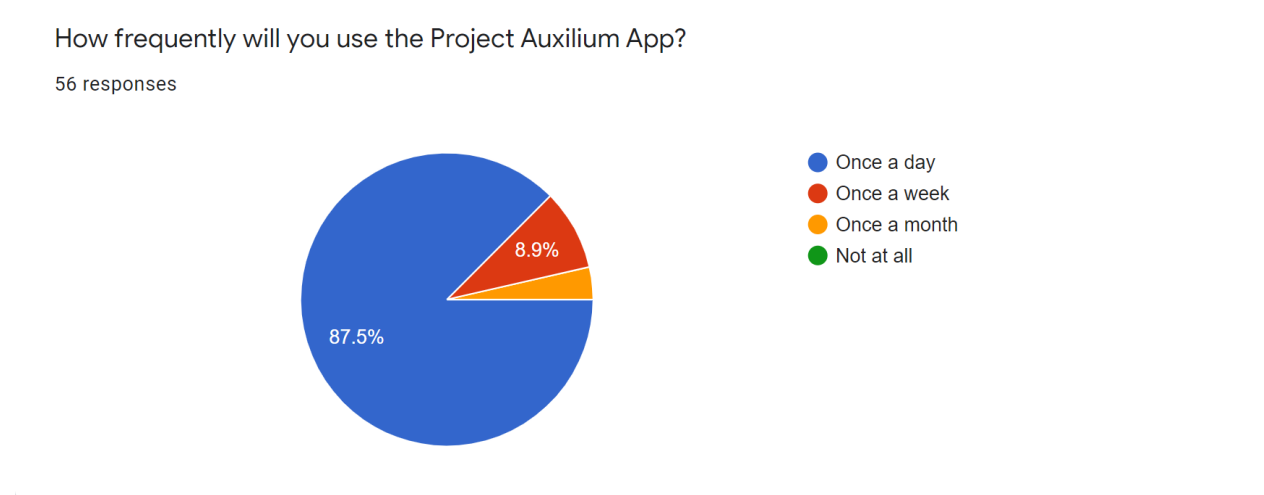
Enoch: Programmer

3.7   Pilot Test
We carried out a pilot test on the Project Auxilium App as we wanted to find out what Hwa Chong students felt about it. This information would aid us in improving the application. We managed to garner 56 responses from different Hwa Chong students shortly after we released this to our Hwa Chong friends and classmates. This pilot test shows how well-accepted the Project Auxilium App is, among Hwa Chong students. We collected the responses and results of the pilot test survey 20 days after its release. In general, the responses were rather positive and

allowed us to infer that the application was rather well-accepted by Hwa Chong students, most of them having positive opinions regarding our project. On the whole, Hwa Chong students felt that the Project Auxilium App would benefit their lives.

Did you find the Project Auxilium App useful?

56 responses

52 students responded that they found the Project Auxilium App to be useful and beneficial to them, highlighting the need for such an application.

How frequently will you use the Project Auxilium App?
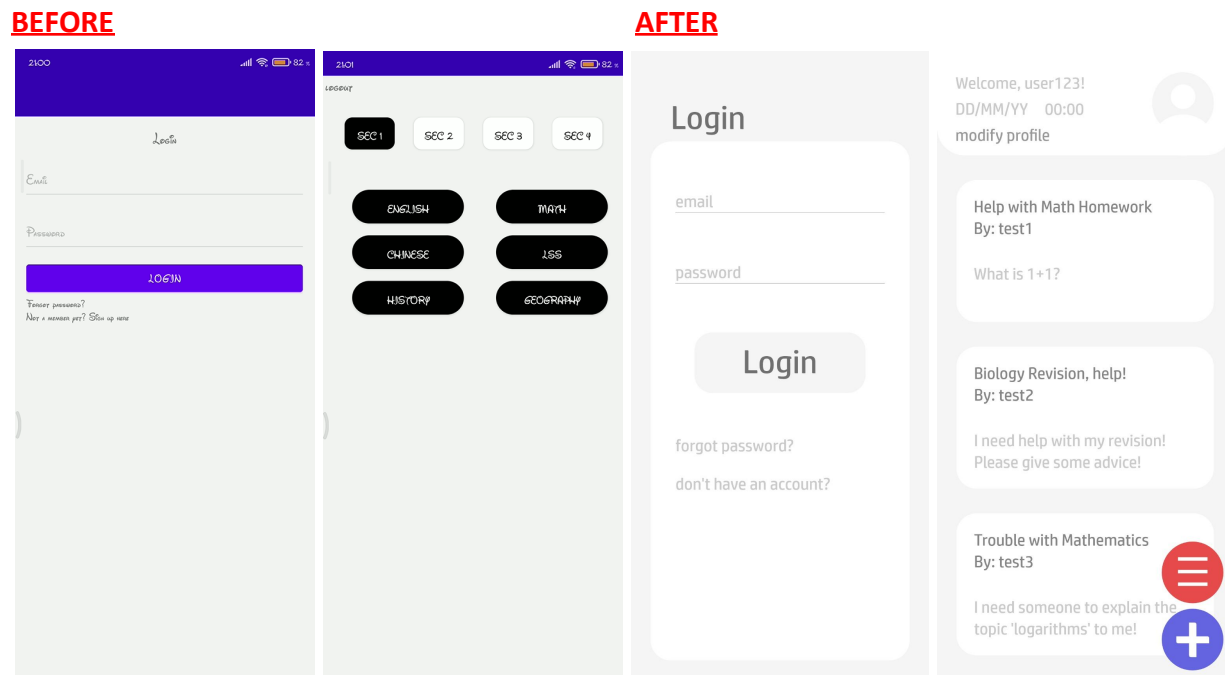
56 responses

54 students responded that they would use the Project Auxilium App at least once a day or once a week. Visibly, Hwa Chong students will frequently utilize the application.

The app can be improved aesthetically. Should aim for a cleaner/fresher look.

One respondent pointed out that the Project Auxilium App should be aesthetically improved.

4   OUTCOME & DISCUSSION

Overall, positive feedback was received from the respondents through the pilot test. However, since some respondents felt that the Project Auxilium App could be further improved in some aspects, we edited and improved it based on the individual responses. One of the responses pointed out that the application could have been improved to look more appealing and attractive. Thus, we revamped the application's user interface, giving it a much cleaner look. The photos below feature our application before and after the user interface was revamped.

BEFORE   **AFTER**

5   CONCLUSION

5.1   Difficulties faced

Some challenges which we encountered along the way of our project work include COVID-19. It prevented us 4 from meeting up physically to code and develop the app together.

5.2   Reflection and learning points

We learnt how to deal with issues that get in our way or hinder our progress. For example, thanks to this project, we learnt to deal with COVID-19 through adaptation, moving our group coding sessions and discussions fully online, through Google Meet or Zoom. During this project work journey, we were able to gain invaluable lessons of hard and soft skills. Lastly, we learnt that communication and proper distribution of work among group members is vital for success.

5.3   Summary

In conclusion, although Project Auxilium was a rather challenging project to carry out, with many problems faced along the way, we feel that our days of hard work and perseverance had finally paid off. We have very much enjoyed the entire process of developing the Project Auxilium app, and have also taken away many learning points from this process. We are grateful to have such a wonderful opportunity to develop and build this "dream app" of ours. Finally, we have fulfilled our wishes to build an app that will be able to assist Hwa Chong students academically, one that is also able to promote a positive learning environment in Hwa Chong where students are able to help one another out academically through an online platform. We hope that, one day, Project Auxilium's app will be officially launched to the entire Hwa Chong community, and be put to good use.

6   REFERENCES

All images shown above were taken from our app and products; no external images or references were used.