BUNKUP : A CONTENT-BASED FILTERING MOBILE APPLICATION FOR ROOMMATE FINDING IN UPLB

Fritzgerald M. Urbano and Concepcion L. Khan

BACKGROUND

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Need for a dedicated mobile application specifically designed for roommate finding at the University of the Philippines Los Baños

OBJECTIVES

General objective of the study aims to develop a mobile application for roommate finding by utilizing content-based filtering and existing roommate pairing application features. The study also aims to provide an effective way in finding an ideal roommate for an individual based on their preferences.

OBJECTIVES

- **develop a mobile application using Flutter and Firebase for roommate-finding;**

- **apply content-based filtering and features on the roommate-finding mobile application that are used by existing matchmaking applications for matching two individuals**

- **connect individuals with similar lifestyle preference regarding shared-housing using the roommate-finding mobile application;**

OBJECTIVES

- **conduct the testing of the roommate-finding mobile application on students of University of the Philippines - Los Baños;**

- **utilize the System Usability Scale to assess the usability of the roommate-finding mobile application**

METHODOLOGY
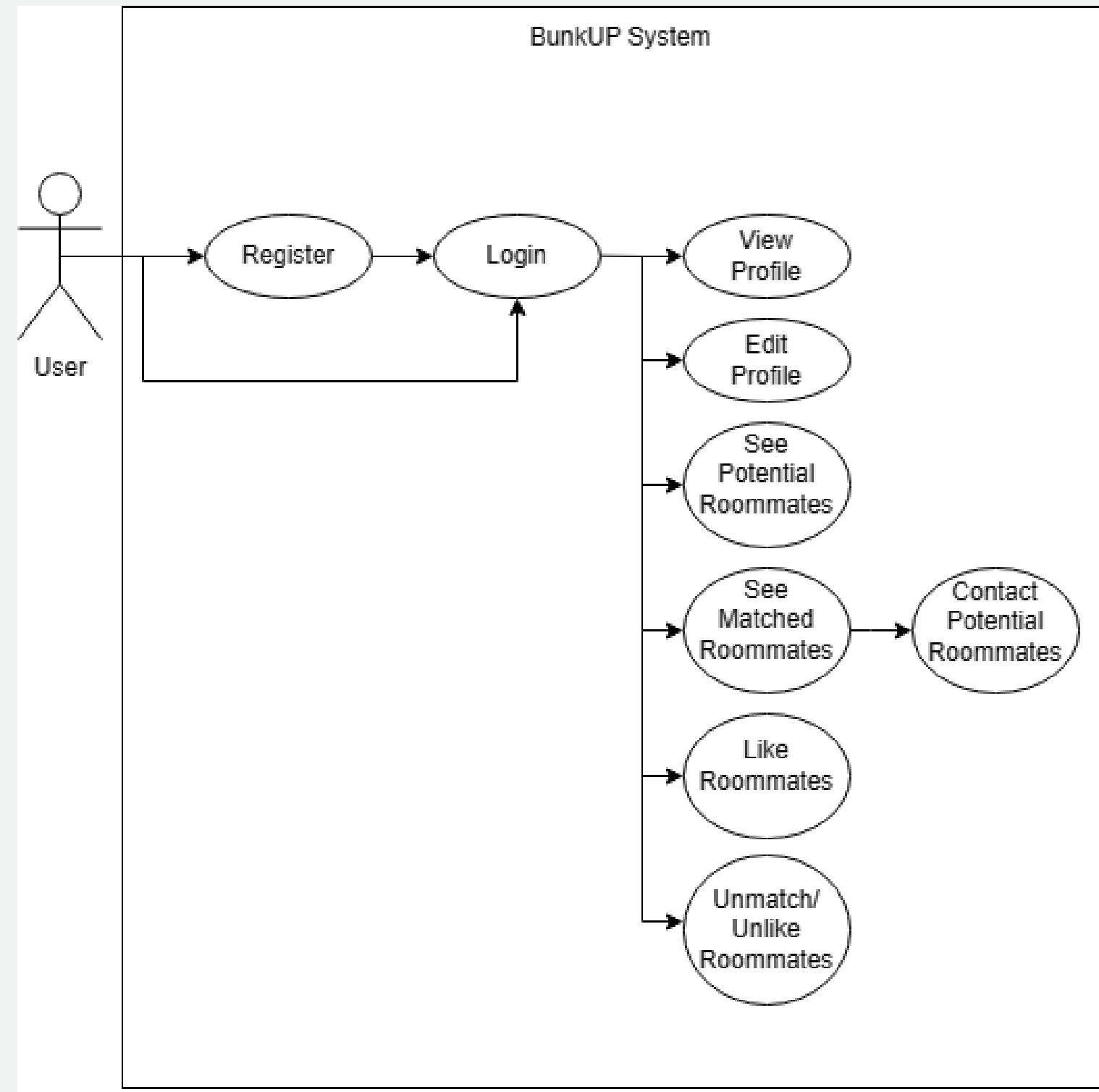
Tools and Technologies:

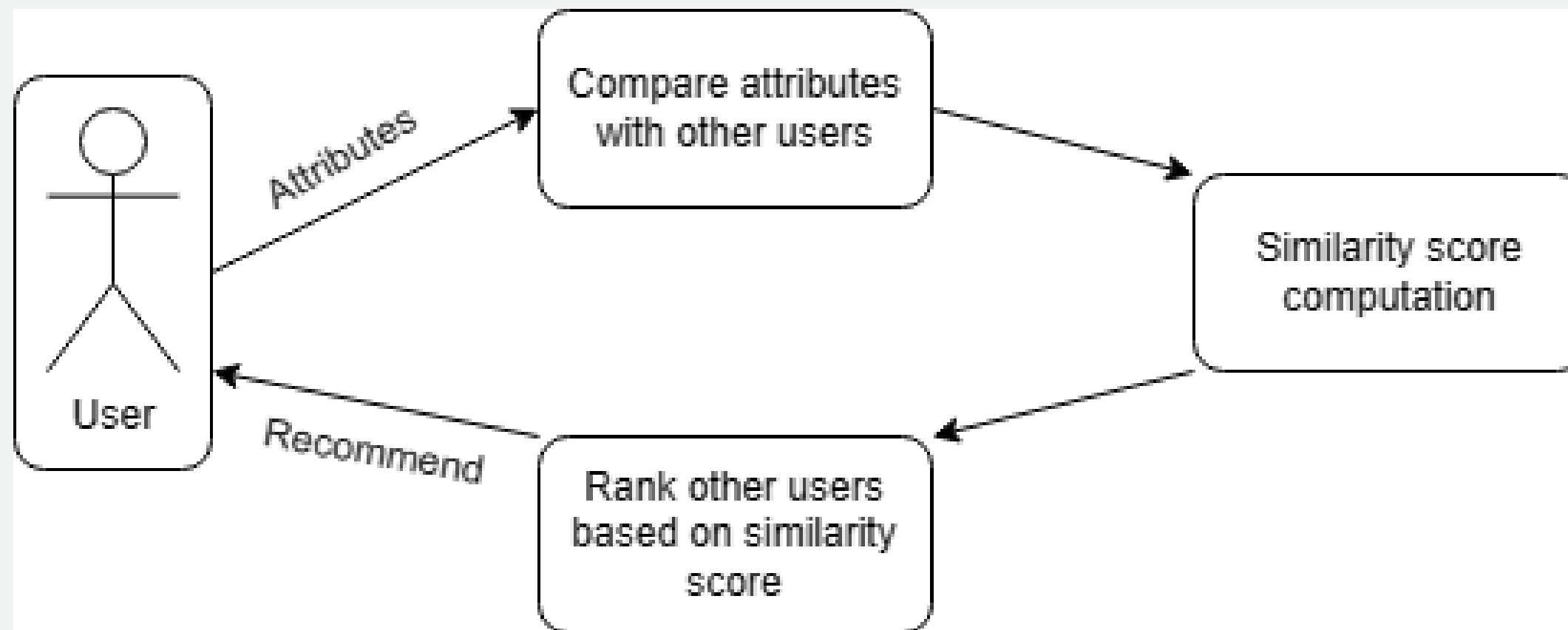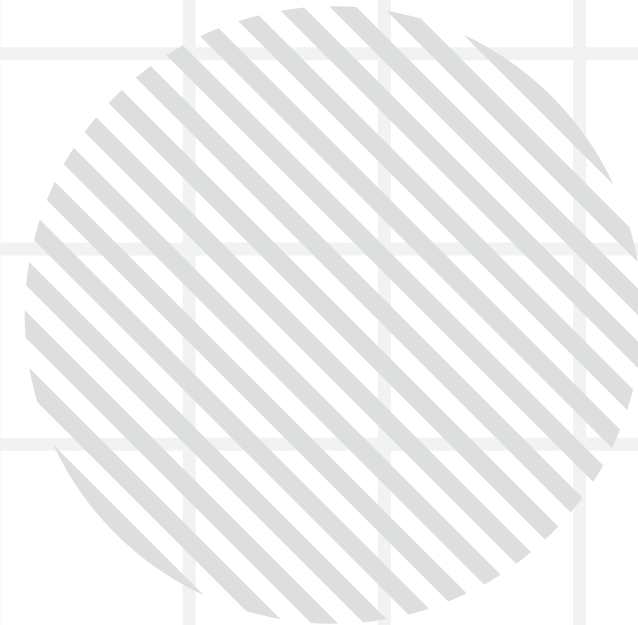| Android Studio | Flutter | Firebase | Cloud Firestore | WhatsApp |

METHODOLOGY

Use-case Diagram

METHODOLOGY

Content-based Filtering

START OF DEMO

RESULTS AND DISCUSSION

System Usability Testing

- The mobile application was tested by 11 students from UPLB using the System Usability Scale and a feedback questionnaire.

- The questionnaire was made using Google Forms and were shared to respondents via Facebook Messenger.

RESULTS AND DISCUSSION

System Usability Testing

- The mobile application acquired a score of 92.05 out of 100 and can be classified as above average
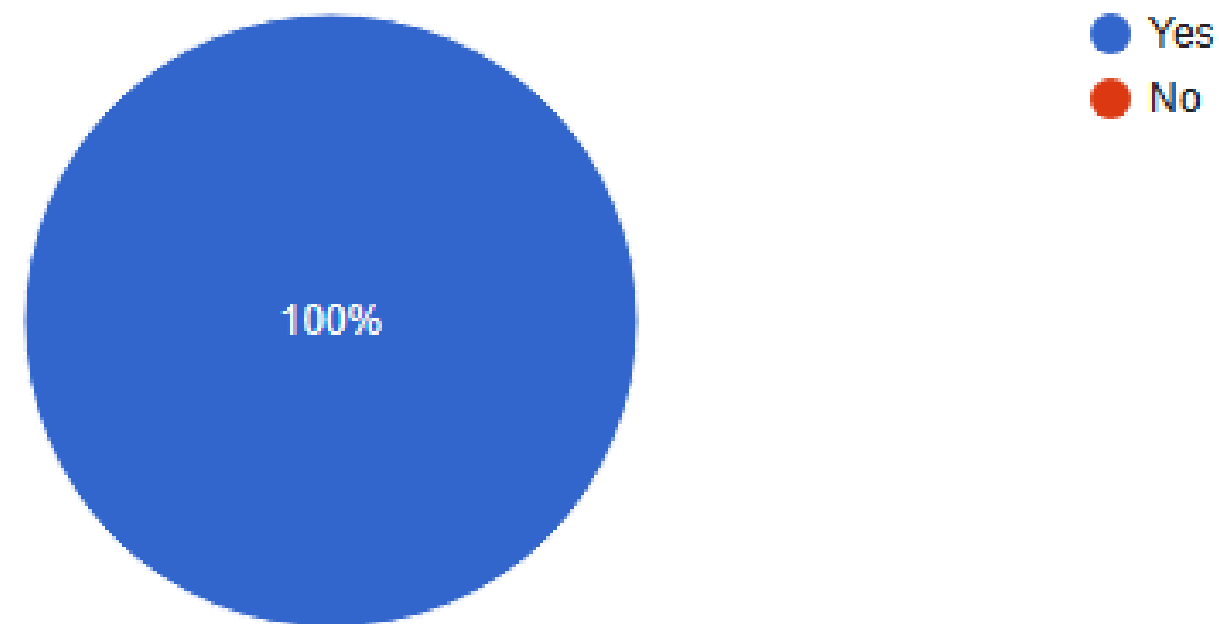
Respondent	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Odd	Even	Score
Respondent 1	5	1	5	2	5	1	5	1	5	2	25	7	95
Respondent 2	5	1	5	1	5	4	5	1	5	1	25	8	92.5
Respondent 3	5	1	5	1	4	1	5	1	4	1	23	5	95
Respondent 4	5	1	5	1	5	1	5	1	4	5	24	9	87.5
Respondent 5	4	1	4	2	5	1	5	2	3	3	21	9	80
Respondent 6	4	1	5	1	5	1	5	1	5	1	24	5	97.5
Respondent 7	5	1	5	1	5	1	5	1	5	1	25	5	100
Respondent 8	5	1	5	1	5	1	5	1	5	1	25	5	100
Respondent 9	3	1	5	1	4	3	4	1	5	1	21	7	85
Respondent 10	4	1	5	1	5	2	4	1	5	1	23	6	92.5
Respondent 11	5	2	5	1	5	3	5	2	4	1	24	9	87.5
Mean	4.55	1.1	4.91	1.19	4.82	1.73	4.82	1.19	4.55	1.64	23.64	6.82	92.05

RESULTS AND DISCUSSION

Analysis of Feedback

Do you think the roommate-finding mobile application streamlined the process of finding a suitable roommate for you?
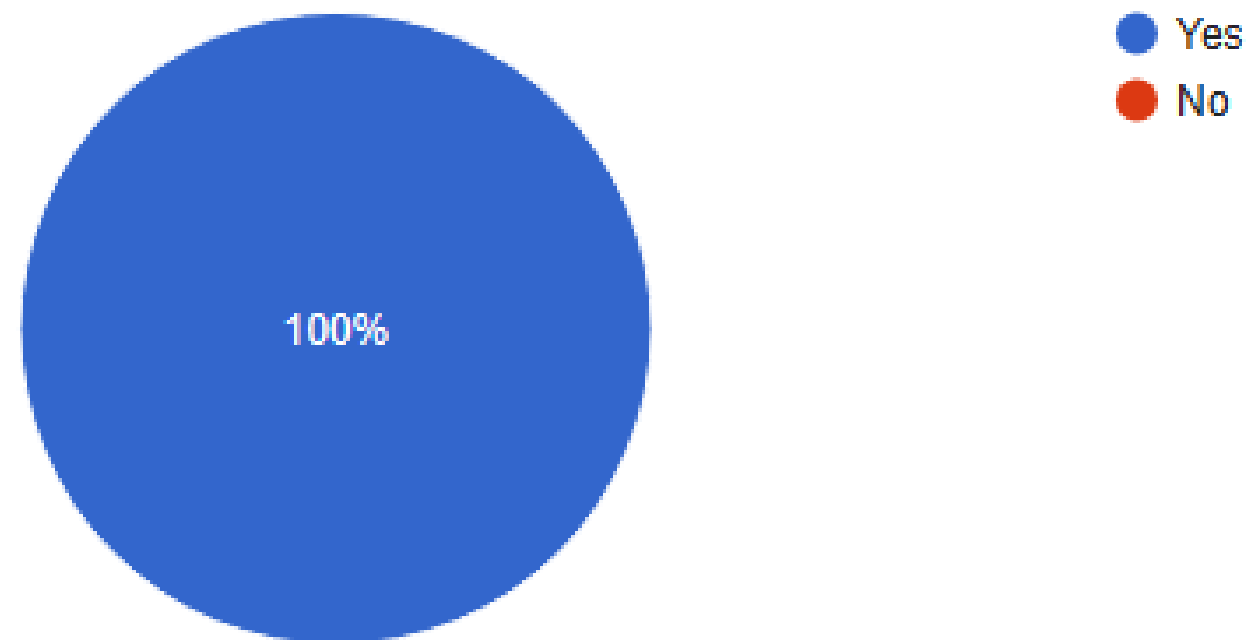
11 responses

- ● Yes
- ● No

100%

RESULTS AND DISCUSSION

Analysis of Feedback

Did the features provided in the application, such as preferences matching and user profiles, help you in making an informed decision about choosing a roommate?
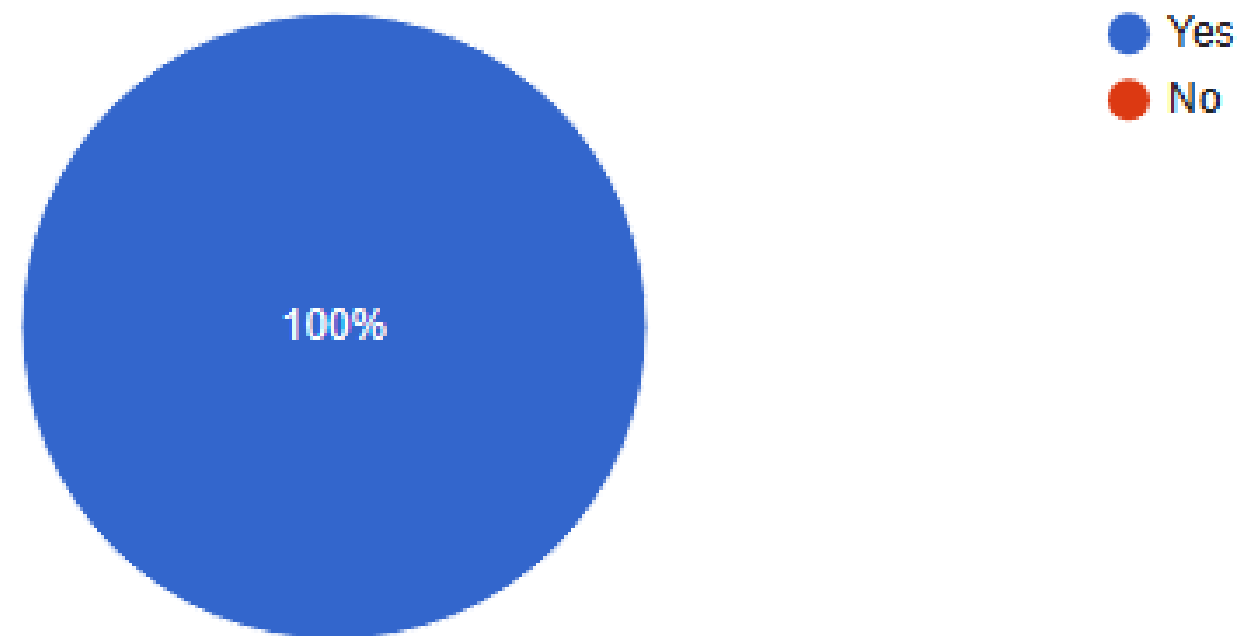
11 responses

● Yes
● No

100%

RESULTS AND DISCUSSION

Analysis of Feedback

Do you believe the technologies used (Flutter and Firebase) contributed to the overall functionality and user experience of the application?
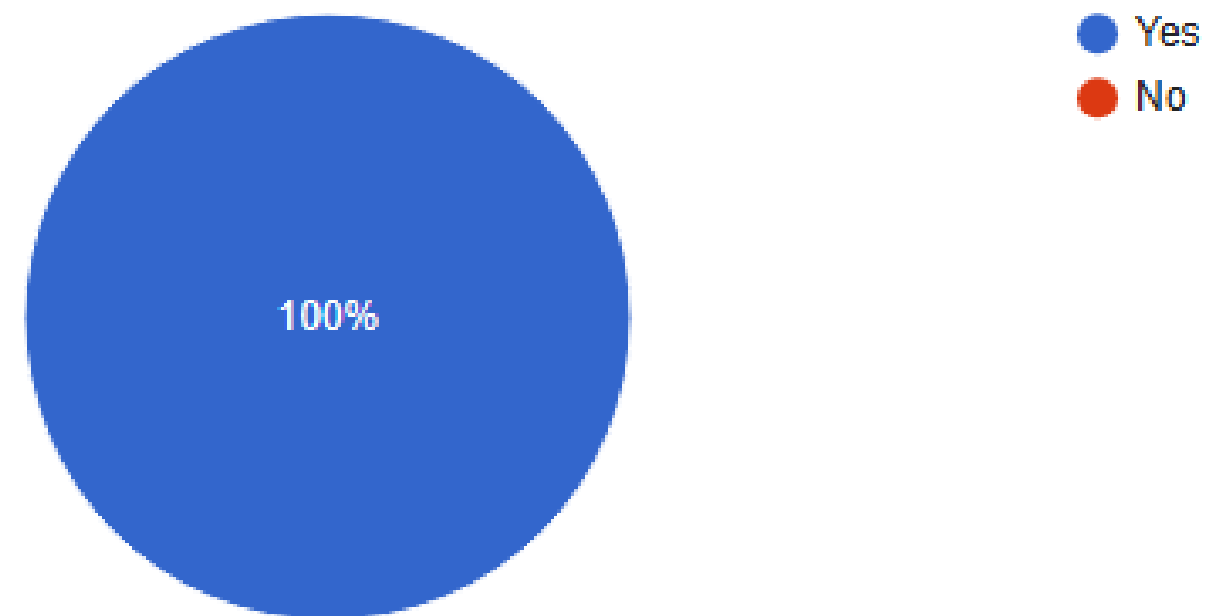
11 responses

● Yes
● No

100%

RESULTS AND DISCUSSION
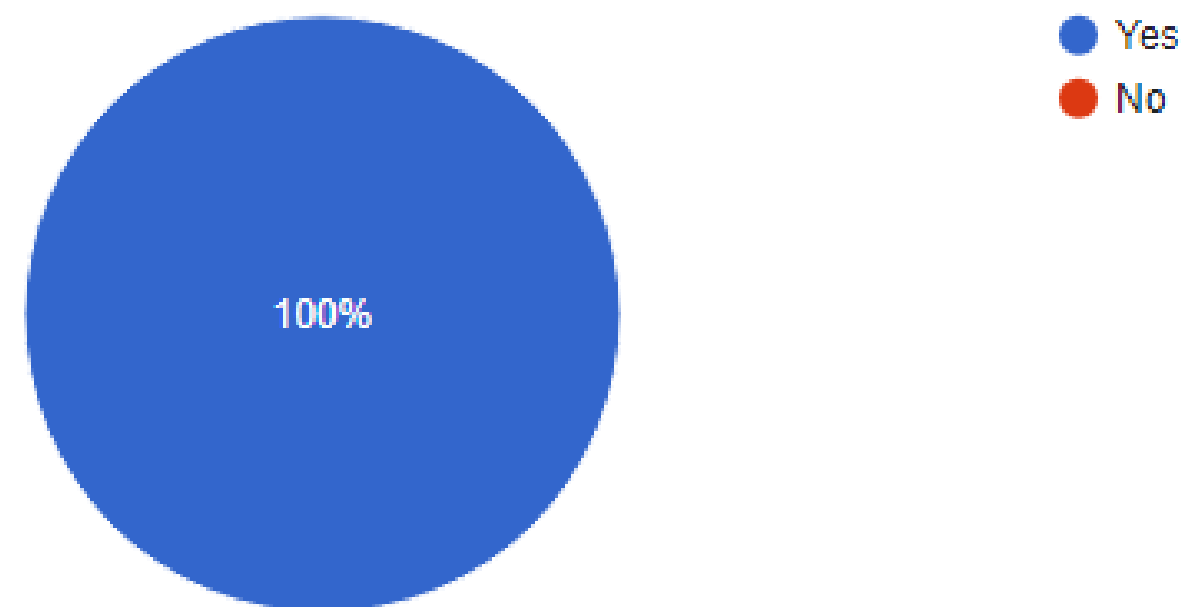
Analysis of Feedback

RESULTS AND DISCUSSION

Analysis of Feedback

Considering your experience with the application, do you think this platform could help in preventing bad roommate pairings among students at the University of the Philippines - Los Banos?

11 responses
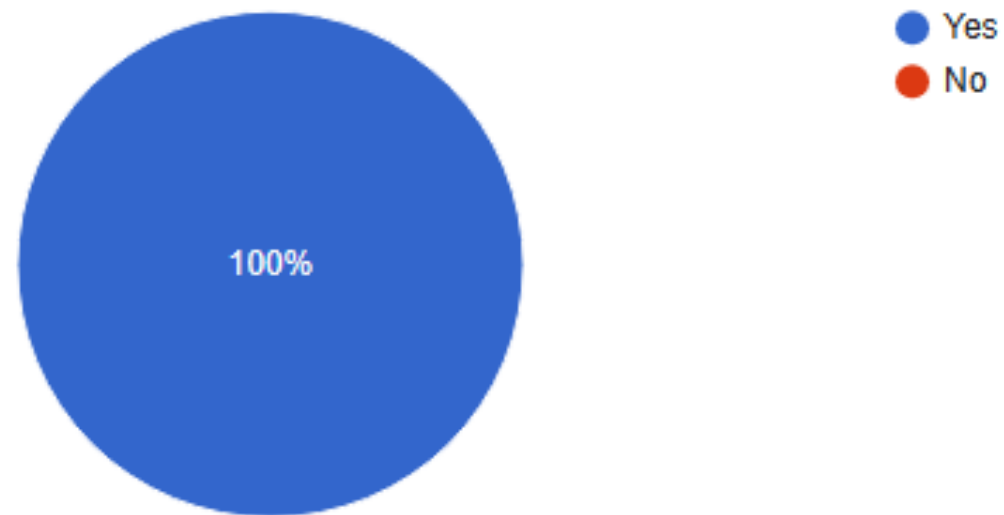
100%

- Yes
- No

CONCLUSION

CONCLUSION

- **BunkUP is a mobile application designed to streamline the process of roommate-finding in UPLB. It was created using Flutter for the user interface and Firebase for the back-end services.**

Do you believe the technologies used (Flutter and Firebase) contributed to the overall functionality and user experience of the application?
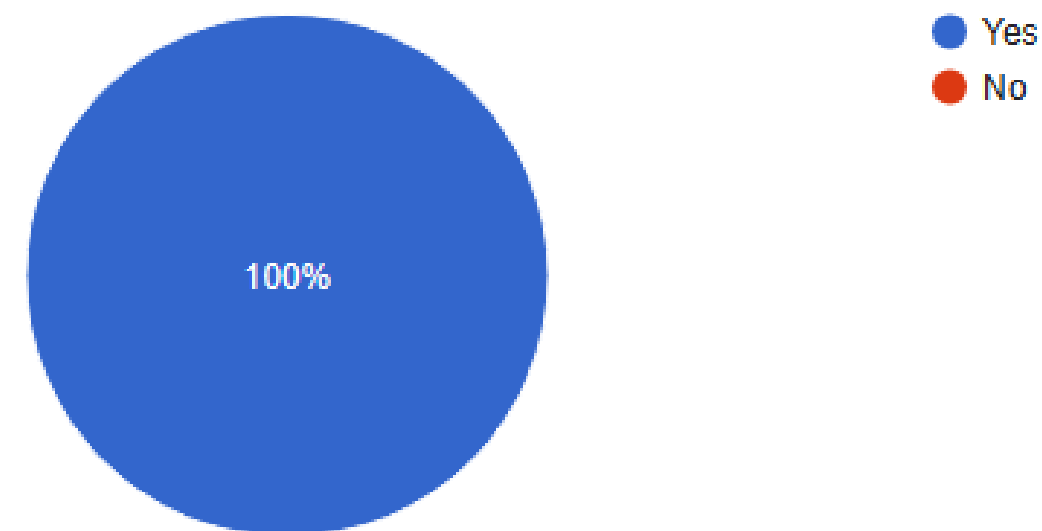
11 responses

100%

● Yes
● No

CONCLUSION

- **The mobile application leverages functionalities of existing matching applications and incorporates content-based filtering based on the users' provided information to deliver personalized roommate suggestions.**

Did the features provided in the application, such as preferences matching and user profiles, help you in making an informed decision about choosing a roommate?

11 responses

● Yes
● No

100%

CONCLUSION

- **Users can create accounts, providing personal information and lifestyle preferences, enabling them to browse ranked suggested roommate profiles, like and view other users, check mutual interest, and communicate with matches via WhatsApp integration, with account management for profile editing.**

Did the features provided in the application, such as preferences matching and user profiles, help you in making an informed decision about choosing a roommate?
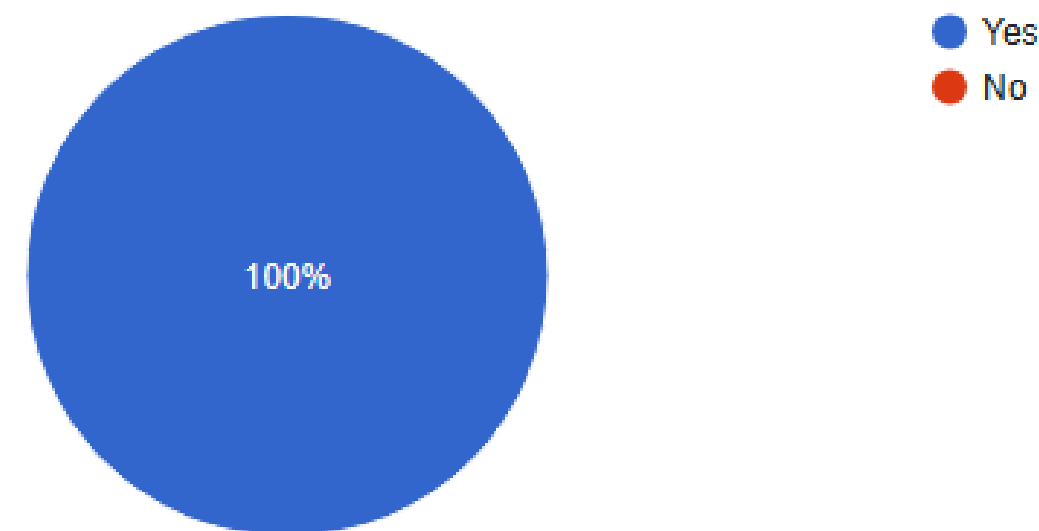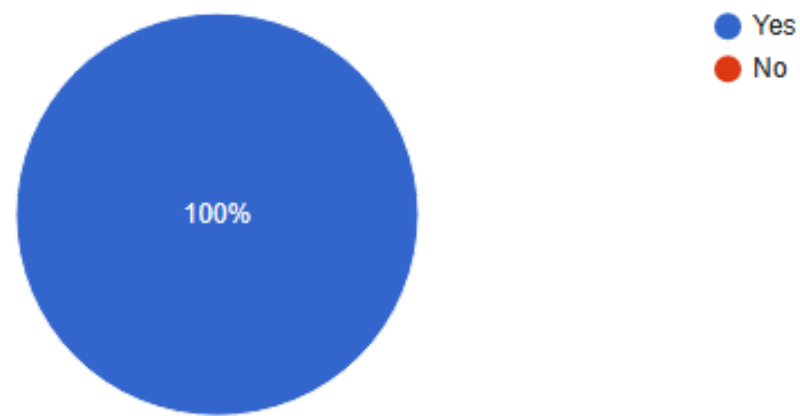
11 responses

CONCLUSION

Based on the feedback questionnaire:

- **It was also proved that the application can effectively connect individuals who had similar preferences regarding shared-housing and prevent bad roommate pairings among students at the University of the Philippines - Los Baños**
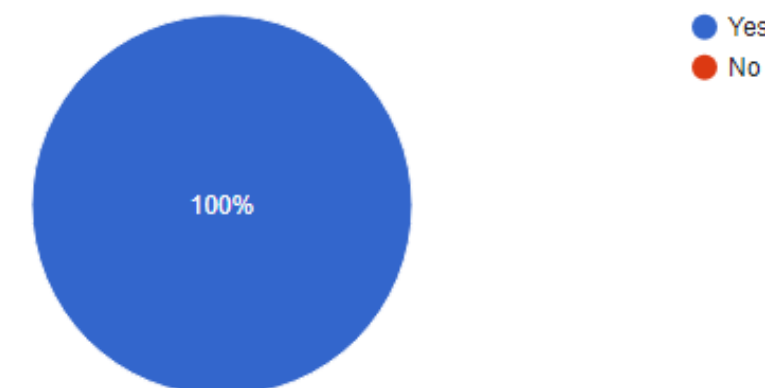

Do you think the application can effectively connect you with individuals who had similar preferences regarding shared housing?

11 responses

- Yes
- No

100%

Considering your experience with the application, do you think this platform could help in preventing bad roommate pairings among students at the University of the Philippines - Los Banos?

11 responses

- Yes
- No

100%

CONCLUSION

- **The mobile application had an SUS score of 92.05 out of 100 and can be classified as above average.**

Respondent	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Odd	Even	Score
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FUTURE WORK

- The scope of the application could be expanded aside from limiting it to students of UPLB.

- An admin panel could also be implemented to be able to manage the users within the application itself and without relying on the application overview or dashboard provided by Firebase.

- A better authentication process should be implemented since a lot of information from the users will be used by the application.

FUTURE WORK
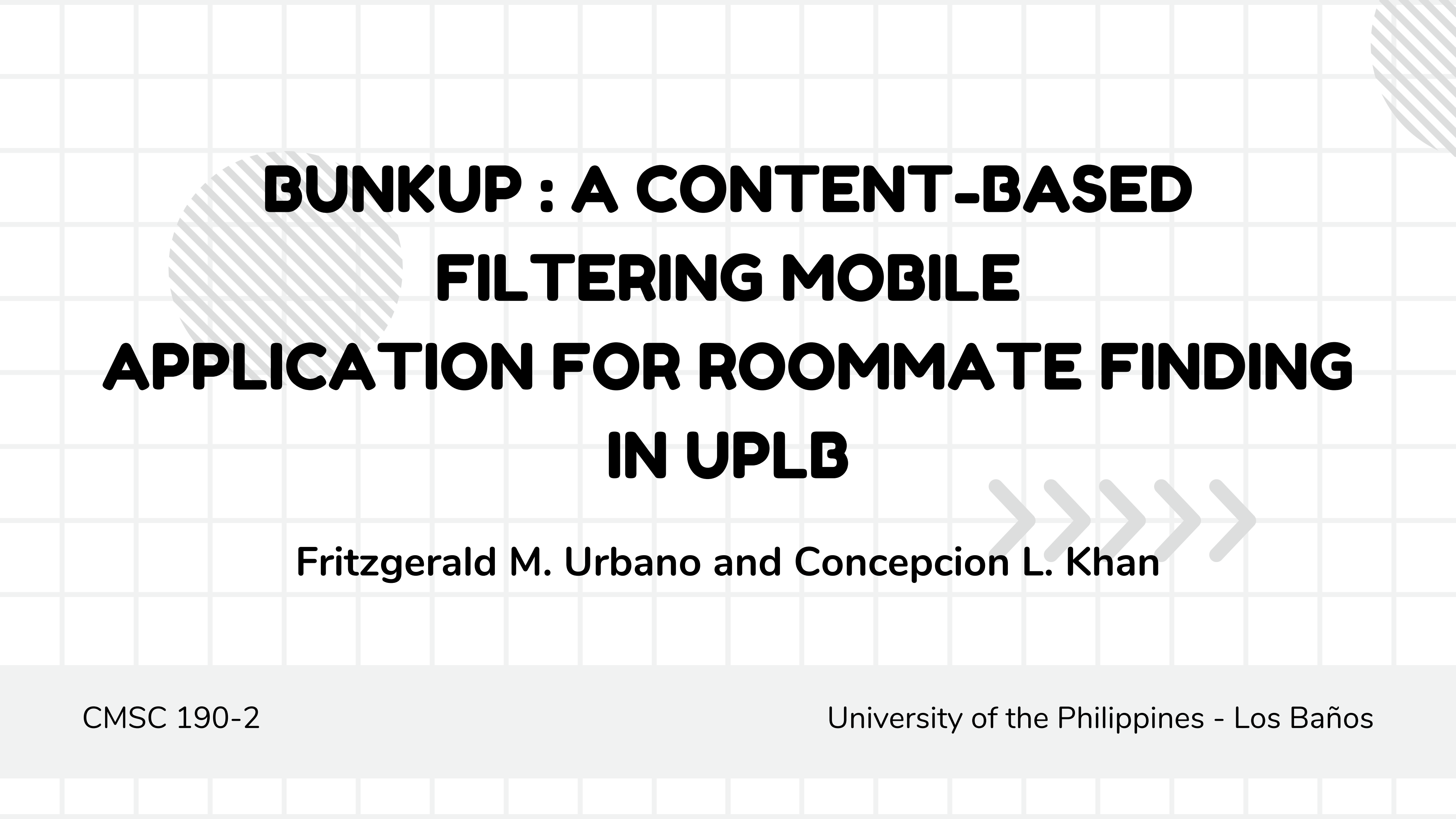
- Improve scalability by upgrading from the Spark plan to the Blaze plan in utilizing Firebase and Cloud Firestore.

- Provide a list of suggested living spaces to streamline not only the roommate-finding process but also the housing selection process.

- The design can be improved for a more engaging experience. Better error-handling and a smoother routing process could also be implemented.

IMAGES USED

- https://en.wikipedia.org/wiki/University_of_the_Philippines_Los_Ba%C3%B1os
- https://www.eileenwynnephd.com/blog/college-roommate-relationships-101-6-rules-to-rock-your-freshman-year-together
- https://www.opensourceforu.com/2018/08/an-introduction-to-open-source-platforms-for-developing-mobile-applications/
- https://iconduck.com/icons/60851/android-studio
- https://iconduck.com/icons/94312/flutter
- https://www.iconfinder.com/icons/1175544/firebase_google_icon
- https://iconduck.com/icons/101938/file-type-firestore
- https://commons.wikimedia.org/wiki/File:WhatsApp_icon.png

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