

# HousemateHeaven : Housemate Finder Mobile Application For University Student

## *Final Year Project*

*Danish Farhan bin Mohd Rusdi*

University Kuala Lumpur  
Malaysian Institute of Information Technology (UniKL  
MIIT)  
Kuala Lumpur, Malaysia  
danish.rusdi29@s.unikl.edu.my

*Husna Sarirah Husin*

University Kuala Lumpur  
Malaysian Institute of Information Technology (UniKL  
MIIT)  
Kuala Lumpur, Malaysia  
sarirah@unikl.edu.my

**Abstract**—Housemate finding is not a new problem among university students. This research paper address university student problem in finding housemate and propose a solution which called HousemateHeaven. The main objective of the research is to develop a functional mobile application that specializes in providing a method for university students to find housemate in a whole new way. This research will outline about the problem that university students have in finding new housemates, factors in choosing housemates and usability of mobile applications.)

**Keywords**—Housemate, University Student, Mobile Application

### I. INTRODUCTION

Housemate definition is a person who lives in the same house with another [1] . Every year, there are always a complaint from university student about how hard it is to find housemate to rent a house around their university area. That is why HousemateHeaven been developed

HousemateHeaven is intended to be a mobile application that will be an ease to university student in finding housemate or roommate during their university years. This application will be using Flutter as a backbone of the project. Student can expect that this application will be a good application for them in solving their finding in searching for person to share house with.

### II. OBJECTIVES

- To study the requirements in developing a mobile application for finding housemate, which is named HousemateHeaven.
- To design a good functional application with a nice interface
- To develop Housemate Heaven mobile application using Iterative and Incremental model in SDLC methodology.

### III. PROBLEM STATEMENT

#### *A. Problems in Finding Housemates*

To study the requirements in developing a mobile application for finding housemate, which is named as HousemateHeaven mobile application.

#### *B. Difficulty to Find Similar Application that Focusing in Malaysia*

After researching for a while, a housemate finder application that focusing in Malaysia is quite hard to find. The application mostly focus in am Europe Country like France, England and Germany. Student that studying in Malaysia will have a hard time to use this application because most user in other application mostly originate from outside of Malaysia.

#### *C. Rental is High in Certain Place*

In certain places, rental of house can be unexpectedly high due to how develop the town is. For example, range of rental around Kuala Lumpur is around RM 1 300 - RM 1 800. This amount is too high if student want to rent the house.

### IV. LITERATURE REVIEW

#### *A. Factors in Choosing Housemate*

In choosing housemate, there have been many studies done to investigate the factors or criteria in choosing housemate. According to [2] , the factors of choosing a housemate are based on age, gender and ethnicity. This is supported by research that had been done by [3] that said that one of the factors in choosing housemate is related to age range. The atmosphere in the house will be different for each group of age. Sometimes, younger people tend to be a housemate with a group of people around their age then with older people because of things like conversation topic of younger generation mostly about current trends in social media. The same thing can be said for older generation

because that generation will likely talk about something related to current issue in the world like politic and economic. The next criteria for choosing a housemate may be due to an economic factor, as stated by [4]. It is because there is big differences in rental around rural areas and city areas. The amount of rental fees in city area tends to be higher than rural area because of how development progress in city like public transportation, tall buildings and shopping malls growing faster. Furthermore, in the research by [5], the need of housemate to fill the family role to other housemate has also been included among the factors. Housemate needs to be treated like a family because housemate live under same roof as how a family does. A person who learning at university that has long distance from their house will feel lonely because of absence of their family around them. The feeling will be overcome when they have an interaction among their housemate like what they used to with their family.

### B. Effects on Interactions and Relationships between Housemates

Based on previous studies, there are many effects on interactions and relationships between housemates. One of research from [6], social interactions are importance for humans and their happiness. When a person interact with each other, they will feel happy because it fills the void of loneliness in them because there is someone they can share things with. This research is supported by a research by [7] that said that social interaction between housemates has an impact on the happiness of student. Student is also a human, so they need glimpse of happiness in their life too. When we are in a happy mood, everything will seem to run so smoothly. Other than that, a research by [8] said that social interaction can be seen as an important source of emotional and practical support to a person. If a person has a problem with something, they need another person to support them emotionally by having conversation with them. This situation can happen between housemates when one of them is having a problem with something. That is why according to research by [9], social interactions are more important than housing characteristics because of how social interactions can have many effects on someone. In this case, it is important for housemates to always have social interactions between each one of them.

### C. Usability Factors in Mobile Application

When we talk about usability factors in mobile application, it is related to how user feels about how well the application can be a user-friendly application. According to research by [10], there are three factors that can affect usability of mobile application which are user, task and context of use. These factors are proven as a critical factor to the usability of an application as supported by a research by [11]. The first factor is user. The end user needs to be put as priority in the development of an application because in the end of the day, they will use the system. In the view from mobile application development, user experience will be based on how well the interface will be because of how small mobile application compared to the website. This is what based on research done

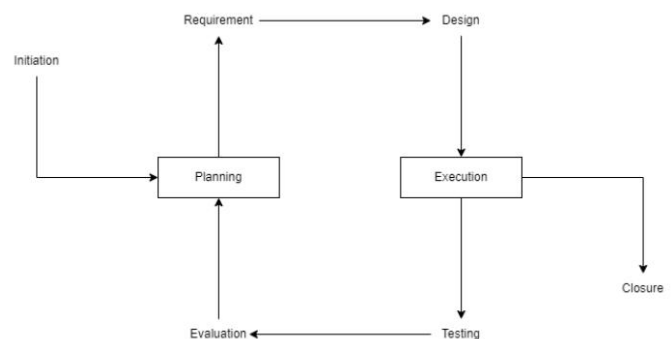
by [12] that said most of the time user interface has been sacrificed for unnecessary amount of information that wants to be displayed. Next factor is task. It refers to the goal of the user in the mobile application. For example, user might have downloaded the mobile application for entertainment, functionality utility or communication based on research by [13]. The user goals cannot be achieved if the application is too complex for them like there are too many additional features that have been added to the application.

Finally, context of use is one of the important factors of usability in mobile application. This factor also can be said as what environment the user will use the application. According to research by [14], user will likely adapt new technology when it offers an expected outcome. This can mean that mobile application will be used more when it offers what user wants in the situation. For example, public transportation mobile application will be used more when user wants to know the exact time the public bus arrived. Mobile application also can be accessed anytime like in the middle of walking to the office. This is supported by research by [15] that stated, using mobile application while walking can slow down walker's average speed. The user walking's speed is affected because of how focus user on their mobile application during that time.

## V. MATERIALS AND METHOD

Methodology that has been used to develop HousemateHeaven mobile application is Iterative and Incremental Model. The first stage basically discussed about the application specification. There will be possibility of requirement changing throughout the development of HousemateHeaven mobile application. Because of this, Iterative and Incremental Model will be the most suitable model to be chosen. Each stage of the development is important in developing the application. The tools and technology needed for it also fully prepared. This will make the application will be developed on par to schedule.

Figure 1 : Iterative and Incremental



### A. Planning

The first stage of the iterative and incremental model is planning. In this stage, collecting data on how to develop mobile application will be the main point. This stage is important because before developing the application, developer need to know what they are developing and how to develop it.

### B. Requirement

The second stage is requirement. Modules that will be implemented in the application development will be determined here. All limitation and constraint that might hinder project progress will be discussed thoroughly to make sure developer ready for any circumstance.

### C. Design

In the third stage which is design, use case diagram and ERD diagram will be constructed. This is important because the road map in developing HousemateHeaven application will be seen clearly.

### D. Execution

In the execution phase, technology that will be used in developing the application will be set up. Each module will be develop using Dart Programming language.

### E. Testing

In the testing process, selective crowd will test the demo of HousemateHeaven application. The system testing to identify any flaws will be conducted in this phase. Quality control will be most important to make sure that application will be developed with expected quality.

### F. Evaluation

The evaluation phase will depends on testing phase because the application will be evaluated to make sure it follows all functional and non-functional and quality requirement. This phase also will be a phase to ensure that final product will not have any problem. Evaluation report will be keep updated if any changes made.

### G. Closure

Finally, the HousemateHeaven mobile application will be made available for public to use it. In this stage, report about the development of the application will be wrote and a meeting to marks the end of HousemateHeaven development.

## VI. RESULTS AND DISCUSSION

Figure 2 : Google Form - 1

Do you believe that having a housemate will help reduce the cost of rental?  
14 responses

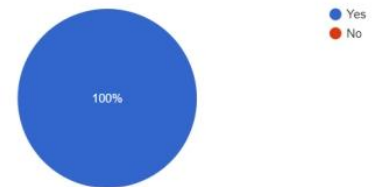


Figure 3 : Google Form - 2

Are you facing difficulty in finding a housemate finder mobile application in Malaysia?  
14 responses

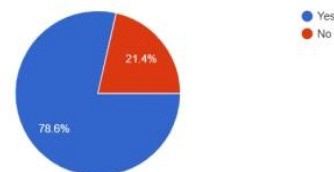


Figure 3 : Google Form - 3

Are you aware of the existence of housemate finder applications?  
14 responses

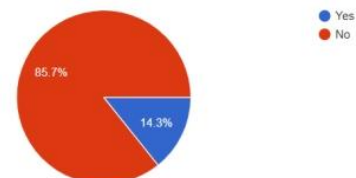
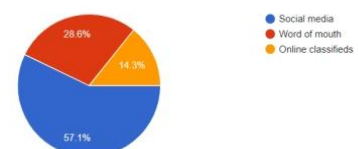


Figure 4 : Google Form - 4

What way you use to find new housemate?  
14 responses



Based on testing and google form answered, HousemateHeaven mobile application has been developed based on User Acceptance Testing. The information that has

been collected from result of Google Form proves that university students indeed are having problems in finding housemate and the needed of housemates during the university years. The student also in needed a new way of finding housemate. A lot of students also did not aware of the existence of housemate finder mobile application.

## VII. CONCLUSION

In conclusion, this research paper proves that the HousemateHeaven mobile application is developed correctly. Most of the requirements and modules were successfully implemented. Admin and student are the target users of the application and each user perform various functions in the application. The methodology that been used is Iterative and Incremental model. In the design phase, use case diagram and ERD diagram has been designed. The HousemateHeaven mobile application go throughout testing to make sure that it will be developed without constraint. Overall, the HousemateHeaven mobile application is ready for more improvement to make sure it reaches highest quality of mobile application development.

Several recommendations that might be able to improve the application in future is to add more security features and improve the application in terms of how user friendly it is. Also, customer support will be a need to be added considering the application might facing problems after general released.

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