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**The Design Report of An Interactive Housing Application**

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## Introduction

In this report, the author chooses to display the process of designing an interactive application that enables and facilitates people to share images and feelings about renting a house and get immediate feedback, while the community of the application provides people in need with free tools or furniture by exploiting the posts in the module. The process of designing the housing application includes five stages: empathizing, defining, ideation, prototyping, and testing. After recording the interview with three people and analyzing relevant secondary data, the author figures out the methods and direction to solve the design challenge that designing a housing application for these people having trouble finding appropriate houses to foster trust, positive community interaction, and resource sharing by creating a user-friendly interface and finally getting membership fees to earn benefits.

## Empathizing

According to the primary data collected from the interviews, the author gets the information that people’s attitudes toward using a housing platform are positive, and most of them feel acceptable and supportive of downloading an interactive housing application if this can help them find proper housing resources. As an acceptable interactive ICT platform, the housing application should be user-friendly, and it should emphasize relevant technology that promotes independence (Algilani *et al.*, 2017). “With the mobile requirement of population and ownership, the disruptive digital housing platform emerges as an online flexible and interactive information medium” (Jiang and Wang, 2023:16). The need for a comprehensive and efficient housing platform designed by the author then occurs to provide useful services for users.

Most people who come to other places to study or work will face a crisis of renting houses in many of our most productive cities with exorbitant housing costs which causes poverty, inequality, and epidemic homelessness. By 2050, two-thirds of people around the world are going to live in urban areas (Siliski, 2018).

图形用户界面, 应用程序

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Viewing the statistics form from Realtor, we can see that “the median price for rent across the country jumped by 12.3% in July from July 2021 and was up by 23.2% from July 2020. It stands at an eye-watering $1,879 per month” (Campisi, 2022). Many Americans with limited money have problems renting houses and approximately 23 million people must pay most of their income to keep renting their houses, especially in low-income households. About 1.3 million school-age children can only live in shelters and on the street or live together with other households in hotels or motels (Will *et al.,* 2019). Therefore, it will be a big problem for target users like youngsters or works seeking a house to live at a normal price. By analyzing the interview answers, the author finds that the sharing module, the feedback module, and the peer-to-peer help module are the main modules interviewees desire most. Furthermore, most of the interviewees feel it is acceptable to pay membership fees to get professional advice and unlock the premium module to efficiently get housing services.

图示

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描述已自动生成图形用户界面, 文本, 应用程序, Word, 电子邮件

描述已自动生成图形用户界面, 文本, 应用程序, 电子邮件

描述已自动生成Based on the interview samples, the author creates two personas and two empathy maps as follows to analyze the target users and their requirements for the application:

The first kind of interviewees or users have rich experience with using housing platforms thus they want to solve housing problems as soon as possible and desire good-quality and efficient housing services. These interviewees usually want to find a dependable housing platform to contact landlords and they will decide rationally whether to trust the platform through its functions provided, relevant services, and housing resources so that they can assess whether the platform can make them satisfied with it or not. The second kind of interviewees or users only have limited experience using housing platforms thus they need other people’s help to get existing housing information in the community module of the platform. Usually, they will feel confused about using an intricate platform with too many functions or modules and getting little useful information about housing due to their weak capabilities of filtering information, which makes it hard for them to successfully rent houses. Therefore, these users with limited experience need a community with posts to teach them some experience and some professional help from experienced practitioners.

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When it comes to the structure of the stakeholder map of the housing application which helps project managers or teams understand the importance and level of stakeholders, it can be divided into three layers: the product layer, the operation layer, and the customer layer. As the core layer, the product layer contains developers, designers, and product testers to develop and maintain the housing application’s basic functions; the operation layer including product managers, marketing analysts, and data analysts helps the application searching for customers’ requests for houses and be familiar to customers or subscribers that belongs to the customer layer containing individual customers need houses, group customers like banks offering housing loans or other enterprises giving housing services.

## Defining

From the personas displayed above, the author transforms them into two POV statements to better understand the users’ features, requirements, and expectations that will influence the design of the housing application. Bob is a 33-year-old engineer who is not satisfied with the efficiency of housing apps. He needs to find an efficient platform to help him rent or reserve a good-quality house because he wants to maximize his chance to rent the next house if the deposit can be withdrawn from the former landlord on the platform. Cindy is a 25-year-old assistant who lacks help from others to rent a house. She needs some peer-to-peer help so that she can get the newest information about renting a house and she wants to know other people’s lives living in a new house.

Considering the description, the author concludes that efficiency, a direct communication function, and a community module are requirements needed by users as the core design and characteristics of the housing application. Hence, the author applies the five whys as a tool to identify users' deepest reasons for generating these requirements. The problems occurring among these people can be summarized into one question: how to get some valuable information about renting a house? By analyzing the question, the author discovers that most users of housing platforms want to get helpful information to help them achieve their requirements for renting a house, and that is the reason why housing requirements exist. The reason for the requirement is that users know their objectives are to rent houses to live for study or work. Due to these objectives, house-seekers will be anxious about large requirements in contrast to limited housing resources. The reason for being anxious about seeking houses can be attributed to house-seekers lack some help or advice from other experienced people and they donnot know how to search for effective information. Finally, the author finds that most users are alone with limited experience in renting houses or with little interaction with others, and this is the deepest reason why users need such housing platforms.

The design challenges mentioned above can be specified as a problem statement:

People like teenagers and workers are facing a severe problem in searching for effective housing resources because they sometimes cannot find an efficient and useful housing platform to help them, which causes housing resources wasted and lowers people's sense of happiness. The aim of the report and the designed application is to distinguish the different weak points of seeking houses for those users to help them solve housing problems and to know people's requirements for a platform to efficiently facilitate housing deals and provide appropriate services.

## Ideation

Mind map:

图示, 示意图

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The author comes up with six proposals for designing a feasible housing platform to help solve the problem of renting houses and finally selects the idea to design a housing application with a community module to share users’ requirements and daily life. A mobile app with an interactive community module will give users peer-to-peer help and attract people searching for houses or getting free resources and advice for the newest housing information, which is in accord with the pains of people with limited experience in seeking houses. People can share their daily lives by sending pictures or sharing feelings in the module and invite their friends having the same trouble to join them in using the app and get professional suggestions by paying membership fees, which is helpful for both experienced and new house-seekers.

Existing websites and housing applications like Draft. ie and Airbnb only provide traditional functions for users to search for houses and filter locations but lack a forum module for users to communicate with each other and lack professional services that can give users help and professional suggestions, furthermore, few of them enable users to contact directly with landlords in their platforms. These limitations, however, are all distinctive features realized by the housing application the author is to design.

Storyboard:

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The storyboard links to Cindy’s persona to depict a scenario in which she is not capable of using applications to find housing resources with a reasonable price, but she usually sees housing recommendation on an advertisement board that contains limited housing resources with high prices. She comes across a poster about the housing application the author designed someday so she tries to download the application from an app store. When she enters the application and logs in to her account, she releases a post in the community module in the app, and soon a kind landlord finds her and contacts her to rent his house. Finally, Cindy pays the appointment fee to the landlord and successfully rents the house.

Wireframes:

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The wireframe depicts the basic layout of the housing application called “SuperHous”, which is shown in six interfaces. The log-in part depicts that a user needs to register an account to use the application. After logging in to the application, a user can start to search for a house or a landlord if he already knows who he has contacted. The navigation bar includes basic three parts: search, sharing, and community. Nevertheless, if a user tries to unlock the premium version of the application to view more credible recommended landlords, the premium module will appear on the navigation bar as optional in which module the user can contact directly with these highly recommended landlords and ask for professional advice from relevant consultants.

Proposition map:

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SuperHous offers a community module that enables users to share their housing information and feelings. If a user first comes to the community module, he can find a forum-like place to communicate with other people who are in the same situation as him having trouble renting a house, thus they can either release posts to seek help or express their anxious feelings and urgent requirements for houses. Finally, these users can contact landlords recommended to find housing resources and rent houses. Compared with traditional housing websites and applications, SuperHous provides an interactive community module for users to share information and resources, and it can give users some professional help if they unlock the premium module. All these gains for users sharing housing information and expressing feelings to facilitate mutual communication are achieved in the application and it helps users with limited experience solve their pains by offering them an easy and interactive housing platform to realize their ultimate goals to rent houses.

## Prototyping

Wireflows:

图形用户界面

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The wire flows depict the process of how users use the housing application to help them find houses. Users first can click the sign-up button to register an account and click the sign-in button to enter the main interface. Users can type in the name of the location or the name of the landlord’s account to search for information. If users have trouble searching for a housing resource, they can click the share button on the navigation bar to edit their posts which can add pictures, videos, texts, and directions of their original places to give other landlords some hints to help these users. When users finish their posts, they can click the share button on the right bottom of the interface to jump to the community module where they can view myriads of relevant posts issued by other users or landlords. If a user wants more professional services, he can click the profile icon to open the profile interface in which he can complete his personal information and upgrade his account to the advanced account by paying the membership fee. The premium module occurs after the user finishes his payment and he can view some credible landlords recommended by the algorithm of the application and contact them directly.

Prototype:

<https://www.figma.com/proto/npqcGwsNfTFhAMYt9rbO1R/Design-Portfolio-by-Wenxuan-Xia1?node-id=7-26&starting-point-node-id=7%3A25&mode=design&t=nHL5Jyuf6rEHnLnp-1>

The prototype of UIs gives a tangible demonstration to users, designers, developers, and product managers before the housing application is published in app stores. The demonstration allows all stakeholders to understand abstract words about design conceptions and lets designers get immediate feedback about whether the prototype follows the requirements of clients. If a client does not know how to improve the functions of the housing application, he can depict what he wants on the prototype. The prototype also allows product managers to conduct user testing to find whether the application can gain traffic from true users and decide whether to choose this plan or change to another.

## Testing

After conducting five user-testing surveys, the author gets the data that 60% users will use the housing application in the future, and they feel using the application is easy for them while they also feel the community module is interesting and useful. 80% users think or may think the premium module is necessary for them, and 40% users will share the application with their friends though 60% users hold ambiguous attitude but they do not refuse to invite their friends to use the application.

The feedback of these users about how to improve the application can be concluded as follows: first, the search module can add a search button and location selection buttons; second, the sharing part can be more interactive like adding a vote and communicative function; third, the community module can add a board to display the newest housing information; fourth, the premium part can recommend some roommates.

Updated Prototype:

https://www.figma.com/proto/Y2g2lcaA8o08JF1RoN98jT/Updated-Design-Prototype-b-Wenxuan-Xia?type=design&node-id=4-54&t=Y251K8MLRWmFI0co-1&scaling=scale-down&page-id=0%3A1&starting-point-node-id=4%3A46&mode=design

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