

Habitat Connect

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Abstract—We are creating a web application designed to enhance the communal living experience for the people in our apartment complex, who majority consist of foreign exchange students. Specifically, we wanted to improve the convenience of certain tasks as well as having thorough communication with all the tenants. Since the tenants are generally close with one another, the primary function that our application will have is a discussion board with the general purpose of pushing announcements. Our next function will be a washer checker, a simple page showing whether or not the washer is in use. We also will have an event calendar, where everyone's birthday is automatically on the calendar upon logging in. Our final function will be a maintenance request page, allowing the tenants to have a direct form of communication with the apartment manager solely for the purpose of maintenance in rooms. Our application will provide a more convenient way of living for all tenants in Hanyang Habitat.

Role Assignments

Roles	Name	Task description
User	Laura	Uses the software. Establishes the conditions that the software must satisfy (requirements). Provides feedback.
Consumer	Laura	Is the stakeholder of the project, defines requirements, prioritizes features and approves change requests.
Software developer	Christian	Gather user's needs and develop the software.
Development manager	Marcel	Supervises the software development. Ensures communication between user and software developer.

I. INTRODUCTION

A. Motivation

When international students come to Hanyang University, we can find that the most popular housing option are Goshiwons. This kind of spaces are designed for students that need a place to live for a short period of time and find

themselves on budget. Moreover, they are often near urban areas and public transportation. The members of this team are currently living in Hanyang Habitat, and we would like to develop a tool that will be useful to international students living in this apartment complex. Since it is a very communal space, it would be in the convenience for the tenants to have an web application where everything regarding events, apartment announcements and other continent tools that make living in this space exponentially better. Living here firsthand, we understand the exact problems and the solutions that can improve our living situation to make it even more inclusive then it already is, as well as have handy tools, such as maintenance assistance and a washer checker. Every semester, a whole new batch of students come, and we realized we can enhance each of their experiences through our web application.

B. Problem Statement

The number of Hanyang Habitat residents is around 70 international students. Exchange students come from places all over the world, and sometimes the communication tools change greatly depending on the area. For instance, European countries make use of WhatsApp or Instagram to send messages. In North America, text messages are the most common option to message friends and relatives. In some Asian countries such as China, WeChat wins in popularity. KakaoTalk enjoys significant popularity in Korea as a prominent messaging platform, but it can be challenging for foreigners to adapt to due to its unique features and interface. Thus, which software can Hanyang Habitat residents use to communicate with each other? Our idea is to develop Habitat Connect, an announcement board where all residents are comfortable using. Its user-friendly English interface is designed in such a way that new users will be comfortable using.

C. Research on related software

WhatsApp

WhatsApp is a widely used messaging application that offers instant messaging, voice and video calls, file-sharing and even a poll-system that allows voting for user given options. WhatsApp is used in family, friends and even work environments to stay connected and up to date with your contacts. We can use the same "texting" as concept into our project, and visually look at the messaging board for inspiration into how ours would look like.

KakaoTalk

Just like WhatsApp, KakaoTalk is a popular messaging application. It offers even more features than WhatsApp like mobile payment and other various app services making it a

multifunctional communication platform, and it can give us an alternative view point on how an announcement page can look.

Discord

Discord is known for its features like text and voice chat, creating and managing channels, and building communities around specific interests or topics. It's often used for both casual and structured discussions, making it a versatile option for promoting communication and collaboration in a variety of settings, including apartment buildings and shared living spaces. It also has a visually appealing layout like structure wise, with the messaging board as the main page with clickable icon options on the left side of the page that will redirect you to another chat.

Google Calendar

Google Calendar is a user-friendly online calendar application from Google. It allows users to create, manage and share events, streamlining planning. You can also import birthdays from your contacts, making it easier to remember important dates. Google integration and various viewing options make it a valuable time management and organization tool.

FamilyWall

FamilyWall is an application designed to help families and individuals organize their lives, share information, and manage family-related activities. It allows users to create shared calendars, to-do lists, shopping lists, and share photos, as well as important information with family members or within their respective groups.

Laundry Applications

Some laundromats like Samsung and LG have developed their own mobile apps to check the availability of washing machines and dryers.

Zendesk

Zendesk is a popular ticket management system used for customer support and issue tracking. It helps organize and track customer inquiries and support tickets. With Zendesk, businesses can provide better customer service.

II. REQUIREMENT ANALYSIS

A. Sign up / Log in

This option will be in the top right of the screen and will with a clickable button saying "SignUp/Sign In". Once clicked the user will be taken to another page where you will be asked to sign up with an email address and a password. Moreover, to complete the registration process, it is necessary to provide a username, birthdate, and Habitat's room number. Once the signup is completed, you will be redirected to the main announcements page, and in the top right you will be able to see your account with your username automatically being your first and last name, since this is a very communal apartment complex, privacy shouldn't be an issue.

If a user is logged out and wants to login, they click the sign in button on the top right of the page, and this option will be available in any page, whether that'd be the announcement page, washer checker page, etc. Once the sign in button is clicked, the Registered users can log in with their username and password.

B. Recent announcements

"Recent announcements" is the main page. Once the loading screen has completed after 3 seconds, this page will appear. If they have not been deleted, the user is able to see all announcements ever posted. Regarding announcements, the following actions are available for the user

- Post an announcement: user can write text and insert images in an announcement. Once they choose to post the announcement, it will be available in the "Recent announcements" page to every user registered in Habitat Connect. The ownership of the announcement is registered as well.
- Edit an announcement: users can edit their posted announcements.
- Delete an announcement: users can delete their posted announcements.
- Comment on an announcement: registered users can comment on posted announcements. Comments can only contain ASCII characters. Furthermore, the ownership of the comment is available for every user to see.

C. Calendar view

The calendar view will be a calendar icon under the announcement icon. The system will provide a calendar view for users that automatically displays other users' birthdays based on their sign-up information. The calendar view will be monthly, and it can be switched between months with the help of navigation arrows on each side of the calendar. Users should be able to click on a specific date on the calendar to view the list of birthdays for that date, including the names of the users celebrating their birthdays. The system will provide a rich and immersive calendar view that serves as a central hub for keeping track of important dates and fostering a sense of community among users. This dynamic calendar is designed to go beyond just birthdays, offering a comprehensive view of significant events and milestones that are occurring, as our main goal is to have a very connected community everyone is familiar with each other

D. Laundry checker

This function will be on the left side of the main page in the form of an Icon, and once clicked, you will be taken to another page where you will see each washer, which is assigned a unique number. The status of each washer is displayed in the "Status" column, with different colors to make it visually clear: "IN USE" is displayed in red. "AVAILABLE" is displayed in green. "FINISHED" is displayed in white. Visually, it will be in a table-like format for easy understanding. Each washer has a set of action buttons next to it. The available actions are: AVAILABLE (Green Button): Users can click this button when they are going to use the washer, once clicked, the washer's status will change to "IN USE," in the color red. Once a User is done using the washer, they will click the FINISHED (White

Button): Clicking this button will change the status back to "AVAILABLE," displayed in green. There may be additional features such as timers to display how long a washer has been in use, as well as user-friendly tooltips or information icons can provide additional information or instructions.

E. Maintenance requests

Under the Laundry Checker Icon will be the Maintenance request Icon, once it is clicked you will be taken to a new page. There will be 2 text boxes to create a "ticket". The first textbox will be the ticket name, for example "No Hot Water". The second text box will be the description of the maintenance issue with a maximum of 200 characters. Once the ticket is set up, there will be a "Submit Ticket" button at the bottom of the page, and when it gets clicked, an email will automatically be sent to the apartment manager's private email. The page for the user after clicking "Submit Ticket" will also change. The first half of the page is a message saying "Your ticket has been submitted!". Under that will be the status of the ticket which can be one of two options: Under Review(which will automatically be selected), and Ticket Completed. Once your request has been completed in person, you can click the "Ticket Completed" option on the Maintenance Request page which will update your page back to the original create a ticket page. Ticket logs will not be available, and you can only have 1 ticket running at a time until it is completed, and only then can you create another ticket.

F. Loading page

Upon opening our website, a 3 second screen with just our logo will appear on the screen. This is the general convention for websites, we can see an example of this in X or discord. After 3 seconds, the page will load into the recent announcements page. Moreover, the implementation of this loading screen is not merely a matter of aesthetic preference; it serves a functional purpose as well. The brief delay allows essential elements of the website to load efficiently, resulting in a smoother and more responsive browsing experience for our users. This loading screen will only be seen upon reloading the site, not when switching between the different functions, this is for the users convience, as they won't need to wait for the page to load every time they want to use a new function.

E. Notifications

You will only receive notifications regarding the status of your maintenance ticket, and the events that are occurring the day of. You can see your notifications on the top right of your screen where your profile is, and next to your profile there will be an bell icon wit hand number, signifying how many notifications you have received. Once you click the bell, you will see your notifications which again, can either be your ticket status or the events that are occurring that day. You can click the "clear" button to remove the notifications, however once you do this, you cannot go back to see what was there. This will be the extent of the notifications, as we do not want to overflow it with other unnecessary added notifications.