

الجامعة الإسلامية العالمية ماليزيا  
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA  
يُونِيسَيْتِي إِسْلَامُ، أَنْتَ أَرِيحُشَا مِلْدُسِيَا

*Garden of Knowledge and Virtue*



## **INFO 3307 HUMAN COMPUTER INTERACTION**

**SEMESTER 2 2021/2022**

### **PROJECT PHASE 1**

**“Community SOS Welfare System”**

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## **1.0 EMPATHY**

### **1.1 Project Introduction**

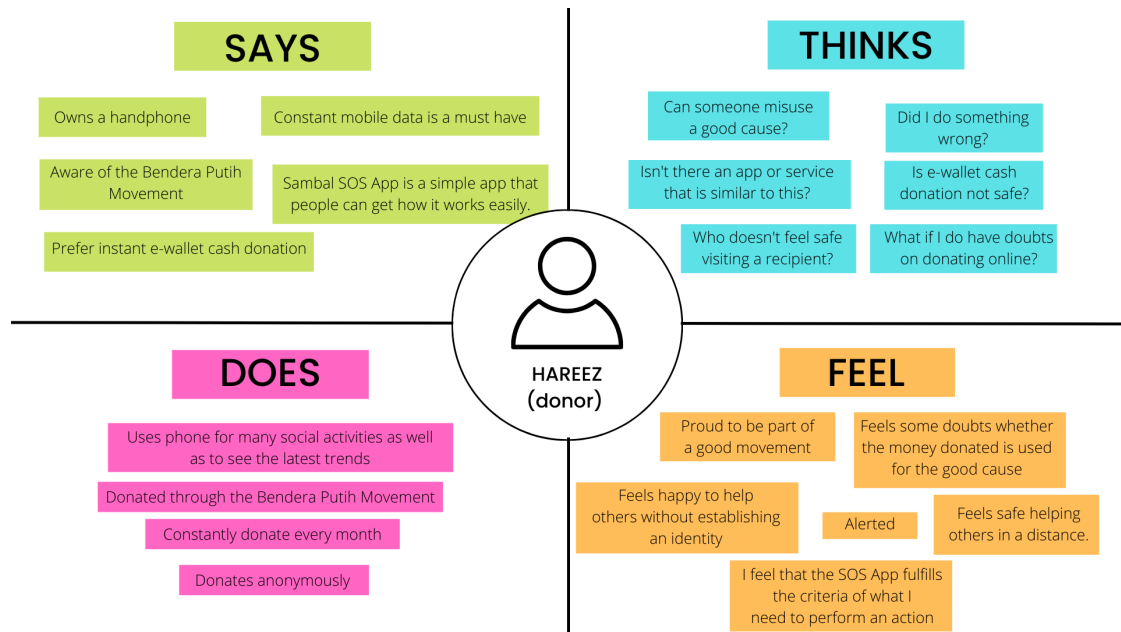
Topic of our project represents the solutions for a handful of persisting issues concerning humanity and the environment. We aimed to offer HCI ideas contributing to the SDG of your choice. We also hope our user-friendly app contributing to helping people in need will benefit by the will of Allah swt.

In order to help IIUM students in need, our team came up with the concept of a Community SOS Welfare System. We can observe that many Malaysians were struggling financially and emotionally during the pandemic. The development of apps like Sambal SOS was done in order to support persons in need. In IIUM, it's common to see people requesting assistance via whatsapp or other social media, yet these requests rarely receive the attention or assistance they deserve. That's why our team decided to develop this app to help individuals in need.

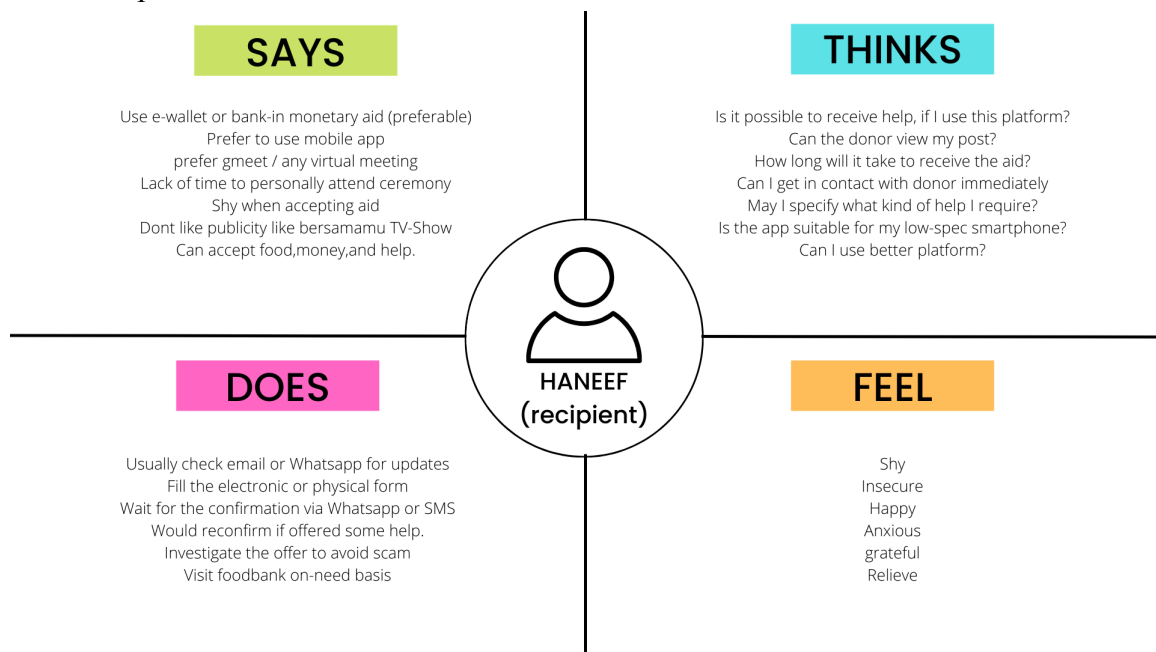
Much like a user persona, an empathy map can represent a group of users, such as a customer segment. We have used empathy map for deeper insight into our customers. There are two roles: Donor and Recipient. The four quadrants reflect four key traits, which the user demonstrated/possessed during the observation/research stage. The four quadrants refer to what the user: Said, Did, Thought, and Felt. Each user's experience helped us to discover pains and needs of further improvements on our project.

## 1.2 Empathy Map

### Module: Donor



### Module: Recipient



## **2.0 DEFINE**

### **2.1 Challenges**

The recent covid-19 outbreak has put a particular strain on the community, especially on the economy. This is because many stores and working places got closed, leading to a high rate of job loss and people were having trouble keeping up with their savings and goods price fluctuations. This problem hits harder on those who are from low-income families, which the majority of the income is earned enough for per day or a week basis. When the situation keeps getting worse, the only option to escape the problem is to ask for emergency help from other people by launching a white flag which represents a symbol of surrender or truce.

Besides aiding the people struggling to cope with the pandemic, the white flag campaign also helps encourage people to help others in distress. Thus, the development of an application of such a campaign will bring a positive impact to other people. However, there are a few challenges that need to be faced to encourage people to use the application.

The first challenge is to overcome people's hesitation in asking others for help despite them being seriously in need of that. According to lawmaker Maria Chin Abdullah, she said that the reason people refuse to ask others for help is perhaps because they want to avoid telling everyone that they cannot manage the situation. In some people's perception, begging others for something is considered lazy because they should work for it if they really want something. However, it can be taken positively as it is impossible to cover everybody's needs, and if people raise for help, the other people will be more alert and able to come to aid. It is not considered a selfish act because it also indirectly helps other people to give help more efficiently.

The next challenge for the people to use the application is because they still lack experience in using similar kinds of applications which focus on donating and requesting items. However, this issue could be solved by giving proper guidance on how to use it and adjusting the application to be able to be used by any level of knowledge.

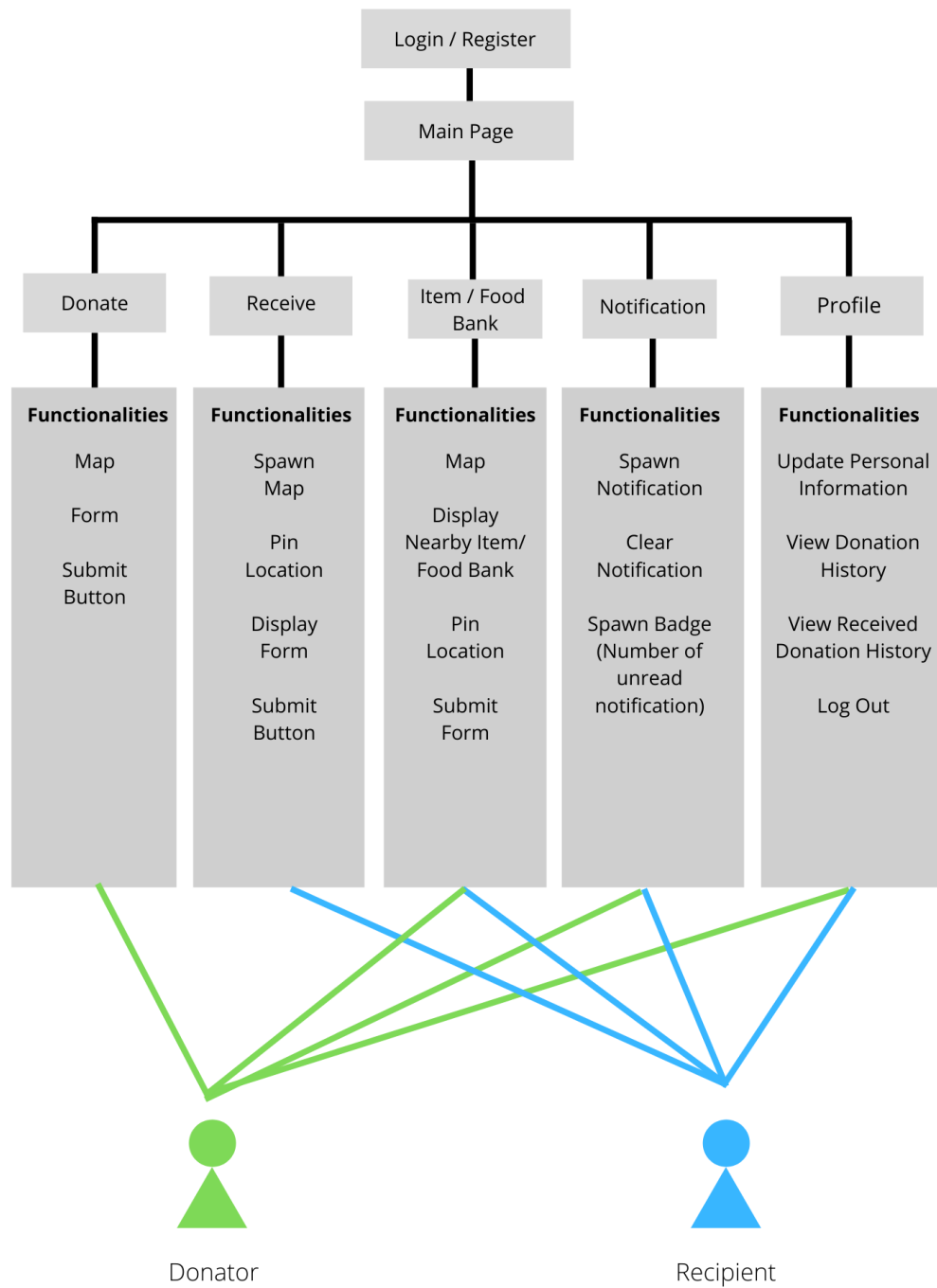
The other challenge that restrains people from using the application is because they still are not aware of the benefits of the application, especially what its purpose and for who it is intended. People should be able to use and will use it more often once they are exposed to how the application could be a number one thing they will need in case they are struggling to cope with difficult situations like lockdown and disaster. This problem could be solved by exposing the people about the benefits they can gain using the app so that they will have ideas on when and where to use it.

## 2.2 Persona

 <p><b>Aiman</b> Age: 22 Occupation: Student Level: University</p>	<b>Description</b> <p>Aiman is a 2nd Year Student taking Bachelor of Information Technology at IIUM. He is currently looking for ways to help students in need around the campus.</p>	<b>Personal Characteristics</b> <p>Helpful Independent Resourceful Outgoing Studious</p>	<b>Hobbies and Interests</b> <p>Reading Board games Cooking Online gaming Playing guitar</p>
	<b>Needs</b> <ul style="list-style-type: none"><li>- A safer approach to help those in need</li><li>- A simple way to transfer money via Instant E-wallet funds</li><li>- Alerted of students in need</li><li>- Anonymous Donation Feature</li></ul>	<b>Goals</b> <ul style="list-style-type: none"><li>- To help students in need</li><li>- To be a part of a good movement</li><li>- To build a better community</li></ul>	<b>Experiences</b> <ul style="list-style-type: none"><li>- Donates to charity organizations every month</li><li>- Used the Bendera Putih App</li><li>- Donate to IIUM Students via Whatsapp</li></ul>
 <p><b>Izzati</b> Age: 23 Occupation: Mahallah Cafe Worker Level: Diploma</p>	<b>Description</b> <p>Izzati is an ambitious woman who aims to further her education. However, coming from a B40 family, her financial situation discouraged her from continuing her education. To help her family and to sustain her livelihood, she works at Cafe as general worker. As a contract worker, she is often overlooked by university welfare system.</p>	<b>Personal Characteristics</b> <p>Shy Ambitious Hardworking Introvert Low-Esteem</p>	<b>Hobbies and Interests</b> <ul style="list-style-type: none"><li>- cooking</li><li>- reading</li><li>- playing puzzles</li><li>- jogging</li></ul>
	<b>Needs</b> <ul style="list-style-type: none"><li>- Need some financial aid to sustain her family livelihood.</li><li>- Prefer android smartphone apps as she does not have a laptop or an iphone.</li><li>- Want to find nearest food bank.</li><li>- Willing to provide basic personal information.</li><li>- avoid scam.</li></ul>	<b>Goals</b> <ul style="list-style-type: none"><li>- put up SOS to get help.</li><li>- Enable her to receive the donation in the efficient manner.</li><li>- Find food bank faster and easier.</li><li>- System that can be installed in smartphone especially low cost ones.</li></ul>	<b>Experiences</b> <ul style="list-style-type: none"><li>- Has experiences working at fast food restaurant.</li><li>- Adept smartphone user.</li><li>- Has social media accounts</li></ul>

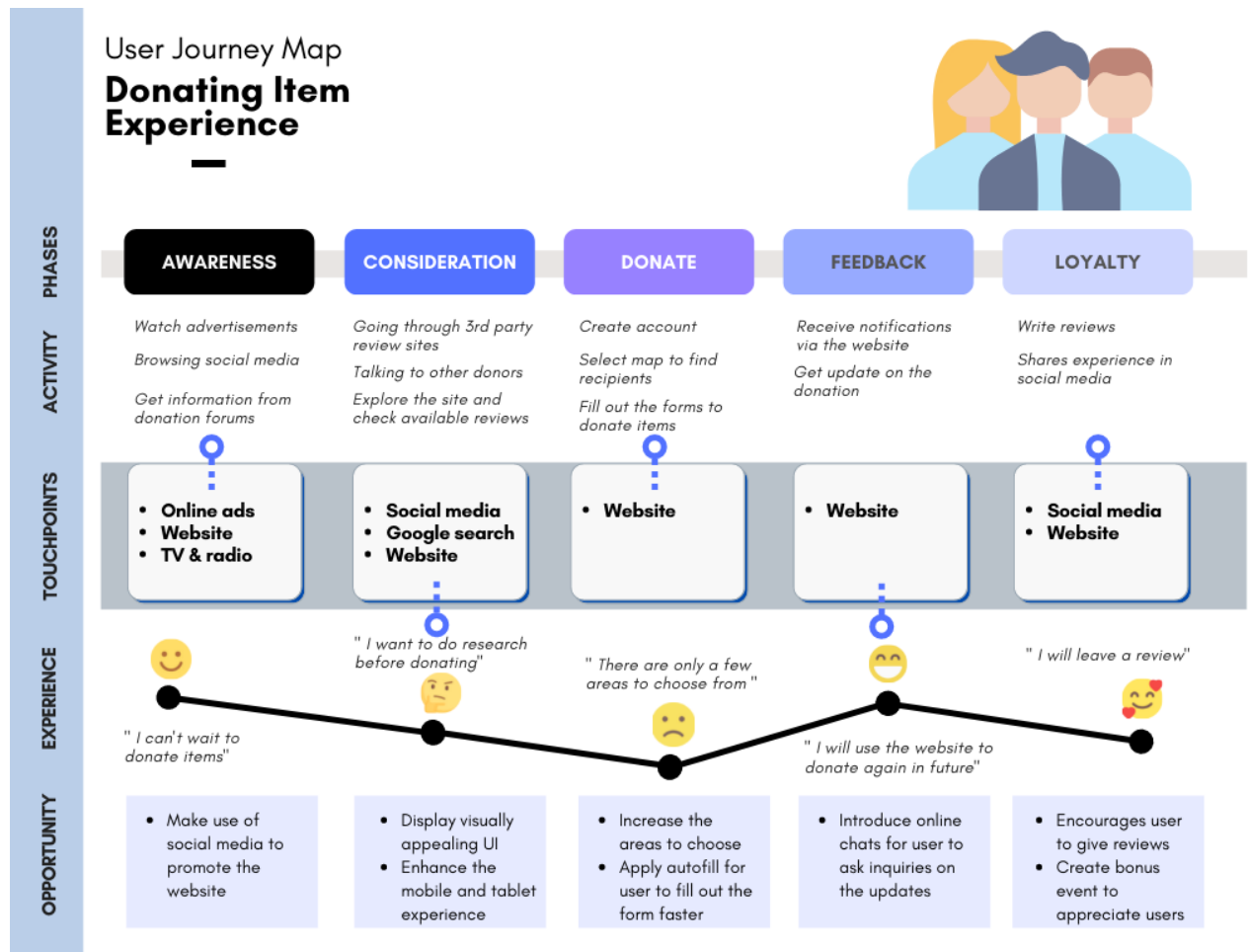
### 3.0 IDEATION

#### 3.1 System Functional Architecture



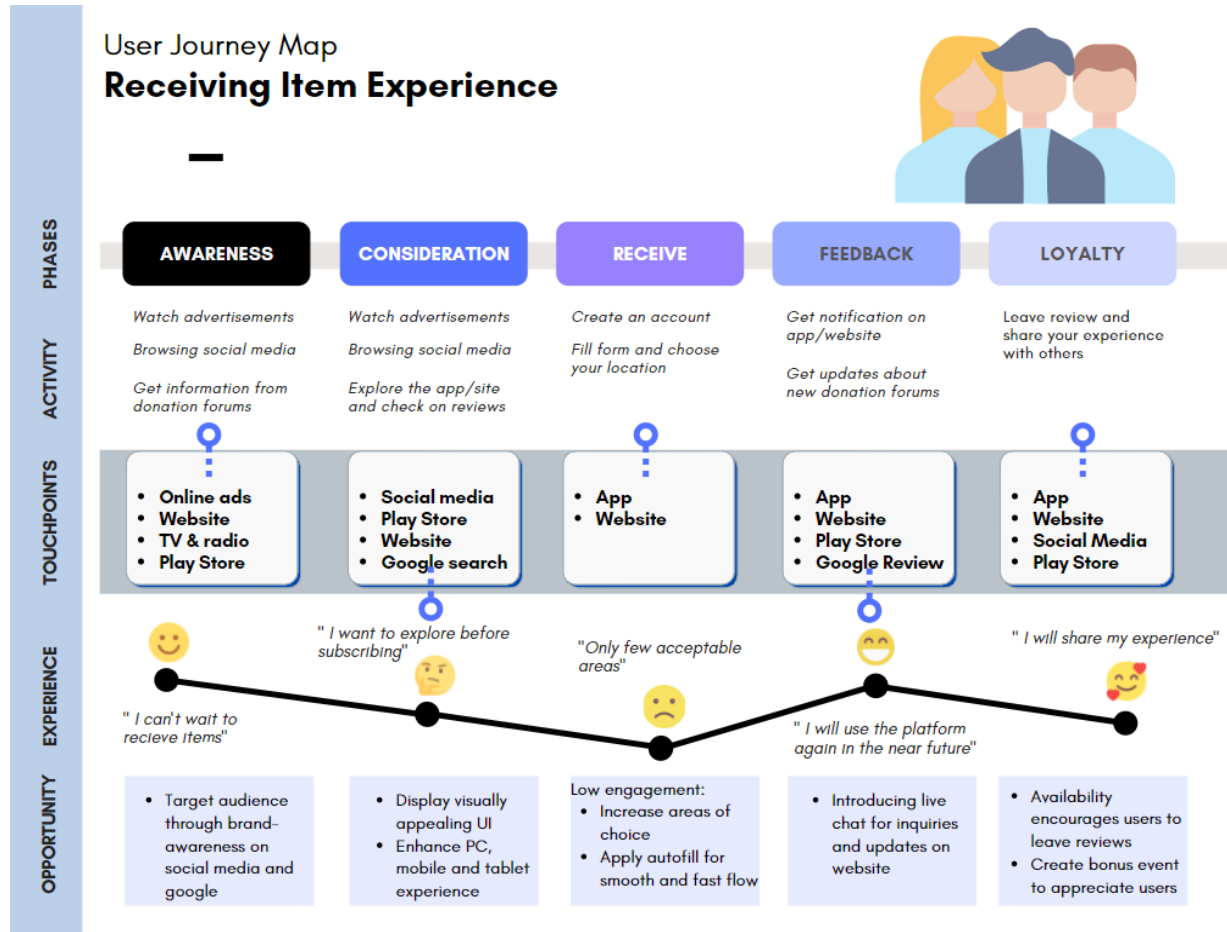
## 3.2 User Journey Map

### Module : Donation





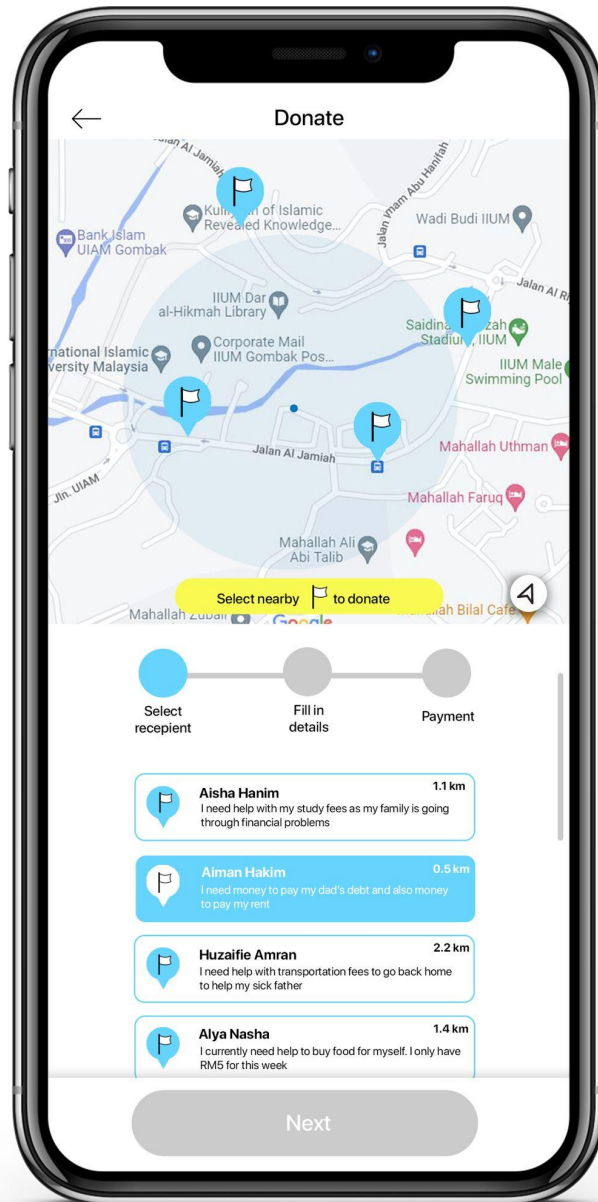
## Module : Recieve



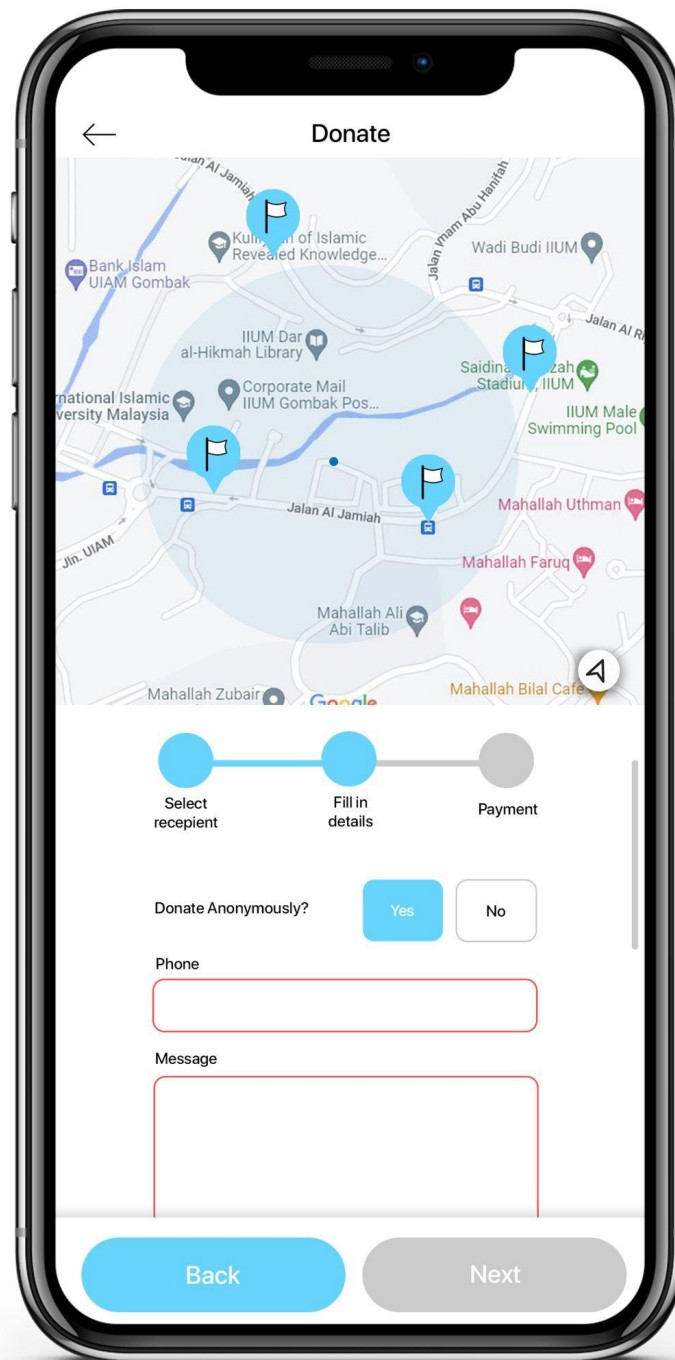
### 3.3 UI Alternative Designs

#### 3.3.1 UI Design 1

Step 1:



Step 2:



Step 3:

←

Donate

Select recipient

Fill in details

Payment

Enter Amount:

RM

Min donation amount is RM1.00

Payment Method

FPX

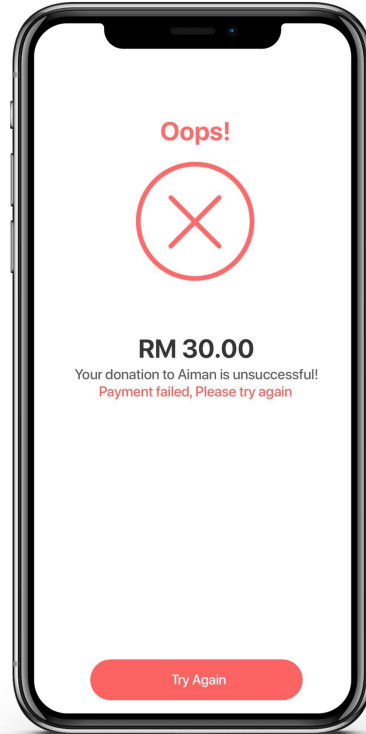
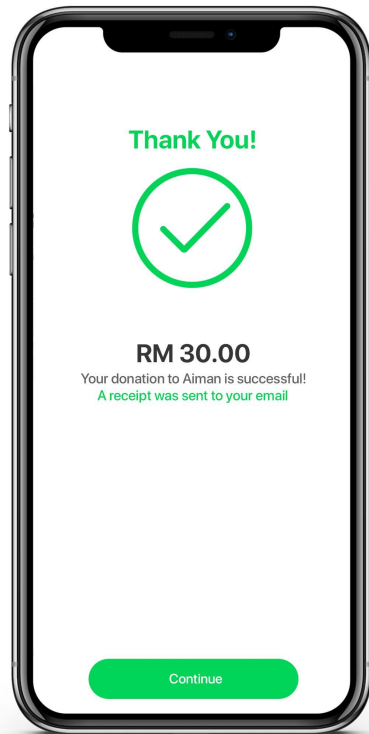
Card

Select Bank:

Back

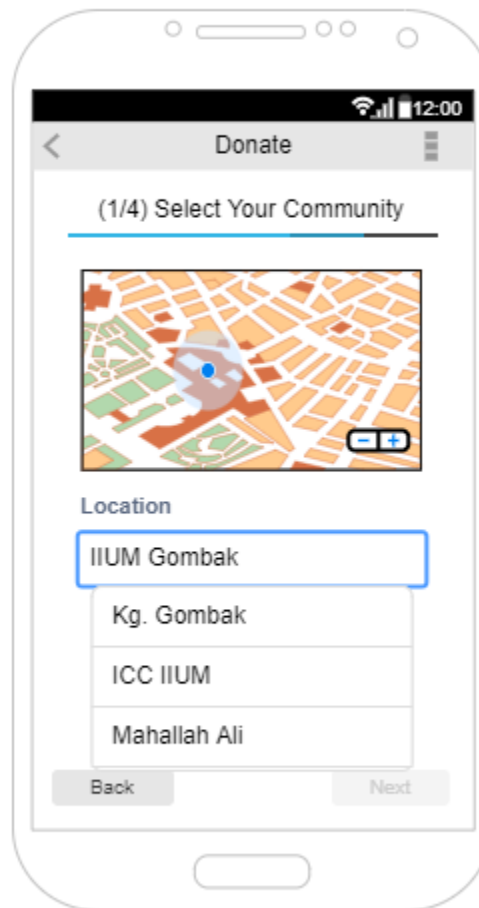
Submit

Step 4:



### 3.3.2 UI Design 2

#### Step 1



## Step 2




### Step 3

The screenshot shows a mobile application interface for a donation process. At the top, a status bar displays signal strength, Wi-Fi, and the time 12:00. Below this is a header bar with a back arrow, the title "Donate", and a menu icon. The main content area is titled "(3/4) Basic Info" with a progress bar. It features a profile section with a placeholder icon, a green status dot, the name "Peter Giles", and the age "22-45" with a chevron. Below this is a section titled "Hospital Bill Overdue" with a paragraph of placeholder text. A green progress bar is shown below the text. At the bottom of the main area is a "Payment Method" dropdown menu. The footer contains "Back" and "Next" buttons.

12:00

< Donate

(3/4) Basic Info

 ● Peter Giles 22-45 >

**Hospital Bill Overdue**

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

**Progress Bar**

Payment Method ▼


Back Next



## Step 4

Donate

(4/4) Donate

 **Hospital Bill Overdue**  
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

\$ MYR

☒ Anonymous Donation

Back Finish

## Step 4

Donate

(4/4) Donate

**Hospital Bill Overdue**

>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

Mailing Address

Jalan Gontak

12345 Gontak

Selangor

copy

Enter Tracking Code

Contact Info

SMS

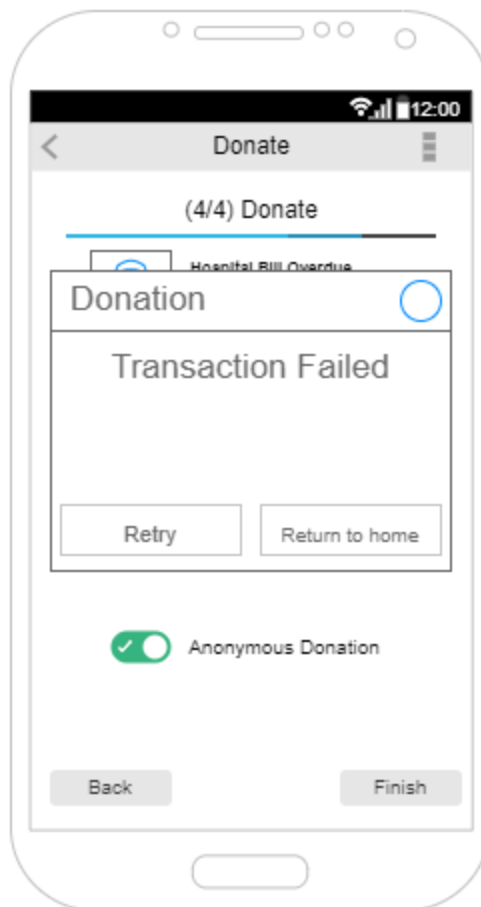
WhatsApp

Phone

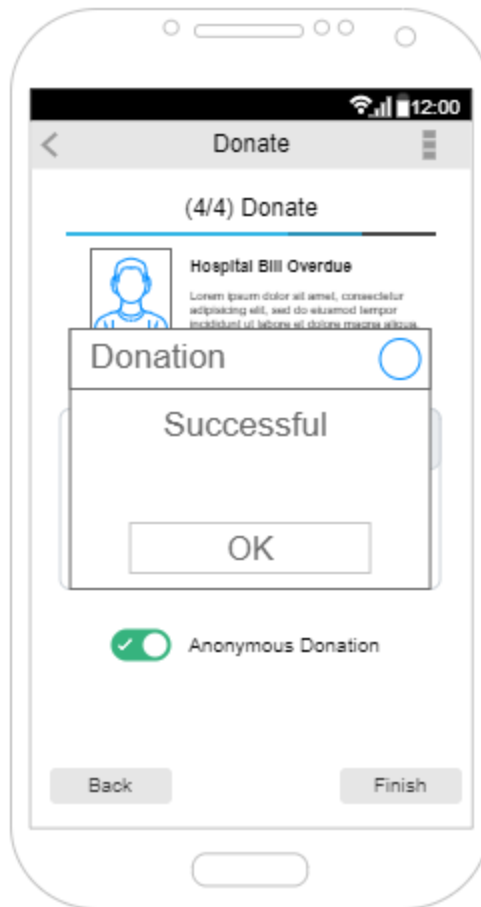
Back

Finish

Step 5



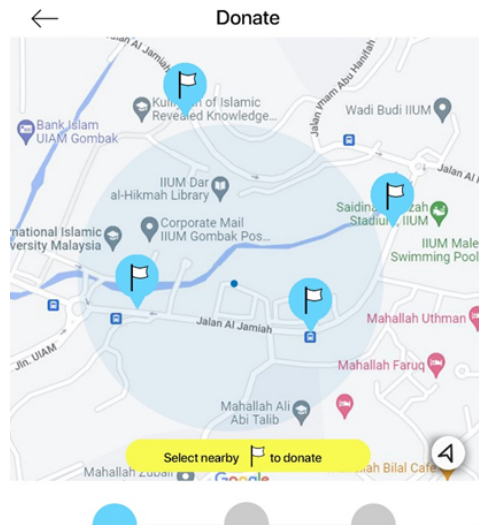
Step 5



### 3.4 Description of each UI Design

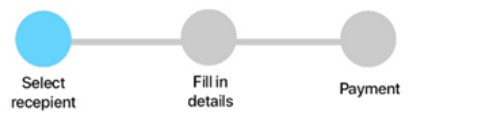
#### 3.4.1 UI Design 1

For Map,



It shows the users their own location with surrounding white flags nearby which indicates nearby recipients' location. Users can move and swipe around the map to look at the white flags around them. There is also a button that lets users center the map on themselves.

For the Progress bar,



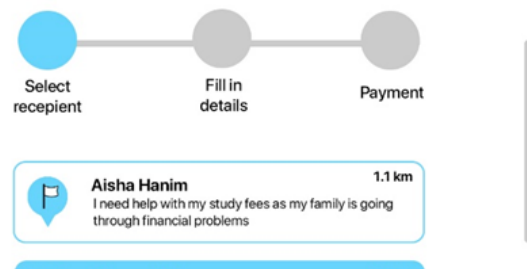
This indicates to the user which stage they are at during the donation process where in the donation process there are 3 stages to complete before donating successfully.

For moving between pages,



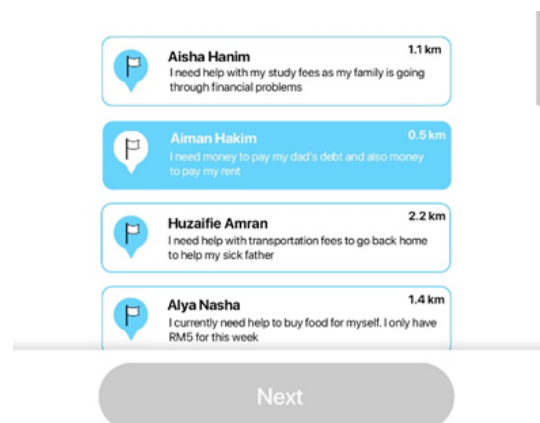
Users are given the ability to navigate backwards or forwards through the donation process using this button. If they have not finished filling out all of the form, the button will be disabled or made inaccessible to them during that donation stage.

For scrolling down the page,



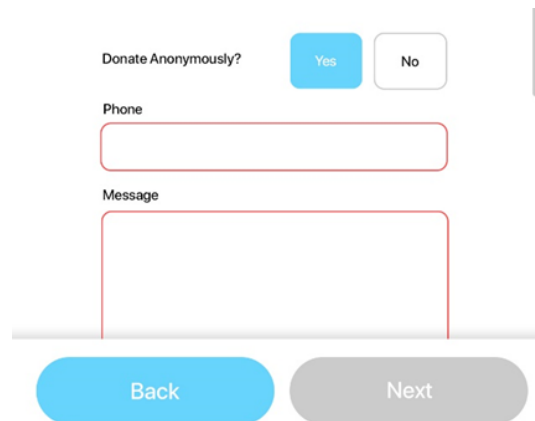
During the donation process, the user is informed by a scroll bar that they are allowed to scroll down the form in order to provide further information. They will be unable to scroll through the page only in the event that there is not a scroll bar present.

For Step 1,



Users can scroll through names, descriptions, and distances of nearby white flags. Once a user chooses a white flag, it will be highlighted blue. After selecting, the next button will be accessible.

For step 2,

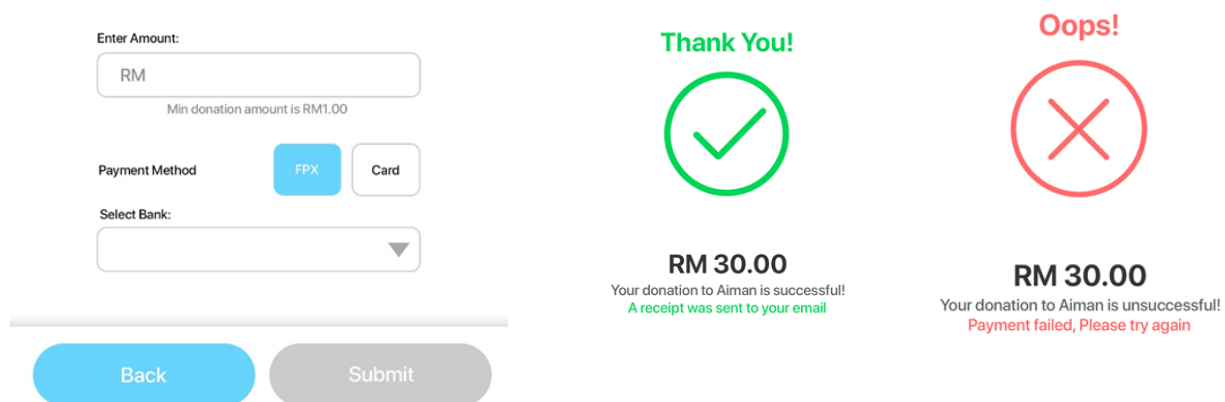


Donation form for step 2:

- Donation Anonymously? (Yes/No buttons)
- Phone (text input field)
- Message (text input field)
- Back (blue button)
- Next (grey button)

Donors can choose whether or not to remain anonymous when filling out the form. No matter if consumers select yes or no, the form will change. The next button can only be accessed if all of the relevant fields have been filled out by the user.

For step 3,



Step 3: Donation Amount and Payment Method

Enter Amount: RM [input field] (Min donation amount is RM1.00)

Payment Method: FPX (selected) / Card

Select Bank: [dropdown menu]

Back (blue button) | Submit (grey button)

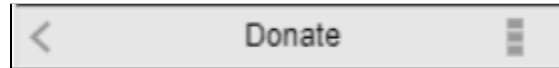
Two possible outcomes:

- Thank You!** (Green checkmark icon)  
RM 30.00  
Your donation to Aiman is successful!  
A receipt was sent to your email
- Oops!** (Red X icon)  
RM 30.00  
Your donation to Aiman is unsuccessful!  
Payment failed, Please try again

The final step in the donation process is for donors to specify how much money they wish to donate to the chosen recipient. FPX or card payments are available, and customers can then select their preferred banks or enter their credit card information. Once the user is done with the whole payment process, the system will check whether the payment is successful or not.

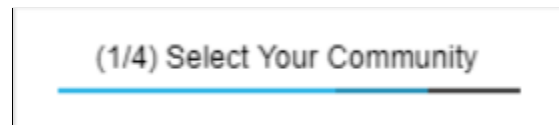
### 3.4.2 UI Design 2

For the Basic Navigation Bar,



The Left Arrow indicates to cancel the operation and return to main, upon clicking the left arrow '<', the user will be prompted to confirm leaving the "Donate" page and cancel the operation. With "Confirm" the data is discarded and the user returned to the Home page. The "Burger" icon allows the user to: 1) Change Language (BM, EN) 2) Adjust font Size 3) Set High Contrast Mode 4) Help. The title Donate lets the user know that they are in the donation page.

For Progress Bar,



This acts as a wizard to guide users throughout the donation process, The fraction  $\frac{1}{4}$  shows that user in the first step out of 4 steps. The Instruction helps the user to understand the purpose of that page.



For moving between pages,



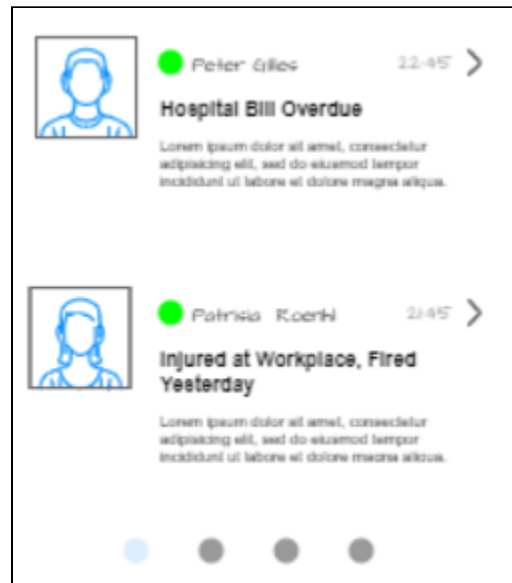
This allows the user to progress between pages, Next button is grayed out and disabled until user input mandatory field. Back button brings user to previous pages. The data is saved unless the user escapes to the Home Page using the left arrow '<' at the navigation bar.

For Step 1,



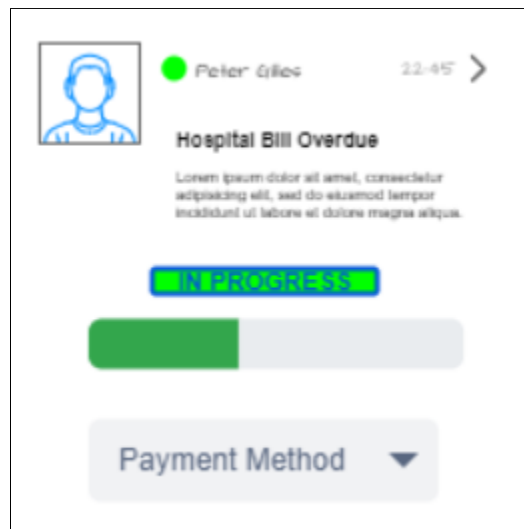
Users can type in the area name or select from the map. Auto suggestion is turned on to assist the user. User can zoom in or zoom out using '+' or '-' respectively.

For Step 2,



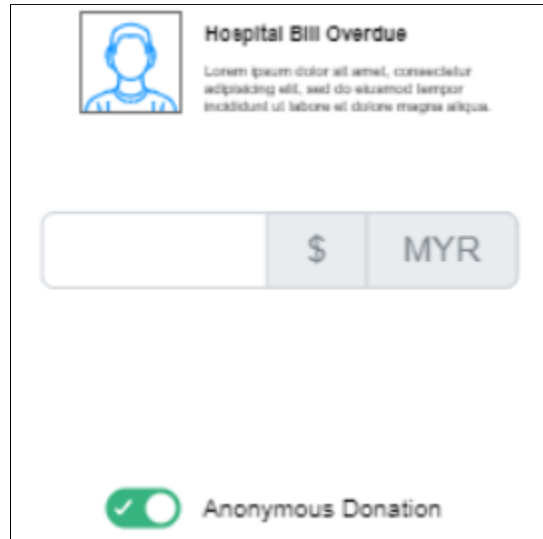
User profiles and their request description is written with Different font size and bold style. Green Circle indicates that the user is online. Timestamps are shown near the right arrow '>'. Right Arrow lets us read more info and donate to the recipient. Circle at the bottom let us know there are more requests and pages. Light circle indicates the current page.

For Step 3,



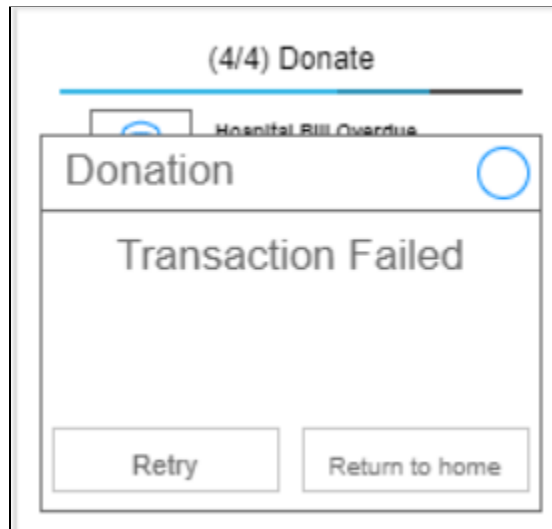
After the user clicks the right arrow, they can read more information. The green “In progress” shows that the user is still accepting donations. The green progress bar shows how many donations the user needs and how many he has obtained so far. Payment method lets the donor choose how he wants to pay : credit card, debit card, FPX, or item donation.

For Step 4,

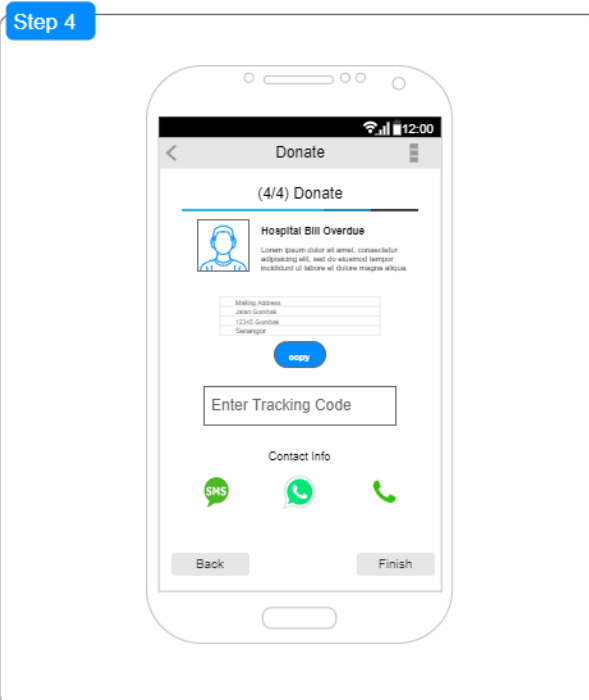
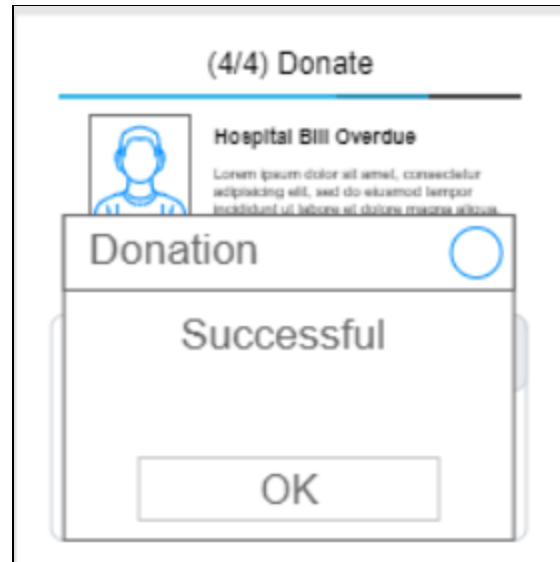


A form titled "Hospital Bill Overdue" with a blue icon of a person with a headband. Below the title is a placeholder text: "Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua." The form has a text input field, a currency selector with "\$" and "MYR" options, and a green toggle switch labeled "Anonymous Donation" which is currently turned on.

The final step, let the user enter an amount of money. Donors can opt to remain anonymous by selecting the “Anonymous Donation” radio button. Another click will disable the anonymous donation feature. If an item donation is selected, the mailing address of the recipient is shown with a copy button and a text box for tracking code is shown instead of the money amount textbox. Donors are shown contact information (Whatsapp, Telegram) that is provided by the recipient for further inquiries and setting up meeting points. After the donor clicks the “Finish” button, a pop-up box is displayed to inform successful or failed transactions. The donor returned to the home page.



A pop-up box titled "(4/4) Donate" with a progress bar. It contains a "Hospital Bill Overdue" header, a "Donation" title, and a "Transaction Failed" message. At the bottom are two buttons: "Retry" and "Return to home".



### 3.5 Usability Evaluation

#### 3.5.1 UI Design 1

#### System Usability Scale UID Design 1

		Strongly Disagree		Strongly Agree		
		1	2	3	4	5
1.	I think that I would like to use this system frequently					/
2.	I found the system unnecessarily complex	/				
3.	I thought the system was easy to use					/
4.	I think that I would need the support of a technical person to be able to use this system	/				
5.	I found the various functions in this system were well integrated					/
6.	I thought there was too much inconsistency in this system	/				
7.	I would imagine that most people would learn to use this system very quickly					/
8.	I found the system very cumbersome to use	/				
9.	I felt very confident using the system					/
10.	I needed to learn a lot of things before I could get going with this system	/				

### 3.5.2 UI Design 2

#### System Usability Scale UID Design 2

		Strongly Disagree			Strongly Agree	
		1	2	3	4	5
1.	I think that I would like to use this system frequently				/	
2.	I found the system unnecessarily complex	/				
3.	I thought the system was easy to use					/
4.	I think that I would need the support of a technical person to be able to use this system	/				
5.	I found the various functions in this system were well integrated				/	
6.	I thought there was too much inconsistency in this system	/				
7.	I would imagine that most people would learn to use this system very quickly					/
8.	I found the system very cumbersome to use	/				
9.	I felt very confident using the system				/	
10.	I needed to learn a lot of things before I could get going with this system	/				

#### Score Table:

Each item's score contribution will range from 0 to 4. For items 1, 3, 5, 7 and 9 the score contribution is the scale position minus 1. For items 2, 4, 6, 8 and 10, the contribution is 5 minus the scale position. Multiply the sum of the scores by 2.5 to obtain the overall value of SU.

	1	2	3	4	5	6	7	8	9	10	Score*2.5
UID 1	4	4	4	4	4	4	4	4	4	4	100
UID 2	3	4	4	4	3	4	4	4	3	4	92.5

### 3.6 Designated UI Design and Justification

Both of the UI Designs of our app are based on Simplicity, Clarity and Transparency principles. User friendliness makes the UI usage flow on time and gives users safe search by making them secure through its transparency as well.

In comparison UI Design 1 is on top while the second design lacks in transparency not enough being interactive. Firstly, design no 1 meets all the requirements of project goal scope, making it perfectly suitable for the target audience. Secondly, it shows uptodate interactive and adaptive interface while second is a more older version and non suitable for new softwares.

In summary, the user experience and scope of research clearly serves as evidence of UI design support and adaptability. This is the most important core value that customers need to pay attention to in their projects. Mostly, Design 1 is the best, and Design 2 is not very compatible and gives the user the best impression of simplicity.

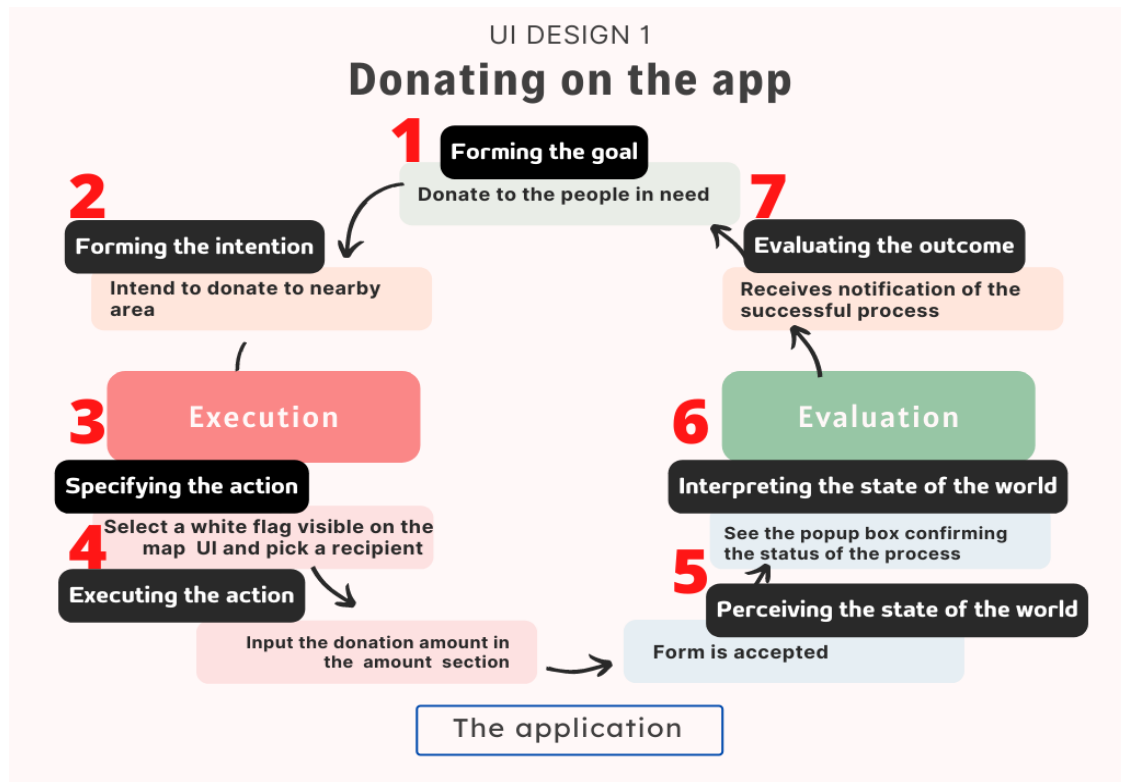
### 3.7 Task Analysis

In order to better understand the interaction between the user and the application, a model called **the seven stages of action**, or Norman's action cycle will be used.

The action cycle is divided into two parts. The first part is **execution** in which the users form a goal they want to accomplish and execute an action in order to achieve the goal.

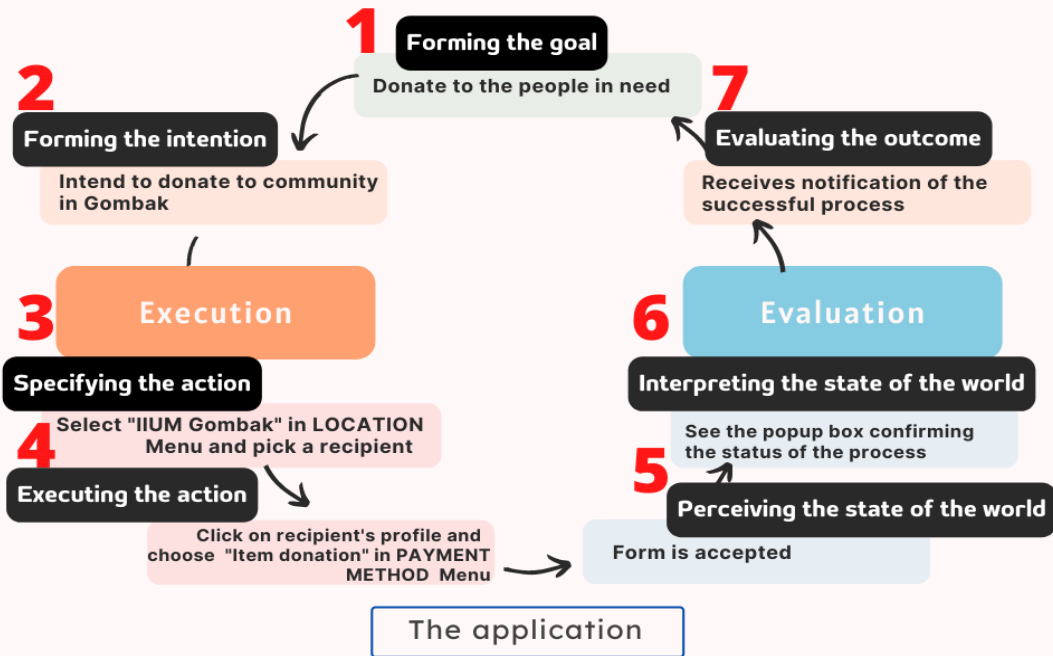
The second part is **evaluation** in which the users evaluate the effects of the action and know whether the goal was achieved or not.

The action cycles are illustrated as below:





## Donating on the app



## REFERENCES

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