

Project Title: White Flag Web (WFW)
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Abstract

Malaysian launched White Flag Campaign to signal person are desperate for help during the pandemic and movement of control without the need of begging. However, there is a lack of channels for the public to seek the location of those who need help or even spread information that helps are given in public. Hence, White Flag Web (WFW) is produced to generate a channel for people to ask for help (especially on food supplies) during the pandemic period. This application allows users to register as white flag members or get information about white flags such as the location of the food banks and white flag members on the map. As a result, people who wanted to help can get white flag member information easier, as well as members can gain help easier. This web also able us to know the situation of Malaysia nowadays by looking at the number of white flags that appear on the map. The proposed approach can improve the tracking accuracy by 90%. Additionally, WFW has achieved all the required objectives during its development of WFW. Our web application is developed based on Software Development Life Cycle (SDLC) Waterfall model with PHP as the programming language and MySQL Server as the database for storing the application information. The proposed approach can improve the tracking accuracy by 90%.

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1. Introduction

During this Covid-19 pandemic, many people lost their job or cannot get a job because their employer lost business or closed. This causes the problem of people who are jobless losing their income resources and the situation becomes worse when they finish their savings. As a result, they may suffer from starvation, so they need to get help. Therefore, the white flag campaign was created to overcome these problems. This white flag campaign had already started in Malaysia at the beginning of the year 2021 and the purpose of this campaign is to help the unemployed person or some population of B40 to tide over their difficulties during the pandemic. The way people gain help is by hanging white clothes or shirts outside their house to say they are facing difficulties and need some help. After that, there will be people helping them out by donating food or daily necessities.

The result of this campaign is remarkably successful and effective in helping people who need help. However, there are still many people who ask for help but do not get noticed, or people who wanted to help have no idea where to help. Thus, a web application – White Flag Web (WFW) is proposed with the idea of combining all the information of the white flag campaign, making it easier to get the white flag member info, food bank locations, and the organization that can get help from or donation in a more effortless way. The web application benefit is not just combining all the information, but also in the age of advances in information technology, mobile phone is necessary for everyone and there is a lot of free Wi-Fi zone so the web application can easily get accessed by everyone. Hence, it brought a lot of convenience to us. In other ways, WFW can lower the rate of people who are facing difficulties of hunger or need other necessary help because the white flag member can be more noticeable.

Before starting on writing the proposal, research on the white flag campaign had been done when writing the initial plan, and more research on each of the topics that must be proposed in this proposal has to be done.

In this project, the problem issues of the white flag campaign will be stated clearly with reference, and the literature review on the areas related to WFW will be addressed properly with 3 examples of existing systems that help to resolve the problem. The objectives of WFW that need to be achieved at a specific time will be set and elaborated in this project. Next, in the work done section, all the methodology stages will be discussed with all the significant deliverables. Following is the discussion of results which is the analysis and discussion about achieving the objectives, the limitations, and challenges faced during development and solutions for it. Lastly, there will be a conclusion that summarizes the whole project and future enhancements will be stated clearly.

1.1 Problem Statement

The latest percentage of unemployment in Malaysia is 4.8% in June 2021 with 768.7 thousand unemployed persons (Dato Sri Dr. Mohd U., 2021). This enormous number of people who become unemployed affected their quality of life. This is because they may face a shortage of food and money to buy daily necessities, especially those parents that have children to raise. The research stated above has proved that there are many Malaysians who are facing and suffering financial issues since the lockdown was implemented. Despite most of the economy here being allowed to resume operations successively, there are more unemployed to get a new jobs to cover their daily expenses. The inflation led to them becoming lack of saving which may cause them are not able to afford food, drinks, and some daily necessities to live.

In July, some of the non-government organizations started a campaign which is called the 'white flag movement' to help those peoples who are hanging the white flag in front of their houses to ask for a helping hand. But there is also a problem during this campaign. (TheIndianExpress,2021). The first problem during the white flag campaign is that not everyone is allowed to receive help or get noticed by their neighbor or other people. It is because some of the housing areas are far from the city and making them helpless during this pandemic. This causes their house area to be not able to be noticed by other people from outside to look for help.

Moving on to the next problem is there are few people who know the location of the food bank in their area. One of the reasons is that some of the locals are not able to receive information about the food bank during this pandemic. After the government had announced that the second lockdown will be implemented, their livelihood is unable to maintain as well as usual and this may oblique lead to their meals being a problem every day (P Prem Kumar, 2021). Besides that, lockdown causes them not to be allowed to work and some of the companies would fire their employees to reduce the expenses of the company.

Finally, another problem is the help rate of the white flag campaign is not higher than expected. Although some of the non-government organizations and food retailers have started relief operations, they might

miss some houses which also need help. Furthermore, this makes the people who want to help are not convenient to give their lending hands because some of the passersby will forget the location and make them not allow to help. (ShazGhaf,2021)

1.2 Objectives

This project's target is to meet various objectives that will convenience society by creating a responsive website. This website acts as a collector for collecting all the white flag information, so it is conducted to make it easier for people to search for the location of people who wanted to ask for help. The following objectives for our website are:

i. To convenience people who trying to help the white flag members to find their living places.

Users can find white flag members around them via a map so they can provide help.

ii. To make white flag members more noticeable.

Some locations of white flag members may be unnoticeable by people so they cannot get help, hence, our web application can help them to get noticed by showing their location on map.

iii. To increase the efficiency of helping rate and decrease the rate of people who face starvation.

Users will be more willing to help when they notice there is someone that can help by accessing our website application map that shows white flag members' locations.

iv. To increase the awareness of Malaysian about white flag issues.

Malaysian can understand the seriousness of the matter and track the number of white flag members via the web application web.

2 Literature Review

After the second full lockdown has been announced by the government, there are a lot of Malaysians started to work from home. But this lockdown causes many Malaysians are suffering from financial issues as well as their livelihood is also affected. So, the white flag movement was launched in July. The White flag movement or the "#benderaputih movement" is a campaign that helps those low-income families or some unemployed who need some food, daily necessities, or other essentials. (TheIndianExpress,2021) This movement is supported by many celebrities and some non-government organizations. (TheStar,2021). Also, the main purpose of the white flag movement is to reduce the burden of some low-income families and unemployed who just lost their job during this pandemic and lead them out from this pandemic.

After the white flag campaign launched, the white flag website or application was also created. Compared to visiting door-by-door, a white flag website or application will be more convenient for those people who are affected by this pandemic. A white flag website or application can let people easily know the location of the person who is asking for help. For those people who need a helping hand, they can just press the button and fill in the form to ask for help through their mobile phones or PC (Personal Computers). Other than that, they also can know where the food bank is nearest to their house area. This makes a lot of convenience for them without any effort. (TheStar,2021)

2.1 KitaJaga.co website

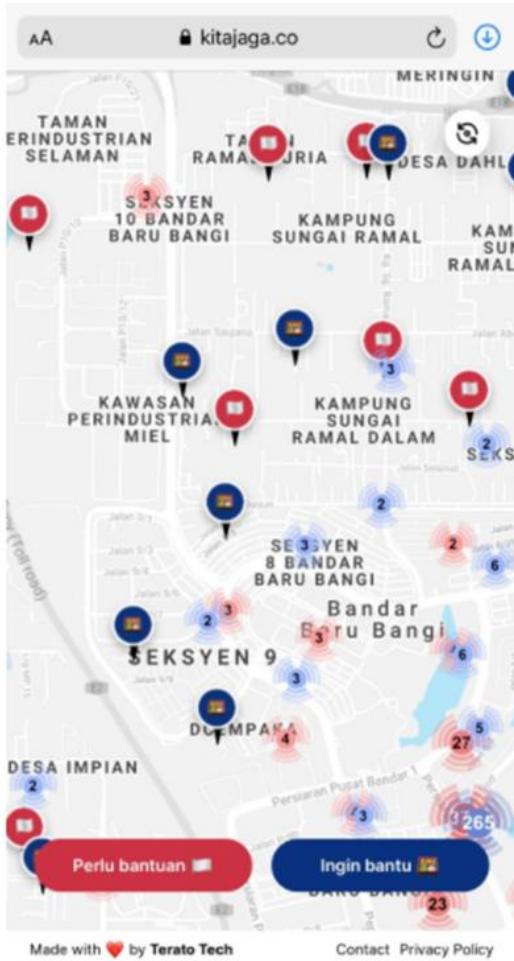


Figure 2.1 KitaJaga.co website (KLfoodie,2021)

Kitajaga.co (Figure 2.1) is a website that was created by Terato Tech. This website can let all the Malaysians know which houses are needed for help and it is amazingly easy to use for all ages. The feature of this website is users can press the button directly to pin their location to raise the white flag to

ask for help. This site is also very convenient to locate the food banks within your house area. Users must fill in all the personal details like name, telephone number, and what they want to buy before pinning their location. If users are the food bank's owners, they also need to fill in all the details and most importantly their location and food provided as well. (KLfoodie,2021)

2.2 SambalSOS

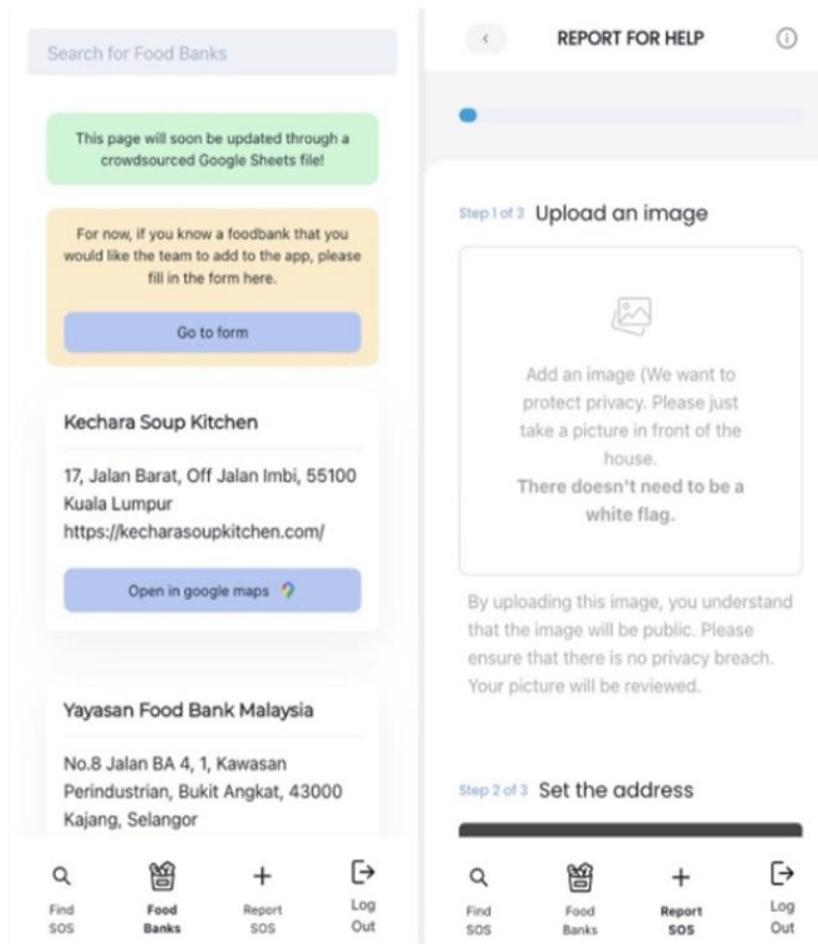


Figure 2.2 SambalSOS web application (FreeMalaysiaToday,2021)

SambalSOS web application (Figure 2.2) was created by a group of students who study at Multimedia University (MMU). The name before it launched is “Bendera Putih App” but in the end, they change their application name to SambalSOS.(MalayMail, 2021). This application currently supports English, Chinese and Malay languages as options to attract more Malaysians to use this web application. The features of this web application are they can locate the house that raised the white flag and the location of the food bank.

But the difference between SambalSOS and another white flag web, SambalSOS required that users must take images in front of their house. This feature can protect the user's privacy and increase the efficiency of finding the house located. Other than that, they also provide the address of the food bank with the operating hours. So, users can easily find where the food bank is located. (FreeMalaysiaToday,2021)

2.3 Weirdkaya

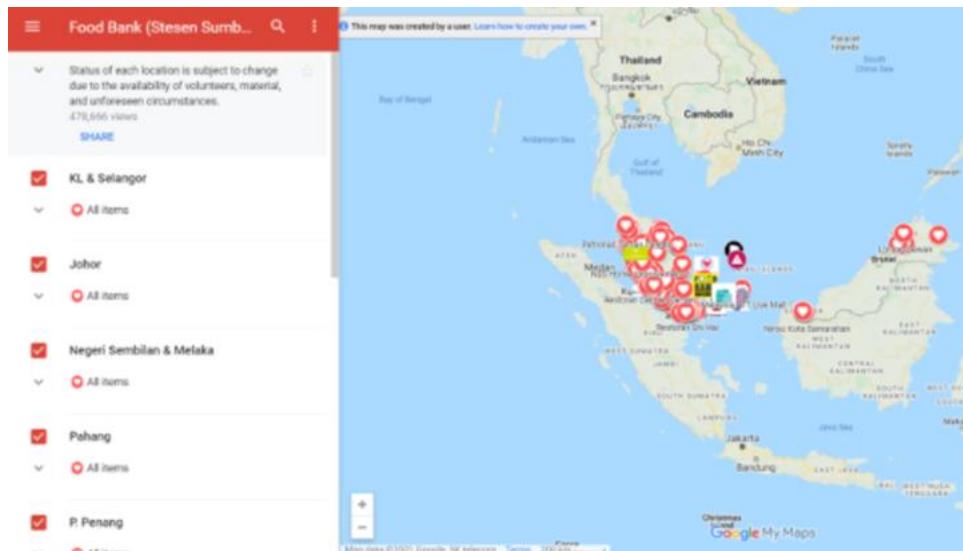


Figure 2.3 Weirdkaya (Weirdkaya,2021)

WeirdKaya (Figure 2.3) is a news & media company, and they also provide them at some foods bank station to help the community. This company also created a website on their personal page and provided the location of the food bank station. They recently started working with Hawkr food, which is a food delivery service company. Both companies work together to send aid to the people who ask for help. The feature of the website is users can just use their mobile phone or PC click the link then they will bring the users to the google map website and the website will show all the food banks in Malaysia. Now there are 340 food banks provided on google map. (Weirdkaya,2021)

System Comparison

	White Flag Web (WFW)	KitaJaga.co	SambalSOS	Weirdkaya
Request for help	✓	✓	✓	✗
Add foodbank information	✓	✓	✗	✗

Provide foodbank detail and location	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Quizzes about white flag campaign	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Provide the information of the white flag campaign	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Table 2.1 White Flag website System Comparison

Based on the studies made on KitaJaga.co, SambalSOS and WeirdKaya, each website has its own unique feature. In this case study, we found out that except for the feature of the quiz, KitaJaga.co has the most similar features to our White Flag Web (WFW) web application.

According to table 2.1, we know that all the web applications have the feature of providing foodbank detail and location. This feature can make it easier for the user to use the web application to find the nearest foodbank around their housing area. Other than that, the feature of request for help is not available in Weirdkaya because the website of Weirdkaya only provides foodbank detail and information to the users. Moving on, KitaJaga.co and White Flag Web (WFW) are the only web applications that can allow users to add or register as a foodbank location.

Quiz is the only feature that other web applications do not have. Quizzes can test knowledge and awareness about the white flag campaign because the awareness is vital for all Malaysian. Lastly, KitaJaga.co and White Flag Web (WFW) provide information about the white flag campaign and provide which items are allowed to donate and not allowed to donate.

3. Methodology

The methodology that we chose for this project is the **waterfall** method. Waterfall methodology was created in 1970 (Maja M., 2019) and it is the most traditional method to choose as software or web development. Waterfall methodology is a breakdown of project activities into phases, and it is moving from one phase to another phase one by one without revisiting the completed phase until all phases are completed. It is like building a house, starting with a foundation and step by step to other phases.

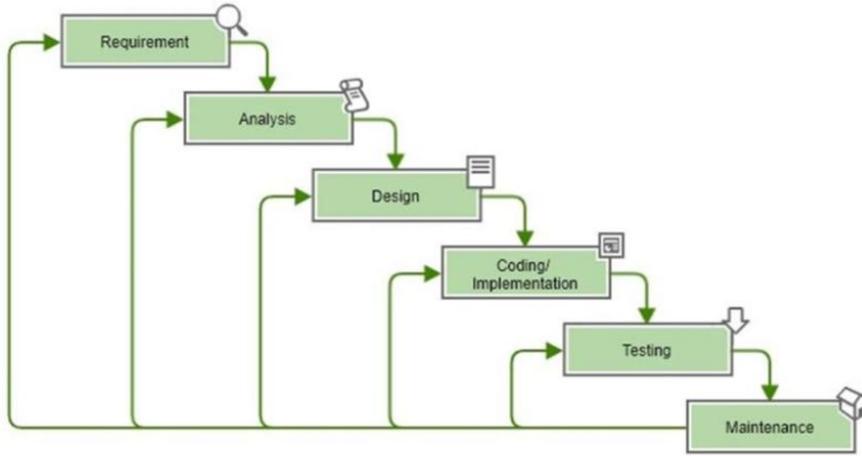


Figure 5.1 The Waterfall Methodology (Rifqi, 2019)

The reason for choosing the waterfall methodology is because the model is easy and simple to understand and implement. Since the project scope and timeline have been defined, therefore by using this model can help us to use time on this project more organized because this model does the phases one by one following our timeline and does not overlap until all is complete, plus the outcome is more predictable.

Not only that, but this model also has common and basic phases to build most of the web applications. Hence, by referring to the model, the team can verify the requirements for each phase easily. Each phase ends with an intermediate milestone (Digital guide, 2019).

However, there are some disadvantages to using this model. As stated above, waterfall methodology is about before moving on to another phase, the current phase must be completed, hence this will cause the team cannot proceed to another phase first before the current phase is completed, same as difficult to edit back the previous phase work especially in the testing phase. Thus, the flexibility of this model to be stricter.

The difficulty of going back phase and changing something, higher risk and uncertainty of the project occurs. This is because errors can only be fixed during the phase.

There are six phases of the waterfall model:

Phase 1: Requirements

The requirements phase, also called the planning phase, is the phase that is completed early to enable the team to define the project scope and milestones before moving on to the next phase. In this phase, the team is gathering all the required information and requirements to plan for this WFW project and have the expected overall outcome for WFW as well as writing an initial plan and proposal.

Phase 2: Analysis

This phase is to check the feasibility of the WFW project's requirements is valid or not and the team analyzes it by considering several aspects such as the time to complete the project, the achievability of the WFW project's function so it is able to meet the project requirement as well as analyzing the need of WFW project in the current pandemic situation by researching online of the information of the white flag member. Analysis must be done before going to the next phase, design.

Phase 3: Design

The design phase is where the team develops a front-end interface and the back end of the website. While the user interface of the team developed must be easy and friendly to use by all aged groups since the WFW project's market scope is for whole Malaysians that want to access information of white flag campaign. The team will use the collaborative tool, Figma, to create a wireframe as a design for the front-end interface. Meanwhile, the team also must design a well-structured database by creating an ERD (Entity Relation Diagram) to ensure the collecting of white flag member information functions well.

Phase 4: Coding/ Implementation

In this project, there are two split parts of the coding, front-end implementation, and back-end implementation. For front-end coding, the team will be using HTML, CSS, and JavaScript. While for the back-end coding, the team will be using PHP to code the logic of the application and link the database to the front-end code. For the building of the database, the team will use the MySQL server.

Phase 5: Testing

After the full implementation, testing of the web application is performed. This phase is especially important before it is released to users so it can ensure the quality of the web application works well and is functional. The team will do a system testing of the functionality and check whether the web application had met the requirement stated above in the first phase. The team will also do unit testing, it is the method to verify the testable coding fulfills the purpose. This phase will not be done before all the errors are fixed.

Phase 6: Maintenance

The maintenance phase is the last phase of the waterfall methodology. This phase is to improve or strengthen web application usability. Due to the limitation of the web application, the team is unable to do full maintenance, hence, the team will propose a future enhancement or may require a change to the code. Maintenance should be done regularly to ensure the efficiency of web applications.

4. Work Done

4.1 Defining Requirements

During the requirement stage, the ideas for the website are defined and the goals are determined. A comparison between similar web applications has been made by the team to gather the information of the requirements for White Flag Web. Research also has been done to determine the functional and non-functional requirements for the web application. The project timeframe was tracked by reference from the Gantt Chart (Figure 4.1) to ensure all the tasks are completed on time.

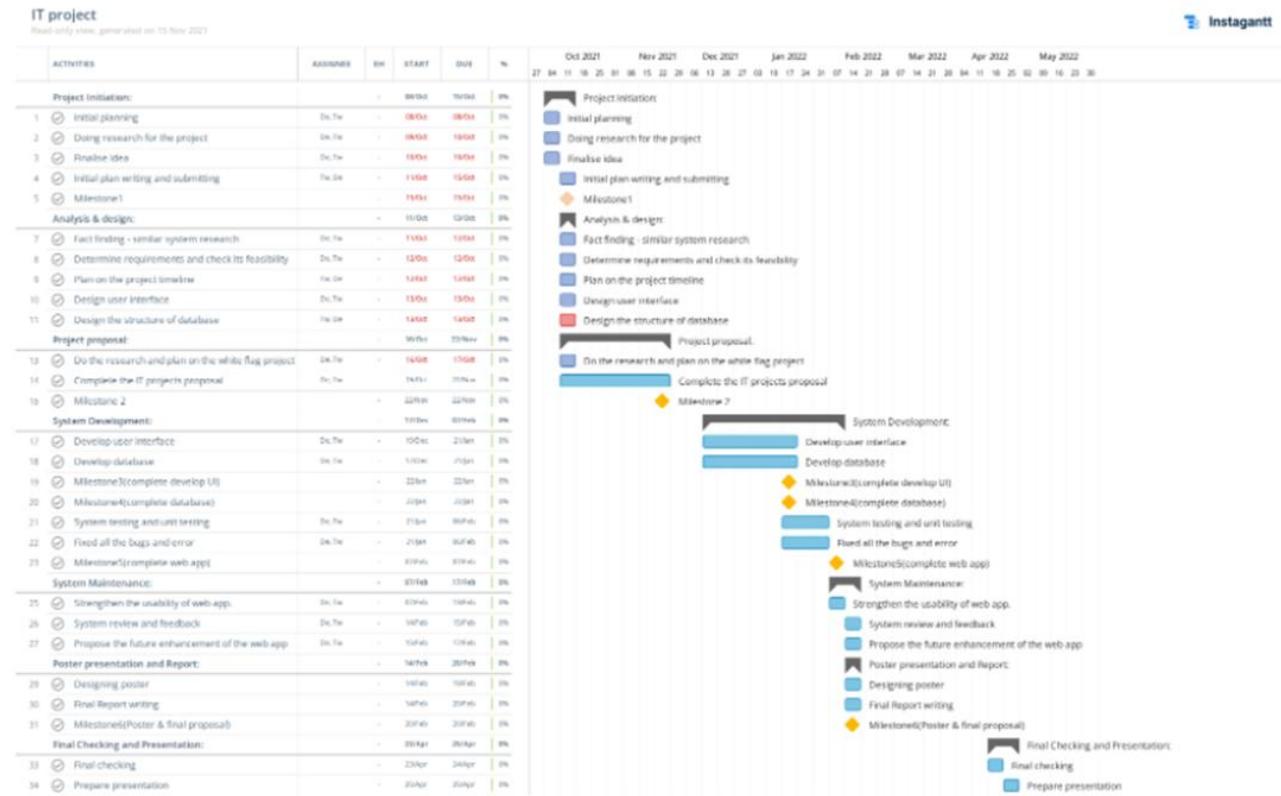


Figure 4.1

4.2 Wireframe

The wireframe is illustrated (Figure 4.2.1 to Figure 4.2.9) to show the page's interface on the part of design where space allocation is well organized, the functionalities available, all the elements positioned logically, and the prioritization of content.

User Interface Wireframe

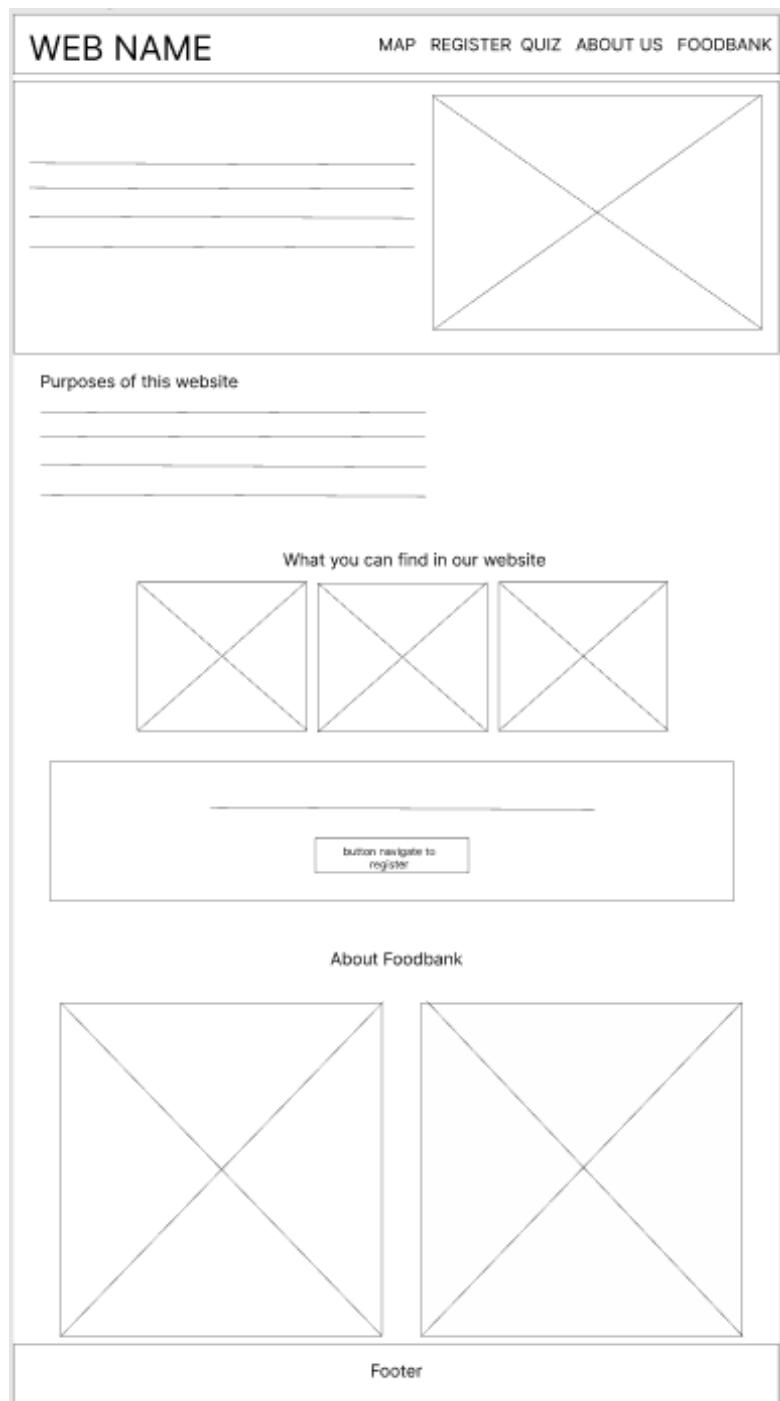


Figure 4.2.1 Main Page Wireframe



Figure 4.2.2 Map Page Wireframe

A wireframe diagram of a registration page. The top navigation bar includes links for MAP, REGISTER, QUIZ, ABOUT US, and FOODBANK. Below the navigation is a section titled "REGISTER". Inside this section, there is a heading "LOCATION" followed by a rectangular button labeled "button to open map". Below the button are four input fields for "address", "name", "email", and "phone number", each with a horizontal line for input. Below these fields is a text area labeled "Note" with a large rectangular input field. At the bottom of the "REGISTER" section is a "SEND" button. A footer section at the bottom contains the word "Footer".

Figure 4.2.3 Register Page Wireframe



Figure 4.2.4 Quiz Page Wireframe

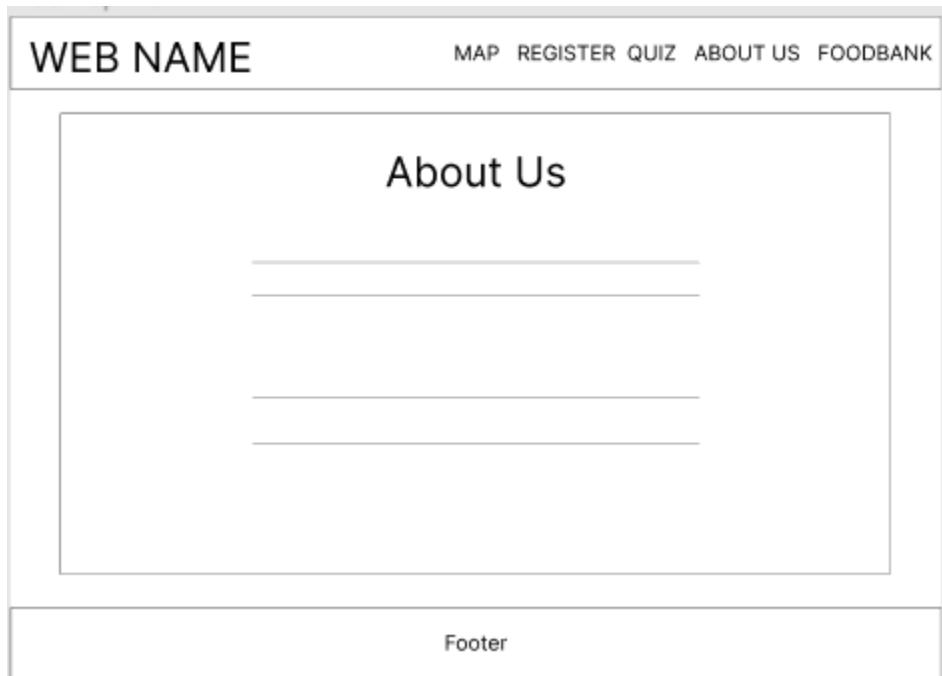


Figure 4.2.5 About Us Page Wireframe

WEB NAME

MAP REGISTER QUIZ ABOUT US FOODBANK

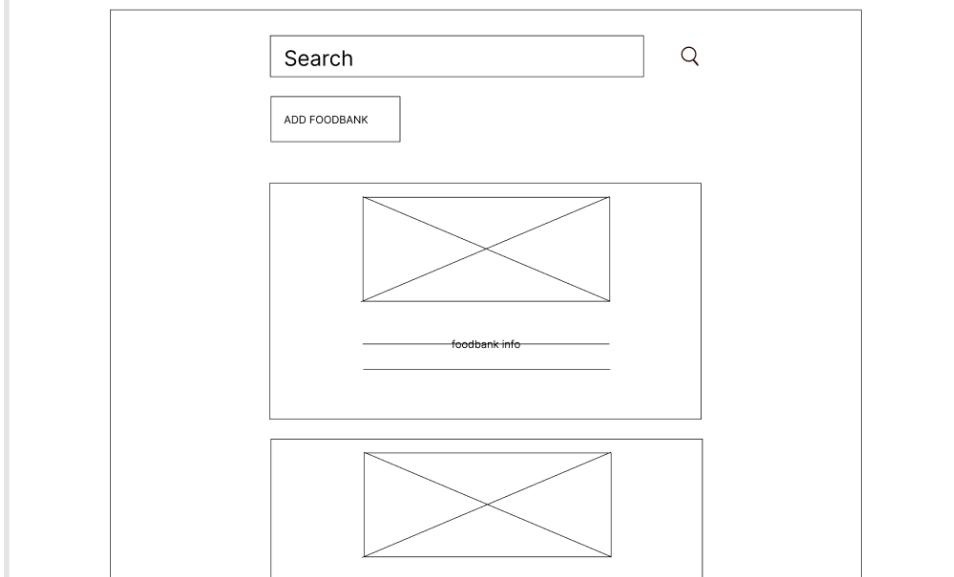


Figure 4.2.6 Foodbank Page Wireframe

Admin interface Wireframe

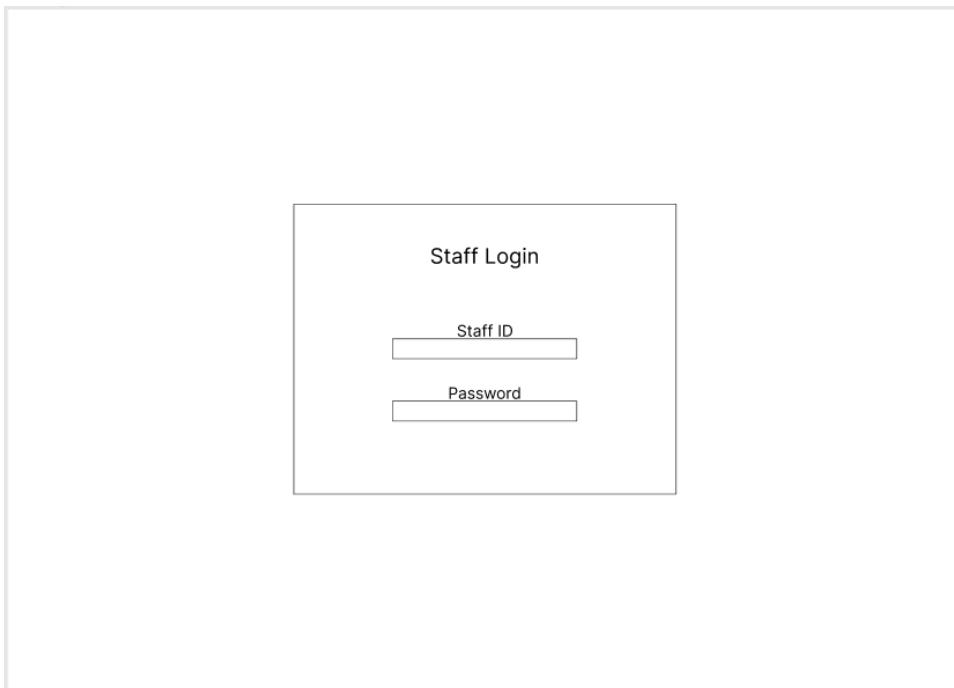


Figure 4.2.7 Staff Login Page Wireframe

Staff Approve page

ID	Name	Email	Status	More info	Approve	Delete

Logout
Button

Figure 4.2.8 Staff Approve Page Wireframe

More info about white flag members

Figure 4.2.9 More info Page Wireframe

4.3 Entity Relationship Diagram (ERD)

The Entity Relationship Diagram (ERD) (Figure 4.3.1) is to illustrate the design of the White Flag Web database. This step must be taken before implementing the database for the website because designing ERD can ensure all the entities, data, and relationships are logical and well structured.

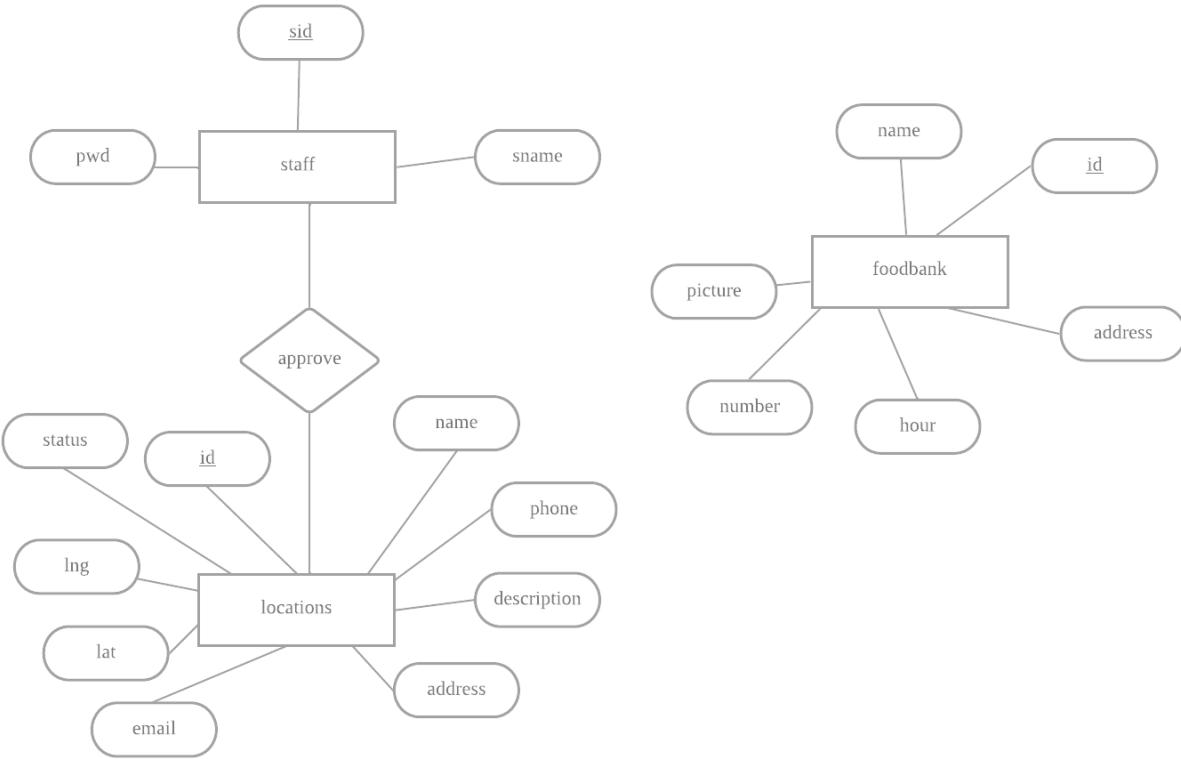


Figure 4.3.1 Entity Relationship Diagram (ERD)

4.4 Coding and Implementation

HTML, CSS, and JavaScript were used to implement the front end of the website. For all the user interface's part consists of the main page, the register page, the map pages, the quiz page, and the foodbank page. On the register page, there is a send form function and for the foodbank page, there is an add foodbank function. For the admin functions, there is the login page, approve page and more information page. For the approval page, there is more information, approve, delete functions.

Next, PHP and MySQL as the backend have been coded. MySQL is the database to collect white flag members' information and store staff information as well as food bank information. Additionally, XAMPP is used to host the website and it relates to the phpMyAdmin database.

User Interface and important coding

White Flag Web WFW

Map Register Quiz About Us Foodbank

A movement called #bendera putih or white flag, is a campaign that started by Malaysians to convey distress about their financial crisis during the covid pandemic. In response, people will provide assistance to them such as providing food daily necessities.

On 18 March, 2020, Malaysia began the implementation of the movement control order. On June 1, 2021, Malaysia again enforced another lockdown to rein in surge of Covid infections and this lockdown has caused some of the low income families with depleted savings surviving on one meal a day.

To this day, even though there is no lockdown, there are still some residents who lost their jobs or business during this pandemic desperate for help without begging. Hence the white flag movement still ongoing.



Purpose of this website

WFW stands for White Flag Web and the purpose of this website is:

1. To convenience people who trying to help the white flag members to find their living places.
2. To make white flag members more noticeable.
3. To increase the efficiency of helping rate and decrease the rate of people who face starvation.
4. To increase the awareness of Malaysian about white flag issues.
5. To convenience low income families ask for assistance.

What can you find in this website?



Here to Register If you are seeking for Help

[Register](#)

About Food Bank

Our map function not only showing the locations of people who need help, but also showing the places of foodbank.
BUT do note that:

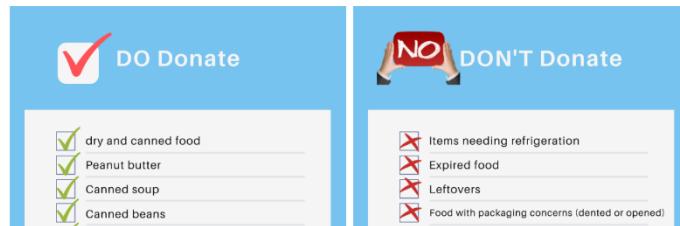




Figure 4.4.1 Main Page Interface

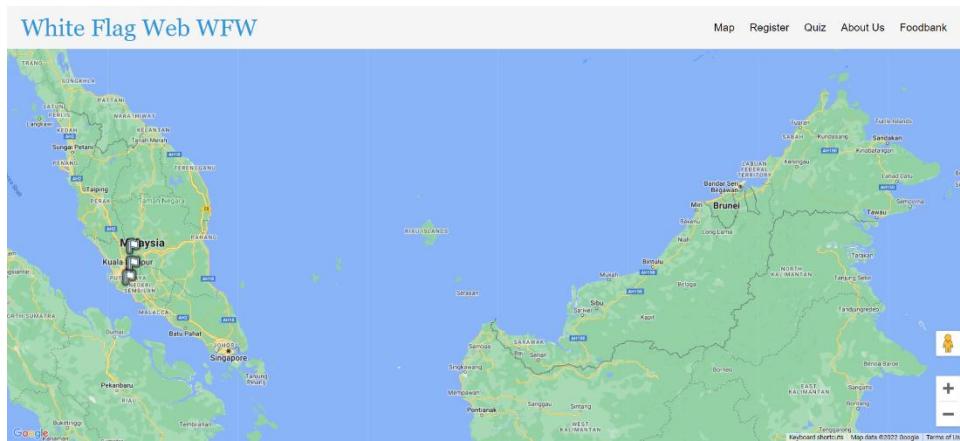


Figure 4.4.2 Map Page Interface

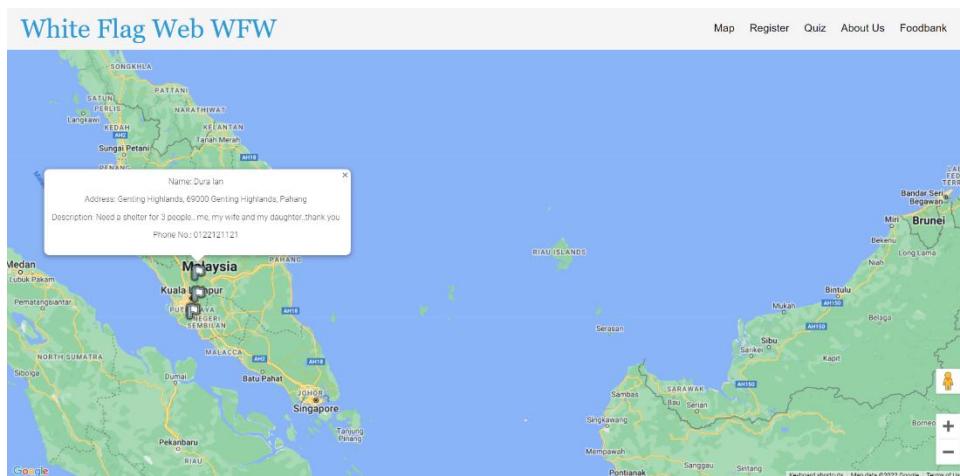


Figure 4.4.3 Map Page Interface

Figure 4.4.2 shows the map page interface in which the Malaysia Map is illustrated and there are white flag icons on specific locations. Figure 4.4.3 shows how the results when the user clicks the icon, and the info window will pop out respective according to the locations of the icon clicked.

```

var locations = [
  ['Name:King Kong <p> Address: 5, Jalan Mahkota 6, Bandar Mahkota Cheras, 43200 Kajang, Selangor, Malaysia</p><p>Description:'],
  ['Name: Dura Ian <p> Address: Genting Highlands, 69000 Genting Highlands, Pahang</p><p>Description: Need a shelter for 3 people.. al'],
  ['Name: Ping Pong <p> Address: Persiaran Korporat KLIA, 64000 Sepang, Selangor</p><p>Description: No income.. need food.. all'],
];

let map;

function initMap() {
  map = new google.maps.Map(document.getElementById("map"), {
    center: new google.maps.LatLng(4.1093195, 109.45547499999998),
    zoom: 6.7,
  });
}

var infowindow = new google.maps.InfoWindow();

var marker, i;

for (i = 0; i < locations.length; i++) {
  const iconBase =
    "http://maps.google.com/mapfiles/kml/pal5/";
  marker = new google.maps.Marker({
    position: new google.maps.LatLng(locations[i][1], locations[i][2]),
    icon: iconBase + "icon13.png",
    map: map
  });

  google.maps.event.addListener(marker, 'click', (function(marker, i) {
    return function() {
      infowindow.setContent(locations[i][0]);
      infowindow.open(map, marker);
    }
  })(marker, i));
}

```

Figure 4.4.4 Map Page JavaScript

Figure 4.4.4 is the JavaScript for the map page. The initMap function is to center the map where it shows both the West and East Malaysia map by using the latitude and longitude coordinates. Var location's function is to add the information onto the locations database. Next, the Infowindow function is to store the information of white flag members on the map with the correct markers and the for-loop function is to show the white flag icon on each respective location's longitude and latitude. Lastly, the listener function is to show the infowindow on the map when the user clicks on each respective white flag icon.

The screenshot shows a web application interface for registering white flag members. At the top, there is a navigation bar with links for 'Map', 'Register', 'Quiz', 'About Us', and 'Foodbank'. Below the navigation bar, a blue header bar contains the text 'White Flag Web WFW' and a button labeled 'Register as white flag members'. The main content area is a form titled 'Personal Information'. It includes fields for 'Address (Area and Street)', 'Locality', and 'City/District/Town'. Above the 'Address' field, there is a section titled 'Location' with instructions: 'You can click the button below to use your current location as your address or type out manually'. A green button labeled 'USE MY LOCATION' is positioned next to this text. The entire form is set against a light gray background.

Pin Code

State

Name.*
Your full name...

Leave below blank if dont have email or phone (Not encourage)

Email :
(Will email you if your application approved)

Email Address

Enter your phone number:
(will message you the process if no email, and the phone number will show on map)

Format:01x-xxx-xxxx

Notes.*

Why and What you wan (Food/Shelter/Baby items/daily supplies)

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Figure 4.4.5 Register Page Interface



Figure 4.4.6 Quiz Page Interface



Figure 4.4.7 Quiz Page Interface (Pressed the “Are you ready for the quiz?”)

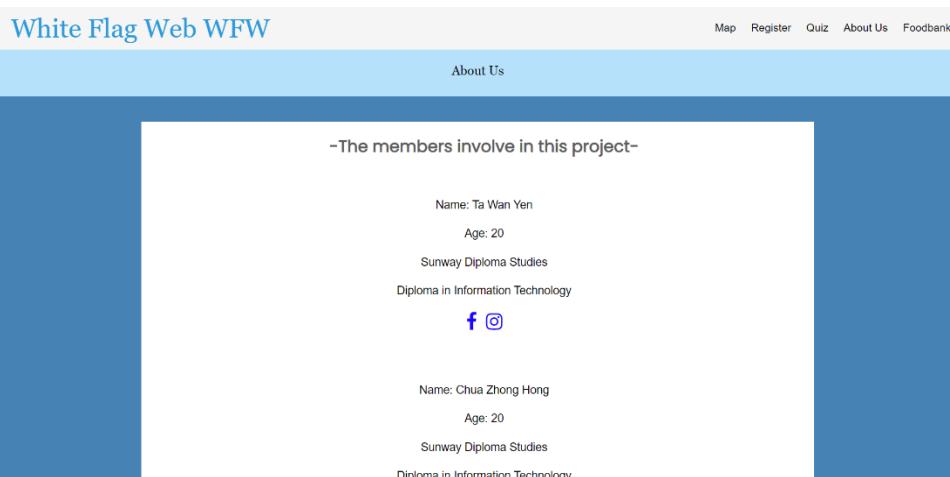


Figure 4.4.8 About Us Page Interface

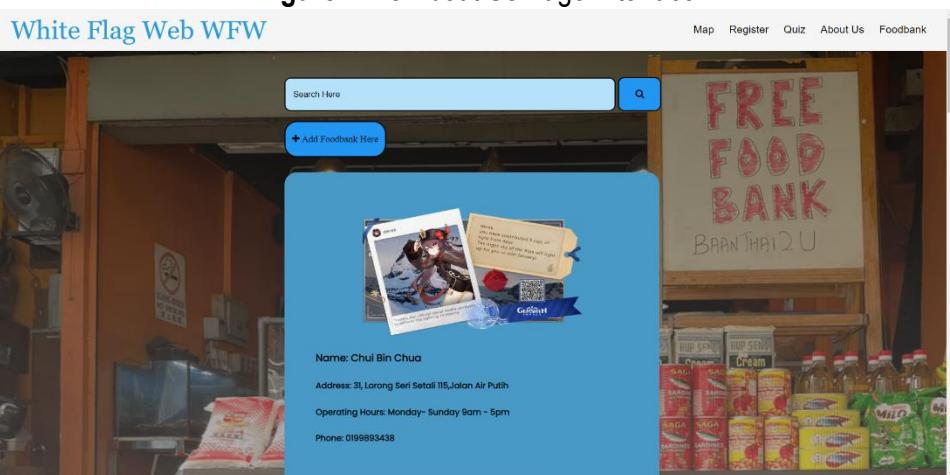


Figure 4.4.9 Foodbank Page Interface

Figure 4.4.10 Add Foodbank Page Interface

	<input type="button"/> Edit	<input type="button"/> Copy	<input type="button"/> Delete	id	name	address	hour	number	picture
<input type="checkbox"/>	<input type="button"/> Edit	<input type="button"/> Copy	<input type="button"/> Delete	18	Chu Bin Chua	31, Lorong Seri Setali 115,Jalan Air Putih	Monday- Sunday 9am - 5pm	199893438	1640765518993.png
<input type="checkbox"/>	<input type="button"/> Edit	<input type="button"/> Copy	<input type="button"/> Delete	19	Chua Zhong Hong	31, Lorong Seri Setali 115	Monday- Sunday 9am - 5pm	199893438	akebibchan(2).jpg
<input type="checkbox"/>	<input type="button"/> Edit	<input type="button"/> Copy	<input type="button"/> Delete	20	Derek Chua	31, Lorong Seri Setali 115	Monday- Sunday 9am - 5pm	1131203086	akebibchan(1).jpg
<input type="checkbox"/>	<input type="button"/> Edit	<input type="button"/> Copy	<input type="button"/> Delete	21	Petronas	Lot 33050, Jalan Air Putih, Taman Harapan, 25300 K...	Monday-Sunday 24hours	95622111	petronas.jpg
<input type="checkbox"/>	<input type="button"/> Edit	<input type="button"/> Copy	<input type="button"/> Delete	22	foodbank near jalan jalan	13 jalan 2, jalan 3, raub, pahang	10am - 10pm	129876543	DZW-S51W0AA2vQV.jpg
<input type="checkbox"/>	<input type="button"/> Edit	<input type="button"/> Copy	<input type="button"/> Delete	25	cheras foodbank	5, Jalan Mahkota 6, Bandar Mahkota Cheras, 43200 K...	10am - 10pm	123982934	5081324.jif

Figure 4.4.11 foodbank database

Figure 4.4.11 is a screenshot of a foodbank database that keeps foodbank information. The figure also shows some examples of foodbank information stored. Additionally, when the user adds foodbank information in Figure 4.4.10, it will send it into this database (Figure 4.4.11). Id is the primary key of the foodbank database and consists of name, address, hour, number, and picture attributes.

Admin Interface and important coding

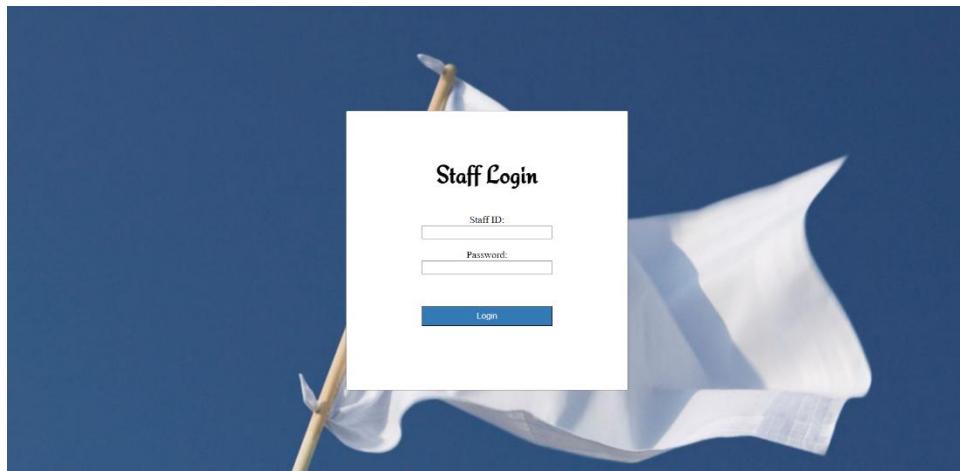


Figure 4.4.12 Staff Login Interface

Figure 4.4.12 shows the page that cannot access through the main page, but it can only be accessed by typing the URL which only staff will know. Even though non-employees may find out about this page, they

still need to fill in their staff id and password only to access the approval page. The staff that can log in has been shown by the staff database (Figure 4.4.13).

	<input type="button" value="←"/>	<input type="button" value="→"/>		sid	sname	pwd	
	<input type="checkbox"/>	<input type="button" value="Edit"/>	<input type="button" value="Copy"/>	<input type="button" value="Delete"/>	1	Wanyen	1
	<input type="checkbox"/>	<input type="button" value="Edit"/>	<input type="button" value="Copy"/>	<input type="button" value="Delete"/>	2	Chua	2

Figure 4.4.13 staff database

ID	Name	Email	Status	More Info	Approve	Delete
1	Ping Pong	ping@yahoo.com	done	More Info	Approve	Delete
2	Dura Iau	du@lol.com	done	More Info	Approve	Delete
19	King Kong	kingkong@gmail.com	done	More Info	Approve	Delete

Figure 4.4.14 Approve Page Interface

Figure 4.4.14 is the interface of the staff approves page after login. This page shows all the white flag members' information, and, in the table, there is more information, approve and delete functions that can perform tasks. The approve function is to change the status from pending to done when the staff completes adding the information of white flag members into JavaScript and shows it on the map.

	<input type="button" value="←"/>	<input type="button" value="→"/>	<input type="button" value="id"/>	<input type="button" value="name"/>	<input type="button" value="email"/>	<input type="button" value="address"/>	<input type="button" value="lat"/>	<input type="button" value="lng"/>	<input type="button" value="description"/>	<input type="button" value="phone"/>	<input type="button" value="status"/>	
	<input type="checkbox"/>	<input type="button" value="Edit"/>	<input type="button" value="Copy"/>	<input type="button" value="Delete"/>	1	Ping Pong	ping@yahoo.com	Persiaran Korporat KLIA, 64000 Sepang, Selangor	2.741300 101.701500	No income.. need food... allergic to peanut.thank ...	012-222-2222	done
	<input type="checkbox"/>	<input type="button" value="Edit"/>	<input type="button" value="Copy"/>	<input type="button" value="Delete"/>	2	Dura Iau	du@lol.com	Genting Highlands, 69000 Genting Highlands, Pahang	3.423600 101.791600	Need a shelter for 3 people.. me, my wife and my d...	012-212-1121	done
	<input type="checkbox"/>	<input type="button" value="Edit"/>	<input type="button" value="Copy"/>	<input type="button" value="Delete"/>	19	King Kong	kingkong@gmail.com	5, Jalan Mahkota 6, Bandar Mahkota Cheras, 43200 K...	3.043700 101.784600	Need foods	012-888-0002	done

Figure 4.4.15 locations database

Figure 4.4.15 shows the database of locations that contain white flag members' information. This database is used in Figure 4.4.13 to display all the information about white flag members so the staff can access and perform tasks on it.

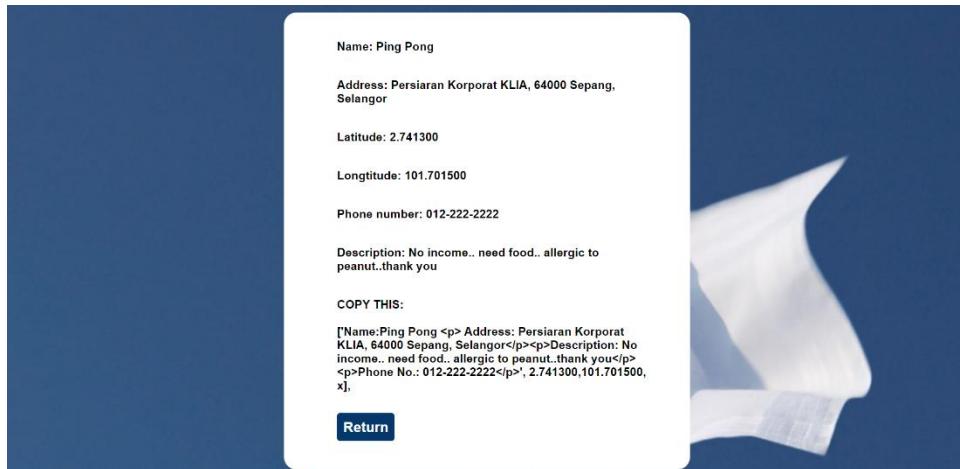


Figure 4.4.16 more info page

Figure 4.4.16 is one of the examples of the more information page when staff clicks the more info button in Figure 4.4.14. This example is the information of the id=1 white flag members. All the information is gathered from the locations database.

4.5 System Testing

No	Test step	inputs	Expected output	Actual output	Test results	Test comments
1.	Key in nothing in the register form	-	The form is unable to submit and error messages pop out	The form is unable to submit and error messages pop out	Pass	"Please fill out this field"
2.	Key in invalid format of email address	Lilin@g	The form is unable to submit and error messages pop out	The form is unable to submit and error messages pop out	Pass	"Email format wrong"
3	Press send button without errors	-	The form information successfully sent to database	The form information successfully sent to database	Pass	Register successful, your application status will be emailed or sent through message after getting verified manually! Returning to the register page.
4	Answer the quiz on the quiz page	Click all 5 correct answers	Results of quiz should be 5 out of	Quiz result is 5 out of 5	Pass	You have completed the Quiz! Welldone!!

			5 because of all correct			You got 5 out of 5
5	Click the social media icon on the about us page	https://www.facebook.com/profile.php?id=100009416607671	Navigate the user to Zhong Hong's Facebook page	Zhong Hong's Facebook page	Pass	-
6.	Input keywords at search bar on foodbank page	Air Putih	Food Bank information that consists of "air Putih" word display out on the foodbank page	Information displayed only related to air Putih	Pass	<p>Name: Chui Bin Chua Address: 31, Lorong Seri Setali 115, Jalan Air Putih Operating Hours: Monday- Sunday 9am - 5pm Phone: 0199893438</p> <p>Name: Petronas Address: Lot 6 33050, Jalan Air Putih, Taman Harapan, 25300 Kuantan, Pahang Operating Hours: Monday-Sunday 24hours Phone: 095622111</p>
7	Submit new food bank information at add_fb page	name: foodbank at Pj address: 22/03, Lorong Taman Baru, Pj, Selangor hours:24 hours	All the information can be sent to the foodbank database	Information added to foodbank database	Pass	Record in foodbank database: Id: 26 name: foodbank at Pj address: 22/03, Lorong Taman Baru, Pj, Selangor hours:24 hours

		Number: 0128888888 Picture: 164080.png				Number: 1288888888 Picture: 164080.png
8	Login at login page as staff	Staff ID: 1 Password: 1	Able to login and navigate to approve page	Login successfully and navigate to approve page	Pass	Login successful Auto directing to approve page
9.	Input keywords at search bar on approve page	Id: 1	Shows id = 1 information on display table	Id = 1 information shows on display table	Pass	Data shows on display table Id: 1 Name: Ping Pong Email: ping@yahoo.com Status: done More info: More info Approve: Approve Delete: Delete

4.6 Unit Testing

Unit testing on the website functions was done in every individual component. Below are the test results

No	Description	Test Step	Expected Result	Actual Result
1.	Main Page			
1.1	Scroll the page and see the navigation bar	Scroll the main page down	Navigation bar stick while scrolling	Yes
1.2	3 info images that hover with word	Move cursor to the image	Description of each image will be shown while hovering	Yes
1.3	Register button	Click the button	Navigate user to the register page	Yes
2.	Map Page			
2.1	Zoom in, zoom out, drag map	Scroll in and out to zoom in out also, press left click to drag around the Malaysia map.	User able to zoom in and out the map as well as drag the map whenever user wants	Yes
2.2	Info window appears	Click on the white flag icon	The info window displays out according to which of the white flag icon clicked	Yes

2.3	Close the info window	Click the x button at the top-right of the info window	Info window closes	Yes
3.	Register Page			
3.1	Use my location button	Click the “use my location” button	Map open and display the user current locations	Yes
3.2	Fill in location	Choose the most accurate option provided by the map Api	The address chosen will automatically fill into the respective field.	Yes
3.3	Input fields	Click the input fields and type	User able to fill in the input fields	Yes
3.4	Validation of input fields	No inputting anything or type in Invalid format of the input	Error messages pop out according to the errors.	Yes
3.5	Send form	Click the send button without any errors input	The information input is successfully added to the database and the user can see an alert message on registering successfully and auto direct back to the register page.	Yes
4	Quiz Page			
4.1	Show rules	Click the “Are you ready for the quiz “button	Quiz rules pop out	Yes
4.2	Start Quiz or Quit Quiz	Click the continue button or quit quiz	If the continue button is clicked, the quiz and timer start. If the quit quiz clicked, it goes back to 4.1	Yes
4.2	Choose answer	Click the answer option	If the answer is correct, it will become green to indicate correct, if the answer is wrong it will become red. The clickable next question button will pop out afterward.	Yes
4.3	Replay	Click the replay button after the quiz ends	The quiz will be replay and marks reset.	Yes
5.	About Us Page			
5.1	Social media link	Click the social media icon	Navigate users to the correct staff social media	Yes
6.	Foodbank Page			
6.1	Search function	Click the search bar and input the keyword	Search results display according to the keyword	Yes

6.2	Add foodbank	Press the “add foodbank here’ button”	Navigate to a new page with a form to input new foodbank information	Yes
7.	Add_fb Page			
7.1	Input fields	Click the input fields and type	User able to fill in the input fields	Yes
7.2	Upload image	Click “choose file” button	Open the user’s local document and be able to upload a picture	Yes
7.3	Validation of input fields	No inputting anything or type in Invalid format of the input	Error messages pop out according to the errors.	Yes
7.4	Submit form	Click the submit button without any errors input	Information input is successfully added to the database and the user can see an alert message on adding successful.	Yes
8.	Staff Login Page			
8.1	Input fields	Click the input fields and type	User able to fill in the input fields	Yes
8.2	Validation of input fields	No inputting anything or typing in Invalid format of the input such as wrong password and id	Another page to show error messages and has a button to back to login	Yes
8.3	Login	Click the login button without any errors input	Login successfully and navigate to approve page	Yes
9.	Approve Page			
9.1	Search function	Click the search bar and input the keyword	Search results display according to the keyword	Yes
9.2	Reset Search function	Click the reset button	Search results will reset back to default	Yes
9.3	More info functions	Click the more info link	Navigate to the more info page that shows the chosen id information	Yes
9.4	Approve functions	Click approve link	Status from pending change to done	Yes
9.5	Delete functions	Click delete link	The information of the specific id will be deleted for both database and display table.	Yes
10.	More info Page			

10.1	Return functions	Click the “return” button	Return to approve page (9.1).	Yes
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5. Discuss of Result

5.1 Analysis of Objectives

The first objective that the team achieved is that users can use the web application to register for help and success in adding the information on the map. For the user who needs help, they can register as a white flag member on the registration page. Users must key in their name, email, phone number, note and address. Most important is that the web application has validation for each of them and users must make sure the address is pinned correctly to prevent misunderstanding about the wrong location pinned. After the users have successfully submitted the registration form, they must wait for the admin to approve their registration. When the admin has approved the registration, the location that users registered will be manually pinned by the admin by using the white flag icon. In this case, all the WFW users are allowed to see the icon on the map including the white flag members themselves.

The second objective which is to increase the awareness of the Malaysian about white flag issues was also achieved. The reason is that we have provided a lot of information about the white flag campaign and users can know more about the white flag campaign. Then, the team created a feature of quizzes to test the users' awareness and knowledge about the white flag campaign and the purpose of creating this web application. The quiz is asking questions about what the white flag web is, following with, the date the first MCO started, what is the color of the flag waved in this movement, the purpose of the white flag web, and which items do donate and do not donate to the food bank. All the answers can be found on the main page of the web application.

Lastly, the web application also achieved the third objective, and the objective is to convenience the people who are trying to help to find the white flag members' location. People who are trying to help the white flag members can be able to find all the white flag members on the map. The white flag icon will be displayed on the map to let the people know the location of the white flag members and they are also allowed to click on the white flag icon to see more details such as name, phone number, and note that show what white flag members need. This can let the movement work smoothly and more efficiently.

5.2 Limitations

The first limitation would be the language of the web application. Currently, the web application is only available in English, and this may create trouble for non-English speaking users. Especially in Malaysia not all the users in Malaysia are able to speak English and they do not understand all the content of the website, as a result, they cannot register for help by using our web application. Other than that, the next limitation is we cannot automatically add the white flag icon on the map. In this current situation, the team is not able to make it automatic because it may take more time to complete it due to the due date of the project and this will be considered a future improvement for our web application. n.

5.3 Challenges and Solutions

There are some challenges that were met in the process of our web application development and some challenges can mostly be indicated from the proposal's risk management.

The first challenge that the team faced was probably the time limitation of the project. Due to assignments from other subjects, the team has a lack of time to create the web application and the team must delay our progress development. In order to solve this problem, the team must rearrange our time by cutting short our napping and rest time just to keep up the pace.

Then, another challenge that we met during our project was the lack of coding skills. Since we are just beginners, our coding skill has a limit to perform. For example, the Map API function on the map page is the first time the team implements it into a website, hence, making it functional and showing the white flag marker on the map is a bit of a challenge to the team. However, the team overcame it by searching online to find out the solutions and the team also watched some tutorials to improve our coding skills.

Furthermore, the team has met the challenge that cannot display the foodbank image on the foodbank page. This is the deepest impression on our development because the team has struggled with this problem for a few days. But luckily, one of our friends came to help the team to solve this problem and, in the end, the problem was solved.

The last challenge that the team met during our development was the map system on the register page. When the team is still developing our web application, the map system will not pin the right location even if the team types the exact true addresses, but the map still will not pin the right location. In order to solve this challenge, the team must search for the solutions by posting the question to Stack Overflow to look for the solutions. Other than that, the team also watched tutorial videos to try to fix this issue.

6. Conclusion and Future Works

White Flag Web (WFW) was built to gather all the white flag movement information and help people who are suffering from financial issues during the pandemic by allowing them to register as white flag members and show their locations on maps to let people notice them.

In conclusion, the implementation of WFW has been successfully achieving its aim which is to convenience people to find white flag members' locations by being able to add white flag members' information and locations on the map by their latitude and longitude. Additionally, this project also met all other objectives. For example, WFW can make white flag members more noticeable by showing their locations on the map. This website also increased the efficiency of helping rates and decreased the rate of people who face starvation because people may pay more attention to white flag members. Lastly, it increases the awareness of Malaysian about white flag issues by showing them the information related to the white flag movement on the main page.

There are still a few future improvements that White Flag web can make to enhance the user experience. Firstly, the map on the map page can add the foodbank icons and information by the address just like the

white flag information. Next, the map page can add a search function for the locations, and if added the foodbank locations, the search can be also categorized as a show food bank or white flag location only to let the user choose. The web application can also be improved by implementing choices of language. For now, the web application has only available in English, but in the future, it can be chosen in Malay. Lastly, for the admin part, currently, the information is manually inserted into the map, but it can improve by making it automated when the user submits the form by implementing the code of shows SQL code into the PHP.

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