



ENGINEERING ALGORITHM

ECC3112

SEMESTER 2

PROJECT REPORT

Title: Res-Q Victim Registration System

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Abstract

In this project, we were given the task to create a project based on a given theme, i.e., crowd control and disaster management. Therefore, using Dev-C++, we have created a program named 'Res-Q ~ Victims Registration System'. We hope this program can benefit all crowd control and disaster management.

One of the most frequent disasters in the country is flash floods. Floods will hit almost every year and have left many victims affected. Some victims can survive, some are missing, and let's not forget some have died. This is because the disaster management system in the country is still in a weak state. At the same time, the Covid-19 epidemic is also plaguing our country, causing public gatherings to be discouraged. In that regard, a victim registration system could solve this.

The internet has become something important to everyone nowadays. Various systems and applications that we can see on the internet today. However, not many applications or systems focus on disaster management. Ideally, the internet can be a significant resource in managing disaster victims. Our project intends to create assistance to parties managing disasters such as floods. It can help them check, track and register flood victims.

Our victim registration system is a user and administrator friendly system. Through this system, administrators can control the working staff as well as be able to monitor the condition of the evacuation centre. This can also increase the efficiency of the assistance provided. In addition, it can also help staff check the victim's background, which can facilitate their work—various other exciting features available in this system such as ease of use and others.

This 'Res-Q ~ Victims Registration System' project was developed to make the system able to help manage disasters and control the public well and organised.

1.0 Introduction

Floods are one of Malaysia's most common natural disasters, which occur almost every year, particularly during the monsoon season. Peninsular Malaysia's coasts are the most prone to flooding, especially during the northeast monsoon season, from October to March. Floods are the most frequent and costly natural disaster in the country, causing chaos in affected areas in terms of disruptions to daily and economic activities, causing damage to roads and railway lines, transportation, and property, and even loss of lives ^[1]. Many people were affected, and some remained unknown due to the limited movement to seek emergency help. With such occurrences predicted to become more frequent in the future, crowd control management will check the victims' and rescuers' movements when it happens.

Generally, crowd management is the systematic and documented planning and direction of the orderly progress of events involving many people. Measures may be made to guide or restrict the behaviour of groups of people as part of crowd control ^[2]. However, crowd management will not run efficiently as the victims' data, including the centre and the rescuers, are still slow due to the lack of technological advances. Therefore, our teams have come up with an idea to invent a program for the management called **“Res-Q Victim registration system”**. This program has two modes of the user, which are admin and staff. From the chosen mode, the user can perform various operations as provided.

Our program is different from the conventional rescue victim system because it enables rescuers to spend less time looking for victims of the occurrence. This programme allows the admin and staff system to identify the victims. Moreover, the system may be used to update and register new staff or victims. Additionally, the system helps the centre monitor the victim's status by providing an overview of the victim's details. Indeed, having this programme will make it much easier for both rescuers and centres to save the victims.

2.0 Problem Statements

As we live in a technologically advanced era, many developments in Malaysia have been made. Lately, some cities have recently experienced natural disasters. The flood occurred mainly in a low region, affecting the housing complex and the road. The road is quite significant for travelling from one location to another. Severe floods sometimes bring massive destruction. Floods cost the lives of many people. Numerous others sustain injuries.

The main problem most evacuation centres and rescuers face during floods is that hardcopy data and printing may delay recognising the victims' identity and the status during the search. Some flood victims in Kuala Lumpur claimed they had yet to receive aid a week after a series of floods swept over Peninsular Malaysia [3]. Hence, the procedure of identifying the victim may be complicated for rescuers to search with just physical data. Next, the problem is there are situations where the number of victims of floods is uncertain due to the unpredictable nature disaster which either happened at the same place or expanded to others.

Furthermore, the number of missing or dead victims is difficult to identify in the crowd without saving their status in file digitally. In case some worried relatives or friends are unable to contact those affected. Thus, the only option is to get the evacuation centre, which will be ineffective to check if their system does not have a digital file for determining the victim's status. Moreover, another problem is the limited movement for the rescuers to search for the victims that stay in different centres.

Therefore, by building this program, we believe that it can help the rescuers and the centre monitor the victim's condition easily in a short period in handling crowd control and disaster management.

3.0 Objectives

The main objective of this program is to develop a system that allows the users to:

1. Identifying missing or deceased victims of natural disasters.
2. To reduce the rescuers' work searching for the victims at the incident places.
3. To enable the staff to update the victim status instantly with ease.
4. To allow the staff to register new victims' data in the digital file.

4.0 Methodology

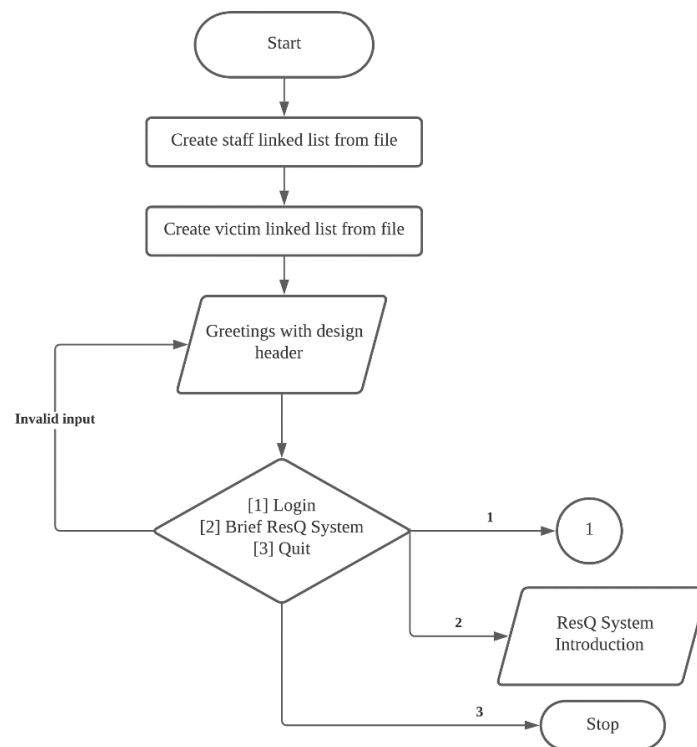


Figure 4.1: Flowchart of the main menu

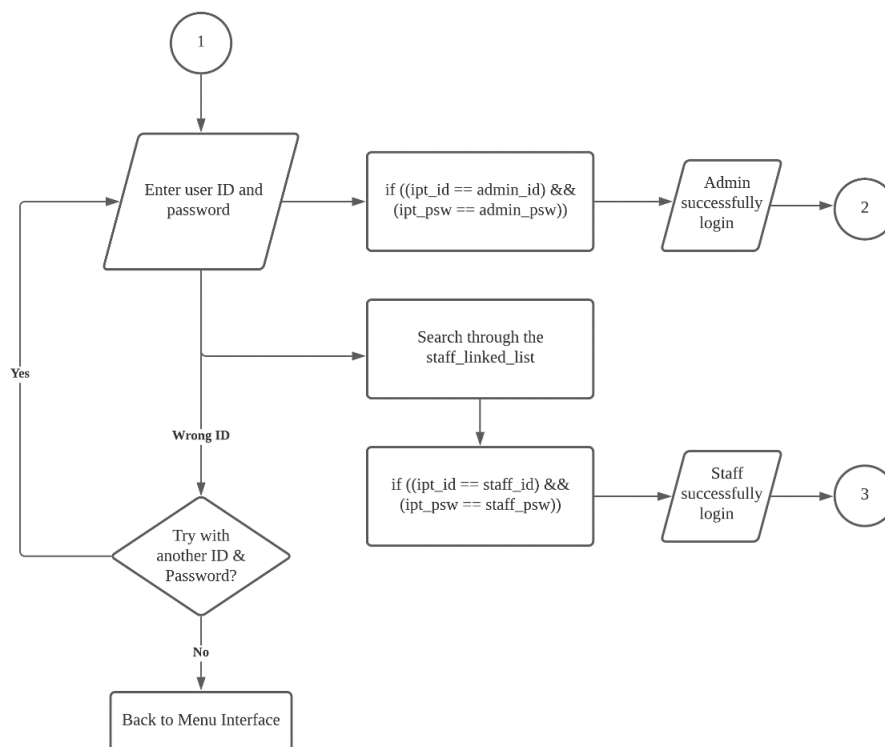


Figure 4.2: Flowchart of the login interface

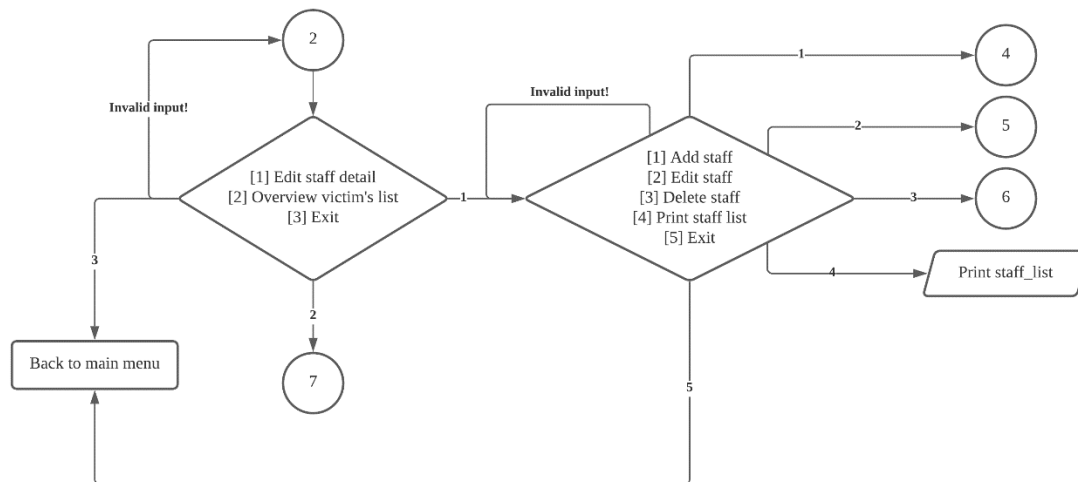


Figure 4.3: Flowchart of admin interface

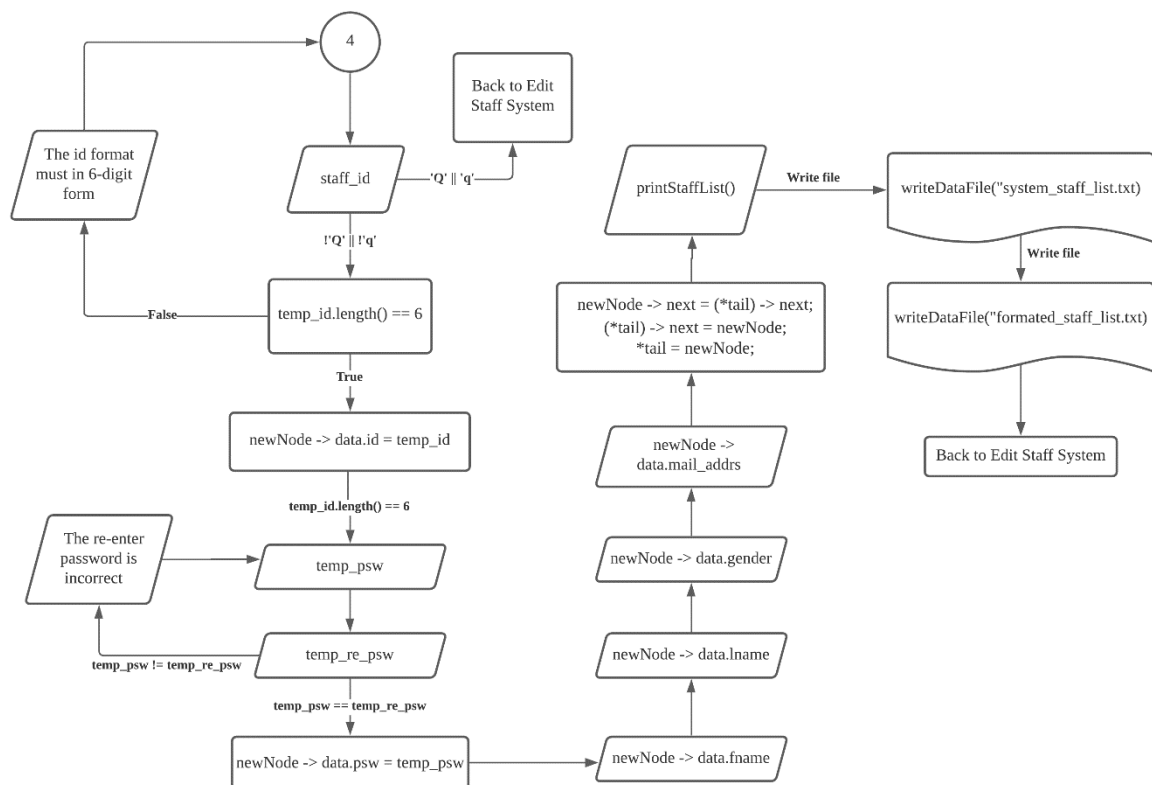


Figure 4.4: Flowchart of adding new staff

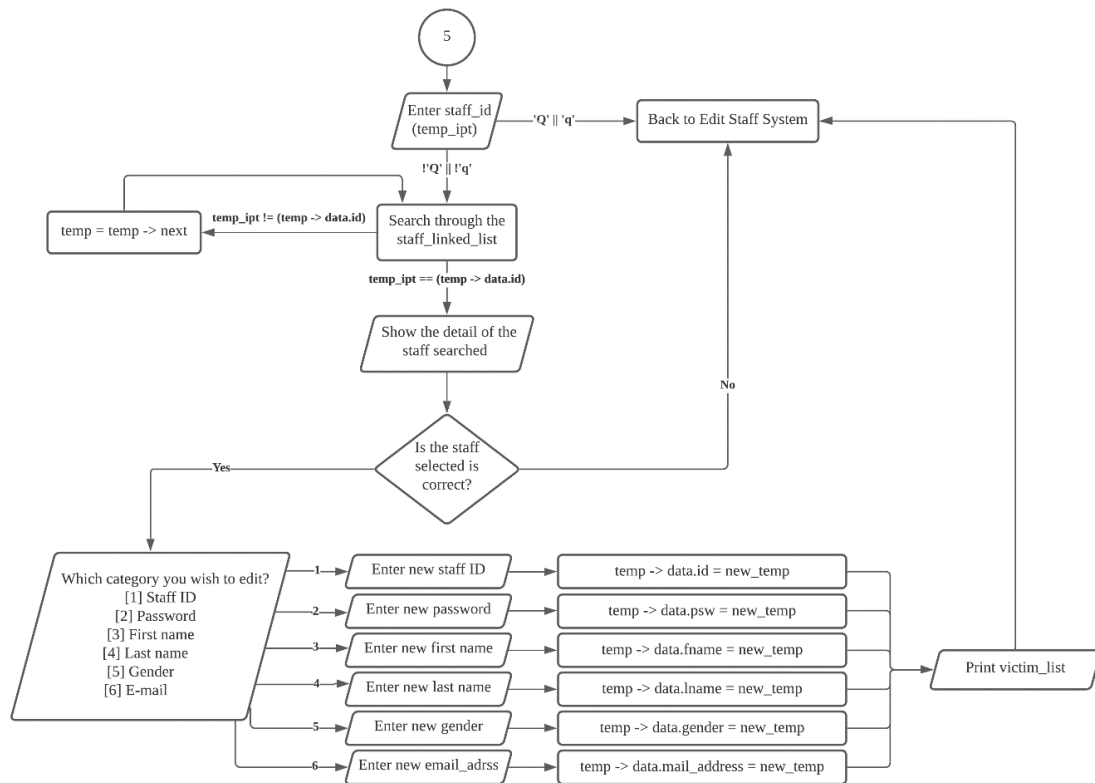


Figure 4.5: Flowchart of editing staff detail

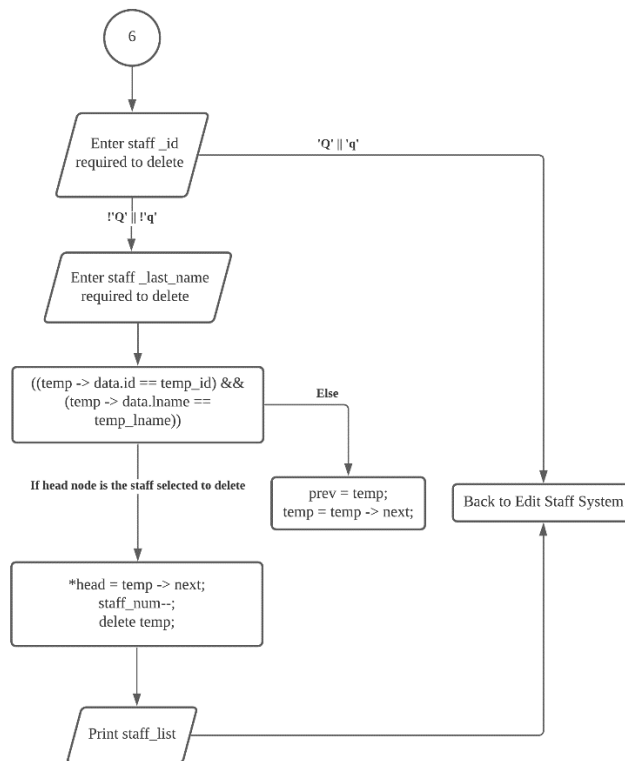


Figure 4.6: Flowchart of deleting staff

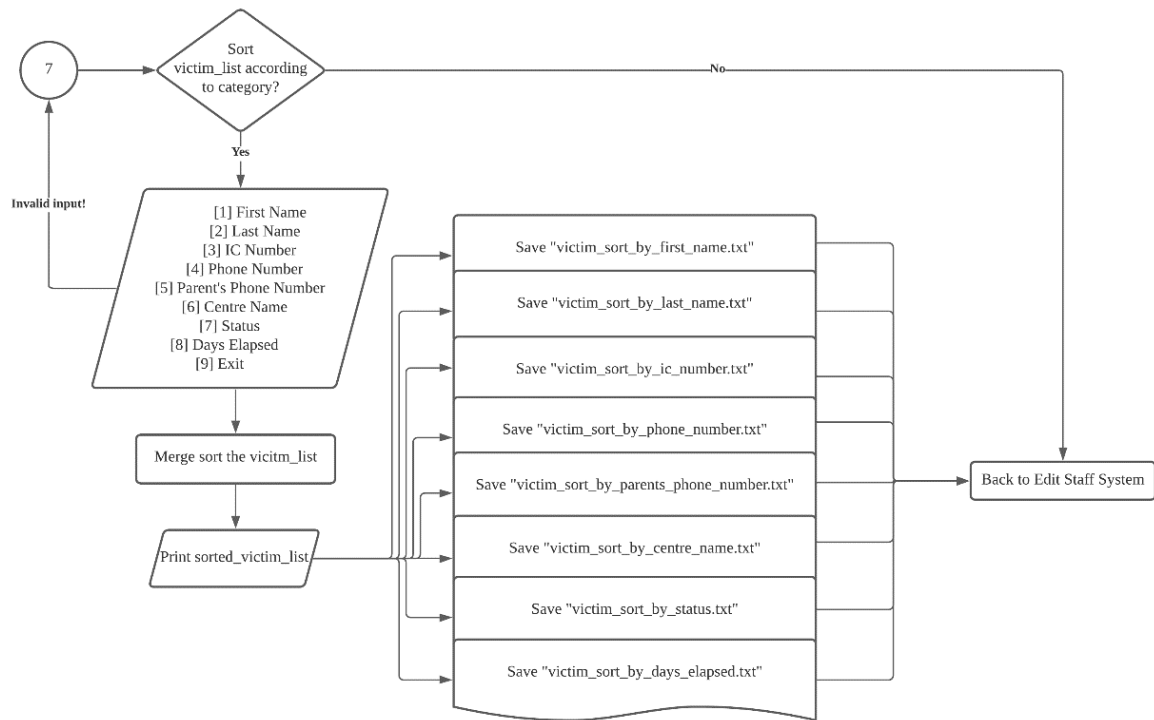


Figure 4.7: Flowchart of overviewing the victim list

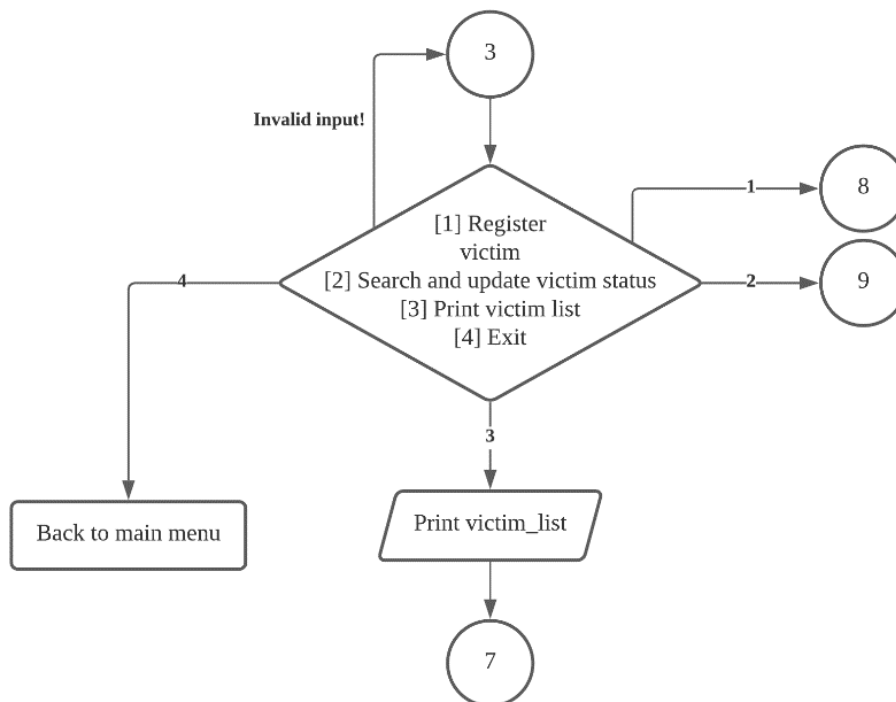


Figure 4.8: Flowchart of staff interface

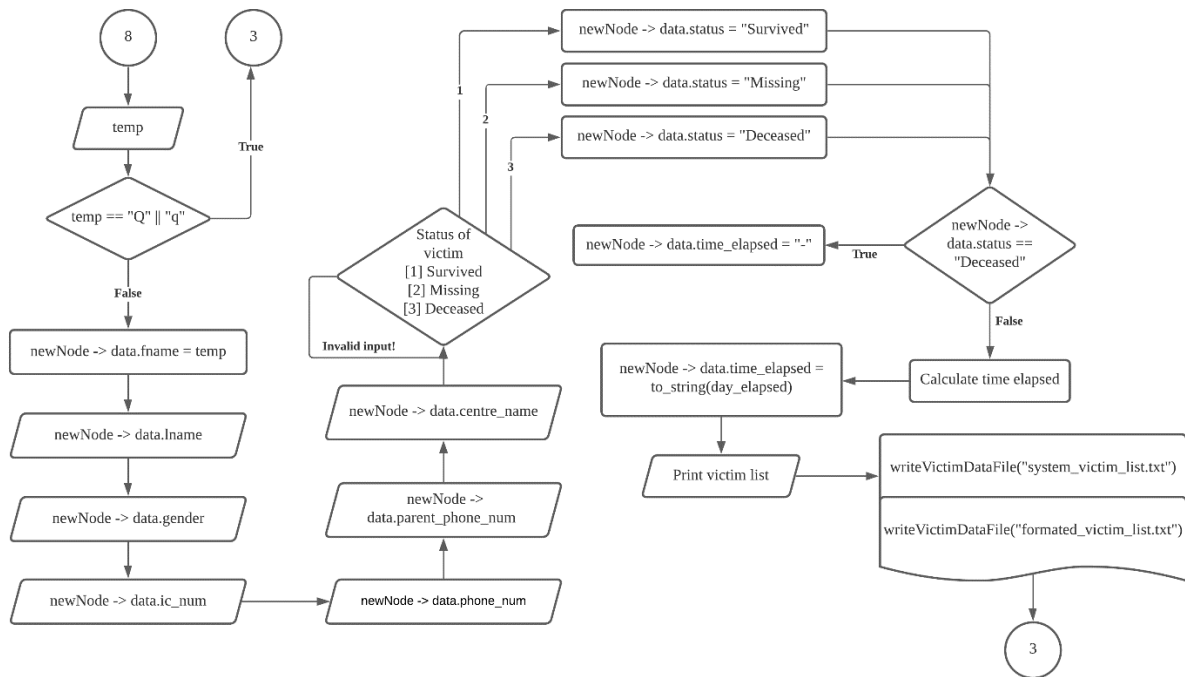


Figure 4.9: Flowchart of adding the victim

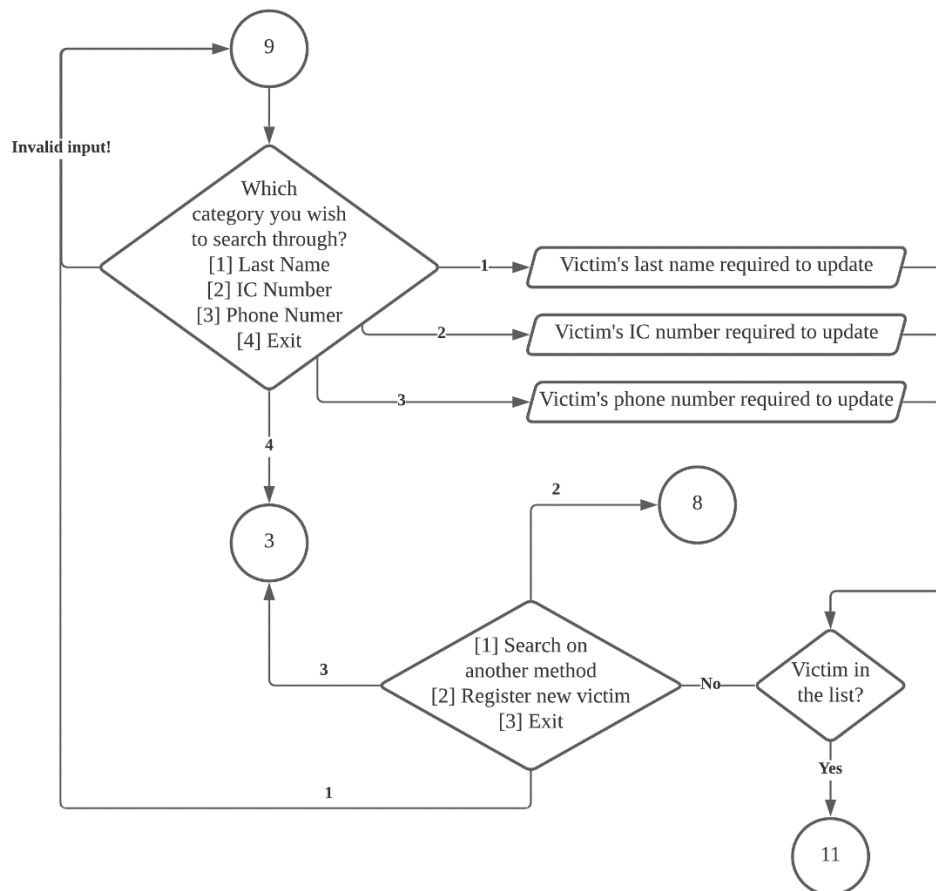


Figure 4.10: Flowchart of search and update victim interface

4.1 Main menu system

Based on the main menu's flowchart and the login interface's flowchart in *Figure 4.1* and *Figure 4.2*, this program has two main sections: the admin system and the staff system. At the main menu, the user can choose whether they want to log in to the system or review the brief intro for the system.

The system will process for the staff list and victim list by reading the files for the staffs and the victims respectively and converting them into 2 linked list for the system to be used. When the user chooses to login into the system, they are required to insert their ID number and password. The system will check whether the input ID and input password is an admin or a staff to switch into the different interface for different control access on the system. To identify the staff ID and password is matched, the system will be searched through the staff linked list by using linear searching with average time complexity of $O(n)$ ^[4]. The time complexity of insertion of data into Linked List is $O(1)$ in the average case and worst case. Assuming that admin data is significantly less in the program, the time taken to search in a Linked List does not have too much difference in the best and worst case. The space complexity of linked list is $O(n)$. Linked lists are dynamic and flexible and can expand and contract its size. Compared to the data structure such as an array, in general, the linked list is a better choice to store staff information and victim detail.

4.1 Admin System

In the admin system interface, the user may choose either to “Edit staff detail” or “Overviewing the victim’s list”. In the section of “Edit staff detail”, the user can choose either “Add staff”, “Edit staff”, “Delete staff”, or “Print staff”.

In the “Add staff” section, the user must enter the 6-digit ID for new staff. The system will check whether the ID is a 6-digit ID, else wise; the system will print an error and require the user to enter a new ID. Besides, the password entered by the user is necessary to check again by re-entering the password for confirmation. Then, the user will be required to enter the first name, last name and email address. The data will be stored to the tail of the linked list as a queue data structure.^[5]

In the “Edit staff” section, the user must enter the necessary staff ID to edit, followed by a linear search on the staff linked list. If the staff ID is found, the system will display the staff detail for confirmation and ask the user to continue editing the staff detail or go back to the “Edit staff detail” interface. If the user wishes to edit the staff detail, the system will ask the user to choose the category required to edit. Once the user enters the new data, the data

will overwrite the old data in the linked list, then print the staff list to confirm that the staff data is updated.

In the “Delete staff” section, the user must enter the staff id and staff last name to delete staff from the staff list. The system can ensure that the user is not deleting a staff in an accident. The staff list will be printed out to ensure that the staff data is updated.

In the “Overviewing the victim’s list” section, the system will sort the list according to the user choice on which category is chosen. The system will use merge sort to sort the victim list and print the sorted victim list on the console. In addition, the system will save the sorted files as an individual file in the program before it back to the “Edit staff detail” section. The merge sort is used to sort the victim list because it has the optimum time complexity of $O(n \log n)$ no matter it is the best case, average case or worst case.^[6] Using merge sort can ensure that the time required to process the sorting can be reduced when the victim registered in the system is tremendous.

4.2 Staff System

In the staff system, the user may choose either to “Register victim”, “Search and update victim status”, or “Print victim list”.

In the “Register victim” section, the user can insert the victim detail accordingly from their first name, last name, gender, IC number, phone number, parent’s phone number and status. The parent’s phone number has been considered since a kid, or a teenager who survives from the flood disaster can be found by their parents through the system. For the status of the victim, the user can choose either “Survived”, “Missing”, or “Deceased” to update the victim status. The time elapsed is used to calculate the days passed by from the date of the incident the victim is registered. It had been estimated by asking the user to enter the date incident followed by a flow of calculation to calculate the difference between the current date and the incident date. Lastly, the system will print the victim list and save the victim list as a file for further use.

In the “Search and update victim status” section, the system allows the user to choose a category to search through, and the user is required to enter the victim’s data into the system. If the victim does not find in the list, the system will ask the user whether to search with another category or register for a new victim. The system is designed to have a choice to search for another category because the victim might memorise the data wrongly. So, the system provides a different way to search through the list again.

5.0 Results and Discussion

After the interface animation is presented, the Main Menu is displayed in *Figure 5.0.1*. The user can choose from 1 to 3. By entering number 1, the user will go to the Login page. By entering number 2, the user will go to the information page of Res-Q, as shown in *Figure 5.0.2*. Lastly, by entering number 3, the application program will exit. If the user enters other characters or numbers, the program will alert the user to enter the correct number, and the Main Menu page will be displayed again. If the user chooses number 1, the login page will be shown in *Figure 5.0.3*.



Figure 5.0.1: Main Menu

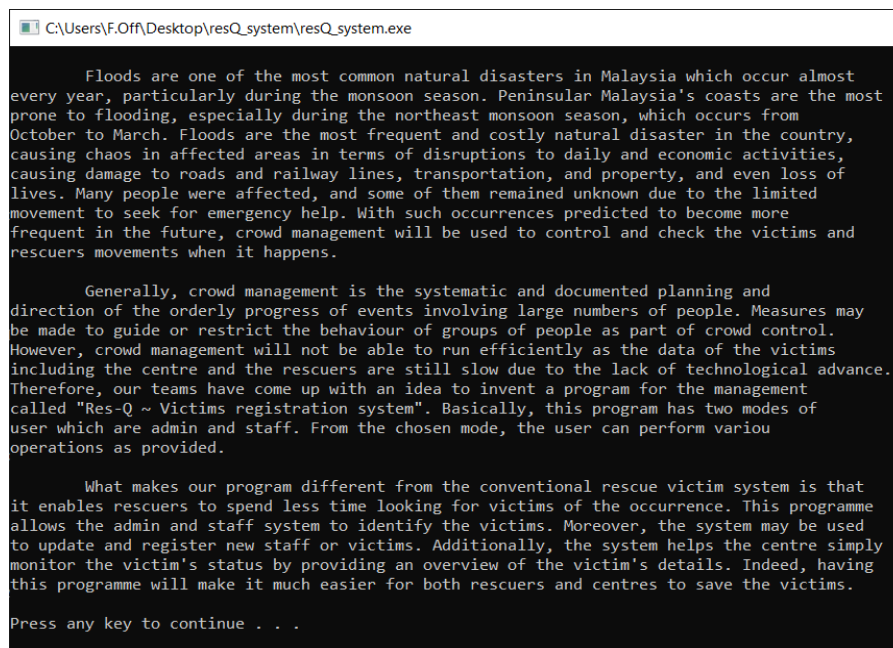


Figure 5.0.2: Res-Q Information

```
|-----|
|              Login System              |
|-----|

Press Q/q to exit the system.

ID: admin
Password: 123456

Admin login successfully done!
Press any key to continue . . .
```

Figure 5.0.3: Login Page for Admin user

```
|-----|
|              Login System              |
|-----|

Press Q/q to exit the system.

ID: 539712
Password: road

Staff login successfully done!
Press any key to continue . . .
```

Figure 5.0.4: Login Page for Staff user

There are two types of system provided: “Admin System” and “Staff System”. Each type of system has different functionalities for two other users. To differentiate the kind of user between the admin and the staff, the program will request them to enter the ID number and password. These are the conditions of the Login program:

- a) For the admin user, the ID number must be “*admin*”, and the password is “*123456*”. Once it is successfully entered, the user will go to the Admin Menu page.
- b) For the staff user, the ID number and password must be the same as in “*system_staff_list.txt*”. Once successfully entered, the user will go to the Staff Menu page.

If the user fails to enter the correct ID number and password, the program will alert the user to enter the valid number, and the Login page will be displayed again.

5.1 Admin System

On the Admin Menu page, there are the three options given to the user, which is “Editing staff list”, “Overview victim’s list”, and “Exit”. By entering number 1, the user will go to the “Edit Staff” menu page. By entering number 2, the user will go to the “Overview victim’s list” menu page. Lastly, by entering number 3, the “Admin Menu” will exit and return to the “Main Menu”. If the user enters other characters or numbers, the program will alert the user to enter the correct number, and the “Admin Menu” page will be displayed again.

```
-----
|                               Admin System                               |
|-----|

Admin ID: admin

[1] Edit staff list
[2] Overview victim's list
[3] Exit

Choice:
```

Figure 5.1.0: Admin Menu

```
-----
|                               Edit Staff System                               |
|-----|

[1] Add staff
[2] Edit staff
[3] Delete staff
[4] Print staff list
[5] Exit

Choice:
```

Figure 5.1.1: Edit Staff Menu

If the user proceeds to press number 1, they will be provided with five choices on the Edit Staff page, as shown in Figure 5.1.1. For number 1, the user can add new staff. The user then will be requested to enter the staff ID number, password, first name, last name, gender and email address accordingly. The program will ask the user to re-enter for confirmation of the password. When the previous password is not the same as the current password, the program will alert the user and ask them to re-enter the correct one for both passwords. After all the new staff details are entered, the program will display the new staff list with the current staff before exiting to the “Edit Staff” page, as shown in Figure 5.1.3.

```

-----
|                               Add New Staff                               |
-----

Press Q/q to exit the system.

New staff
Staff ID (6-digit): 121212
Password: joker
Re-enter password: joker
First Name: Allan
Last Name: Vick
Gender: Male
E-mail address: t_thisnote12@hotmail.com_

```

Figure 5.1.2: Add Staff (adding details of new staff)

```

-----
|                               Staff List                               |
-----

Staff ID      Password      First Name    Last Name     Gender      E-Mail
677509       Raven0627     Loise        Walker        Male        kagamine999@gmail.com
940761       Firerri      Brenda       Robinson      Female      brenda.robinson@gmail.com
428945       Darren112    Joe          Evans         Male        joe.robinson@gmail.com
408351       asdfjkl     Diane        Russell       Female      diane.evans@yahoo.com
193819       k&s@        Benjamin     Russell       Male        benjamin.russell@charter.net
499687       ninja       Patrick      Bailey        Male        patrick.bailey@aol.com
539712       road        Nancy        Baker         Female      nancy.baker@bp.com
121212       joker       Allan        Vick          Male        t_thisnote12@hotmail.com

Total number of staff: 8
Storing data...
Data completely stored!

Press any key to continue . . .

```

Figure 5.1.3: Add Staff (printing out details of a new staff list)

For number 2, the user can edit staff details in a few categories. The user will be asked to enter the staff ID number or enter 'Q' or 'q' character to return to the "Edit Staff" menu page. If the user enters the correct staff ID number, the program will print out the details of the staff found in the linked list for confirmation, as shown in Figure 5.1.4. But if the users enter the wrong ID number, the "Edit Staff Detail" menu page will be refreshed and the user will be asked to either enter the ID number of staff or 'Q/q' character again. The six categories available to edit the specific data are [1] ID number, [2] Password, [3] First name, [4] Last name, [5] Gender and [6] Email as shown in Figure 5.1.5. After the specific data of staff has been edited, the "Edit Staff Detail" program will display the updated staff list with the number of current staff before exiting to the "Edit Staff" menu page, as shown in Figure 5.1.6.


```

-----
|                               Edit Staff Detail                               |
-----

Enter the staff id for editing he/she details.
Press Q/q to exit the system.

Staff ID: 677509

Staff ID:677509
Password:Raven0627
First Name:Loise
Last Name:Walker
Gender:Male
E-Mail:kagamine999@gmail.com

Is the staff selected is correct? [Y/N]
Choice:

```

Figure 5.1.4: Edit Staff Detail (inserting the ID of a selected staff)

```

Which category of the staff detail you would like to edit?
[1] Staff ID
[2] Password
[3] First name
[4] Last name
[5] Gender
[6] E-mail
Choice:

```

Figure 5.1.5: Edit Staff Detail (editing specific detail of a staff)

```

-----
|                               Staff List                               |
-----

Staff ID      Password      First Name    Last Name     Gender        E-Mail
677509        Raven0627      Loise         Walker         Male          kagamine999@gmail.com
940761        Firerri        Brenda        Robinson       Female         brenda.robinson@gmail.com
428945        Darren112      Joe           Evans          Male          joe.robinson@gmail.com
408351        asdfjkl        Diane         Russell        Female         diane.evans@yahoo.com
193819        k&s@          Benjamin      Russell        Male          benjamin.russell@charter.net
499687        ninja          Patrick       Bailey         Male          patrick.bailey@aol.com
539712        road           Nancy         Baker          Female         nancy.baker@bp.com

Total number of staff: 8
Press any key to continue . . .

```

Figure 5.1.6: Edit Staff Detail (printing out details of a new staff list)

For number 3, the user can delete staff details. The user will be asked to enter the ID number and the staff's last name. If the user enters correctly, all the details of the selected staff will be deleted from the list. But if the user entered a wrong ID number, a wrong last name or both, the program would alert the user of non-existence data and ask them to choose whether they would like to continue to re-enter the correct ID number with the last name of a staff or exit the program to the "Edit Staff" menu page. The "Delete Staff" program will display the new staff list with the current staff before exiting to the "Edit Staff" menu page.

```

-----
|                                Delete Staff                                |
-----

Which staff you would like to delete?
Press Q/q to exit the system.

Staff ID: 408351
Staff last name: Russel

```

Figure 5.1.7: Delete Staff (inserting the ID and Last name of a selected staff)

```

-----
|                                Delete Staff                                |
-----

Which staff you would like to delete?
Press Q/q to exit the system.

Staff ID: 408351
Staff last name: Russel

-----
|                                Staff List                                |
-----

Staff ID      Password      First Name    Last Name     Gender        E-Mail
677509       Raven0627      Loise         Walker        Male          kagamine999@gmail.com
940761       Firerri        Brenda        Robinson      Female        brenda.robinson@gmail.com
428945       Darren112      Joe           Evans         Male          joe.robinson@gmail.com
193819       k&s@          Benjamin      Russell       Male          benjamin.russell@charter.net
499687       ninja          Patrick       Bailey        Male          patrick.bailey@aol.com
539712       road           Nancy         Baker         Female        nancy.baker@bp.com
121212       joker          Allan         Vick          Male          t_thisnote12@hotmail.com

Total number of staff: 7
Press any key to continue . . .

```

Figure 5.1.8: Delete Staff (printing out details of a new staff list)

For number 4, the program will display the new staff list with the number of current staff before exiting to the “Edit Staff” menu page, as shown in Figure 5.1.9.

Staff List					
Emp ID	Password	First Name	Last Name	Gender	E-Mail
677509	Raven0627	Loise	Walker	Male	kagamine999@gmail.com
940761	Fireerri	Brenda	Robinson	Female	brenda.robinson@gmail.com
428945	Darren112	Joe	Evans	Male	joe.robinson@gmail.com
193819	k&s@	Benjamin	Russell	Male	benjamin.russell@charter.net
499687	ninja	Patrick	Bailey	Male	patrick.bailey@aol.com
539712	road	Nancy	Baker	Female	nancy.baker@bp.com
121212	joker	Allan	Vick	Male	t_thisnote12@hotmail.com
Total number of staff: 7					
Press any key to continue . . .					

Figure 5.1.9: Print Staff List

Lastly, for number 5, the “Edit Staff” program will exit back to the “Admin System” menu page. If the user enters other characters or numbers, the program will alert the user to enter the correct number, and the Edit Staff page will be displayed again.

Meanwhile, during the Staff Menu pages displayed, if the user decides to press 2, the “Overview Victim” page will be displayed. They will be given two options. For entering ‘Y’ or ‘y’ character, the program will sort the details of victims. There are eight categories available to sort the victim’s data, which are [1] First name, [2] Last name, [3] IC number, [4] Phone number, [5] Parent’s phone number, [6] Centre name, [7] Status and [8] Day elapsed as shown in Figure 5.1.11. When the selected category of the victim was sorted, the program will display the new victim list with the number of current victims before exiting the “Sort Victim” page. If the user wants to exit the “Sort Victim” program, [9] Exit will also be given on the “Sort Victim” page. On the other hand, if the user entered the ‘N’ or ‘n’ character, the program would exit to the ‘Admin System’ menu page.

```
Would you like to sort the list according to category? [Y/N]
Choice: y
```

Figure 5.1.10: Overview Victim (entering the option)

```

----- Sort Victim List By Category -----
Which category you wish to sort by?
[1] First Name
[2] Last Name
[3] IC Number
[4] Phone Number
[5] Parent's Phone Number
[6] Centre Name
[7] Status
[8] Days Elapsed
[9] Exit

Choice: 3
First Name      Last Name      Gender      IC Number      Phone Number      Parent's Phone Number      Centre Name      Status      Elapsed(days)
Tan             XingFei       Female      001012-13-9653  019-6344689      011-8832792      Shah_Alam       Missing     17
Ravi            Kumar         Male        010715-07-8432  013-9454892      019-0675367      Georgetown      Survived    14
Peterson        Sunita        Male        010725-10-6729  019-0785683      019-3881892      Kuala_Langat    Missing     15
Jack            Alexander     Male        021134-10-5245  019-9562756      011-8875345      Shah_Alam       Missing     5
Carol           Ehsan         Male        040517-05-0234  011-8844388      013-9642774      Kuala_Langat    Survived    24
Thomas          Lewis         Male        700416-04-8321  013-0463264      011-8420325      Kuala_Langat    Missing     14
Theresa          Lee           Female      770920-10-0976  019-7674229      018-8256789      Shah_Alam       Deceased    -
Joshua          Stewart       Male        801121-06-5721  011-8455379      011-1361682      Raub            Survived    16
Julia           Scott         Female      810204-07-5621  018-7731124      011-9065345      Georgetown      Missing     26
Cheryl          Scott         Female      850830-10-5135  019-8655278      011-1389534      Shah_Alam       Survived    23
Wayne           Watson        Male        870216-07-7216  013-0747222      019-7298762      Georgetown      Missing     4
Xenon           Joe           Male        881224-05-6534  019-0665382      011-2367823      Shah_Alam       Missing     21
Robinson        Raiyan        Male        900927-11-7313  013-7645887      019-6678324      Kuala_Langat    Survived    32
Paula           Diaz          Female      911026-06-9564  011-6726892      013-8452213      Raub            Deceased    -
Jack            Reyhan        Male        930217-12-7331  018-9953622      013-5639889      Raub            Survived    2
Melissa         King          Female      931226-07-8383  018-9520562      013-5325812      Kuala_Langat    Survived    6
Crystal         Arsyad        Male        941120-06-6266  011-8455672      013-5368486      Raub            Survived    19
Bailey          Balqis        Female      950623-03-9535  011-1234677      018-7743824      Shah_Alam       Deceased    -
Raymen          HongWei       Female      980316-08-6231  019-8864317      018-5689932      Georgetown      Missing     6
Spice           Raghu         Female      990521-05-2411  011-5772189      011-7643725      Shah_Alam       Survived    4

Total number of victims: 21
Storing data...
Data completely stored!

Press any key to continue . . .

```

Figure 5.1.11: Sort Victim

5.2 Staff System

On the Staff Menu page, there are four options given to the user, which are “Register victim”, “Search and update victim status”, “Print victim list”, and “Exit” as shown in Figure 5.2.0. By entering number 1, the user will go to the “Register Victim” menu page as shown in Figure 5.2.1. By entering number 2, the user will go to the “Search and Update Victim” menu page as shown in Figure 5.2.2. Next, by entering number 3, the user will go to the “Print Victim List” menu page as shown in Figure 5.2.3. Lastly, by entering number 4, the “Staff Menu” will exit and return to the “Main Menu”. If the user enters other characters or numbers, the program will alert the user to enter the correct number and the “Staff Menu” menu page will be displayed again.

```

----- Staff System -----
Staff ID: 677509

[1] Register victim
[2] Search and update victim status
[3] Print victim list
[4] Exit

Choice: 

```

Figure 5.2.0: Staff Menu

```

----- Register Victim -----
Press Q/q to exit the system.
First name: Mike
Last name: Lee
Gender: Male
IC number: 981224-05-4453
Phone number: 019-4556213
Parent's phone number: 018-6797214
Centre name: Raub
What is the status of the victim?
[1] Survived
[2] Missing
[3] Deceased

Choice: `
Invalid character! Please try again
What is the status of the victim?
[1] Survived
[2] Missing
[3] Deceased

Choice: 1
Status: Survived
Enter the incident date:-
Day: 11
Month: 01
Year: 2022

```

Figure 5.2.1: Register New Victim

```

----- Search and Update Victim Status -----
Which categories you wish to search through?
[1] Last Name
[2] IC Number
[3] HP Number
[4] Exit

Choice: 

```

Figure 5.2.2: Search Victim by category

First Name	Last Name	Gender	IC Number	Phone Number	Parent's Phone Number	Centre Name	Status	Elapsed(days)
Jack	Alexander	Male	021134-10-5245	019-9562756	011-8875345	Shah Alam	Missing	5
Melissa	King	Female	931226-07-8383	018-9520562	013-5325812	Kuala_Langat	Survived	6
Wayne	Watson	Male	870216-07-7216	013-0747222	019-7298762	Georgetown	Missing	4
Cheryl	Scott	Female	850830-10-5135	019-8655278	011-1389554	Shah Alam	Survived	23
Paula	Diaz	Female	911026-06-9564	011-6726892	013-8453213	Raub	Deceased	-
Joshua	Stewart	Male	801121-06-5721	011-8455379	011-1361682	Raub	Survived	16
Theresa	Lee	Female	770928-10-0076	019-7674329	018-8256789	Shah Alam	Deceased	-
Julia	Scott	Female	810204-07-5621	018-7731124	011-9965345	Georgetown	Missing	26
Thomas	Lewis	Male	700416-04-8321	013-0463264	011-8429325	Kuala_Langat	Missing	14
Jack	Reyhan	Male	930217-12-7331	018-9953622	013-5639889	Raub	Survived	2
Waymen	Hongkei	Female	980316-08-6231	019-8864317	018-5689332	Georgetown	Missing	6
Spice	Raghu	Female	990521-05-2411	011-5772189	011-7643725	Shah Alam	Survived	4
Carol	Ehsan	Male	040517-05-0234	011-8844388	013-9642774	Kuala_Langat	Survived	24
Peterson	Sunita	Male	010725-10-6729	019-0785683	019-3881892	Kuala_Langat	Missing	15
Bailey	Balqis	Female	950623-03-9535	011-1234677	018-7743824	Shah Alam	Deceased	-
Robinson	Raiyan	Male	908927-11-7313	013-7645887	019-6678324	Kuala_Langat	Survived	32
Ravi	Kumar	Male	010715-07-8432	013-9454892	019-0675367	Georgetown	Survived	14
Tan	XingFei	Female	001012-13-9653	019-6344689	011-8832792	Shah Alam	Missing	17
Crystal	Arsyad	Male	941120-06-6266	011-8455672	013-5368486	Raub	Survived	19
Xenon	Joe	Male	881224-05-6534	019-0665382	011-2367823	Shah Alam	Missing	21
Nik	akif	Male	900213-08-6554	019-6421545	013-6534216	Raub	Missing	4

Total number of victims: 21
Welcome back! q
[1] Register victim
[2] Search and update victim status
[3] Print victim list
[4] Exit
Please enter a choice:

Figure 5.2.3: Register Victim Menu

If the user press number 1, the user can register new victim data. The user then will be requested to enter the first name, last name, gender, IC Number, phone number, parent's phone number, centre name, status and days elapsed accordingly. After all the new victim

Search and Update Victim Status									
Which categories you wish to search through?									
[1] Last Name									
[2] IC Number									
[3] HP Number									
[4] Exit									
Choice: 1									
First Name	Last Name	Gender	IC Number	Phone Number	Parent's Phone Number	Centre Name	Status	Elapsed(days)	
Jack	Alexander	Male	021134-10-5245	019-9562756	011-8875345	Shah Alam	Missing	5	
Melissa	King	Female	931226-07-8383	018-9528562	013-5325812	Kuala Langat	Survived	6	
Wayne	Watson	Male	879216-07-7216	013-0747222	019-7208762	Georgetown	Missing	4	
Charyl	Scott	Female	850830-10-5135	019-8655278	011-1389554	Shah Alam	Survived	23	
Paula	Diaz	Female	011026-06-9564	011-6726892	013-8453213	Raub	Deceased	-	
Joshua	Stewart	Male	881121-06-5721	011-8455379	011-1361682	Raub	Survived	16	
Theresa	Lee	Female	770928-10-0976	019-7674329	018-8256789	Shah Alam	Deceased	-	
Julia	Scott	Female	810204-07-5621	018-7731124	011-9965345	Georgetown	Missing	26	
Thomas	Lewis	Male	700416-04-8321	013-0463264	011-8429325	Kuala Langat	Missing	14	
Jack	Reyhan	Male	930217-12-7331	018-9953622	013-5639889	Raub	Survived	2	
Raymen	HongWei	Female	980316-08-6231	019-8864317	018-5689932	Georgetown	Missing	6	
Spice	Raghu	Female	900521-05-2411	011-5772189	011-7643725	Shah Alam	Survived	4	
Ethan	Ehsan	Male	040517-05-0234	011-8944388	013-9642774	Kuala Langat	Survived	24	
Peterson	Sunlita	Male	010725-10-6729	019-0785683	019-3881892	Kuala Langat	Missing	15	
Bailey	Balqis	Female	950623-03-9535	011-1234677	018-7743824	Shah Alam	Deceased	-	
Robinson	Raiyan	Male	900927-11-7313	013-7645887	019-6678324	Kuala Langat	Survived	32	
Ravi	Kumar	Male	010715-07-8432	013-9454892	019-0675367	Georgetown	Survived	14	
Tan	XingFei	Female	901012-13-9653	019-6344689	011-8832792	Shah Alam	Missing	17	
Crystal	Arsyad	Male	941120-06-6266	011-8455672	013-5368486	Raub	Survived	19	
Xenon	Joe	Male	881224-05-6534	019-0665382	011-2367823	Shah Alam	Missing	21	
Mike	Lee	Male	881224-05-4453	019-4556213	018-6797214	Raub	Survived	14	
Total number of victims: 21									
The last name required to update for:									

```
|-----|
| Update Victim Detail |-----|
|-----|
First Name: Melissa
Last Name: King
Gender: Female
IC Number: 931226-07-8383
Phone Number: 018-9520562
Parent's Phone Number: 013-5325812
Centre Name: Kuala_Langat
Status: Survived
Elapsed(days): 6

Do you like to update the victim information/status? [Y/N]
Choice: y

Which category you wish to edit
[1] First Name
[2] Last Name
[3] IC Number
[4] Phone Number
[5] Parent's Phone Number
[6] Centre Name
[7] Status
[8] Days Elapsed
[9] Exit

Choice: _
```

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When the searched name is in the data, it then will be printed, and the user will be asked whether to update the victim status. If the user enters 'N' or 'n', then the program will return to the "Search Victim By Category" menu, but if the user decides to update it, then they will be requested to pick which details that needed to update (*First name, Last name, Gender, IC Number, Phone Number, Parent's Phone Number, Centre Name, Status and Days Elapsed*) as shown in Figure 9.2.5. After the status is updated, the user will be asked whether they want to update another details status or not. If there is nothing to update anymore, the user can insert 'N' or 'n', the program will print the latest victim list for confirmation before returning to the "Search and Update Victim" menu page.

```
|----- Sort Victim List By Category -----|
|
Which category you wish to sort by?
[1] First Name
[2] Last Name
[3] IC Number
[4] Phone Number
[5] Parent's Phone Number
[6] Centre Name
[7] Status
[8] Days Elapsed
[9] Exit
Choice:
```

Figure 5.2.8: Print Victim List

For number 3, the user can choose to display all the victim lists. The "Print Victim List" menu will show all the details of the current victim. Then, the user will be asked whether they want to sort the list through several categories: *First name, Last name, Gender, IC number, Phone number, Parent's phone number, Centre name, Status, and Days elapsed*. After sorting, the data will be stored as a text file, and the program will be looped back to itself.

Lastly, by entering the number 4, the "Staff Menu" program will exit back to the "Main Menu" page. If the user enters other characters or numbers, the program will alert the user to enter the correct number and the "Staff System" menu page will be displayed again.

6.0 Conclusion

In conclusion, the set objectives were achieved by detailing each of the methods required to overcome the problems encountered as stated in the Problem Statement section. The concept we applied to our victim registration system project was to ensure that crowd control and disaster management became more efficient and organized.

First, we have created the system interface to have different permission access i.e., the admin interface and the staff interface. Admin and staff are both required to log in to the system before they can begin using the system. Once logged in, the admin can choose whether to increase the number of staff or monitor the overview of the victims. For staff, they can choose to either check and update the victim's condition or register new victims. These features can help rescuers to help victims more quickly and in an organized way.

The system is also conducive and user friendly. In the future, we hope this project can be enhanced to make the victim registration system better and more usable for any situation. For this project, the scale is much smaller and simpler than existing applications. Finally, the project has been completed by applying some concepts from the subject of engineering algorithms.

7.0 References

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3.	NIK AKIF HAZIQI BIN ROHAIDI	208150	Coding – Check and update victim status Report – Result & Discussion Slide Presentation
4.	MUHAMMAD AQIL WAFIY BIN AZMAN	207585	Coding – Register new victim Report – Abstract, Conclusion, Cover Page and TOC Slide Presentation
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