

**Project on**

# **DISASTER MANAGEMENT**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**CSE 2112 : OBJECT-ORIENTED PROGRAMMING LAB**

**University of Dhaka**

**Presented by**

**Group -02**

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# Introduction

- **The disaster management system is a project designed to address the needs of citizens, administrators, and responders during emergency situations.**
- **Its primary focus is to ensure smooth communication, disaster reporting, and help coordination.**


## Objective

- **Allow users to report disasters, receive survival guidance, and access emergency contacts.**
- **Enable admins to manage disaster reports, assign tasks.**
- **Provide volunteers with the ability to track their performance and report task completion.**
- **Facilitate smooth communication and coordination between clients and admin by chat application.**

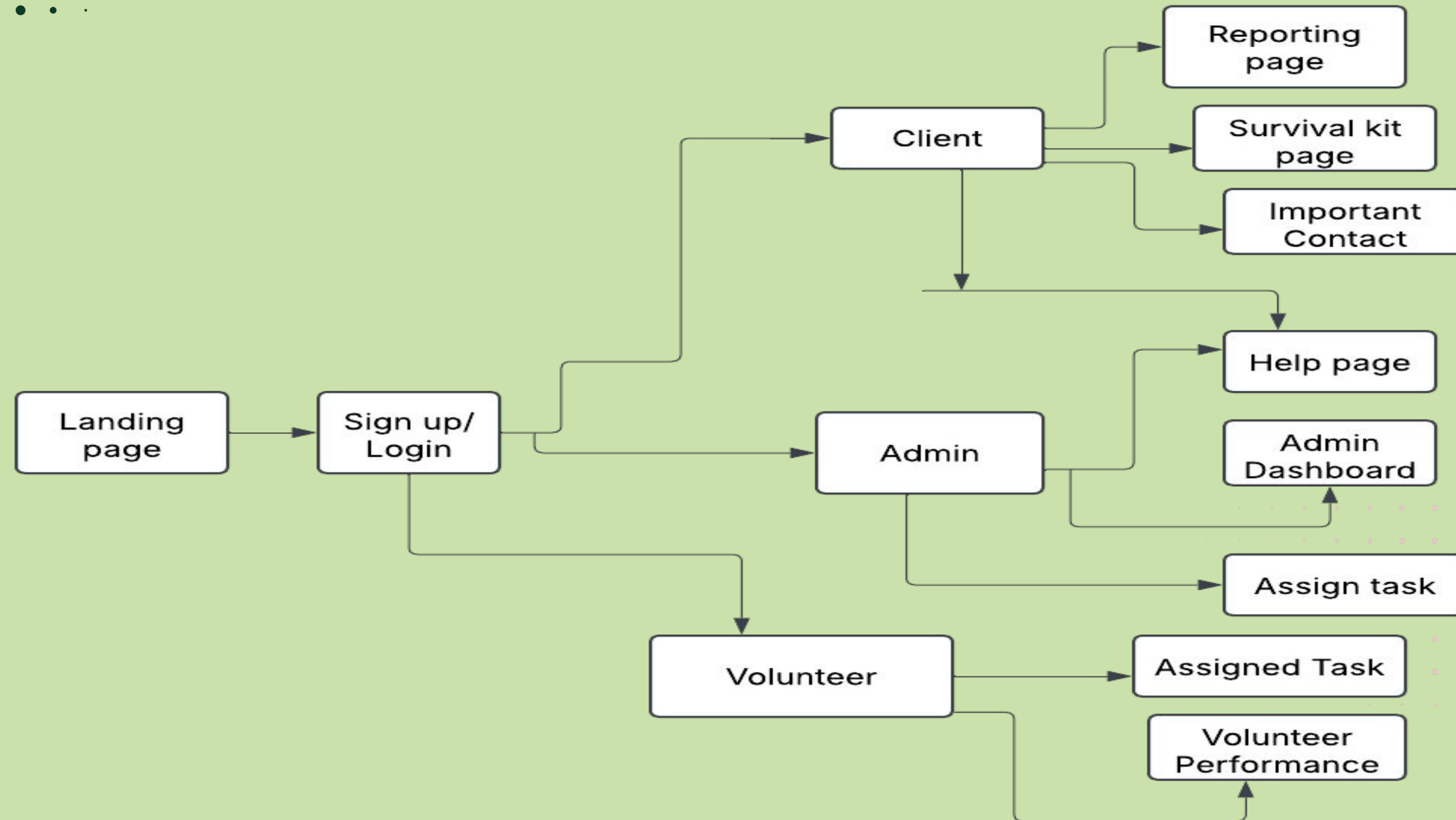


# TOOLS

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- **IDE: IntelliJ**
  - **Language: JAVA**
  - **Framework: JavaFx**
  - **Database: MySQL**
  - **Testing: Manual testing for the overall system functionality**
- 

# WORK OVERFLOW



# User Interface

## Sign up & Login

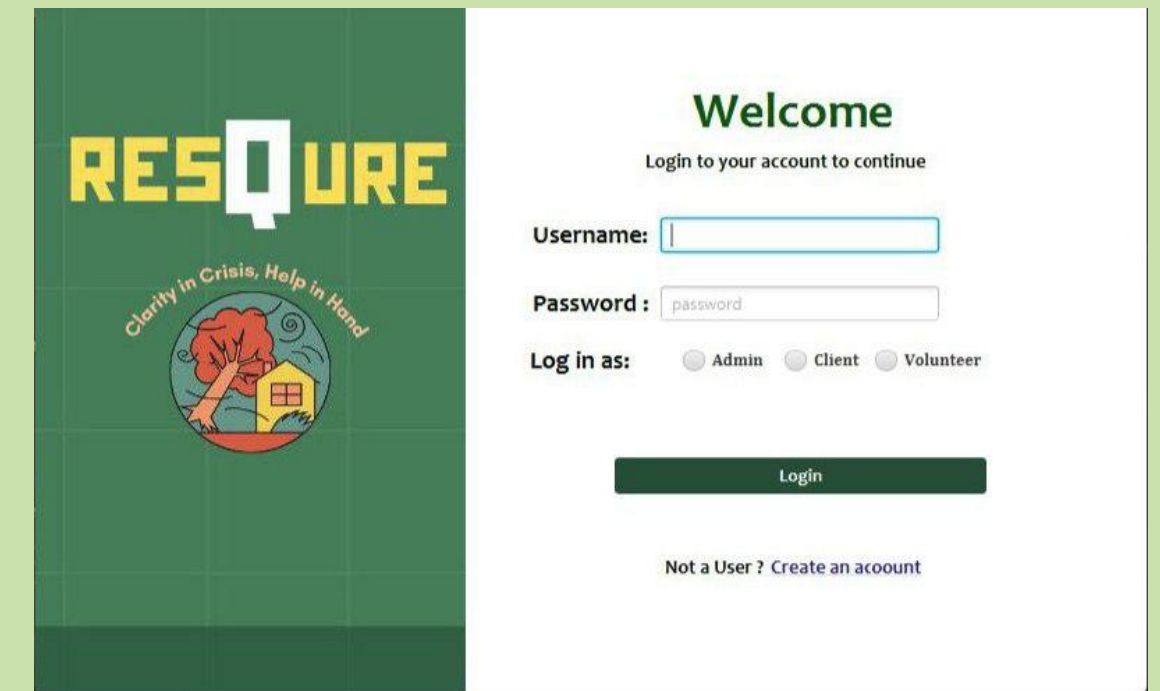
-User will signup and login according to their role.

-This feature ensures authentication of the users by database connection and exception handling.



Landing page

Login page



SignUp page





# User Interface

## Client Dashboard

-The Client's basic information is displayed.

-The dashboard serves as the central platform for clients by providing access to key features .



Client Dashboard

# User Interface

## Reporting Page

-Users can submit disaster reports with location, severity, and description.

-The information is stored in Admin's database for further help.

-Using file writer method , a text based log file has been created.



The screenshot shows a web form titled "Report an Incident" with a home icon and the text "Tell us about disaster or emergency in our area to ensure timely assistance". The form includes fields for Username, Contact, Division, Disaster Date, Description, Disaster Type, Severity (with radio buttons for Severe, Mild, and Moderate), Location, and Reporting Date. A "Submit" button is at the bottom.

## Reporting page

```
Report Date: 2025-01-16
Name: soma
Contact: 018*****
Location: Dhaka
Severity: Severe
Description: Urgent need of food
-----
Report Date: 2025-01-22
Name: soma
Contact:0181*****
Location: Chattogram
Severity: Severe
Description: Medical Support needed
-----
Report Date: 2025-01-23
Name: soma
Contact: 0181*****
Location: Khulna
Severity: Severe
Description: lack of pure water
-----
Report Date: 2025-01-03
Name: soma
Contact:0181*****
```

## Report log Information File



# User Interface

## Survival Kit :

- Offers specific advice based on the disaster type, special needs, and water availability.

- Helps users calculate the amount of food and water required for a certain number of days and people

- If the user in need, they can ask the items to admin.

The screenshot shows the 'Survival Kit' form with the following fields and values:

- What type of disaster ? : Select a option (dropdown menu)
- How many people are in your household? : number of people (text input)
- How many days will you need supplies for? : number of days (text input)
- Does anyone in your household have special needs? : Select a option (dropdown menu)
- Do you have a way to purify water or access to a clean water source? : Select a option (dropdown menu)

At the bottom, there are two buttons: 'Back' and 'Get result'.

The screenshot shows the 'Survival Kit' form with the following fields and values:

- What type of disaster ? : Earthquake (dropdown menu)
- How many people are in your household? : 4 (text input)
- How many days will you need supplies for? : 2 (text input)
- Does anyone in your household have special needs? : Infants (dropdown menu)
- Do you have a way to purify water or access to a clean water source? : Yes (dropdown menu)

At the bottom, there are two buttons: 'Back' and 'Get result'.

## Survival Kit page

# User Interface

## Important contact page :

-Provides important contacts of different designation along with location.

-The data can be filtered out by designation or location for faster outcome.



The screenshot shows the 'Important Contacts' page. At the top, there is a green header with a white telephone icon, the text 'Important Contacts' in yellow, and a 'Home' link with a house icon. Below the header is a search bar with the placeholder text 'Search :'. Under the search bar is a table with five columns: ID, Name, Role, Phone, and Location. The table contains ten rows of data.

ID	Name	Role	Phone	Location
Mr.X		Doctor	0132*****	Dhaka
Mr.Y		FireFighter	0198*****	Khulna
Mr.A		Ambulance Owner	0131*****	Dhaka
Mr.B		Doctor	012*****	Rajshai
Mr.P		Doctor	0129*****	Dhaka
Mr.Z		FireFighter	0189***	Barishal
Mr.T		Emergency Unit	017*****	Khulna
Mr.R		Eye Doctor	01378*****	Dhaka
Mr.G		Blood donor Manager	0123*****	Khulna
Mr.X		FireFighter	0198*****	Rajshahi
Mr.Q		Doctor	0187*****	Rajshahi



The screenshot shows the 'Important Contacts' page with the search bar containing the text 'Dhaka'. The table below shows only the contacts located in Dhaka, which are Mr.X, Mr.A, Mr.P, Mr.R, and Mr.G.

ID	Name	Role	Phone	Location
Mr.X		Doctor	0132*****	Dhaka
Mr.A		Ambulance Owner	0131*****	Dhaka
Mr.P		Doctor	0129*****	Dhaka
Mr.R		Eye Doctor	01378*****	Dhaka
Mr.G		Blood donor Manager	0123*****	Khulna

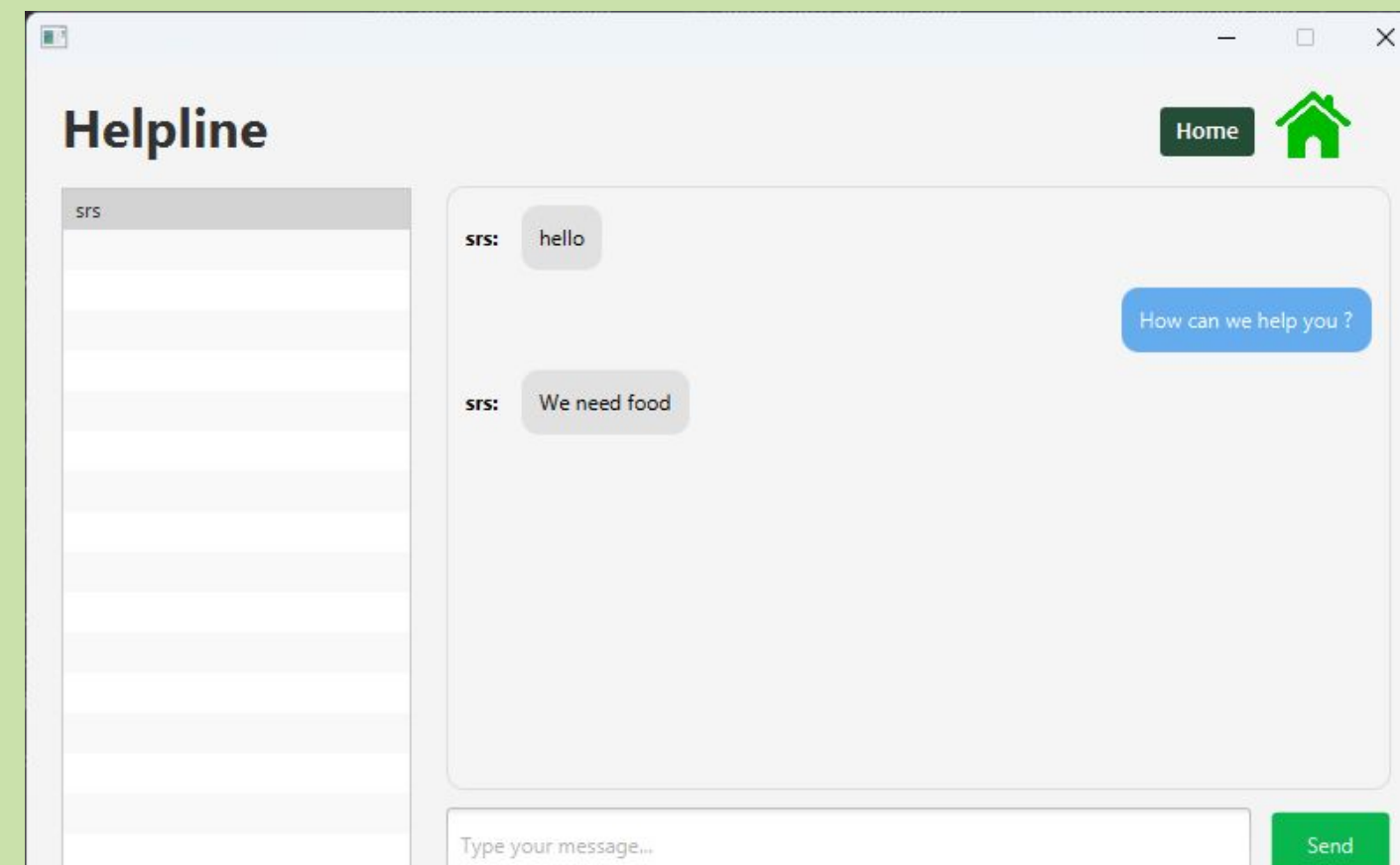
Important Contact page

# User Interface

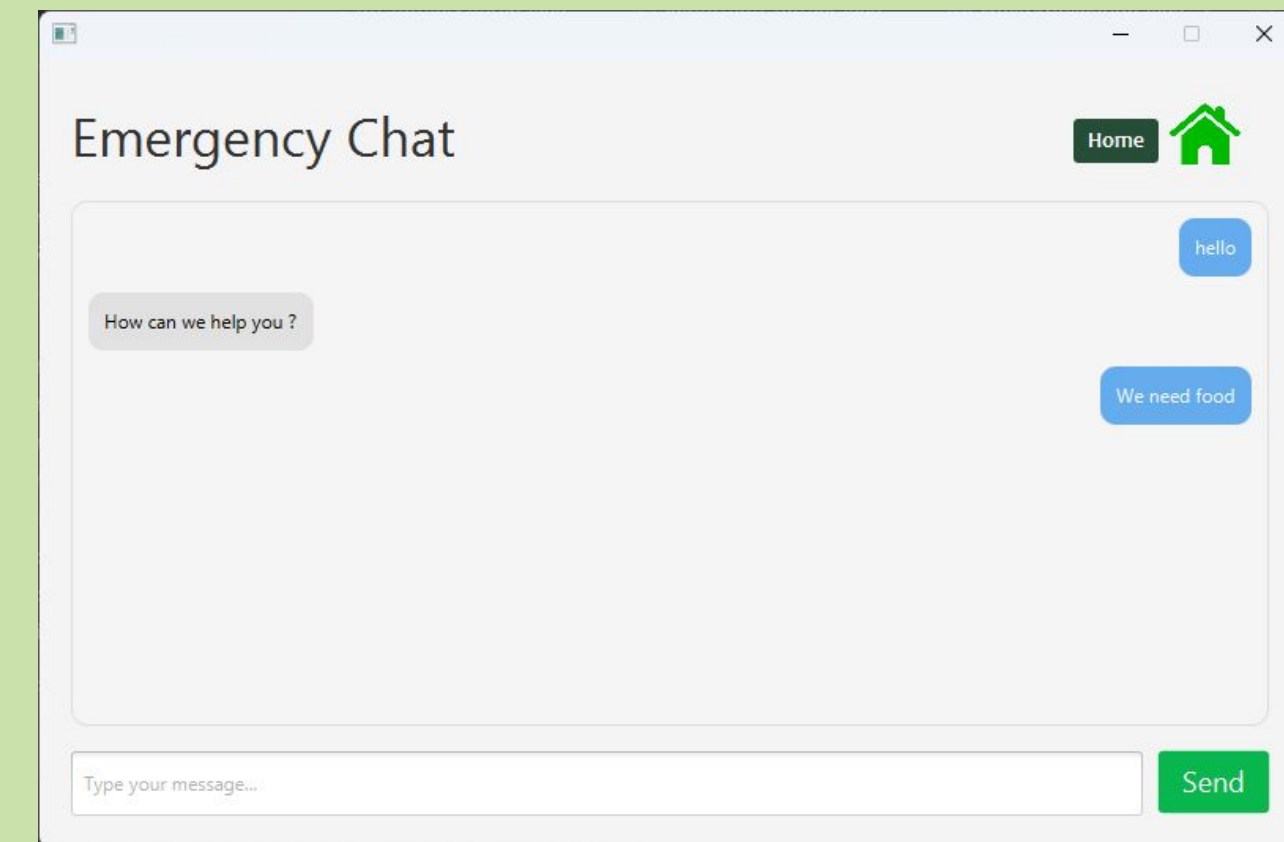
## Chat Application :

-The chat application enables real-time communication between client and Admin ensuring quick response during emergency .

-We used server-socket to build this.



Admin Helpline page

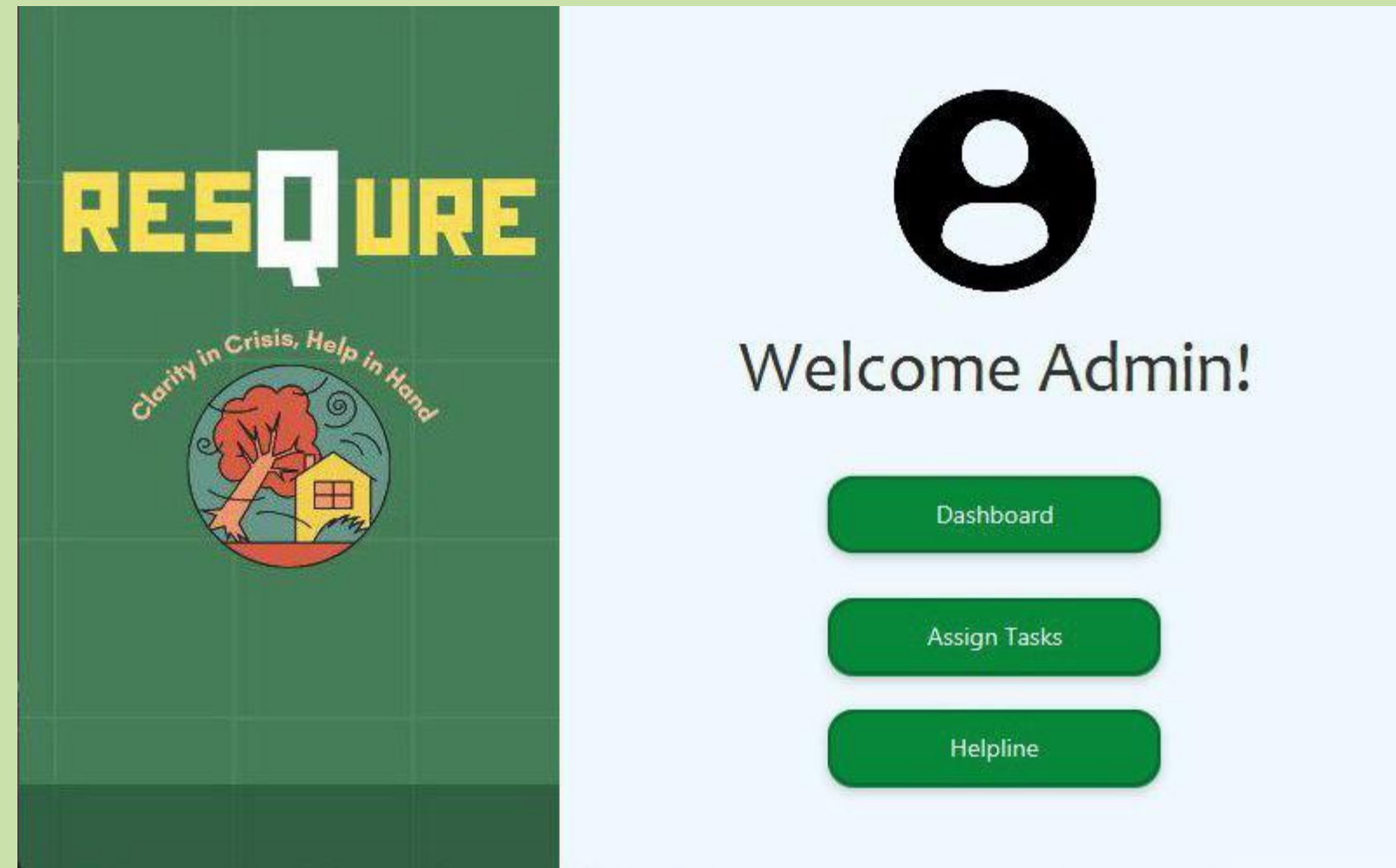


Client Helpline page

# User Interface

## Admin landing page :

-The landing page serves as the central platform for admins by providing access to key features



Admin Landing Page



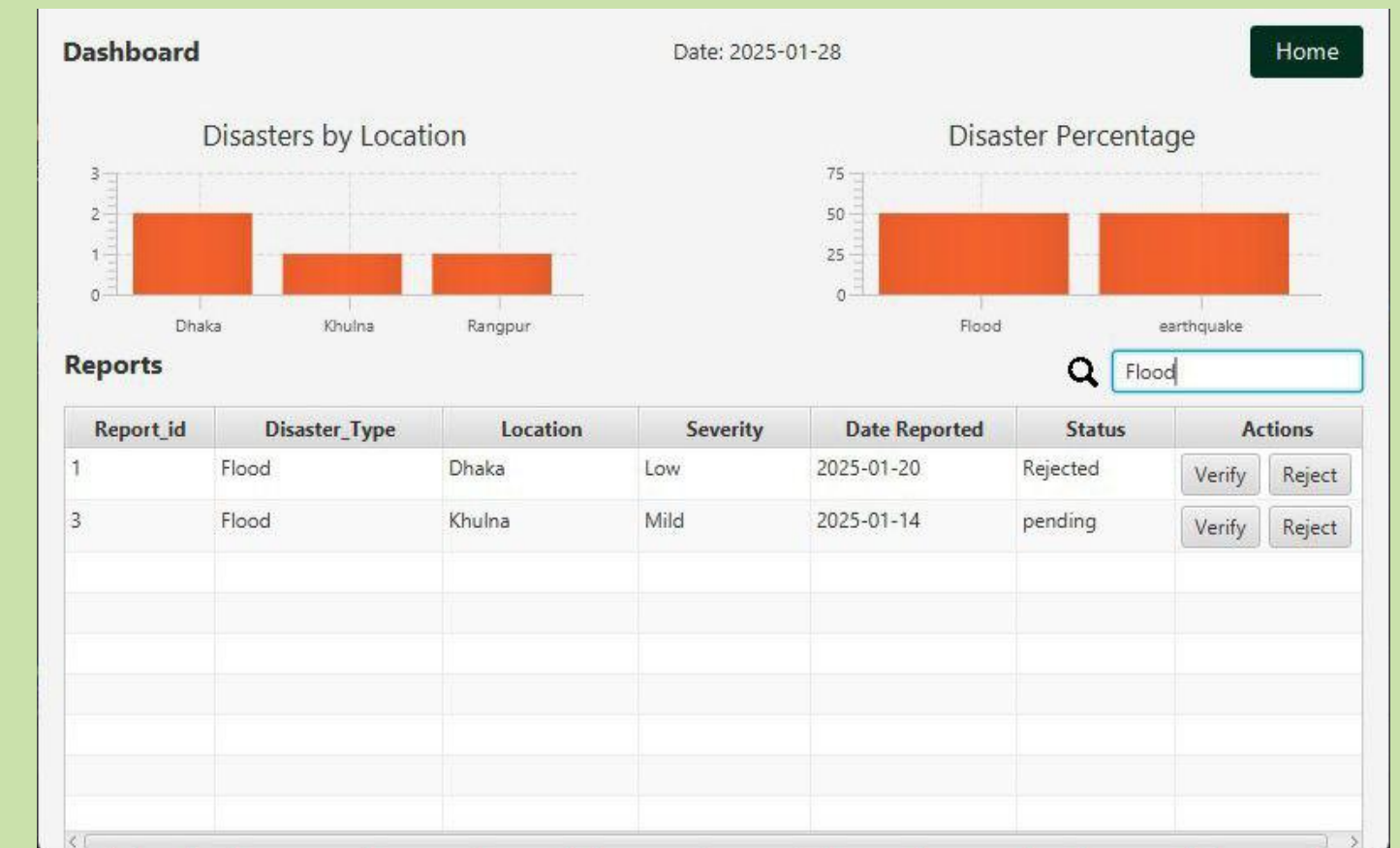
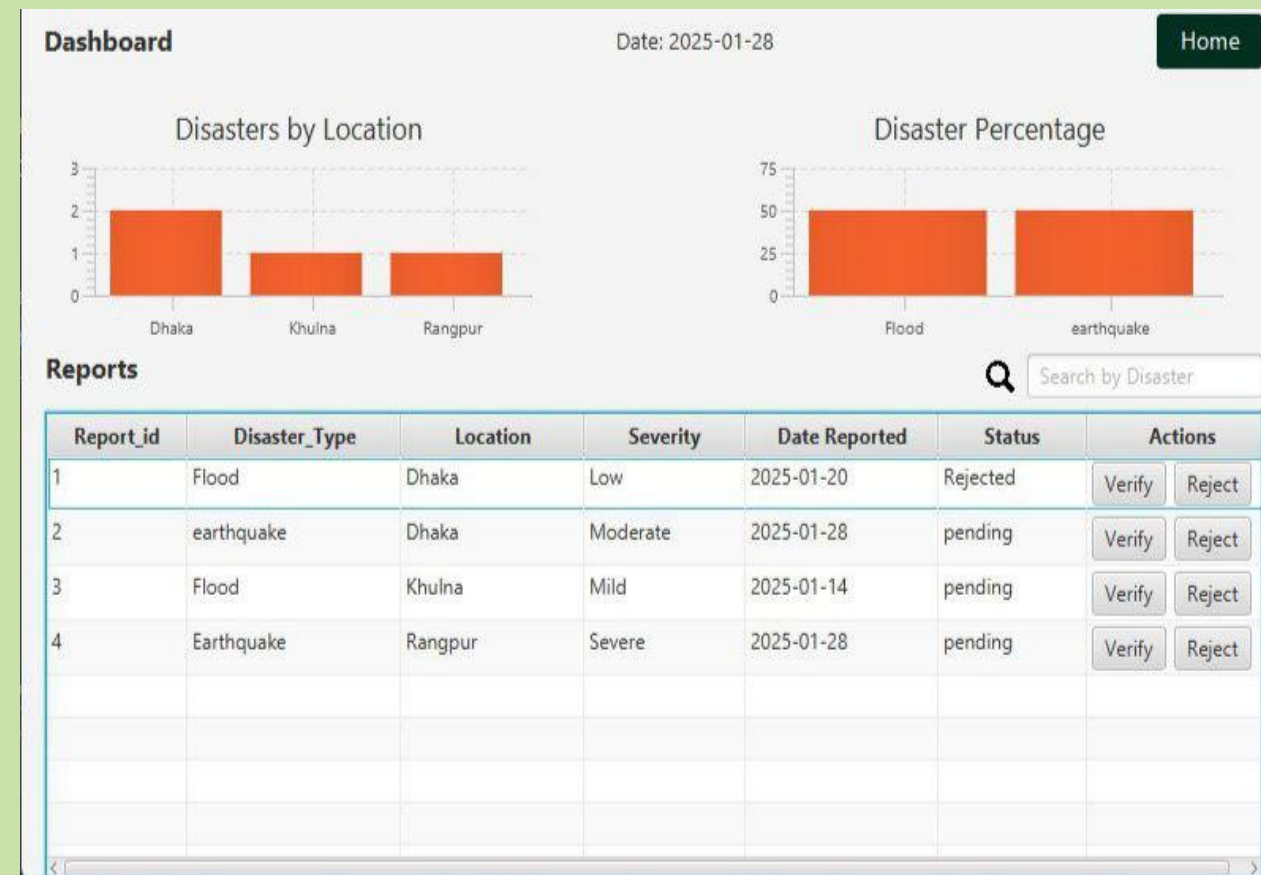
# User Interface

## Admin Dashboard:

-The dashboard provides all the reports submitted by the user.

-The bar graph highlights predictions of people who are most in need.

-The admin can verify and reject any report.



## Admin Dashboard

# User Interface

## Assign Tasks:

-Based on the clients need , admin can assign task to volunteers providing necessary information about the task.

Volunteer Tasks

Home

Task ID	Task Title	Description	Location	Disaster Type	Assigned Date	Status
1	Distribute Food Supplies	Deliver food packages and report ...	Sylhet	Flood	2025-01-20	Confirmed
2	Assist in evacuation	Help evacuate families to the nerby ...	Dhaka	Earthquake	2025-01-27	Confirmed
3	Distribute medicine	Find the most needy people and d...	Khulna	Flood	2025-01-27	Pending

Task Title:

Enter task title

Description:

Enter task description

Location:

Enter location

Disaster Type:

Enter disaster type

Assigned Date:

Add Task

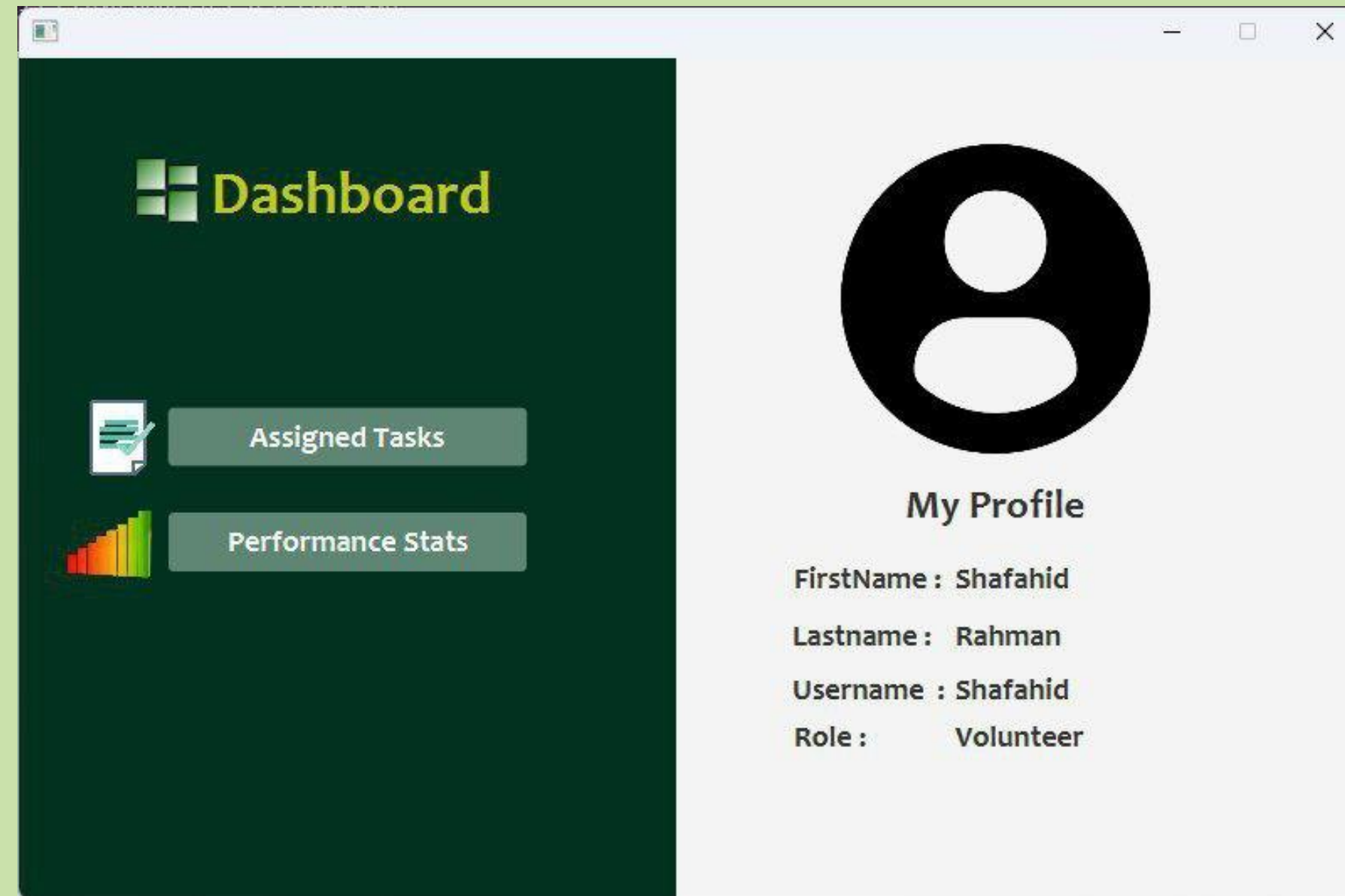
Assign task page



# User Interface

## Volunteer Dashboard:

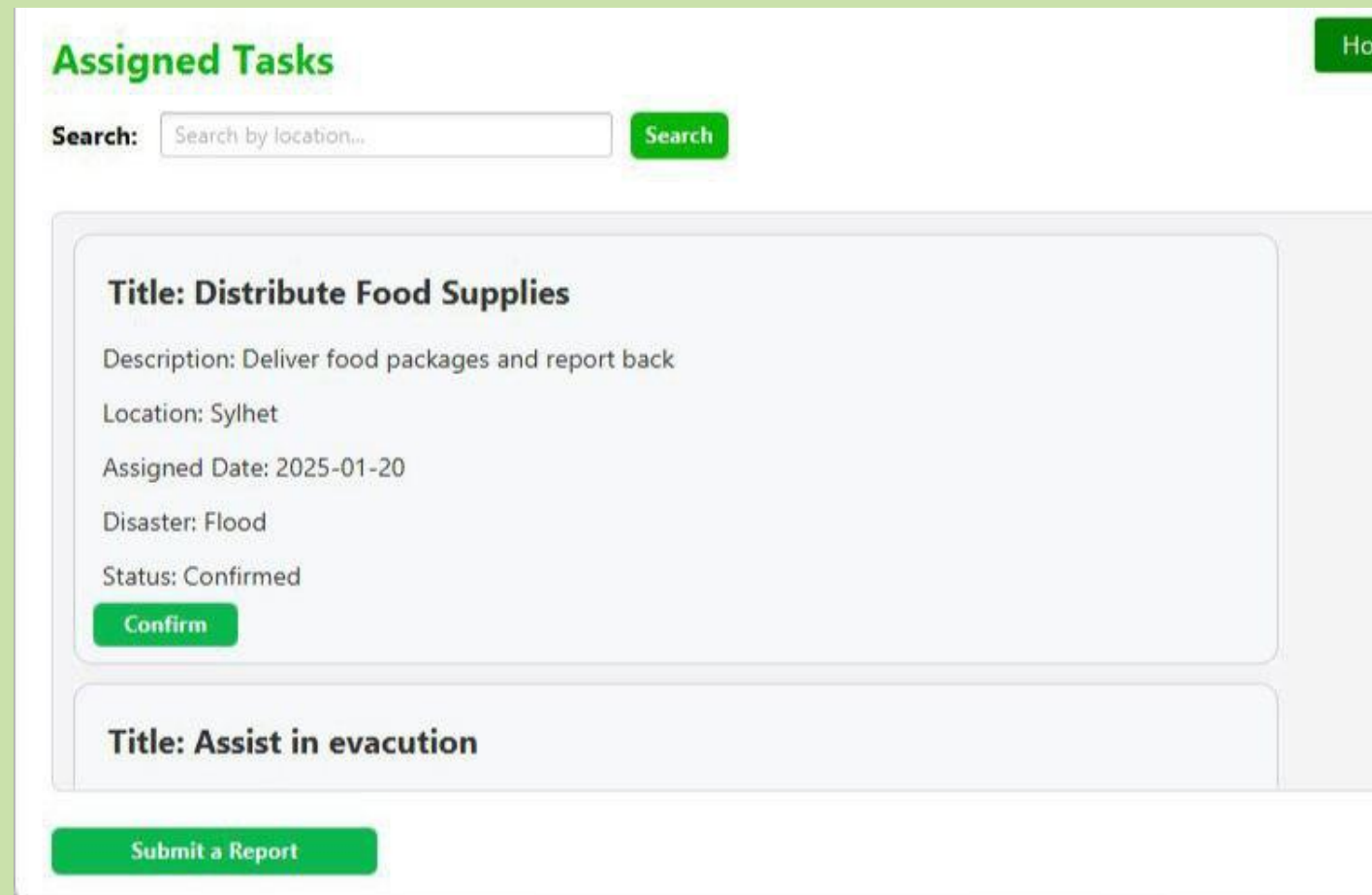
- The Volunteer's basic information is displayed.
- The dashboard serves as the central platform for volunteers by providing access to key features.



Volunteer Dashboard page

# User Interface

## Volunteer Assigned Task :



The screenshot shows a web interface titled "Assigned Tasks". At the top, there is a search bar with the placeholder text "Search by location..." and a green "Search" button. Below the search bar, there are two task cards. The first card has the title "Distribute Food Supplies", a description "Deliver food packages and report back", location "Sylhet", assigned date "2025-01-20", disaster type "Flood", and status "Confirmed". It includes a green "Confirm" button. The second card has the title "Assist in evacuation". At the bottom of the interface is a green button labeled "Submit a Report".



The screenshot shows a "Submit Report" dialog box. It has a title bar with a close button (X). Inside, there is a label "Write your report below:" followed by a text area containing the text "I have completed my task of supplying food". A blue circular help icon with a question mark is located in the top right corner of the dialog. At the bottom, there are "OK" and "Cancel" buttons.



The screenshot shows a text file named "Volunteer Report:". It contains three entries, each separated by dashed lines. The first entry is "I have evacuated all the families". The second entry is "I have delivered the food and ensured everyone was physically safe.". The third entry is "I have completed my task of supplying food.".

1

The tasks that have been assigned by admin displays here

2

Volunteer can submit report after completing task

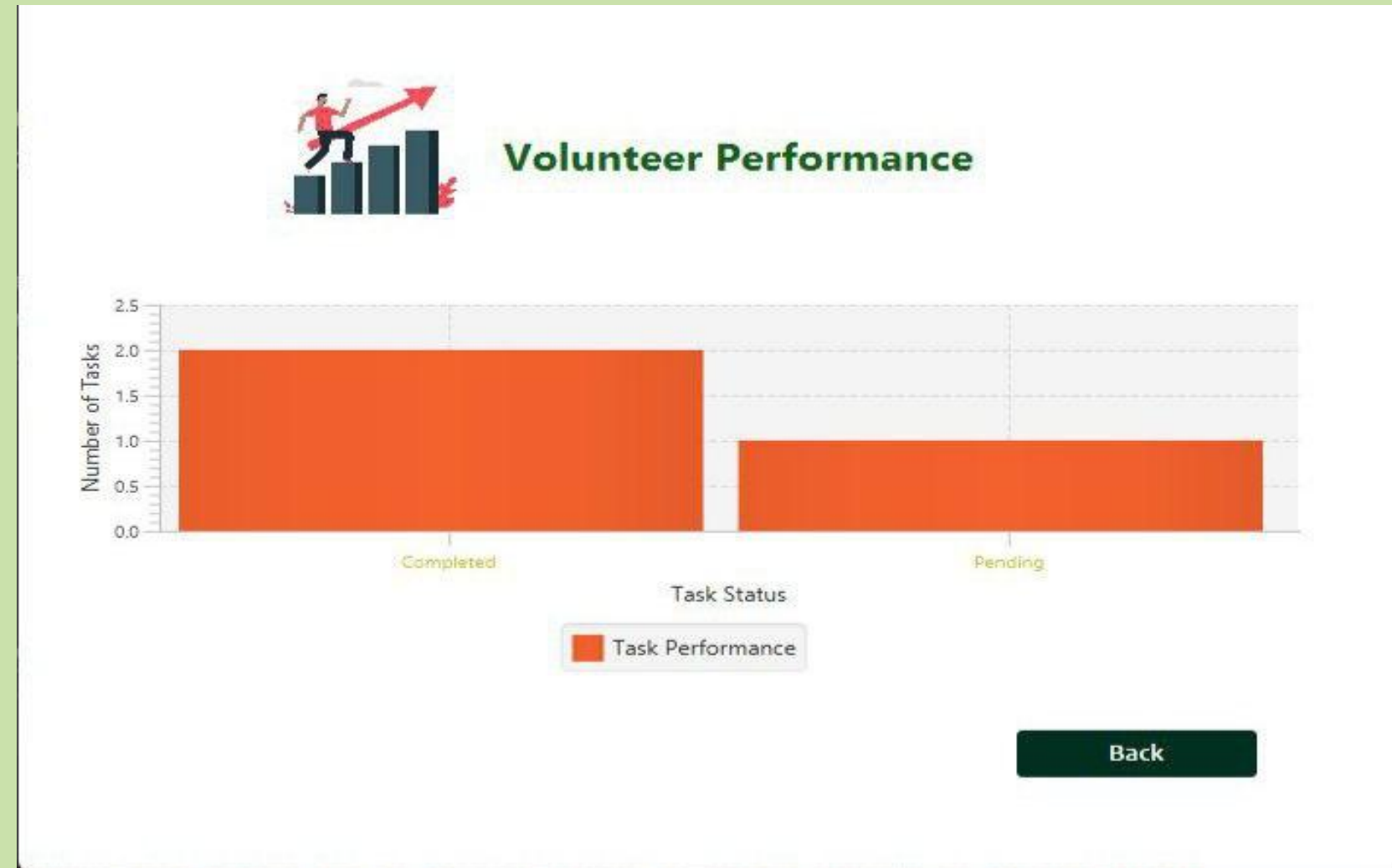
3

In the text file, the report can be viewed.

# User Interface

## Volunteer Performance:

-This section demonstrates the number of pending and completed tasks performed by volunteer using a bar graph



Volunteer Performance page

# IMPLEMENTATION OF OOP PRINCIPLE

- Encapsulation : Hides internal data and provides controlled access through methods.
- Abstraction : Complex implementations by exposing only essential details.
- Polymorphism : One interface to work with different data types or behaviors .
- Inheritance : Reuse the code by allowing classes to inherit functionality from others .

# FUTURE ENHANCEMENTS

## **-Potential Improvements:**

- Improving efficiency and user experience.
- Automated notification alert.
- Data visualization feature & map feature.

Thank you

