

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



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

CONTRIBUTION

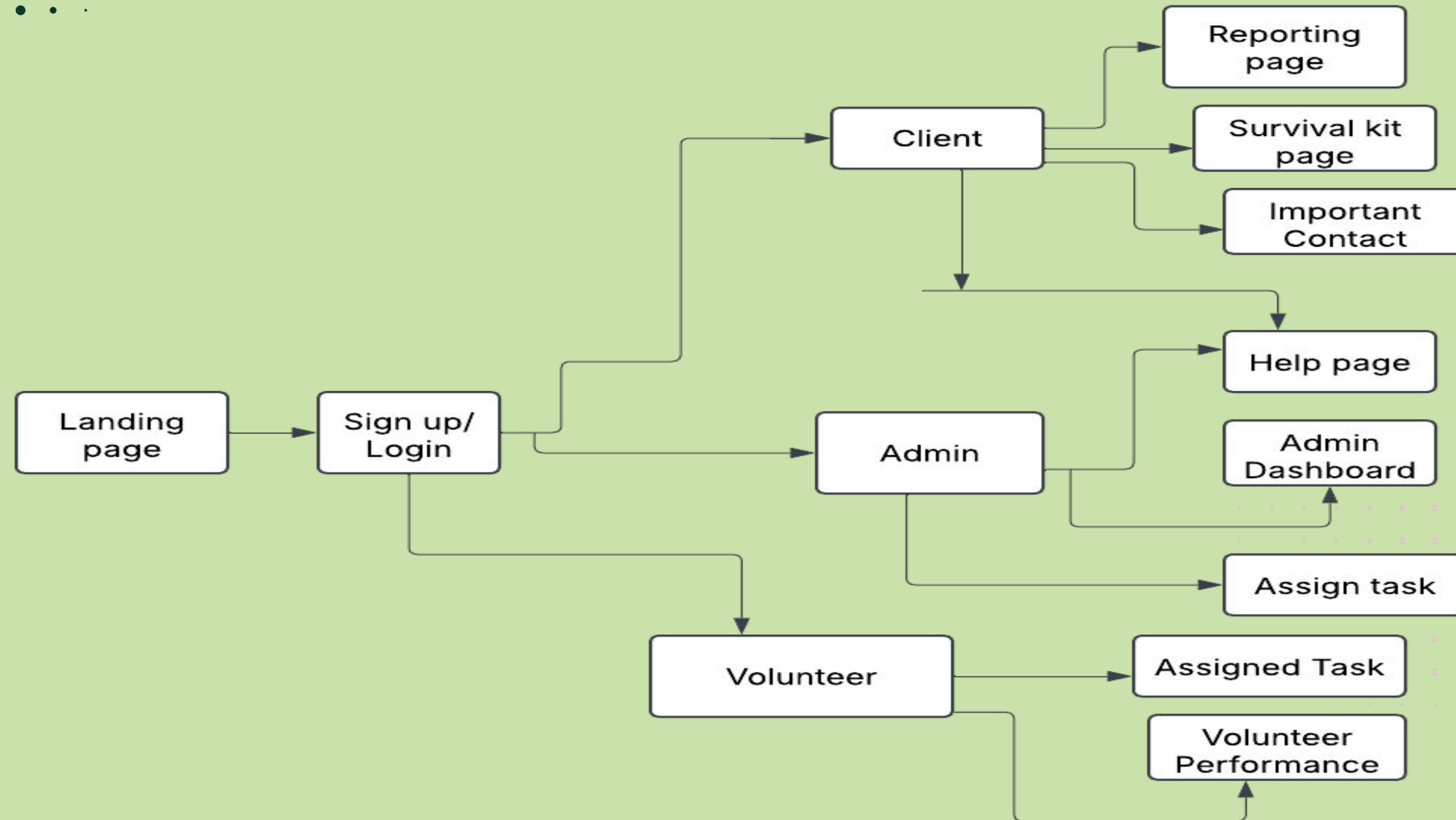
Sumaiya Rahman Soma

- SignUp & Login , Homepage
- Client Dashboard, Reporting (Client) , Survival Kit, Important Contact
- CSS Styling & adding colorful UI to the pages.

Chowdhury Shafahid Rahman

- Admin Dashboard, Assign Task, , Admin landing page
- Chat Application & code combining.
- Volunteer Dashboard, Volunteer Performance, Volunteer Assign Task

WORK OVERFLOW



User Interface

Sign up & Login

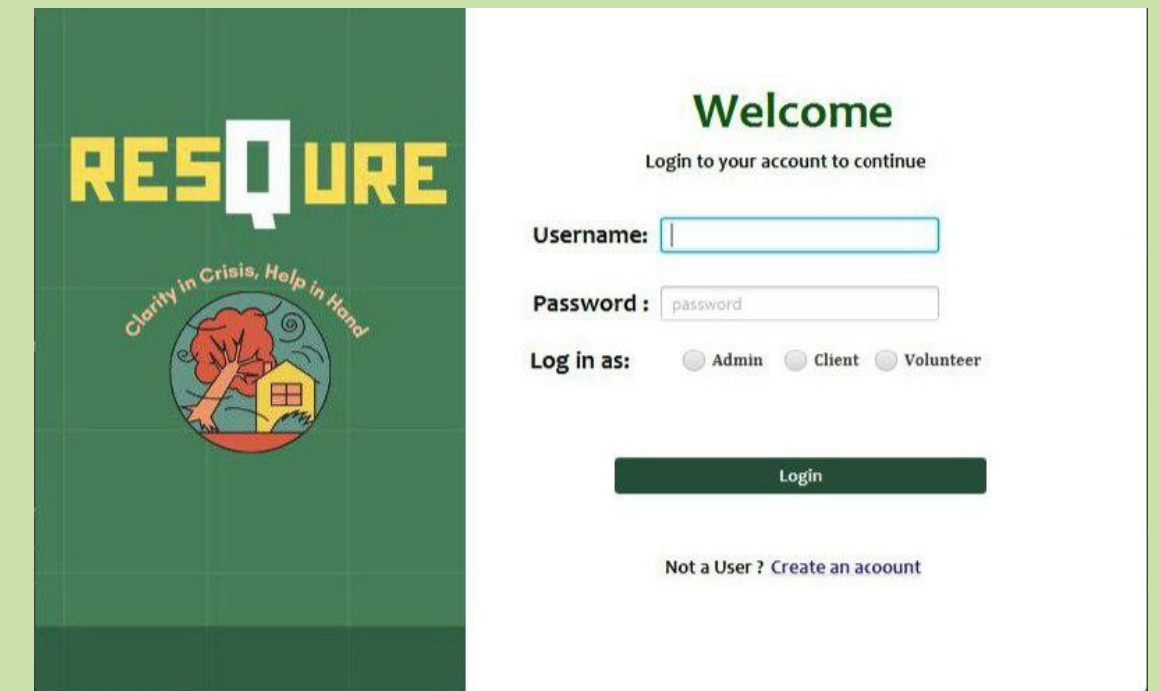
-User will signup and login according to their role.

-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 in the top right corner. Below the title is a subtitle: "Tell us about disaster or emergency in our area to ensure timely assistance". The form contains several input fields: "Username" (text), "Disaster Type" (text), "Contact" (text with a phone icon), "Severity" (radio buttons for Severe, Mild, Moderate), "Division" (dropdown menu), "Location" (text with a location pin icon), "Disaster Date" (calendar icon), and "Reporting Date" (text with a calendar icon). There is a large text area for "Description" with a placeholder "Short description of the event". 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 on the left and a 'Basic Suggestions' sidebar on the right. The form has five input fields: a dropdown for 'What type of disaster ?' with the placeholder 'Select a option', a text input for 'How many people are in your household?' with the placeholder 'number of people', a text input for 'How many days will you need supplies for?' with the placeholder 'number of days', a dropdown for 'Does anyone in your household have special needs?' with the placeholder 'Select a option', and a dropdown for 'Do you have a way to purify water or access to a clean water source?' with the placeholder 'Select a option'. At the bottom are 'Back' and 'Get result' buttons. The sidebar is dark green with the title 'Basic Suggestions' and a dashed line. Below the line is the text 'If you are in need , get the item' and a 'Click here to get' button.

This screenshot shows the same 'Survival Kit' form but with sample data entered. The 'What type of disaster ?' dropdown is set to 'Earthquake'. The 'How many people are in your household?' text input contains the number '4'. The 'How many days will you need supplies for?' text input contains the number '2'. The 'Does anyone in your household have special needs?' dropdown is set to 'Infants'. The 'Do you have a way to purify water or access to a clean water source?' dropdown is set to 'Yes'. The 'Basic Suggestions' sidebar now contains specific advice: 'Earthquake : Store food,tools,and first-aid', 'Infants :Baby formula,diapers,baby food.', 'Store water for 3 days with backup(filter).', 'Food: Stock at least 24 meals.', and 'Water: Store at least 24 liters.' The 'Click here to get' button remains at the bottom.

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 header with a green phone icon, the title 'Important Contacts' in yellow, and a 'Home' link with a green 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.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

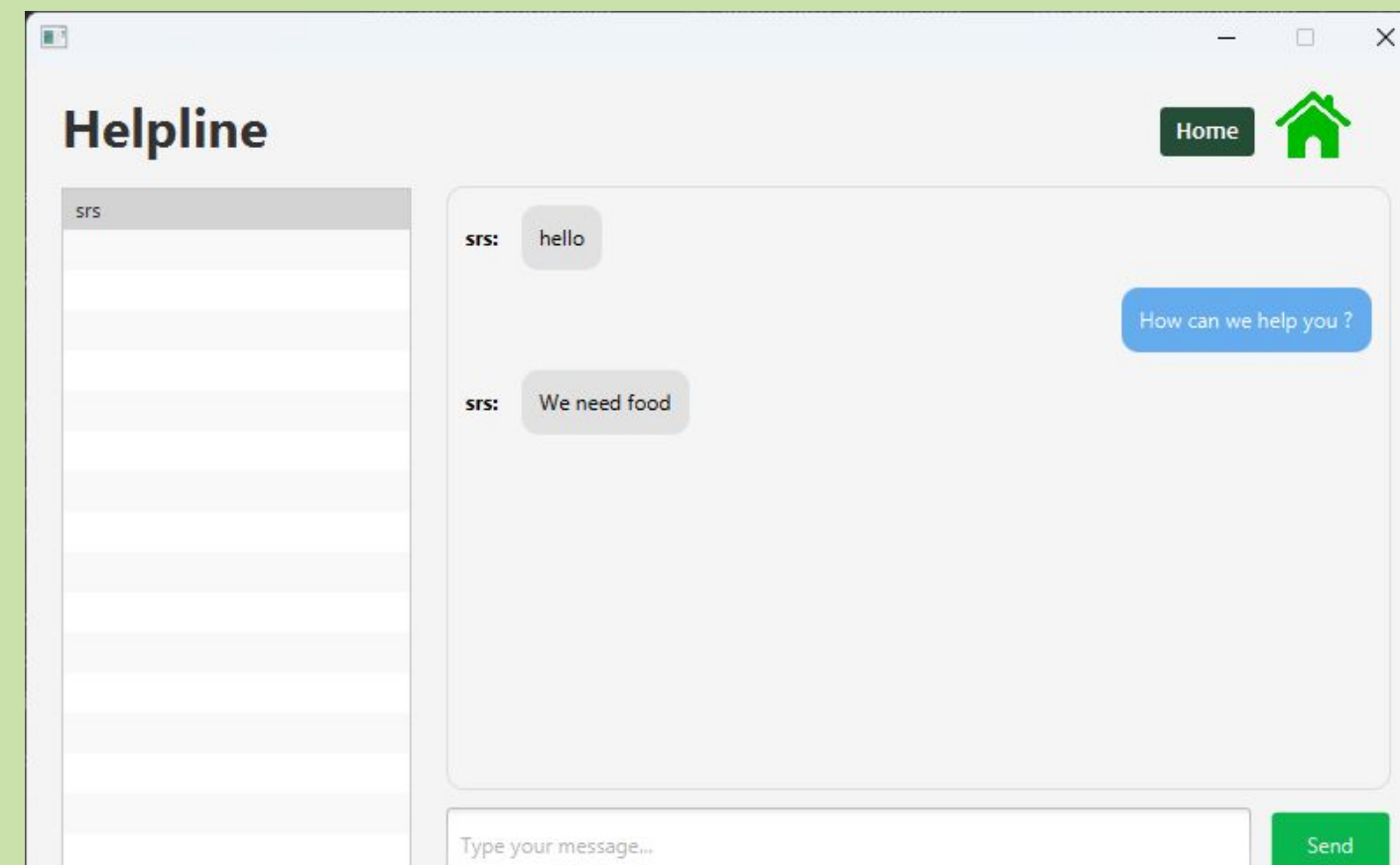
Important Contact page

User Interface

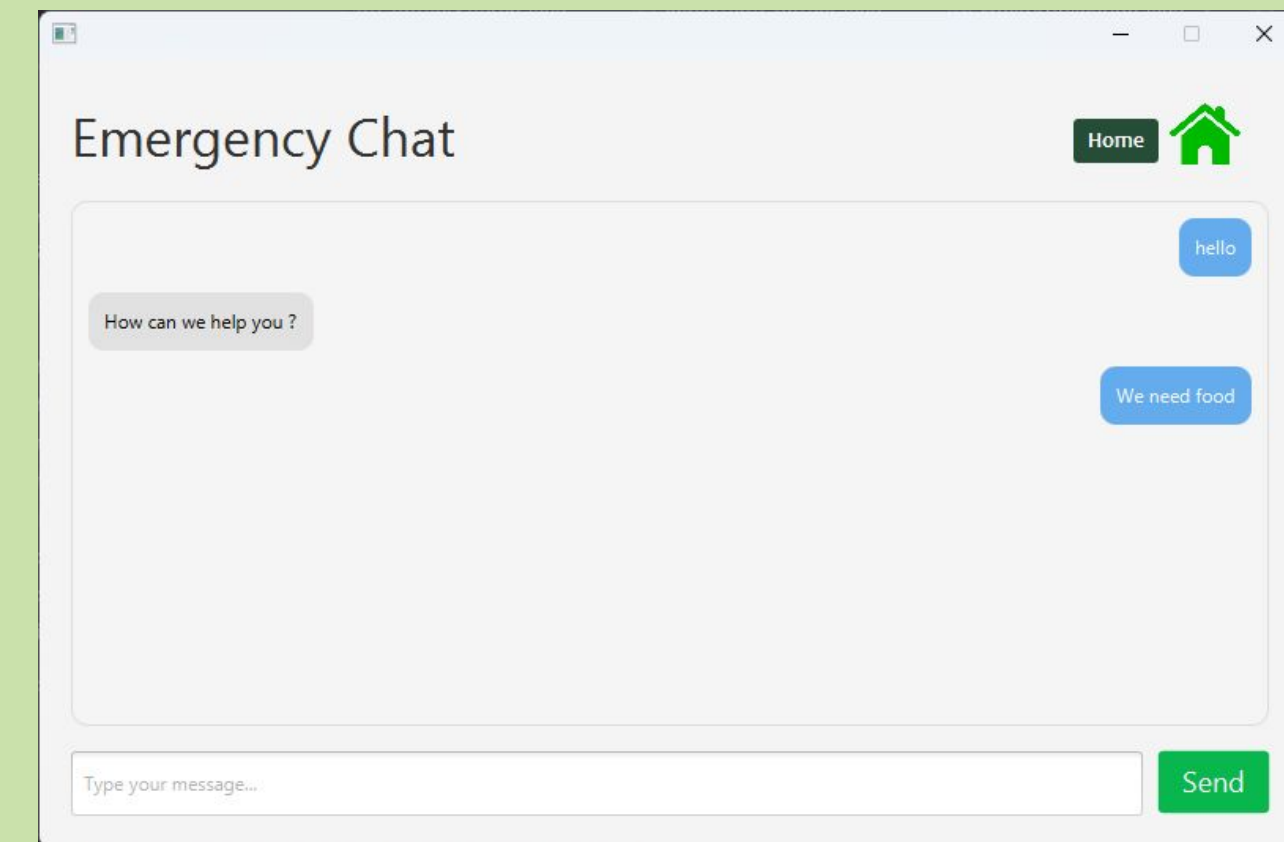
Chat Application :

-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

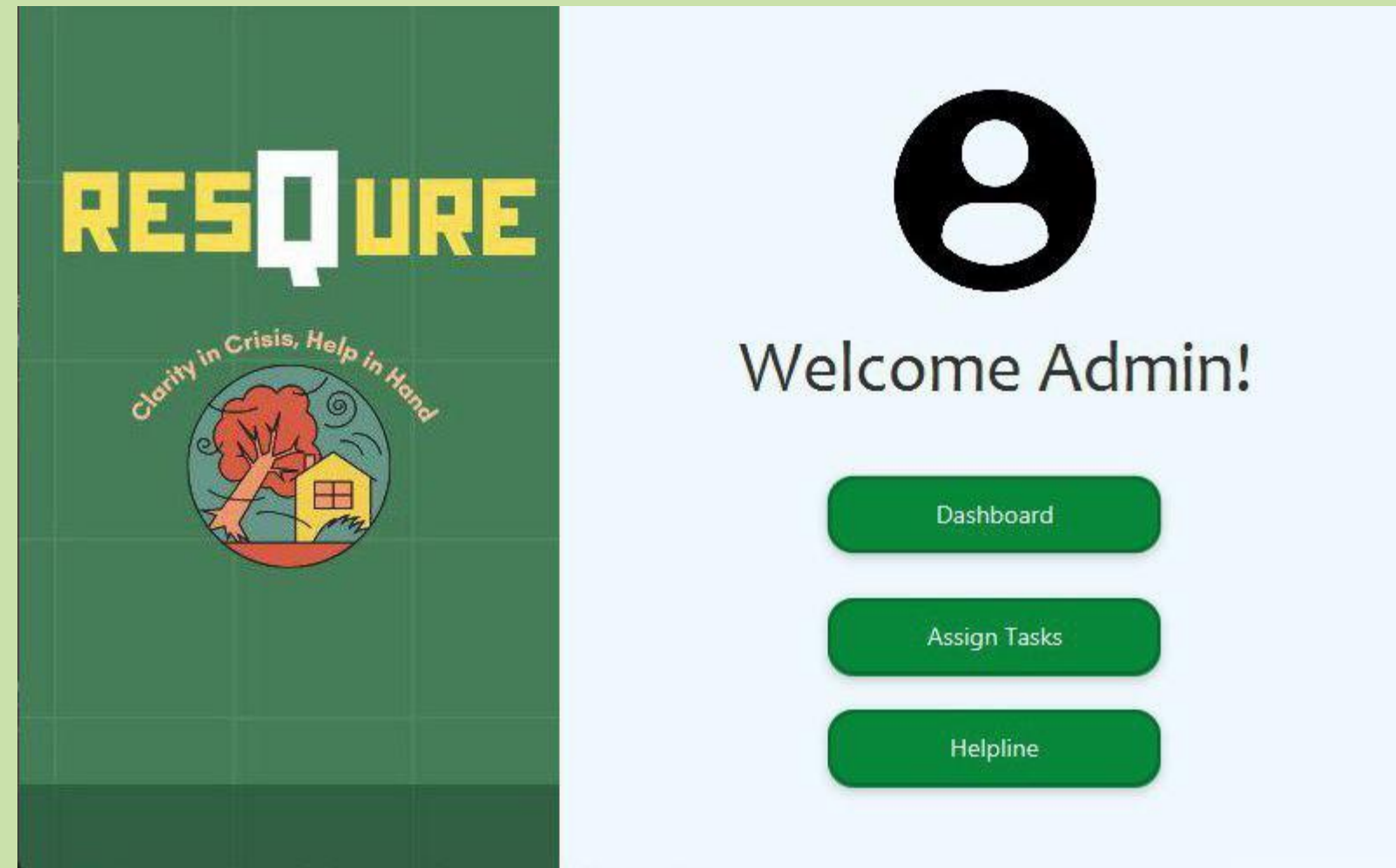


Client Helpline page

User Interface

Admin landing page :

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



Admin Landing Page

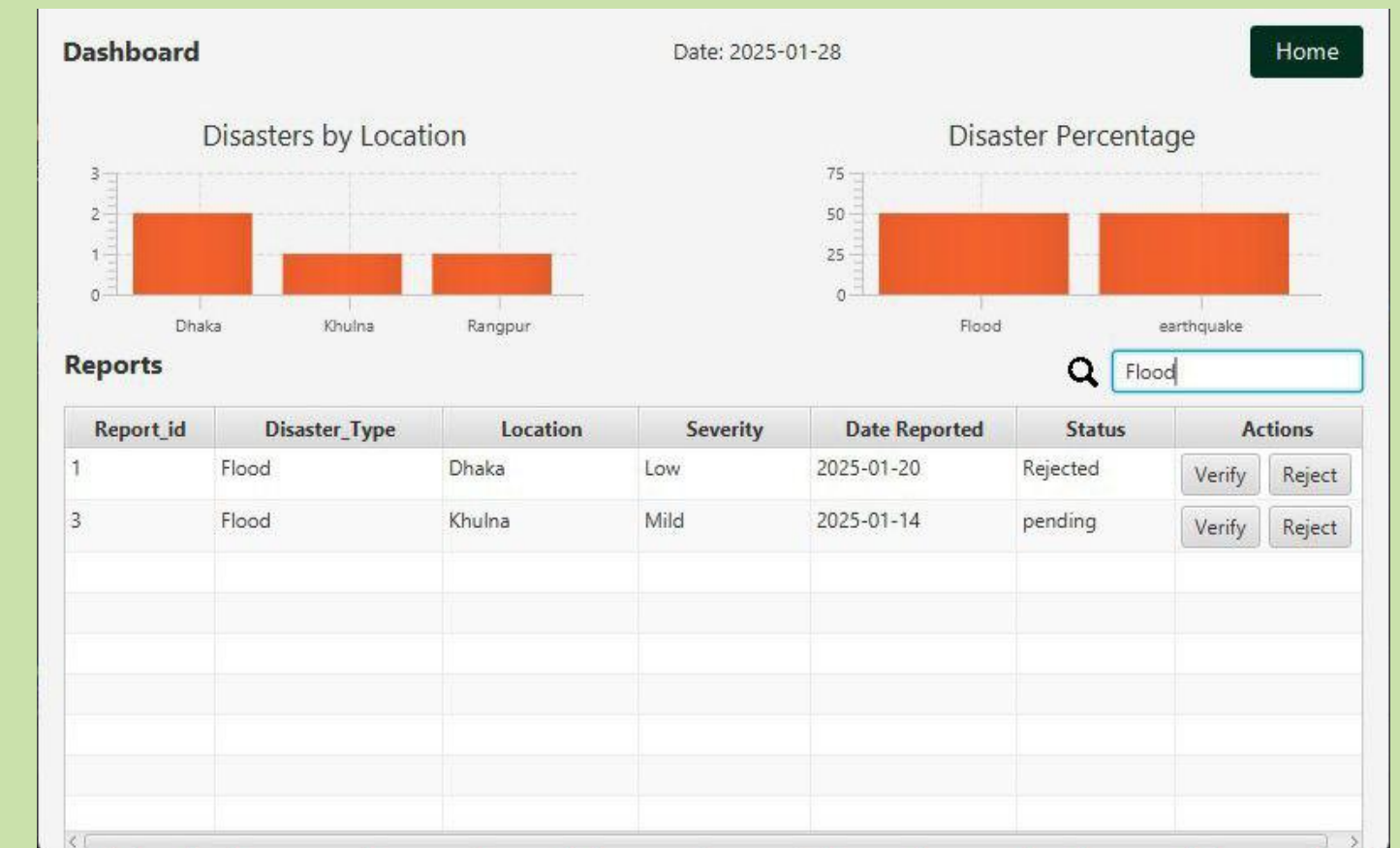
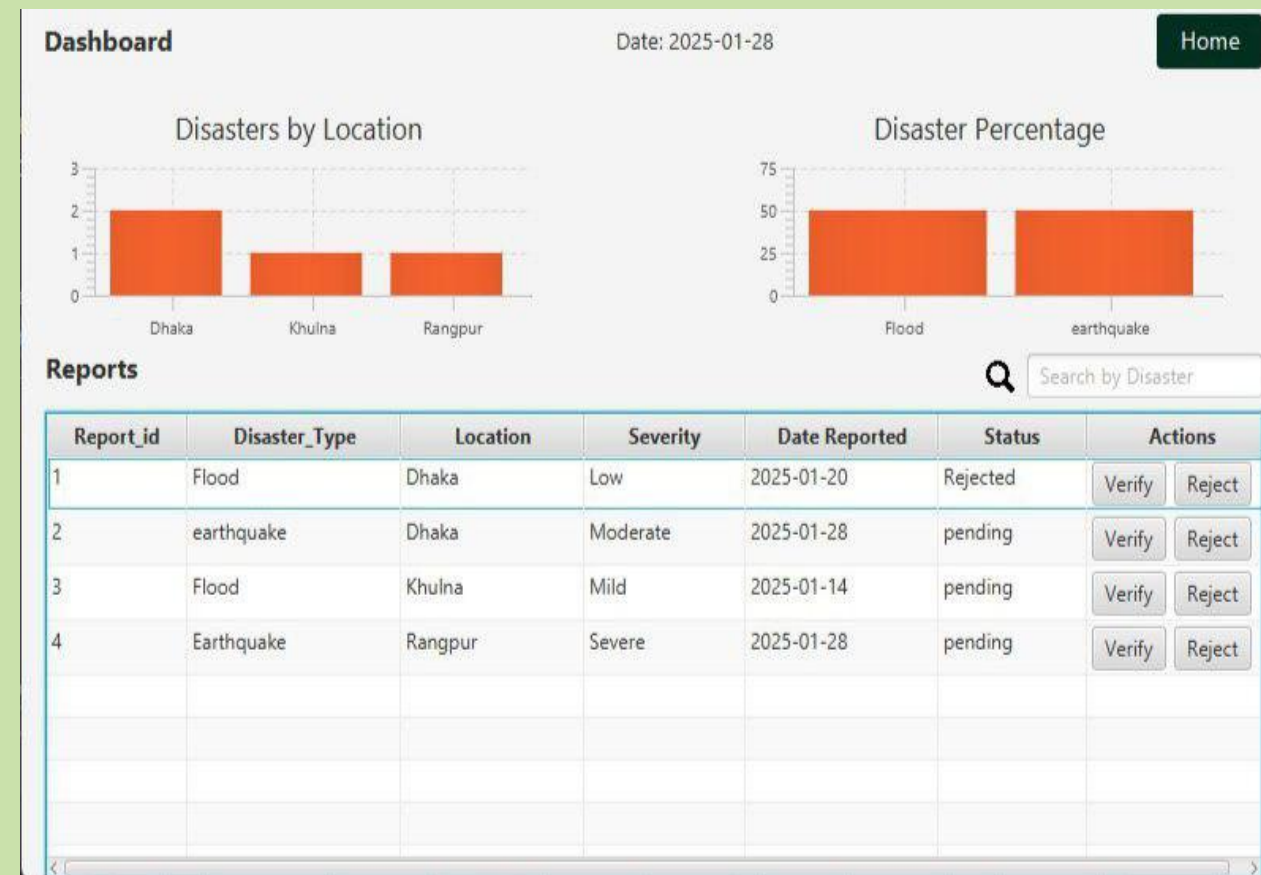
User Interface

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:

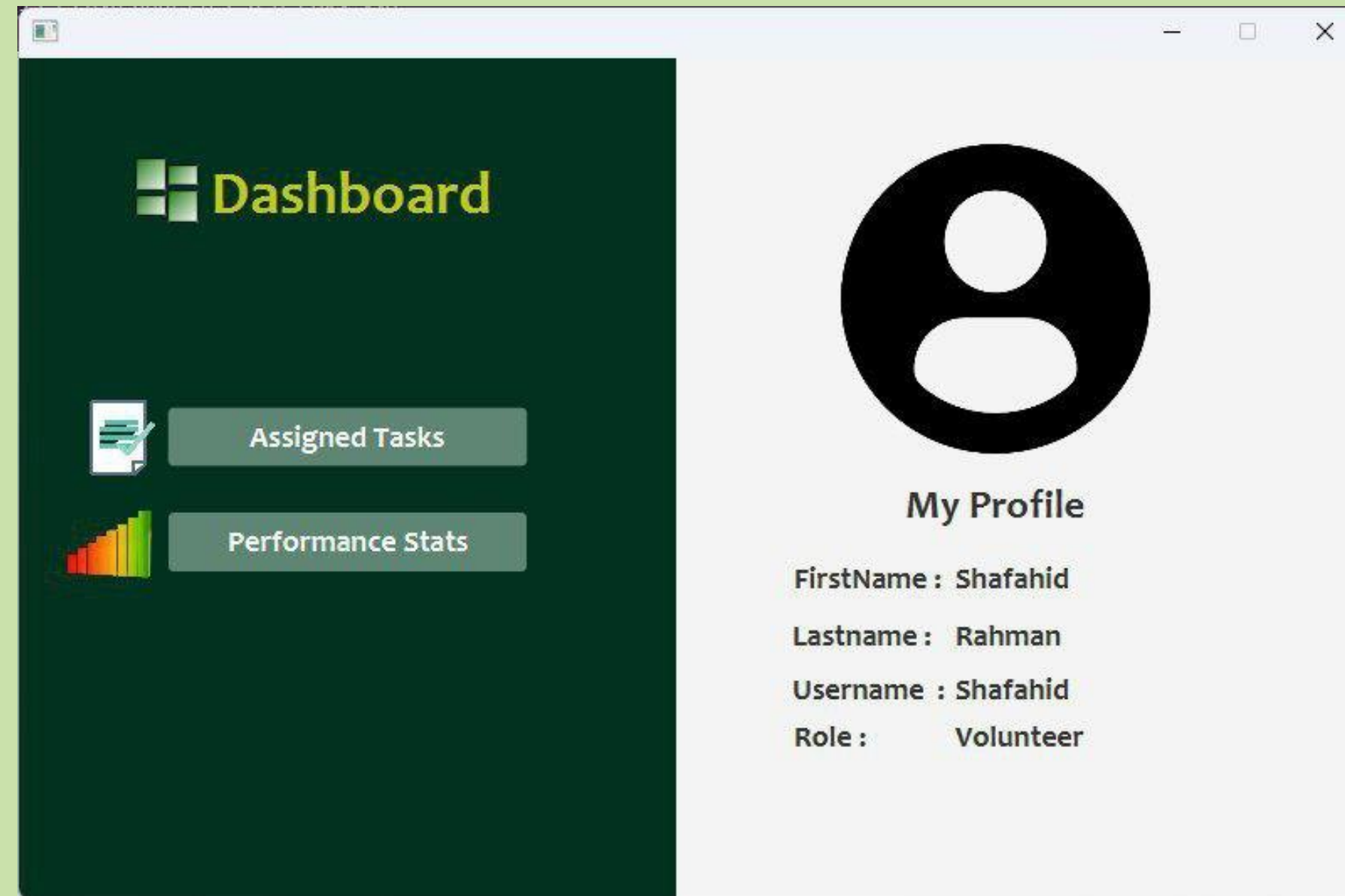
Add Task

Assign task page

User Interface

Volunteer Dashboard:

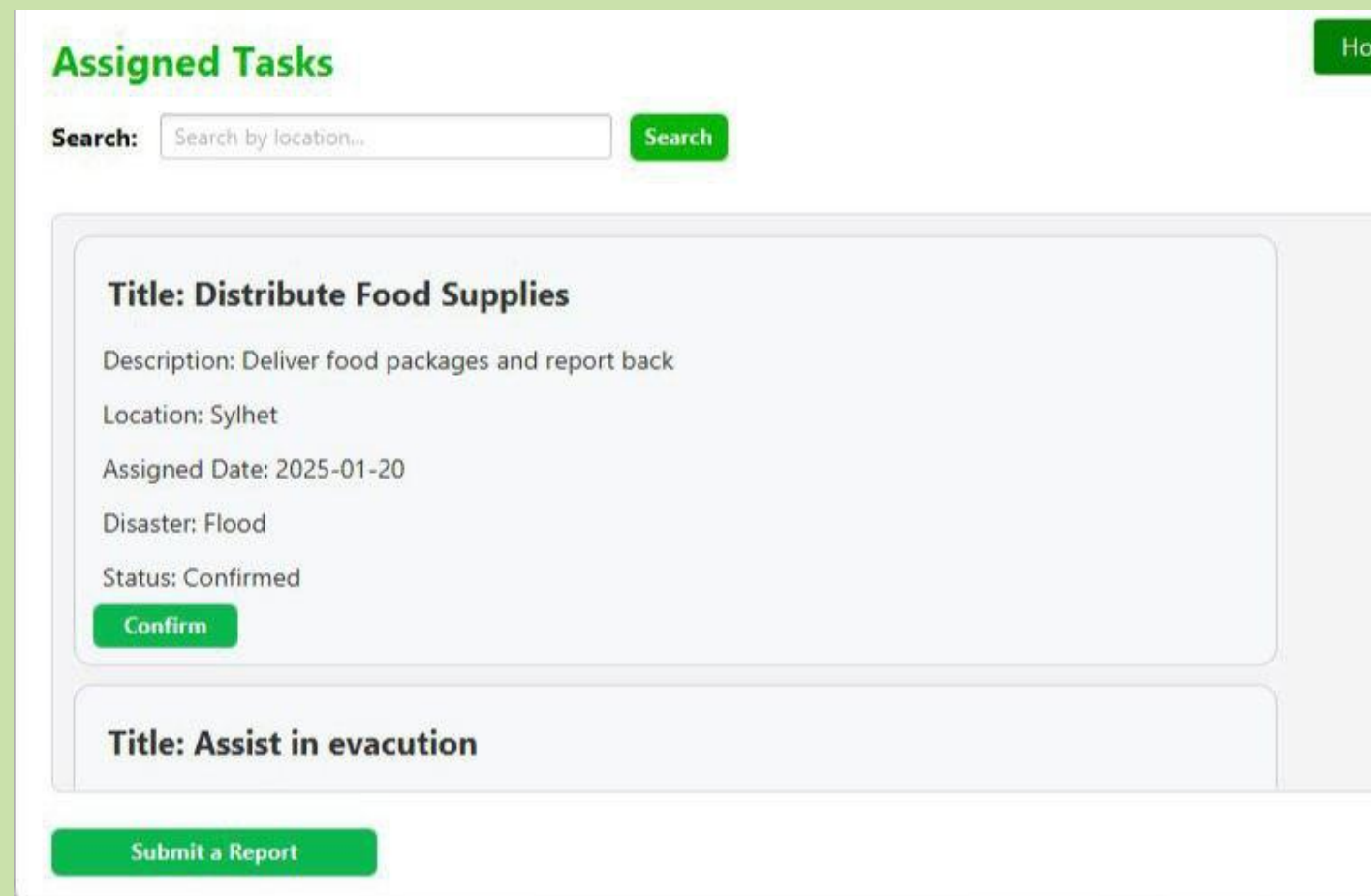
- The Volunteer's basic information is displayed.
- The dashboard serves as the central platform for volunteers by providing access to key features.



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, there 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

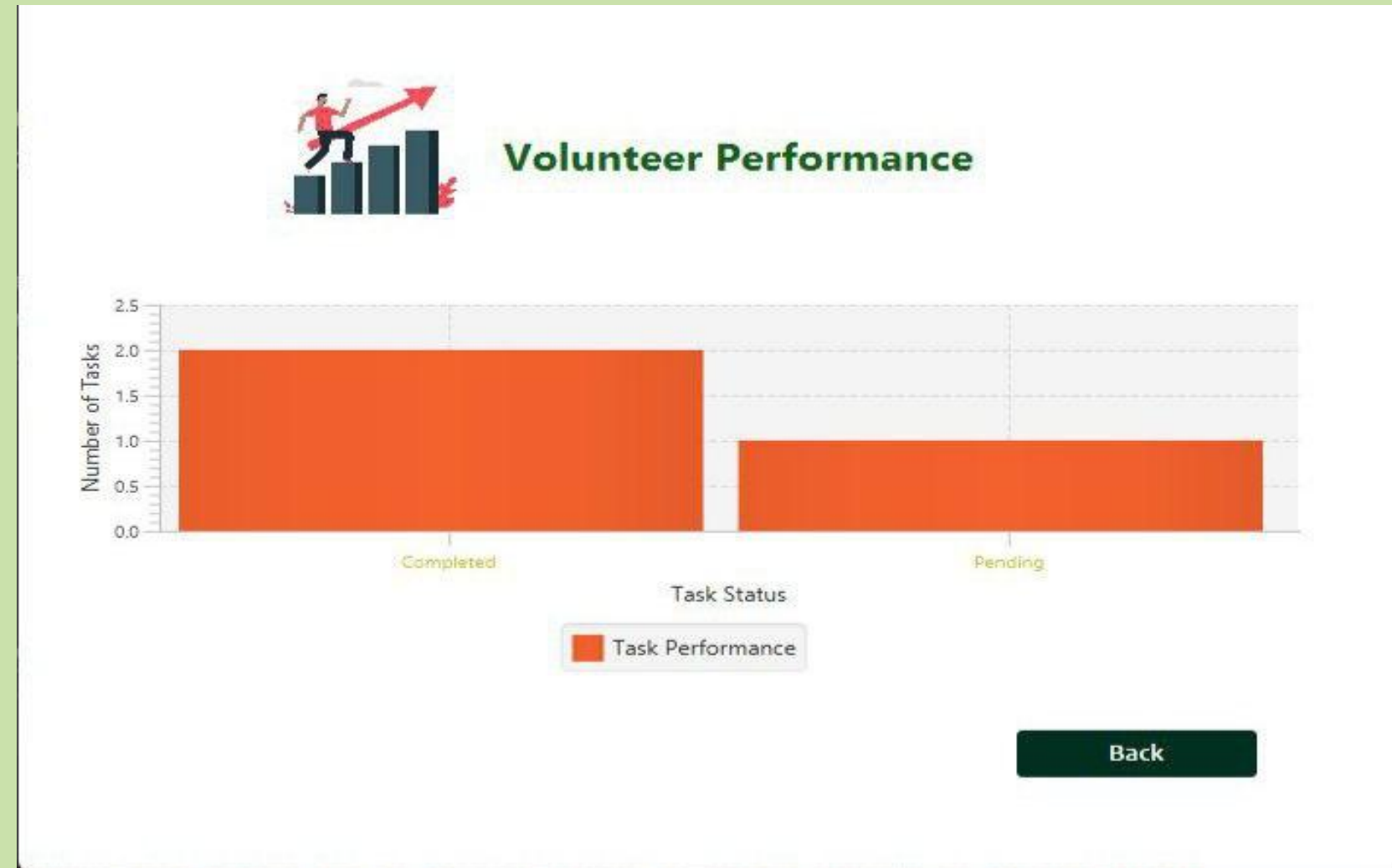
3

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

