



University of Dhaka

Department of Computer Science and Engineering

Software Requirements Specification

RescueTrack – Disaster Response Coordination System

CSE 3112: Software Engineering Lab

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Revision History

Version	Description	Date	Author(s)
1.0	Initial draft with plan and guide-lines	July 5, 2025	Tawyabul, Horaira, Ovijit, Shraban, Adib
2.0	Upgrading more Pages and Mod- ifying database design and usecases	July 12, 2025	Tawyabul, Horaira, Ovijit, Shraban, Adib

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1 Introduction

1.1 Purpose

This Software Requirements Specification (SRS) document describes the functional and non-functional requirements for **RescueTrack**, a comprehensive disaster response coordination system designed to facilitate efficient emergency management across Bangladesh. The system serves as a centralized platform connecting **citizens, volunteers, medical officers, camp officers, leaders** and **administrative personnel** during natural and man-made disasters.

1.2 Scope

RescueTrack is a web-based disaster management system that encompasses:

- **Public Interface:** Information dissemination, donation collection, and emergency alerts
- **Administrative Module:** Camp management, volunteer coordination, inventory tracking
- **Leader Module:** A leader will manage and coordinate all the required elements and necessary requirements for a disaster.
- **Medical Officer Module:** Health monitoring, medical reporting, supply management
- **Camp Officer Module:** Victim management, daily reporting, resource coordination
- **Volunteer Module:** Volunteer will be assigned some task and they will complete those.

The system aims to streamline disaster response operations, improve resource allocation, and enhance coordination between various stakeholders during emergency situations.

1.3 Definitions, Acronyms and Abbreviations

Terminology Reference

Technical Terms

Abbreviation	Definition
SRS	Software Requirements Specification
UI	User Interface
API	Application Programming Interface
DB	Database
GPS	Global Positioning System
QR	Quick Response (Code)
PDF	Portable Document Format
CSV	Comma-Separated Values

Roles

Role	Description
Admin	System Administrator with full access privileges
Camp Officer	Authorized personnel managing relief camp operations
Medical Officer	Licensed healthcare professional providing medical services
Volunteer	Verified individual offering disaster assistance

Entities

Entity	Description
Victim	Person affected by disaster and registered in the system

1.4 Intended Audience and Reading Suggestions

This document is for:

- Project Instructor
- Our Development Team
- NGO Administrators
- QA and Documentation Teams
- General users for better guidelines

1.5 Overview

RescueTrack addresses the critical need for coordinated disaster response in Bangladesh. The system provides a unified platform for managing relief operations, tracking resources, monitoring victim health, and facilitating public donations. Through role-based access control, different user types can perform specific functions while maintaining data integrity and operational efficiency.

1.6 References

- IEEE Std 830-1998: IEEE Recommended Practice for Software Requirements Specifications
- Unified Process (UP) Methodology
- UML 2.0 Specification
- Web Content Accessibility Guidelines (WCAG) 2.1
- ISO/IEC 25010:2011 Systems and Software Quality Requirements
- GitHub Repository: [RescueTrack1](#)

2 Overall Description

2.1 Product Perspective

RescueTrack is a standalone web-based system designed to integrate with existing emergency response infrastructure. The system operates as:

- **Central Hub:** Coordinating multiple relief camps and medical facilities
- **Information Portal:** Providing real-time disaster updates to the public
- **Resource Manager:** Tracking and distributing supplies across camps
- **Communication Platform:** Facilitating coordination between different user roles

2.1.1 User Interfaces

Home Screen

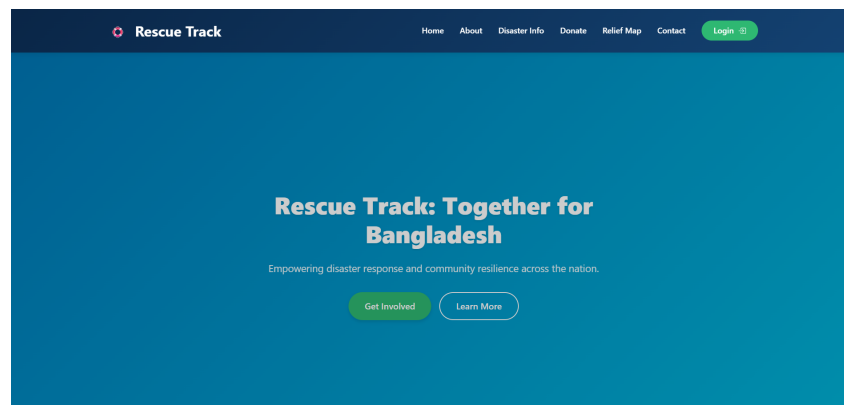


Figure 1: Home Screen 1

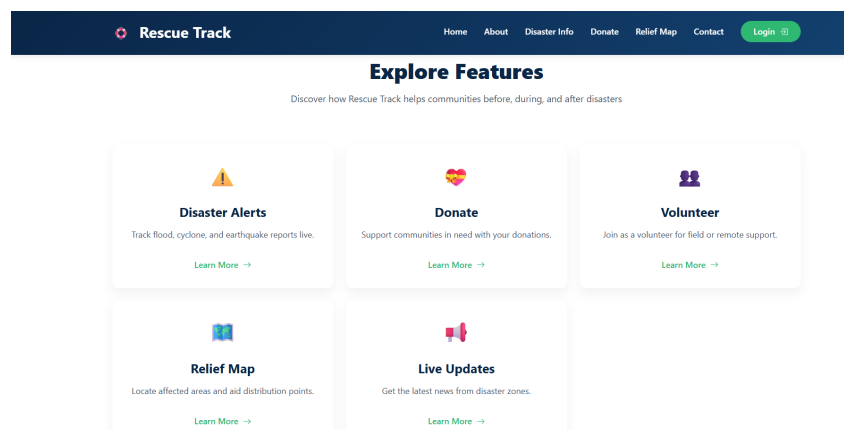


Figure 2: Home Screen 2

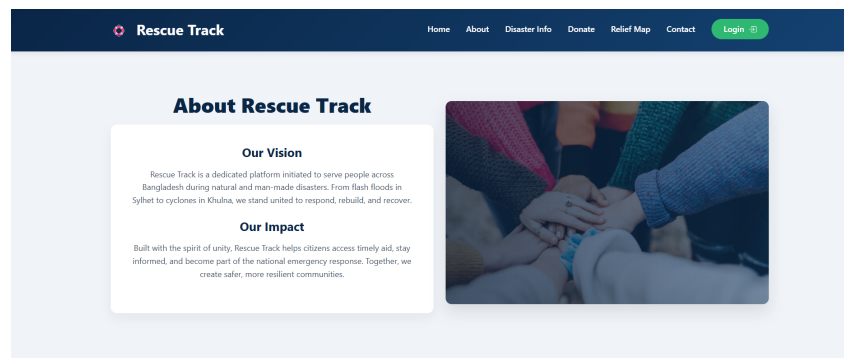


Figure 3: Home Screen 3

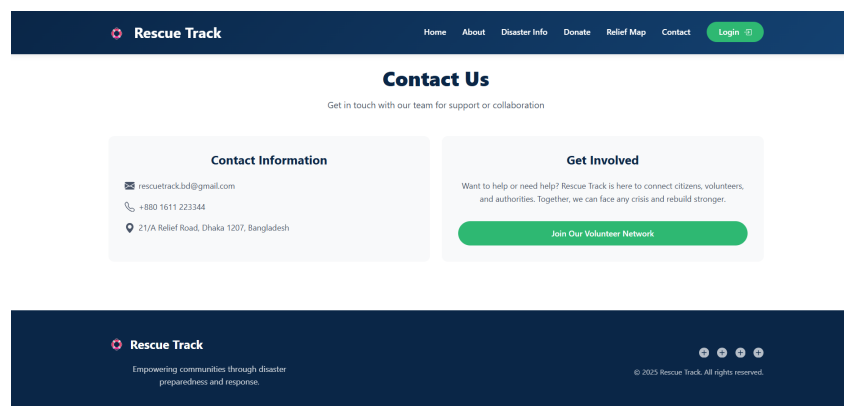


Figure 4: Home Screen 4

Admin Dashboard

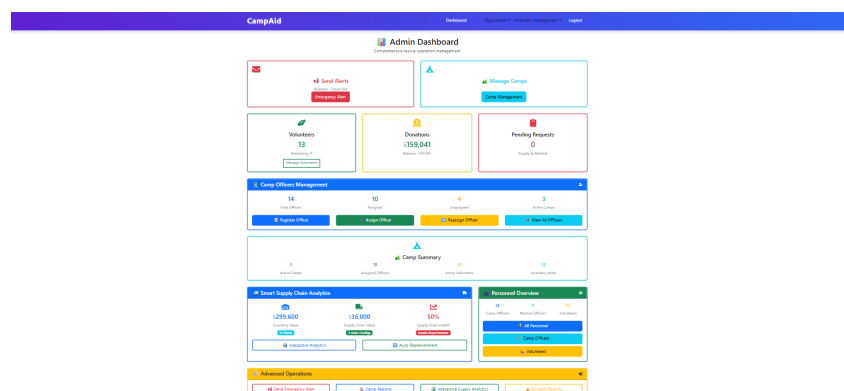


Figure 5: Admin Dashboard

Send Alerts

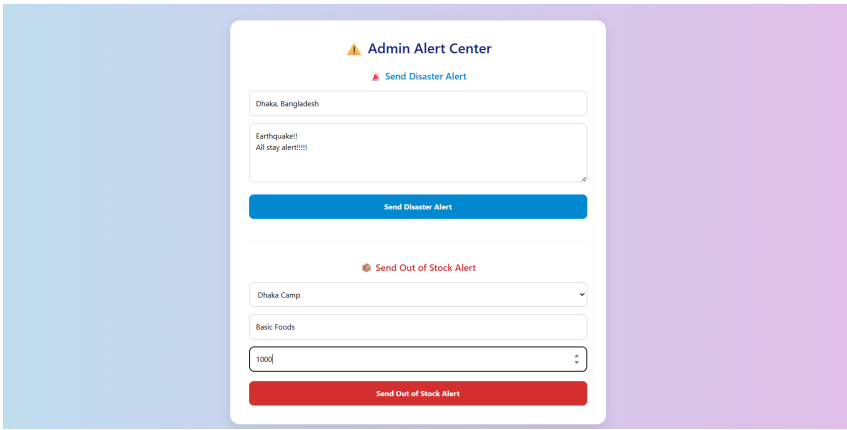


Figure 6: Disaster Alert and Stock Alert

Camp Summary

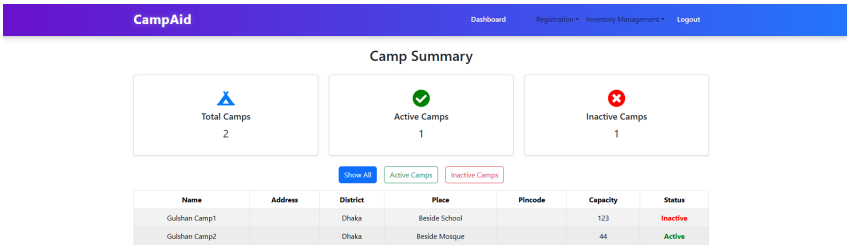


Figure 7: Total Camp Summary

Registered Volunteers

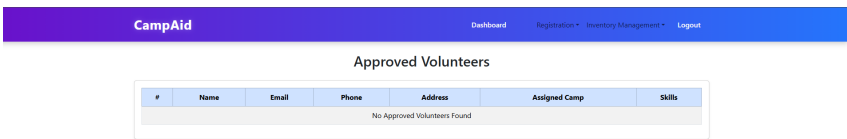


Figure 8: Approved Volunteers

Manage Camps

CampAid

Dashboard

Registration +

Inventory Management +

Logout

Manage Camps

Name	Address	District	Place	Pincode	Capacity	Status	Actions
Gulshan Camp1		Dhaka	Beside School		123	Inactive	<div>Activate</div> <div>Edit</div> <div>Delete</div>
Gulshan Camp2		Dhaka	Beside Mosque		44	Active	<div>Deactivate</div> <div>Edit</div> <div>Delete</div>

Figure 9: Total Camps

Donations Received

Donations List							
#	Name	Email	Amount (Taka)	Spent (Taka)	Balance (Taka)	Message	Actions
1	Tawabul Islam Tanim	tanim@gmail.com	Taka1200		Taka1200	best of luck	Edit Delete
2	Nafizul Islam Nayem	nayem@gmail.com	Taka100		Taka100	---	Edit Delete
3	Rokibul Hasan	rokbul@gmail.com	Taka700		Taka700	---	Edit Delete
4	Muhammad Rubel	rubel@gmail.com	Taka1000		Taka1000	---	Edit Delete
5	Tayeb Toha	toha@gmail.com	Taka1000		Taka1000	---	Edit Delete

Figure 10: Donations List

Active Requests

CampAid

Dashboard

Registration +

Inventory Management +

Logout

Supply Requests

Camp Officer Requests

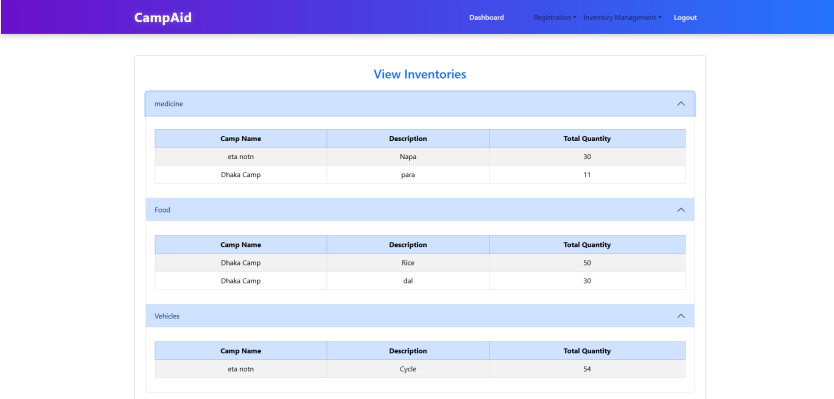
#	Camp	Officer	Item	Quantity	Status	Action
1	Gulshan Camp2	Md.Abu Horatia Tomtoy	Rice	44	Approved	

Medical Officer Requests

#	Camp	Medical Officer	Item	Quantity	Status	Action
1	Gulshan Camp2	Abu Horatia Tomtoy	Napa	44	Pending	<div>Approved</div> <div>Reject</div>

Figure 11: Supply Requests

Inventory Management

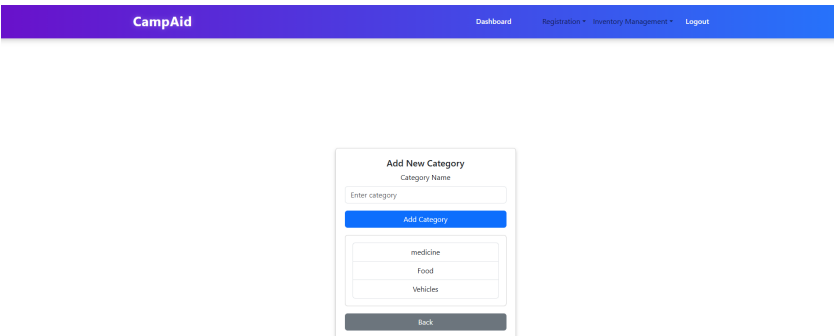


medicine		
Camp Name	Description	Total Quantity
eta notn	Napa	30
Dhaka Camp	para	11

Camp Name	Description	Total Quantity
Dhaka Camp	Rice	50
Dhaka Camp	dal	30

Camp Name	Description	Total Quantity
eta notn	Cycle	54

Figure 12: Inventory and Spents



Add New Category

Category Name

Enter category

Add Category

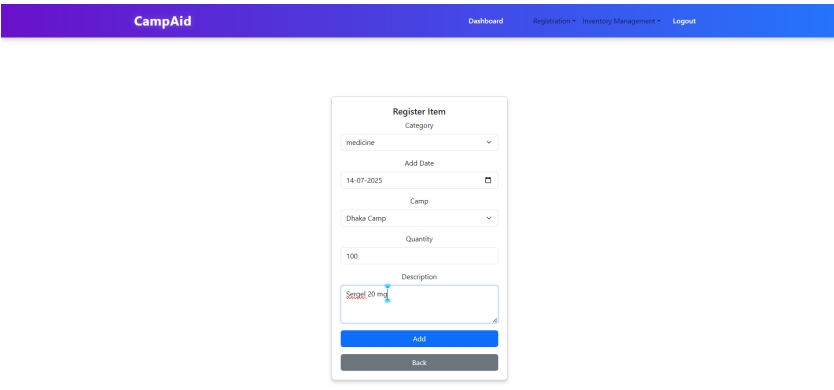
medicine

Food

Vehicles

Back

Figure 13: Category insertion



Register Item

Category: medicine

Add Date: 14-07-2025

Camp: Dhaka Camp

Quantity: 100

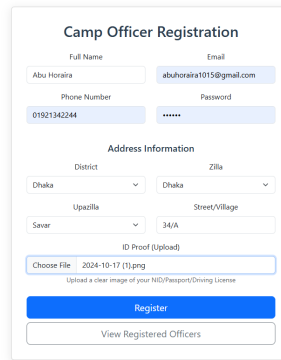
Description: Sergel 20 mg

Add

Back

Figure 14: Adding item of specific category

Registration and Assigning workers



Camp Officer Registration

Full Name: Abu Horaira Email: abuhoraira1015@gmail.com

Phone Number: 01921342244 Password:

Address Information

District: Dhaka Zilla: Dhaka

Upazila: Sevier Street/Village: 34/A

ID Proof (Upload): Choose File: 2024-10-17 (1.jpg)
Upload a clear image of your NID/Passport/Driving License

Register

[View Registered Officers](#)

Figure 15: Registering a camp officer

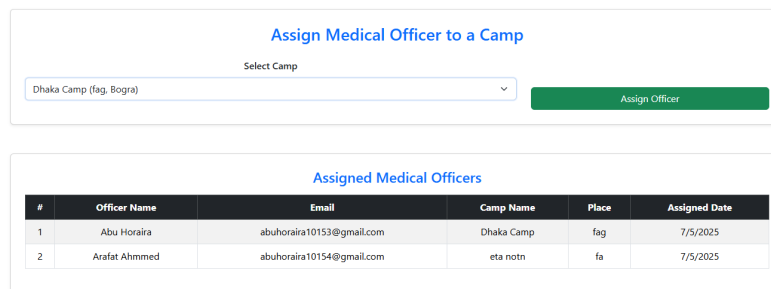


CampAid Dashboard Registration * Inventory Management * Logout

Camp Officers List

#	Name	Email	Phone	Address	ID Proof	Actions
1	Are vai ami	abuhoraira1015@gmail.com	01921342244	44, Bayezid, Chittagong, Chittagong	View ID	Assign to Camp Edit Delete
2	arekta	abuhoraira10152@gmail.com	01921342243	Dhaka Gulshan, Kotwali, Chittagong, Chittagong	View ID	Assign to Camp Edit Delete

Figure 16: Viewing officers and update details



Assign Medical Officer to a Camp

Select Camp: Dhaka Camp (fag, Bogra) **Assign Officer**

Assigned Medical Officers

#	Officer Name	Email	Camp Name	Place	Assigned Date
1	Abu Horaira	abuhoraira10153@gmail.com	Dhaka Camp	fag	7/5/2025
2	Arafat Ahmed	abuhoraira10154@gmail.com	eta notn	fa	7/5/2025

Figure 17: Assigning officer in a particular camp

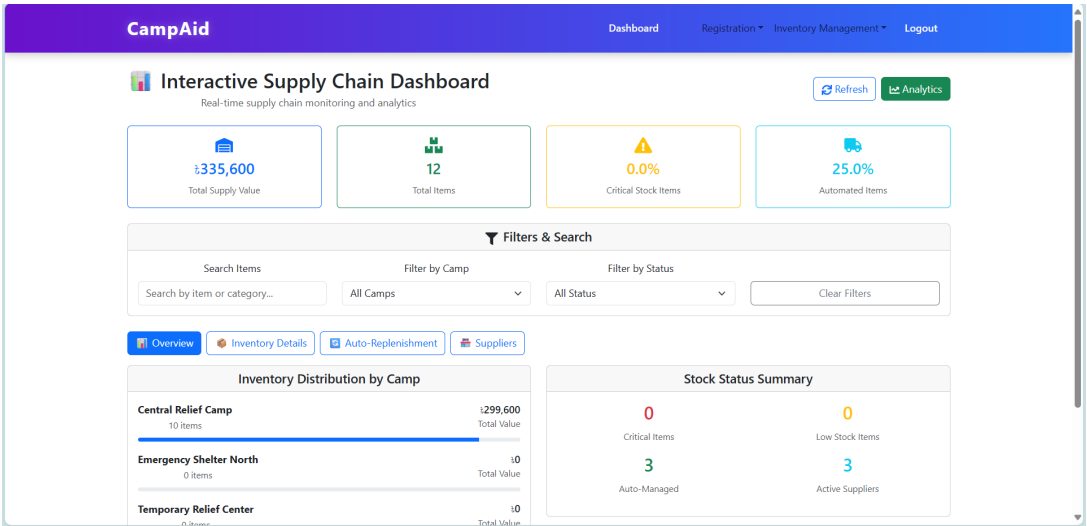


Figure 18: Interactive Supply Chain Dashboard - Real-time Monitoring and Analytics

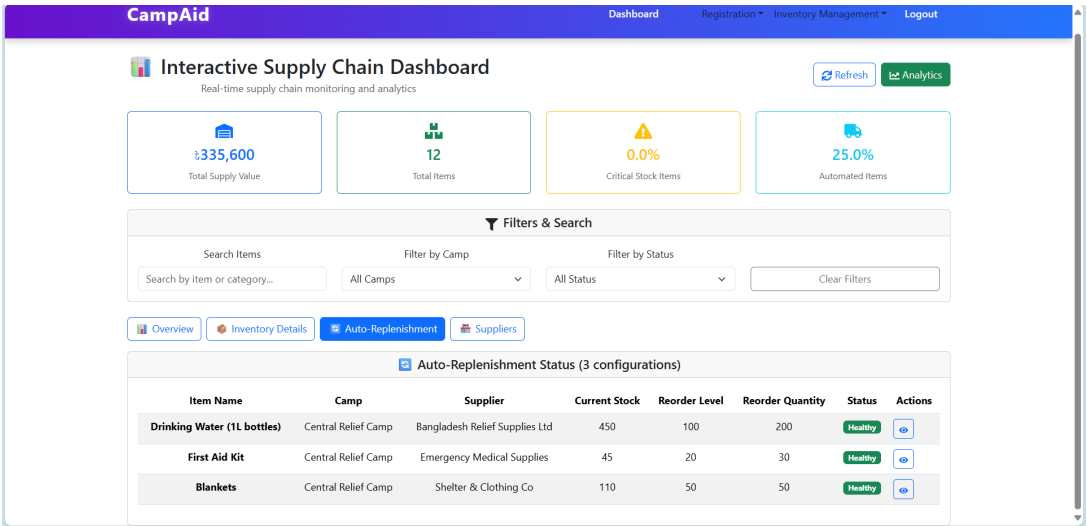


Figure 19: Auto-Replenishment Status - Inventory Management Configurations

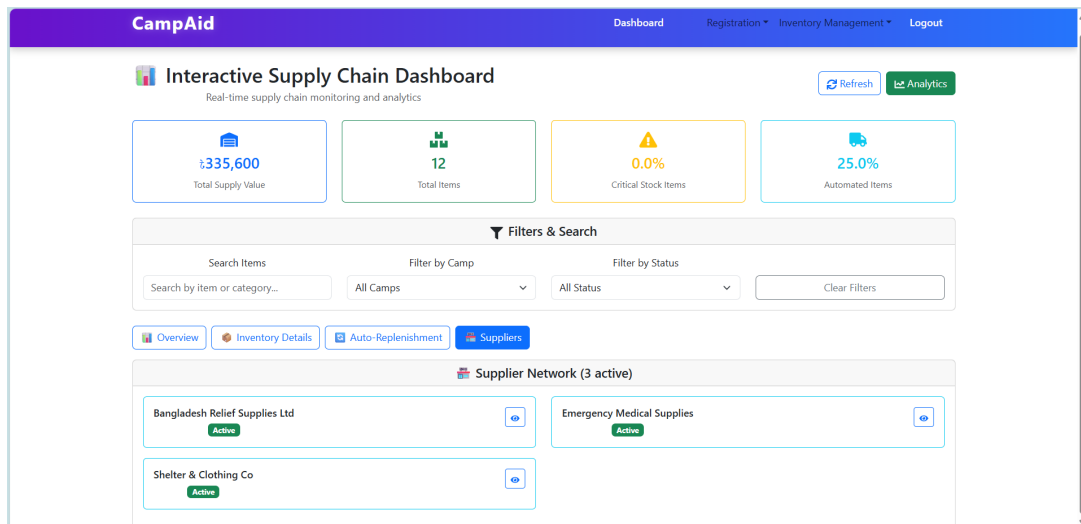


Figure 20: Supplier Network - Active Suppliers Management

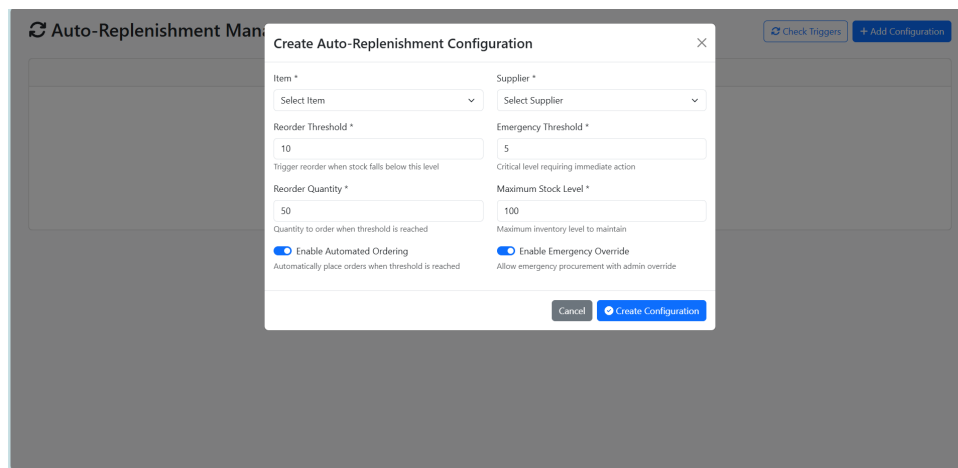


Figure 21: Create Auto-Replenishment Configuration - Automated Ordering Setup

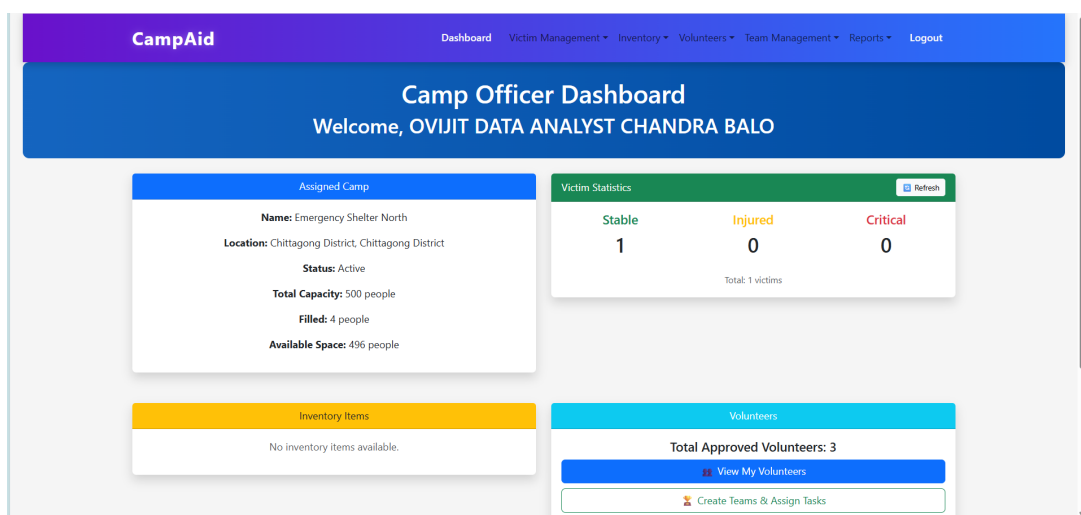
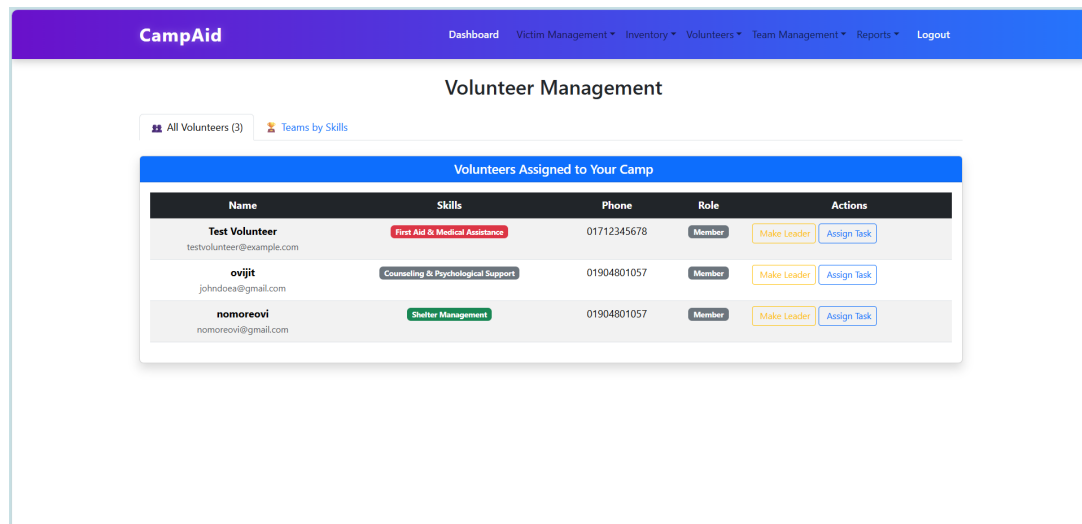


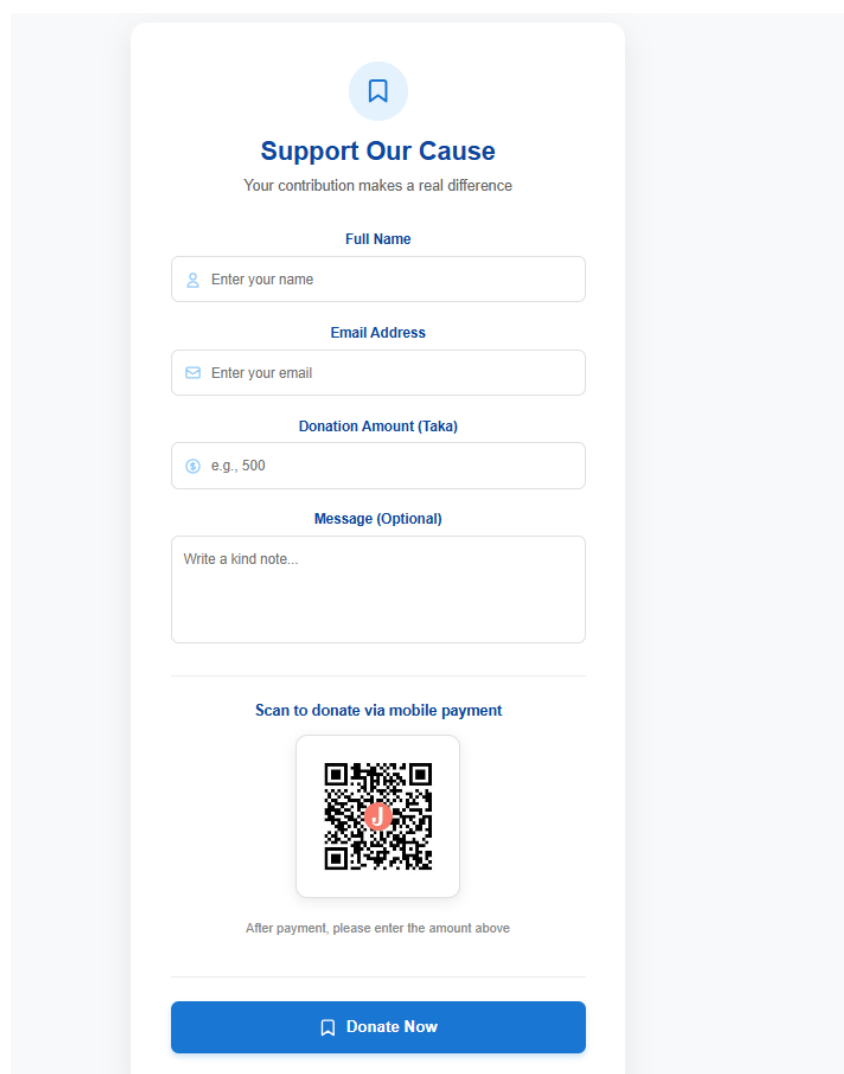
Figure 22: Camp Officer Dashboard - Emergency Shelter North Overview



Volunteers Assigned to Your Camp				
Name	Skills	Phone	Role	Actions
Test Volunteer testvolunteer@example.com	First Aid & Medical Assistance	01712345678	Member	Make Leader Assign Task
ovijit johndoes@gmail.com	Counseling & Psychological Support	01904801057	Member	Make Leader Assign Task
nomoreovi nomoreovi@gmail.com	Shelter Management	01904801057	Member	Make Leader Assign Task

Figure 23: Volunteer Management - Assigned Volunteers with Skills and Roles

Donation



Support Our Cause
Your contribution makes a real difference


Full Name

Email Address

Donation Amount (Taka)

Message (Optional)

Scan to donate via mobile payment



After payment, please enter the amount above

[Donate Now](#)

Figure 24: Donation

Disasters

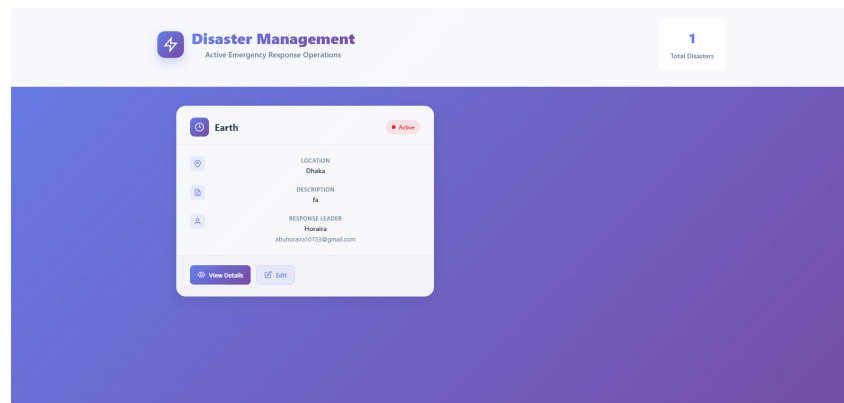


Figure 25: View All Initiated Disaster response

The screenshot shows a form titled "Create New Disaster" with the subtitle "Coordinate emergency response efforts". The form contains the following fields:

- Disaster Name:** A text input field containing "Earthquake".
- Location:** A text input field containing "Dhaka".
- Description:** A text area containing "On august 5th 2024, A huge earthquake".
- Response Leader:** A dropdown menu with the text "Choose a leader..." and a downward arrow.

At the bottom of the form is a large blue button labeled "Create Disaster Response".

Figure 26: Initiate Disaster response

Volunteers

Volunteer Registration

Complete your volunteer registration. Admin will review and assign you to a camp. Camp officers will then set your team and schedule.

Registration successful! Redirecting to home page...

Full Name

Email

Phone Number

Current Address

Current residential address

Permanent Address

Permanent/Home address

Password

Skills/Experience

Select Your Skill

Preferred Work Areas (Optional)

Select areas where you would prefer to work. This helps us match you with nearby camps.

☐ Dhaka

☐ Chittagong

☐ Sylhet

☐ Khulna

☐ Rajshahi

☐ Rangpur

☐ Barishal

☐ Mymensingh

Emergency Contact Information

Emergency Contact Name

Full name of emergency contact

Emergency Contact Phone

Phone number of emergency contact

Relationship

Select Relationship

Register

Figure 27: Volunteer Registration

Volunteer Portal

Access your volunteer dashboard

Email Address

Password

Sign In

Don't have an account?

Register as Volunteer

Login Instructions:

- Use the email you registered with
- Use the password you created during registration
- Your account must be approved by admin to login
- Contact admin if you have login issues

Figure 28: Volunteer Sign In

Approved Volunteers (13)							
Single approved volunteers to camp for 1 day/night							
Name	Email	Phone	Skills	Preferred Dates	Current Status	Actions	
OUEST GAGA HAWTTE CHANDRA BRAG	awestm@redgum.com	0146460102	View profile	Approved	Approved	Approved	Cancel
	Test Volunteer	testvolunteer@redgum.com	01711344819	No preference	Approved	Approved	Cancel
Test Volunteer New	testvolunteer1702247801@redgum.com	01711344819	View profile	No preference	Approved	Approved	Cancel
	Test Volunteer	testvolunteer1702247801@redgum.com	01711344819	No preference	Approved	Approved	Cancel
Test Volunteer New	testvolunteer1702247801@redgum.com	01711344819	View profile	No preference	Approved	Approved	Cancel
	Test Volunteer	testvolunteer1702247801@redgum.com	01711344819	No preference	Approved	Approved	Cancel
Test Volunteer New	testvolunteer1702247801@redgum.com	01711344819	View profile	No preference	Approved	Approved	Cancel
	Test Volunteer	testvolunteer1702247801@redgum.com	01711344819	No preference	Approved	Approved	Cancel
JAM230	jam230@gmail.com	0186460107	View profile	No preference	Approved	Approved	Cancel
	Test Email	testvolunteer@gmail.com	0121467890	No preference	Approved	Approved	Cancel
Test Email Volunteer	testvolunteer@gmail.com	0121467890	View profile	No preference	Approved	Approved	Cancel
	em@	jamesmcc@gmail.com	0186460102	View profile	Approved	Approved	Cancel
OUEST GAGA HAWTTE CHANDRA BRAG	awestm@gmail.com	0186460102	View profile	Approved	Approved	Approved	Cancel
	OUEST GAGA HAWTTE CHANDRA BRAG	jamesmcc@gmail.com	0186460102	View profile	No preference	Approved	Cancel
Test Email	testvolunteer@gmail.com	0186460107	View profile	Approved	Approved	Approved	Cancel
	Test Email	testvolunteer018@gmail.com	0186460102	View profile	Approved	Approved	Cancel
Alo Henda Ternet	ahumawent01@gmail.com	0176107743	View profile	Approved	Approved	Approved	Cancel
	Test Email	testvolunteer@gmail.com	0186460107	View profile	Approved	Approved	Cancel

Figure 29: Approved Volunteers List

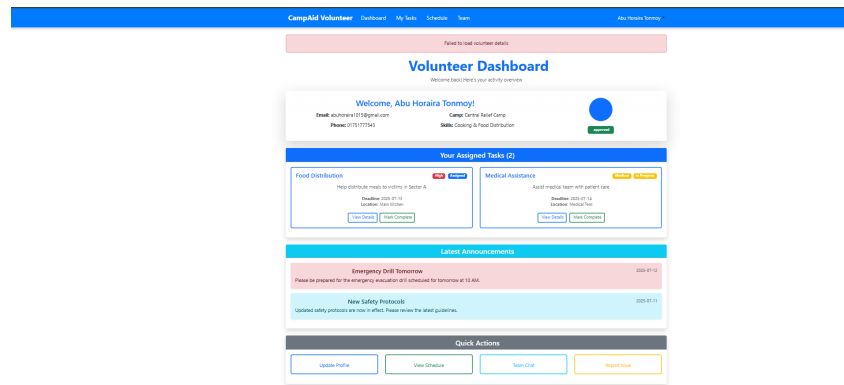


Figure 30: Volunteer Dashboard

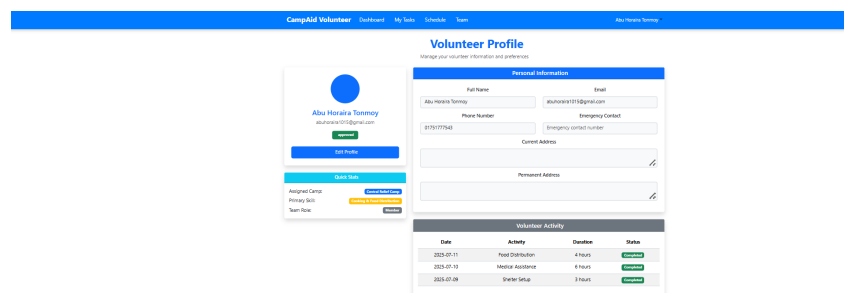


Figure 31: Volunteer Profile

2.2 Product Functions

1. Public Functions

- Disaster information access and real-time updates
- Online donation processing with receipt generation
- Emergency alert notifications
- Relief camp location mapping
- Contact information and support access

2. Administrative Functions

- Camp registration and management
- User role assignment and authentication
- Inventory management and distribution

- Volunteer coordination and approval
- System-wide alert broadcasting
- Comprehensive reporting and analytics

3. Leader Functions

- Initiate and manage disaster response operations
- Assign and oversee camp officers and medical officers
- Monitor camp activities and receive regular reports

4. Medical Officer Functions

- Patient health monitoring and record keeping
- Medical supply request and management
- Treatment documentation and follow-up scheduling
- Medical report generation and export
- Emergency medical alert system

5. Camp Officer Functions

- Victim registration and status tracking
- Daily camp reporting and updates
- Supply request management
- Volunteer coordination at camp level
- Incident reporting and documentation

System Design Overview

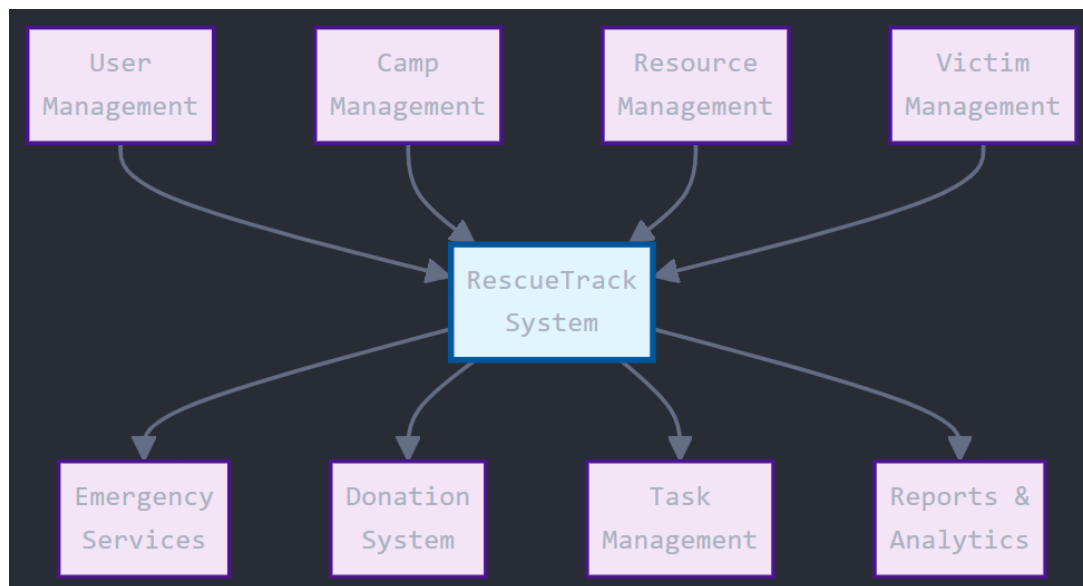


Figure 32: High-Level System Design of RescueTrack

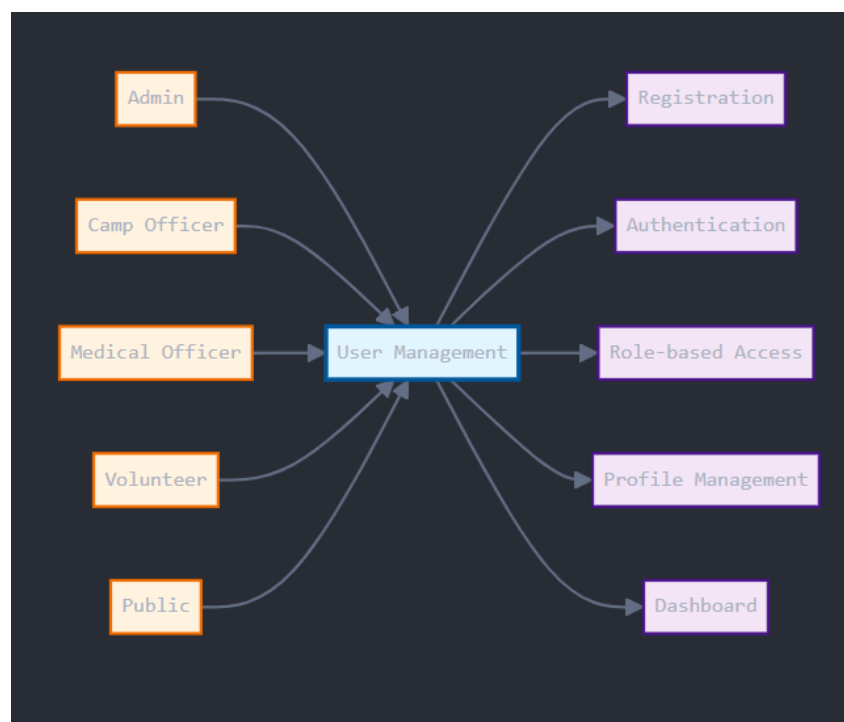


Figure 33: User management

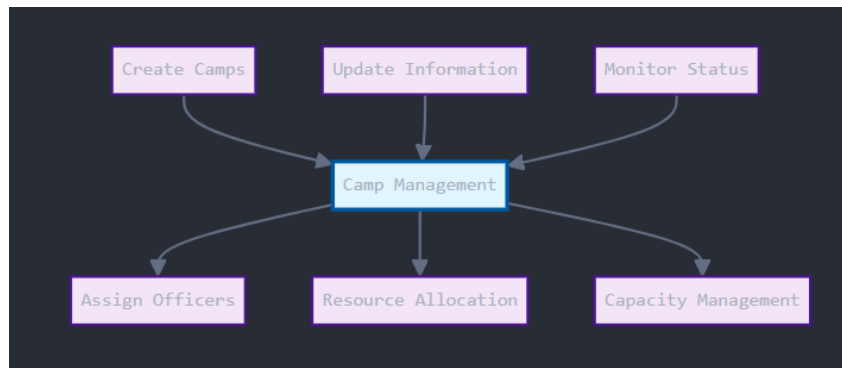


Figure 34: Camp management

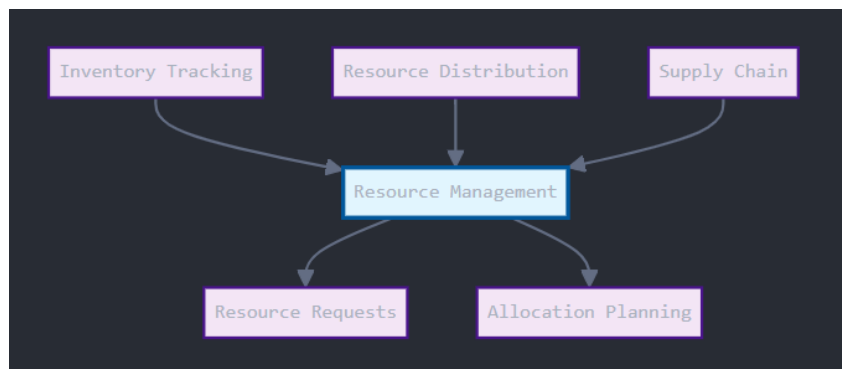


Figure 35: Resources management

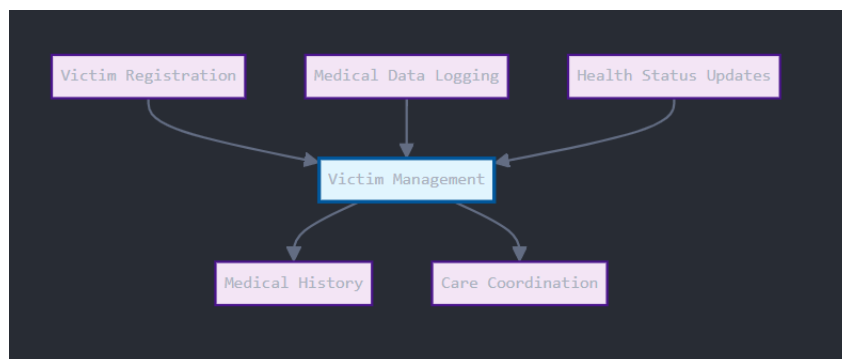


Figure 36: Victim management

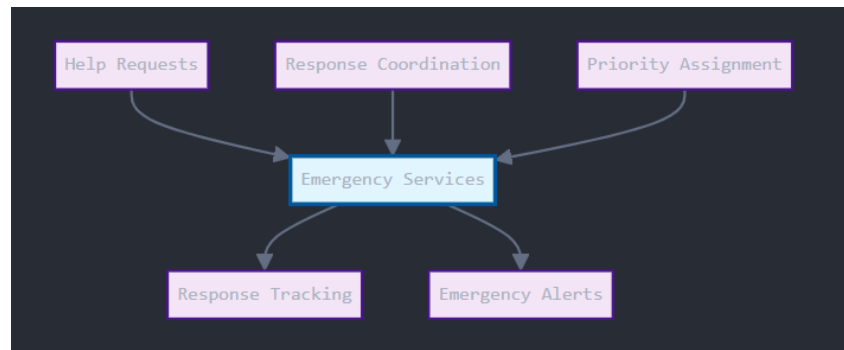


Figure 37: Emergency Services

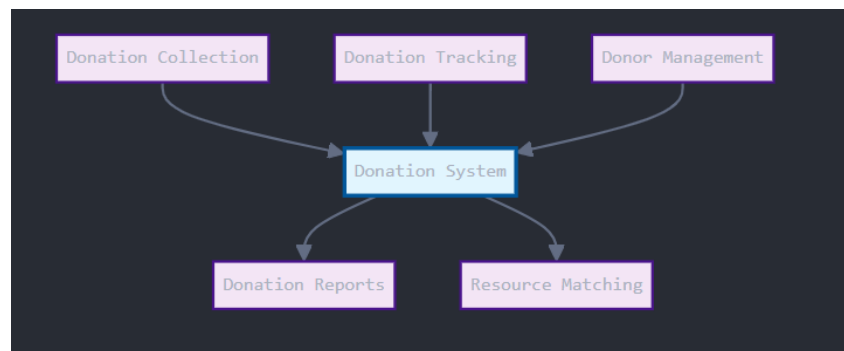


Figure 38: Donation management

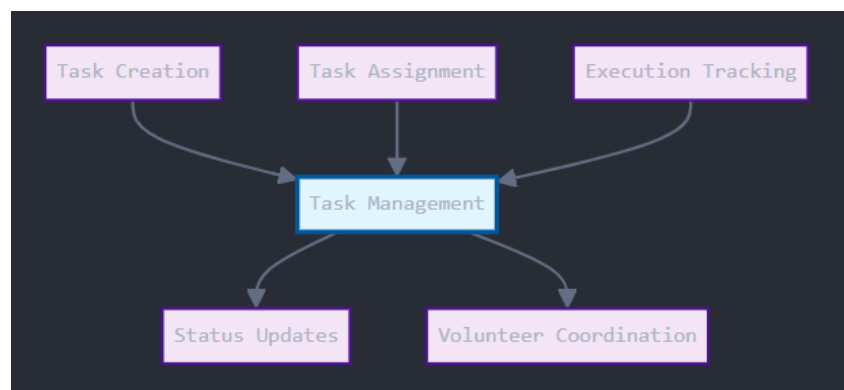


Figure 39: Volunteer Task management

2.3 User Classes and Characteristics

- **Admin:** Full access to manage users and camps.
- **Camp Officer:** Manages camp-specific data.
- **Medical Officer:** Handles victim medical data.
- **Volunteer:** Executes relief operations.
- **Public:** Requests help and donates.

2.4 Constraints

- Internet connectivity is required.
- Role-based access must be enforced.

2.5 Assumptions and Dependencies

- Users have basic digital literacy.
- MongoDB will be used as the backend.
- React will be used as the frontend designing.
- NodeJS or nodemon will used to manipulate the database from frontend.

3 Business Logic Specification

3.1 Business Domain Overview

RescueTrack System Overview

RescueTrack is a disaster relief coordination platform used in Bangladesh to organize victims, camps, personnel, and resources during emergencies.

- **Key Goals:** Improve efficiency, optimize resources, ensure transparency, support multiple disaster zones.
- **Entities:** Disasters, Camps, Victims, Resources, Personnel, Donations.

3.2 Core Business Rules

RescueTrack System Overview

- Role-based access: One primary role per user; Admin has overrides.
- Verified roles (officers, medics) require admin approval.
- Sessions expire after 8 hours; critical tasks extend session.

RescueTrack System Overview

- Capacity capped at 110%; alert at 90%.
- Status transitions: Setup → Active → Closed.
- Only one officer per camp; dual allowed during emergencies.

RescueTrack System Overview

- Auto-monitoring of stock; alerts at critical levels.
- Near-expiry items prioritized; expired removed.
- Distribution approval based on roles (Medics/Admin).

RescueTrack System Overview

- Victims triaged within 24h: Critical, Injured, Stable.
- Patient data accessible only by medical personnel.
- Supplies prioritized for life-threatening cases.

RescueTrack System Overview

- Requires background check, training, and admin approval.
- Tasks assigned by skill, availability, and location.
- Performance tracked (hours worked, task success).

3.3 User Role Business Logic

RescueTrack System Overview

Role	Responsibilities
Admin	Strategic planning, officer assignment, system setup. Critical changes require dual approval. All actions logged.
Camp Officer	Handles registration, resources, volunteers, reports. Must escalate critical events to Admin.
Medical Officer	Manages assessments, patient records, supplies. Enforces confidentiality and logs all actions.
Volunteer	Accepts tasks, reports progress, assists victims. Task completion verified by supervisor.

3.4 Operational Workflows

RescueTrack System Overview

Disaster Initiation: Detection → Record → Leader → Assessment → Camp Setup → Deployment → Monitoring

Victim Handling: Arrival → Registration → Health Check → Accommodation → Care → Reunification

Supply Chain: Inventory Check → Forecast → Procurement → Delivery → Distribution → Reporting

3.5 Data Management Logic

RescueTrack System Overview

- **Integrity:** Validated with rules, formats, and foreign keys. All changes logged.
- **Sync:** Critical updates in real-time; batch updates for reports.
- **Retention:** Operational data retained during emergencies; archived for 7 years.

3.6 Integration Logic

RescueTrack System Overview

- **Systems:** Govt. agencies, payment gateways, SMS/email, mapping APIs.
- **Exchange:** REST APIs using JSON, OAuth 2.0 for secure access.
- **Sync:** Real-time or batch with fallback monitoring.

3.7 Business Constraints

RescueTrack System Overview

- **Compliance:** Follows medical, financial, data privacy, and audit standards.
- **Technical Limits:** <1.5s load, 99.9% uptime, real-time sync, offline/mobile support.
- **Operational:** Localized to Bangladesh, bilingual UI, supports seasonal spikes.

Conclusion

RescueTrack System Overview

This logic ensures RescueTrack remains scalable, efficient, and compliant in disaster situations. Regular updates keep it aligned with evolving needs.

4 Specific Requirements

4.1 Functional Requirements

4.1.1 Use Case 1

Disaster Alert / Out of Stock Alert

Use Case Name:	Send Disaster Alert / Out of Stock Alert
Actor:	Admin
Priority:	Essential
Trigger:	Admin clicks the "Send Alert" button after filling in alert details
Precondition:	Admin is authenticated and required fields (alert type, location, message, item details) are completed
Basic Path:	<ol style="list-style-type: none">1. Admin accesses the Alert Center2. Selects the alert type: Disaster or Stock3. Inputs required information (e.g., location, description, item and quantity if applicable)4. Clicks "Send Alert"5. System validates inputs and sends alert via email6. Success message displayed to Admin
Alternate Path:	<ol style="list-style-type: none">1. Input validation fails or connection issue occurs<ol style="list-style-type: none">(a) System prompts admin to correct input(b) Admin updates the form(c) Resubmits the alert
Postcondition:	Alert is delivered to system admin or responders via email; confirmation shown
Exception Path:	If system fails to send email (e.g., server error), an error message is shown and admin is advised to retry later

4.1.2 Use Case 2

Add Category and Item

Use Case Name:	Add Category and Item
Actor:	Admin
Priority:	Essential
Trigger:	Admin selects “Add Category” or “Add Item” from the system menu
Precondition:	Admin is logged in; camp locations are already configured
Basic Path:	<ol style="list-style-type: none">1. Open Category Management page2. Input category name (e.g., ”Vehicles”) and click “Add”3. System validates and saves the category4. Navigate to Item Add screen5. Select category, date, and camp location6. Enter item quantity and description7. Click “Add” to submit8. System saves item and shows confirmation
Alternate Path:	<ul style="list-style-type: none">• If category already exists: system shows warning; admin must enter a different name• If item form is incomplete: system prompts to fill all fields
Postcondition:	New category is available in dropdown; item is registered under selected camp and category
Exception Path:	If a database or server error occurs, an error message is shown and operation is canceled

4.1.3 Use Case 3

Register and Manage Camps

Use Case Name:	Register and Manage Camps
Actor:	Admin
Priority:	Essential
Trigger:	Admin selects “Register Camp” or “Manage Camps”
Precondition:	Admin is authenticated
Basic Path:	<ol style="list-style-type: none">1. Admin opens Camp Registration screen2. Enters camp details (name, address, district, place, 4-digit pincode, capacity, status)3. Clicks “Register Camp”4. System validates and saves camp, shows confirmation5. Admin opens Manage Camps screen6. Views camp list with status and actions7. Selects Edit, Activate, or Deactivate8. For Edit: updates fields and saves changes9. For Activate/Deactivate: toggles camp status10. System updates records
Alternate Path:	<ol style="list-style-type: none">1. Missing required fields:<ul style="list-style-type: none">• System prompts to complete inputs2. Invalid pincode:<ul style="list-style-type: none">• System shows validation error
Postcondition:	New or updated camp saved and visible in the camp list
Exception Path:	On error (e.g., server failure), an error message is displayed and no changes are saved

4.1.4 Use Case 4

Camp Officer Registration and Management

Use Case Name:	Camp Officer Registration and Management
Actor:	Admin
Priority:	Essential
Trigger:	Admin opens the registration form or officer management section
Precondition:	Admin is authenticated and logged into the system
Basic Path:	<ol style="list-style-type: none"> 1. Admin opens the registration form 2. Admin fills out officer details: name, email, phone, password, address, and uploads ID proof 3. Admin submits the form by clicking "Register" 4. System validates inputs and saves the officer record 5. Confirmation is displayed to the admin 6. Admin can view and update registered officer information
Alternate Path:	<ol style="list-style-type: none"> 1. Registration fails due to invalid or missing inputs <ol style="list-style-type: none"> (a) System highlights the missing/invalid fields (b) Admin corrects and resubmits (c) System re-validates and registers successfully
Postcondition:	New officer account is registered and stored; admin can manage the officer's details
Exception Path:	Server or network error during registration; display appropriate error message and allow retry

4.1.5 Use Case 5

Assign Camp Officer to Camp

Use Case Name:	Assign Camp Officer to Camp
Actor:	Admin
Priority:	Essential
Trigger:	Admin selects a camp and a camp officer to assign
Precondition:	Admin is logged in and camp officer exists
Basic Path:	<ul style="list-style-type: none">• Admin opens the assignment page• Selects a camp and available camp officer• Clicks “Assign”• System assigns officer and confirms success
Alternate Path:	<ul style="list-style-type: none">• If the camp already has an officer:<ul style="list-style-type: none">– System shows “Officer is already assigned to a camp.”– Admin must select a different camp or officer
Postcondition:	Officer is linked to the selected camp
Exception Path:	<ul style="list-style-type: none">• Server or network failure during assignment• Invalid selection (e.g., deleted officer)

4.1.6 Use Case 6

Make a Donation

Use Case Name:	Make a Donation
Actor:	General User (Donor)
Priority:	Essential
Trigger:	User selects “Donate Now” from the website or app
Precondition:	Donation form is accessible and payment QR code is available
Basic Path:	<ol style="list-style-type: none">1. User opens the donation page2. Enters:<ul style="list-style-type: none">• Full Name• Email Address• Donation Amount (Taka)• Optional Message3. Scans QR code with mobile payment app4. Completes the payment5. Clicks “Donate Now”6. System validates the input7. System saves the donation record8. Confirmation message is displayed9. System sends a thank-you email to the donor with details
Alternate Path:	<ol style="list-style-type: none">1. Required fields are empty or invalid:<ul style="list-style-type: none">• System shows validation error and highlights missing fields
Postcondition:	Donation is recorded; email confirmation sent to the donor
Exception Path:	If saving the record or sending email fails, an error message is displayed advising the donor to retry

4.1.7 Use Case 7

Initiate Disaster Response

Use Case Name:	Initiate Disaster Response
Actor:	Admin
Priority:	Essential
Trigger:	Admin logs in and selects “Initiate Disaster”
Precondition:	Admin is authenticated
Basic Path:	<ol style="list-style-type: none">1. Admin fills in disaster location and details and add a leader for the task force management2. Clicks “Initiate”3. System creates a new disaster record4. Leader receives confirmation
Alternate Path:	Required fields are empty or invalid
Postcondition:	A new disaster is stored in the system
Exception Path:	If creation fails, error is shown with retry option

4.1.8 Use Case 8

Emergency Victim Registration

Use Case Name:	Rapid Victim Registration and Health Assessment
Actor:	Camp Officer
Priority:	Critical
Trigger:	Camp Officer logs in and selects "Register New Victim"
Precondition:	Camp Officer is authenticated and assigned to active relief camp
Basic Path:	<ol style="list-style-type: none"> 1. Camp Officer accesses victim registration interface and scans QR code or enters manual data 2. System displays registration form with personal details and health assessment sections 3. Officer enters victim information: name, age, contact details, identification documents 4. Officer conducts health assessment and records status: Critical, Injured, or Stable 5. System assigns unique victim ID and updates camp capacity statistics in real-time 6. Officer records family members and their individual health conditions 7. System generates victim identification card with QR code for future tracking 8. System automatically notifies medical officers of critical cases requiring immediate attention
Alternate Path:	If victim is unconscious or unable to provide information, officer creates anonymous record with physical description
Postcondition:	Victim registered, health status recorded, camp statistics updated, medical alerts generated
Exception Path:	If system is offline, officer uses paper forms and synchronizes data when connection restored

4.1.9 Use Case 9

Medical Care Coordination

Use Case Name:	Comprehensive Medical Care Management
Actor:	Medical Officer
Priority:	Critical
Trigger:	Medical Officer logs in and selects "Patient Dashboard"
Precondition:	Medical Officer is authenticated and assigned to relief operation
Basic Path:	<ol style="list-style-type: none"> 1. Medical Officer accesses patient dashboard displaying all victims requiring medical attention 2. System shows prioritized patient list sorted by health status and urgency 3. Officer selects patient and reviews medical history and current condition 4. Officer updates health status after examination and treatment 5. System records treatment details, medications administered, and follow-up requirements 6. Officer manages medical supply inventory and requests additional supplies if needed 7. System tracks medication usage and alerts for expiring medical supplies 8. Officer generates medical reports for health authorities and insurance purposes
Alternate Path:	If patient requires specialist care, officer initiates transfer request to appropriate medical facility
Postcondition:	Patient treated, medical records updated, supply inventory adjusted, reports generated
Exception Path:	If critical medical supplies are unavailable, system generates emergency procurement request

4.1.10 Use Case 10

Intelligent Supply Management

Use Case Name:	Automated Inventory and Supply Chain Optimization
Actor:	Camp Officer, Admin
Priority:	Essential
Trigger:	System logs in and selects "Inventory Management" or automated threshold triggers
Precondition:	Inventory system is configured and supply thresholds are set
Basic Path:	<ol style="list-style-type: none"> 1. System continuously monitors inventory levels across all camps and detects low stock situations 2. System analyzes consumption patterns and predicts future demand based on victim count 3. System automatically generates purchase orders for critical supplies below threshold 4. Camp Officer reviews automated recommendations and approves supply requests 5. System coordinates with suppliers and tracks delivery schedules 6. Officer receives supplies, updates inventory, and manages distribution to victims 7. System monitors expiry dates and generates alerts for items approaching expiration 8. System generates inventory reports and optimization recommendations for cost savings
Alternate Path:	If automated system fails, officer can manually create supply requests and track inventory
Postcondition:	Optimal inventory levels maintained, supply shortages prevented, cost efficiency achieved
Exception Path:	If supplier is unavailable, system identifies alternative suppliers and generates new orders

4.1.11 Use Case 11

Volunteer Coordination

Use Case Name:	Volunteer Registration and Task Assignment Management
Actor:	Admin, Camp Officer, Volunteer
Priority:	Important
Trigger:	Admin logs in and selects "Volunteer Management" or volunteer submits application
Precondition:	Disaster response is active and volunteer positions are available
Basic Path:	<ol style="list-style-type: none">1. Volunteer submits registration through online portal with personal details and skills2. System captures volunteer availability, experience, and preferred activities3. Admin reviews volunteer applications and conducts background verification4. Admin approves qualified volunteers and assigns them to specific camps5. Camp Officer creates task assignments based on volunteer skills and immediate needs6. System notifies volunteers of task assignments and provides detailed instructions7. Volunteer completes assigned tasks and updates status through mobile interface8. System tracks volunteer hours, performance, and generates recognition reports
Alternate Path:	If volunteer has specialized skills, they can be assigned to multiple camps or critical tasks
Postcondition:	Volunteers registered, tasks assigned, performance tracked, impact measured
Exception Path:	If volunteer fails verification, application is rejected with notification and improvement suggestions

4.1.12 Use Case 12

Multi-Camp Operations Dashboard

Use Case Name:	Centralized Multi-Camp Monitoring and Strategic Analytics
Actor:	Admin
Priority:	Essential
Trigger:	Admin logs in and selects "Operations Dashboard"
Precondition:	Admin is authenticated and multiple relief camps are operational
Basic Path:	<ol style="list-style-type: none">1. Admin accesses consolidated operations dashboard with real-time data visualization2. System displays comprehensive metrics: victim counts, health statistics, capacity utilization3. Admin analyzes performance data and identifies camps requiring additional support4. System highlights critical issues: supply shortages, overcrowding, medical emergencies5. Admin makes strategic decisions for resource reallocation and officer reassignment6. System generates comprehensive reports for government agencies and stakeholders7. Admin reviews efficiency metrics and identifies areas for operational improvement8. System provides predictive analytics for future resource planning and capacity management
Alternate Path:	If critical issues are detected, admin can initiate emergency response protocols immediately
Postcondition:	Operations monitored, strategic decisions made, resources optimized, reports generated
Exception Path:	If dashboard data is incomplete, system uses cached data and alerts admin of connectivity issues

4.1.13 Use Case 13

Relief Camp Setup

Use Case Name:	New Relief Camp Creation and Infrastructure Configuration
Actor:	Admin
Priority:	Critical
Trigger:	Admin logs in and selects "Create New Camp"
Precondition:	Admin is authenticated and disaster response operation is active
Basic Path:	<ol style="list-style-type: none">1. Admin accesses camp creation module and enters location coordinates and basic details2. System displays comprehensive camp setup form with capacity, facilities, and resource fields3. Admin configures camp parameters: maximum capacity, available facilities, medical capabilities4. System validates location accessibility and generates unique camp identification5. Admin assigns camp officers, medical staff, and initial volunteer teams6. System initializes inventory management system with basic supply allocations7. Admin configures operational parameters: supply thresholds, alert preferences, reporting schedules8. System activates camp in the network and notifies all assigned personnel
Alternate Path:	If location has limited connectivity, admin can configure camp for offline operation with periodic synchronization
Postcondition:	New relief camp operational, staff assigned, systems activated, ready for victim intake
Exception Path:	If required personnel are unavailable, system suggests alternative assignments and training requirements

4.1.14 Use Case 14

Family Reunification

Use Case Name:	Family Member Tracking and Reunification Services
Actor:	Camp Officer, Volunteer
Priority:	Important
Trigger:	Officer logs in and selects "Family Search" or receives family inquiry
Precondition:	Victim registration system is operational and family data is being collected
Basic Path:	<ol style="list-style-type: none">1. Camp Officer accesses family tracking module and enters search criteria2. System displays comprehensive search interface with multiple search options3. Officer enters known family member details: names, ages, physical descriptions, last known location4. System searches across all camps and generates potential matches with confidence scores5. Officer reviews matches and verifies family relationships through additional questions6. System updates family connection records7. Officer coordinates with other camps to facilitate family reunification8. System documents successful reunifications and updates victim records
Alternate Path:	If no matches found, system creates missing person alert and continues monitoring new registrations
Postcondition:	Family connections identified, reunification facilitated, records updated, emotional support provided
Exception Path:	If false matches occur, system provides correction mechanism and improves search algorithms

4.1.15 Use Case 15

Resource Optimization Analytics

Use Case Name:	Predictive Analytics for Strategic Resource Allocation
Actor:	Admin
Priority:	Important
Trigger:	Admin logs in and selects "Analytics Dashboard"
Precondition:	System has sufficient operational data and analytics engine is configured
Basic Path:	<ol style="list-style-type: none">1. Admin accesses analytics dashboard and selects optimization analysis parameters2. System analyzes historical data, consumption patterns, and current operational metrics3. System generates predictive models for future resource requirements across all camps4. Admin reviews forecasted demand for supplies, medical care, personnel, and infrastructure5. System provides recommendations for optimal resource allocation and cost optimization6. Admin evaluates recommendations and approves resource redistribution strategies7. System generates implementation timeline with specific actions and responsible parties8. System monitors actual outcomes versus predictions and continuously improves forecasting accuracy
Alternate Path:	If predictions appear inaccurate, admin can manually adjust parameters and rerun analysis
Postcondition:	Resource allocation optimized, cost efficiency improved, predictive models updated
Exception Path:	If insufficient data is available, system uses baseline calculations and requests additional data collection

4.1.16 Use Case 16

Compliance Reporting

Use Case Name:	Automated Regulatory Compliance and Audit Reporting
Actor:	Admin
Priority:	Essential
Trigger:	Admin logs in and selects "Generate Compliance Report" or automated schedule triggers
Precondition:	Admin is authenticated and system has operational data
Basic Path:	<ol style="list-style-type: none"> 1. Admin accesses compliance reporting module and selects required report type 2. System displays available report templates: financial audit, medical compliance, operational efficiency 3. Admin configures report parameters: date range, camps included, specific metrics required 4. System automatically compiles data from all operational modules and validates completeness 5. System generates comprehensive reports with required documentation and evidence 6. Admin reviews reports for accuracy and completeness before submission 7. System formats reports according to regulatory standards and generates digital signatures 8. System submits reports to appropriate authorities and maintains audit trail
Alternate Path:	If data is incomplete, system identifies missing information and provides data collection guidance
Postcondition:	Compliance reports generated, regulatory requirements met, audit trail maintained
Exception Path:	If submission fails, system retries automatically and notifies admin of any persistent issues

4.1.17 Use Case 17

Volunteer Management

Use Case Name:	Volunteer Registration and Activity Tracking System
Actor:	Volunteer, Admin, Staff
Priority:	High
Trigger:	New volunteer attempts registration or existing volunteer logs in for activity tracking
Precondition:	Rescue Track system is operational and volunteer is accessible
Basic Path:	<ol style="list-style-type: none"> 1. Volunteer accesses the registration portal and fills out personal information, skills, and availability 2. System validates information and creates pending volunteer 3. Admin reviews application and approves volunteer account 4. System sends welcome email with login credentials to approved volunteer 5. Volunteer logs in using provided credentials and accesses volunteer dashboard 6. System displays available assignments, training modules, and scheduled activities 7. Volunteer selects assignments and system records participation and hours 8. System automatically tracks volunteer activities, certifications, and performance metrics 9. System generates volunteer reports for compliance and recognition purposes
Alternate Path:	If application is incomplete, system highlights missing fields and allows resubmission
Postcondition:	Volunteer registered, activities tracked, and performance data available for reporting
Exception Path:	If login fails, system provides password reset option and notifies admin of access issues

4.2 Performance Requirements

- Web responses under 1.5 seconds.

4.3 Logical Database Requirements

The system uses a relational database with clearly defined tables to manage data integrity, relationships, and access control. The following are the key logical components of the database schema:

- **User and Role Management**
 - `tbl_volunteers`, `tbl_camp_officers`, `tbl_medical_officers` — Separate role-based tables storing personal and contact details.
 - `tbl_assign_officers`, `tbl_assign_mofficers` — Mapping tables for assigning officers and medical officers to specific camps.
- **Camp Management**
 - `tbl_camps` — Stores camp locations, capacity, and statuses.
 - `tbl_camp_statuses` — Lookup table for camp operational status.
- **Victim and Medical Data**
 - `tbl_victims` — Contains demographic and identification data of disaster victims.
 - `tbl_medical_reports` — Logs medical assessments and diagnosis by medical officers.
 - `tbl_medical_requests` — Tracks requests for medical supplies and support.
- **Inventory and Donations**
 - `tbl_items`, `tbl_inventories` — Tracks available resources and inventory across camps.
 - `tbl_donations` — Records of received donations, including type and donor info.
 - `tbl_supply_requests` — Logs requests for items from specific camps or officers.
 - `tbl_categories` — Classification of items/resources.
- **Emergency and Incident Handling**

- `tbl_alerts` — Emergency alerts generated by users or system.
- `tbl_incidentreports` — Detailed reports of incidents submitted by camp officers or volunteers.

4.4 Software System Attributes

- **Reliability:** 99.9% uptime target.
- **Availability:** 24/7 access.
- **Security:** Data must be encrypted.
- **Maintainability:** Modular architecture.

5 Supporting Information

- Project GitHub: <https://github.com/horaira1015/RecueTrack1.git>
- Tools: React, Node.js, MongoDB, Figma