

AAPADA SAHAYAK

A Project Report

Submitted by

Abhinav Kurule	112103004
Snehasish Bose	112103027
Gaurish Dodke	112103039

of

TY (Computer Engineering)

Under the guidance of

Dr. Tanuja R. Pattanshetti

COEP Technological University



DEPARTMENT OF COMPUTER ENGINEERING

COEP Technological University

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DEPARTMENT OF COMPUTER ENGINEERING

COEP Technological University

CERTIFICATE

Certified that this project, titled “AAPADA SAHAYAK” has been successfully completed by

Abhinav Kurule	112103004
Snehasish Bose	112103027
Gaurish Dodke	112103039

and is approved for the fulfilment of the requirements of “Software Engineering Mini Project- Stage II”.

SIGNATURE

Dr. Tanuja R. Pattanshetti

Project Guide

Department of Computer Engineering

COEP Technological University,

Shivajinagar, Pune - 5.

Abstract

Effectively responding to natural or man-made disasters requires coordination and collaboration among various rescue agencies. To address this need, we present an innovative application that serves as a centralized platform for rescue agencies to register, share information, and coordinate their efforts during times of emergency.

The core functionality of the application revolves around a comprehensive database that houses crucial details about registered rescue agencies, including their location, contact information, and areas of expertise. The application then leverages this rich data to provide an intuitive user interface, featuring a dynamic map that displays the real-time positions of all registered agencies.

To enhance the application's utility, we have incorporated advanced features that facilitate collaboration among rescue teams. Agencies can request assistance, and share resources directly through the application, promoting seamless coordination and efficient allocation of critical emergency response assets. Recognizing the sensitivity of the information involved, we have also implemented robust security and privacy measures to ensure that only authorized users can access the portal.

The proposed application serves as a comprehensive solution for improving the effectiveness of disaster response efforts. By centralizing crucial information and fostering collaboration, the application empowers rescue agencies to navigate crisis situations with increased agility, resilience, and impact. This innovative platform has the potential to revolutionize emergency response strategies, ultimately saving more lives and minimizing the devastation caused by natural or man-made calamities.

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Chapter 1

Synopsis

1.1 Project Title

AAPADA SAHAYAK

1.2 Internal Guide

Dr. Tanuja R. Pattanshetti

1.3 Problem Statement

A Web Portal under which all rescue agencies are registered and which can display the location of other rescue relief agencies during natural/ man made calamities

1.4 Problem Statement Description

All rescue agencies can register their information, including their location, contact details, and areas of expertise. Once the database is populated, It would include a map that shows the locations of all registered rescue agencies. In addition to displaying the locations of rescue agencies, the application will also include features for collaboration. For example, agencies could send alerts or requests for assistance to each other directly through the application, or collaborate on shared resources such as medical equipment or transportation. Security and privacy would be major considerations in building such an application. It would be important to ensure that only authorized users have access to the database, and that sensitive information such as personal contact details is protected. Overall, building an application that allows rescue agencies to coordinate their efforts and provide aid more effectively could be a valuable tool for responding to natural or man-made disasters.

1.5 Plan of Project Execution

Task	Start Date	End Date	Duration	Resources
Problem statement discussion	20-Jan-24	24-Jan-24	5	Abhinav,Snehasish,Gaurish
Stakeholder Identification	25-Jan-24	27-Jan-24	3	Snehasish,Abhinav,Gaurish
Project Scope Discussion	28-Jan-24	30-Jan-24	3	Gaurish,Snehasish,Abhinav
Work Distribution	31-Jan-24	01-Feb-24	2	Snehasish
Requirement Gathering	02-Feb-24	04-Feb-24	3	Abhinav,Snehasish,Gaurish
Technology Selection	05-Feb-24	06-Feb-24	2	Abhinav
System Design and Architecture	06-Feb-24	09-Feb-24	4	Abhinav,Snehasish,Gaurish
Risk Assessment	10-Feb-24	13-Feb-24	10	Abhinav,Snehasish,Gaurish
Database Setup and Config	20-Feb-24	23-Feb-24	4	Abhinav,Snehasish,Gaurish
Backend Development	24-Feb-24	09-Mar-24	15	Abhinav,Snehasish,Gaurish
Frontend Development	10-Mar-24	19-Mar-24	10	Abhinav,Snehasish,Gaurish
Integration and Testing	20-Mar-24	24-Mar-24	5	Abhinav,Snehasish,Gaurish
Documentation	25-Mar-24	29-Mar-24	5	Abhinav,Snehasish,Gaurish
Final Review	30-Mar-24	2-Apr-24	4	Abhinav,Snehasish,Gaurish

Chapter 2

Problem Definition and scope

2.1 Problem Definition

2.1.1 Goals and objectives

Goal and Objectives:

- Goals
 - A Web Portal under which all rescue agencies are registered and which can display the location of other rescue relief agencies during natural/ man made calamities
- Objectives
 - **Centralized Database System for Rescue Agency Registration:** Designing and developing a comprehensive database to store information about registered rescue agencies including details such as location, contact information, areas of expertise, and available resources.
 - **Intuitive Visualization of Rescue Agency Locations:** Creating a user-friendly application interface with a dynamic map-based visualization, displaying the locations of all registered rescue agencies.

- **Advanced Collaboration Features:** Developing features that allow rescue agencies to send alerts and request assistance, enabling the sharing of critical resources (e.g., medical equipment, transportation) among agencies, also facilitating real-time coordination and efficient utilization of emergency response assets.
- **Robust Security and Privacy Measures:** Implementing strict access controls to ensure only authorized users can access the database and protecting sensitive information, such as personal contact details, from unauthorized access or misuse.
- **Comprehensive Solution for Effective Disaster Response:** Centralizing crucial information about rescue agencies and their capabilities, streamlining communication and promote collaboration among rescue teams, enhancing the overall effectiveness of disaster response efforts. Saving more lives and minimizing the impact of natural or man-made calamities.

2.1.2 Statement of scope

- **Enhanced Coordination:** Real-time information sharing fosters a more efficient and coordinated response among rescue agencies.
- **Resource Optimization:** Collaboration prevents duplication, optimizing the utilization of available resources like medical equipment and transportation.
- **Quick Response:** Swift location and collaboration with nearby agencies significantly reduce emergency response time.
- **Improved Situational Awareness:** The map-based interface enhances decision-making by providing a visual representation of the disaster area and registered agency locations.

2.2 Software context

- **Underlying Infrastructure:** Aapda Sahayak is designed for scalability and reliability, utilizing a standard web hosting infrastructure. The application logic is built on Node.js, a popular server-side JavaScript framework, paired with Express.js, a web application framework for Node.js. This combination offers a robust and efficient platform for handling user requests and managing data flow.
- **Data Management:** The core of Aapda Sahayak lies in its central database powered by MongoDB, a NoSQL document database known for its flexibility and scalability. This choice allows for efficient storage of diverse data points associated with registered rescue agencies, including location (geospatial coordinates), contact information, and areas of expertise. Additionally, the system can integrate automated data feeds from GPS or other location tracking technologies to maintain real-time agency location information.
- **User Interface and Visualization:** Aapda Sahayak prioritizes user-friendliness and situational awareness. The application leverages the MapQuest API to display the locations of registered rescue agencies on an interactive map. This visual representation allows disaster response personnel to quickly identify nearby resources and assess the overall deployment landscape. To optimize information retrieval, Aapda Sahayak incorporates a robust filtering system. Users can filter agency listings based on specific criteria such as the type of disaster, available resources (medical supplies, transportation, etc.), or the last reported activity time. This facilitates targeted searches and expedites resource allocation during critical situations.

- **Collaboration:** Beyond information sharing, Aapda Sahayak fosters collaboration among rescue agencies. The system enables agencies to send real-time alerts and requests for assistance directly through the platform. This streamlines communication channels, eliminating delays and facilitating a coordinated response. Additionally, Aapda Sahayak allows agencies to share resource information, such as the availability of medical equipment or transportation. This collaborative approach ensures optimal utilization of resources and minimizes duplication of efforts in the disaster zone.
- **Security and Privacy:** Aapda Sahayak recognizes the sensitive nature of the information it handles. As such, robust security measures are implemented to ensure only authorized users can access the database. Additionally, the system employs data encryption techniques to safeguard sensitive information such as personal contact details.

2.3 Major Constraints

- **Data Accuracy and Integrity:** Ensuring the reliability and accuracy of the information stored in the database poses a significant constraint. It's crucial to implement mechanisms for data validation and verification to maintain the integrity of the rescue agencies' details, including their locations and available resources.
- **Scalability and Performance:** As the application is designed to cater to multiple rescue agencies operating during disasters, scalability becomes a critical concern. Handling a potentially large volume of data and user requests while maintaining performance levels requires careful architectural planning and optimization.

- **Interoperability and Integration:** Integrating with existing systems and technologies used by various rescue agencies may present challenges in achieving seamless interoperability. Compatibility issues and the need for standardized data exchange protocols must be addressed to ensure effective collaboration between different agencies.
- **User Training and Adoption Rate:** Introducing a new platform for coordination and collaboration among rescue agencies requires adequate training and user adoption strategies. Overcoming resistance to change and ensuring widespread acceptance and utilization of the application poses a significant challenge that needs to be addressed proactively.
- **Emergency Response Protocols and Governance:** Aligning the application's functionalities with established emergency response protocols and governance frameworks is essential for seamless integration into existing disaster management practices. Ensuring that the application complements rather than disrupts established procedures may require close collaboration with relevant authorities and stakeholders.

2.4 Outcome

- **Enhanced Situational Awareness and Resource Allocation:** Aapda Sahayak effectively addresses the challenge of fragmented information during disaster response. The centralized database and intuitive map visualization provide a comprehensive view of registered rescue agencies, their locations, and areas of expertise. This empowers responders to quickly identify nearby resources, optimize deployment strategies, and efficiently allocate critical assets based on real-time needs.

- **Streamlined Collaboration:** Aapda Sahayak fosters real-time collaboration among rescue agencies. The integrated alert system facilitates rapid exchange of critical information, enabling quicker response times and coordinated action. Additionally, the platform promotes resource sharing, minimizing duplication of efforts and ensuring optimal utilization of equipment and personnel.
- **Improved Scalability and Reliability:** The underlying infrastructure of Aapda Sahayak leverages the robust combination of Node.js, Express.js, and a scalable NoSQL database (MongoDB). This technology stack ensures the application can handle surges in user activity during disaster events. Furthermore, the integration with location tracking technologies allows for dynamic updates and maintains real-time agency location data for enhanced decision-making.
- **Empowerment of Stakeholders and Community Resilience:** By providing a comprehensive solution for effective disaster response, Aapda Sahayak empowers stakeholders at all levels to contribute meaningfully to disaster management efforts. Through its user-friendly interface and collaborative features, the application encourages active participation from both formal rescue agencies and community-based organizations. This inclusive approach not only strengthens the resilience of local communities but also promotes a culture of preparedness and collective responsibility in mitigating the impact of future disasters.
- **Ensured Data Security and Privacy:** The outcome results in an enhanced user experience, enabling users to make informed purchasing decisions and maximize savings in the electronic marketplace. This commitment to data integrity instills trust among users and stakeholders, fostering a conducive environment for collaboration and information sharing within the disaster response community.

2.5 Applications

- **Emergency Response Management:** Aapda Sahayak can serve as a critical tool for emergency response management agencies at local, regional, or national levels. By centralizing information about rescue agencies and their capabilities, authorities can efficiently coordinate resources during natural disasters like earthquakes, hurricanes, or floods. Furthermore, the real-time collaboration features enable swift decision-making and effective deployment of assets, ultimately saving lives and minimizing the impact of emergencies.
- **Humanitarian Aid Operations:** International humanitarian organizations can utilize Aapda Sahayak to streamline their aid operations in regions affected by conflicts, natural disasters, or public health emergencies. By mapping the locations of both formal and informal rescue agencies, humanitarian actors can identify gaps in assistance, optimize resource allocation, and enhance coordination among various stakeholders. This application facilitates a more targeted and efficient response to complex humanitarian crises, fostering greater resilience and recovery in affected communities.
- **Search and Rescue Operations:** The application can be used as a budget planning tool, allowing users to monitor prices of electronic items and plan their purchases accordingly. By tracking price trends and setting budget thresholds, users can optimize their spending and maximize savings.
- **Educational and Research Purposes:** Aapda Sahayak can also serve as a valuable tool for academic institutions, research organizations, and training centers involved in disaster management studies. Researchers can analyze the platform's data to study patterns of disaster response, evaluate the effectiveness of coordination

mechanisms, and identify areas for improvement in emergency preparedness and response.

- **Public Health Emergency Preparedness:** Public health authorities can leverage Aapda Sahayak to enhance their preparedness and response capabilities during disease outbreaks or public health emergencies. By integrating data on healthcare facilities, medical supplies, and trained personnel, health agencies can create a comprehensive resource inventory to tackle infectious disease outbreaks, natural disasters with health implications, or mass casualty incidents.

2.6 Software Resources Required

1. **Frontend Development Framework:** Aapda Sahayak relies on the React framework and external APIs to deliver a modern and interactive user experience. React's component-based architecture facilitates the development of responsive user interfaces, ensuring compatibility with major web browsers such as Chrome, Firefox, and Edge. Additionally, the software interfaces with external APIs for geospatial services, enabling seamless data exchange and functionality enhancements. By leveraging these software resources, Aapda Sahayak delivers a sophisticated and user-friendly platform for effective disaster response and collaboration.
2. **Backend Development Framework:** Node.js and Express.js - This powerful combination provides a robust and scalable foundation for Aapda Sahayak's server-side logic. Node.js's event-driven, non-blocking nature efficiently handles concurrent user requests, while Express.js streamlines web application development by offering a layer of functionalities for routing, middleware, and templating.

3. Database Management System: A robust and scalable MongoDB database serves as the backbone of Aapda Sahayak, facilitating efficient storage and retrieval of crucial information about registered rescue agencies. This NoSQL database management system (DBMS) accommodates diverse data types, including agency registration details, geographical coordinates, and collaborative alerts. By leveraging MongoDB's flexibility and scalability, the software ensures optimal performance and responsiveness, even during periods of high user activity or data influx.

4. MapQuest API Integration : Aapda Sahayak seamlessly integrates with the MapQuest API to provide users with an intuitive mapping and visualization interface. Leveraging geospatial data, the software accurately displays the locations of registered rescue agencies, enabling users to assess deployment landscapes and plan response strategies effectively. The MapQuest API enhances situational awareness by offering dynamic mapping capabilities and real-time updates, thereby empowering users to make informed decisions during emergencies.

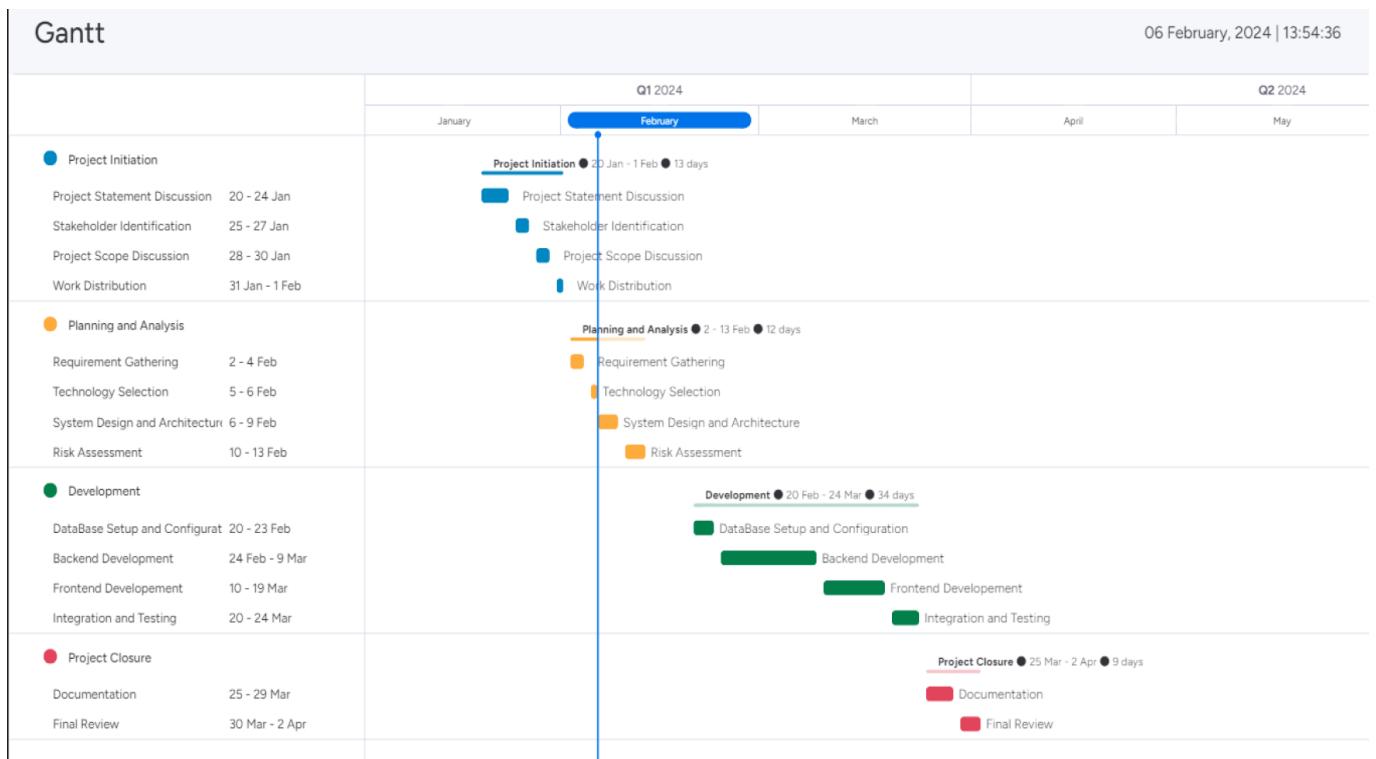
5. Version Control System: Version control software such as Git is necessary for managing the application's source code, tracking changes, and collaborating with team members.

Chapter 3

Project Plan

3.1 Project Schedule

3.1.1 Gantt Chart



Chapter 4

Software requirement specification

4.1 Introduction

4.1.1 Use-cases

SOS Call Activation:

- **Actor:** User
- **Description:** The user initiates an SOS call through the platform, signaling an emergency situation.
- **Outcome:** The SOS call is transmitted to nearby rescue agencies, alerting them to the emergency and prompting immediate response actions.

Location Sharing:

- **Actor:** User
- **Description:** The user's location is automatically shared with registered rescue agencies upon SOS call activation.
- **Outcome:** Rescue agencies receive precise location information, enabling them to swiftly locate and assist the user in distress.

Emergency Response Coordination:

- **Actor:** Rescue Agency
- **Description:** Upon receiving the SOS call, the rescue agency mobilizes its resources and coordinates response efforts.
- **Outcome:** Rescue teams are dispatched to the user's location, ensuring prompt assistance and effective handling of the emergency situation.

Resource Request to Other Agency:

- **Actor:** Rescue Agency
- **Description:** In case of resource shortages or specialized needs, a rescue agency can send a request to other nearby agencies for additional resources or expertise.
- **Outcome:** Other agencies receive the request and may respond by offering assistance, such as deploying personnel, sharing equipment, or providing specialized skills, to support the requesting agency in fulfilling its mission-critical tasks.

Resource Management of Own Resources:

- **Actor:** Rescue Agency
- **Description:** The rescue agency manages its own resources, including equipment, personnel, and specialized skills, to ensure optimal utilization and readiness for emergency response activities.
- **Outcome:** The agency maintains an inventory of available resources, tracks their usage and availability status, schedules maintenance and replenishment as needed, and coordinates deployment based on the evolving demands of emergency situations, maximizing efficiency and effectiveness in resource utilization.

4.1.2 Use Case View

Use Case Diagram:

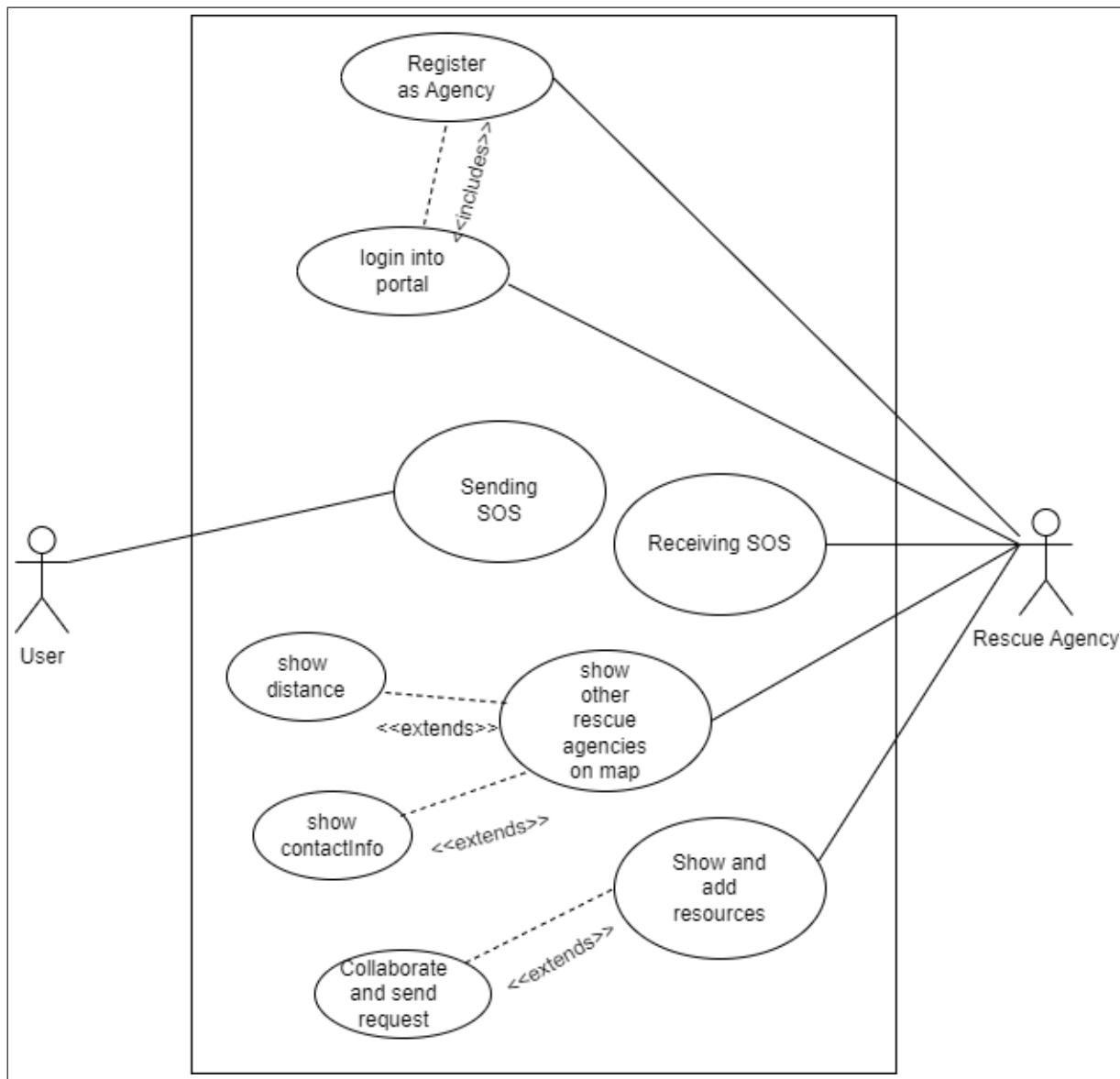


Figure 4.1: Use case diagram

4.2 Data Model and Description

4.2.1 Data objects and Relationships

- **Rescue Agency:**

- Attributes

- * Name
 - * Location (Geospatial Coordinates)
 - * Areas of Expertise
 - * Available Resources

- * Relationships:**

- One-to-Many with Resource Request: A rescue agency can make multiple resource requests.
 - One-to-Many with Resource Inventory: A rescue agency can have multiple resources in its inventory.

- **SOS:**

- Attributes

- * Timestamp
 - * Location (Geospatial Coordinates)

- * Relationships:**

- Many-to-One with Rescue Agency: An emergency call is associated with only one rescue agency.

- **Resource Request:**

- Attributes
 - * Requested Resource Type
 - * Description
 - * Status (Pending, Approved, Rejected)

- * **Relationships:**

- Many-to-One with Rescue Agency: A resource request is made by only one rescue agency.

- **Resource Inventory:**

- Attributes
 - * Resource Type
 - * Quantity

- * **Relationships:**

- Many-to-One with Rescue Agency: Each resource in the inventory belongs to only one rescue agency.

Entity Relationship Diagram:

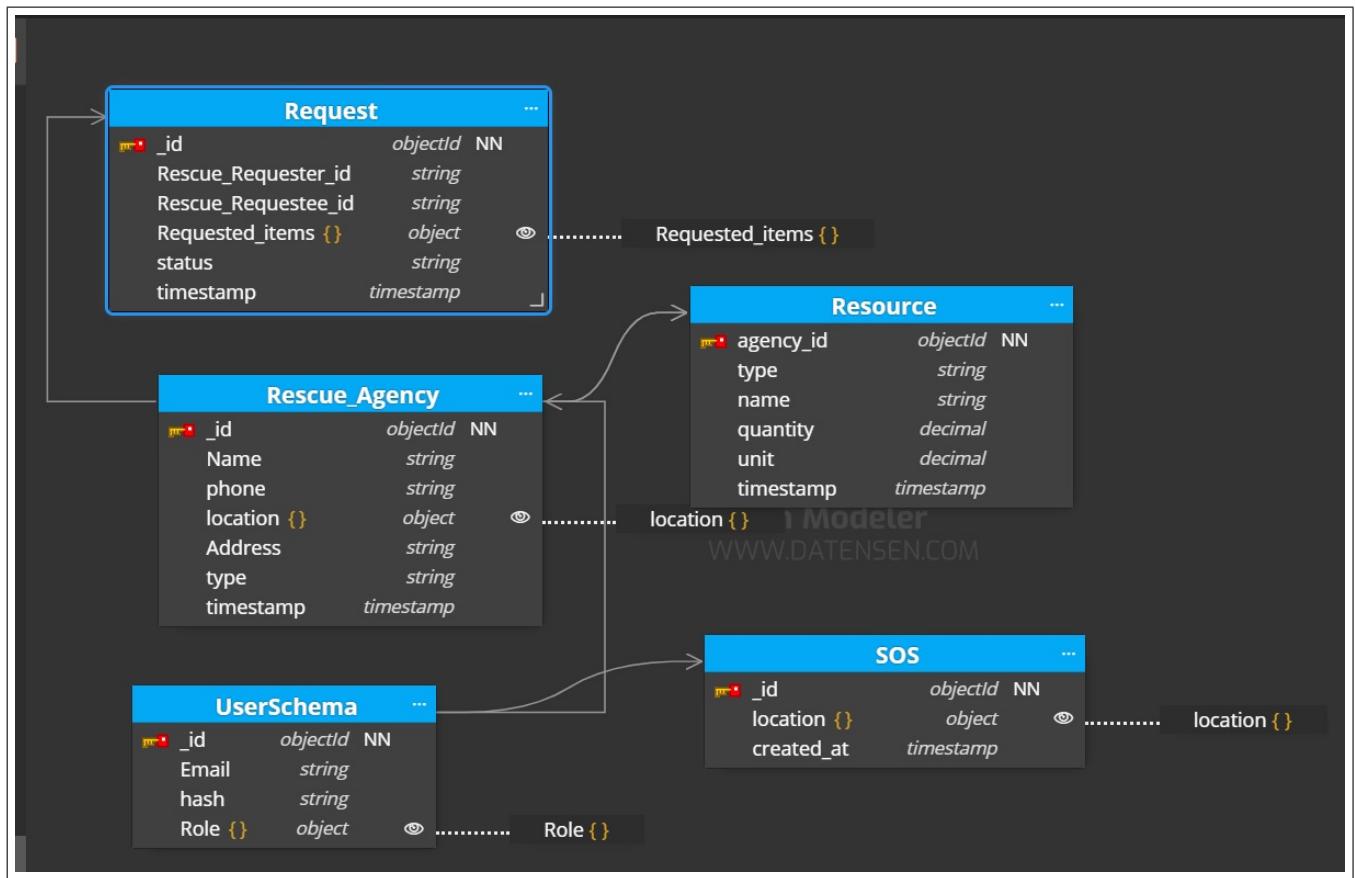
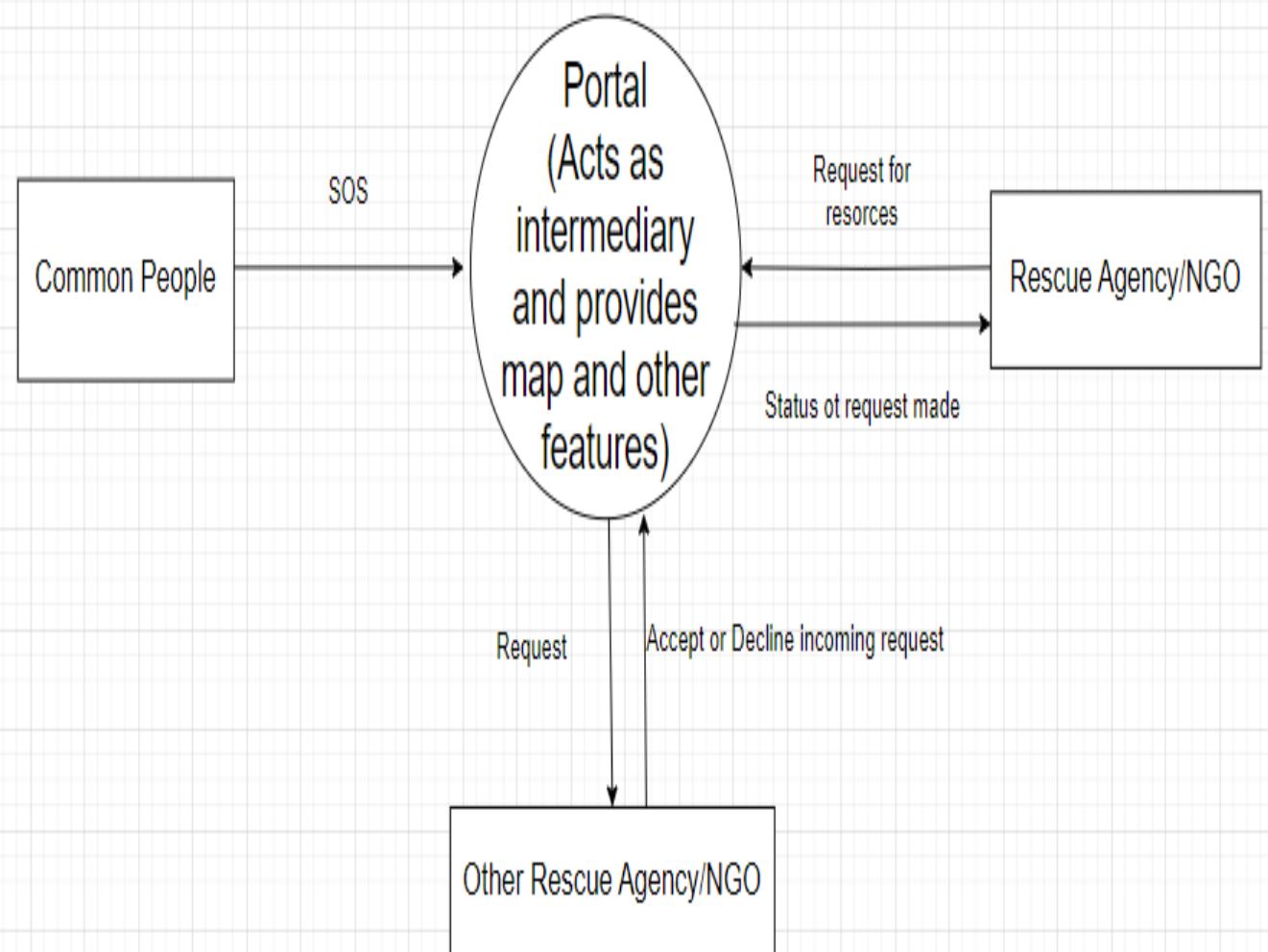


Figure 4.2: Entity Relationship diagram

4.3 Functional Model and Description

4.3.1 Data Flow Diagram

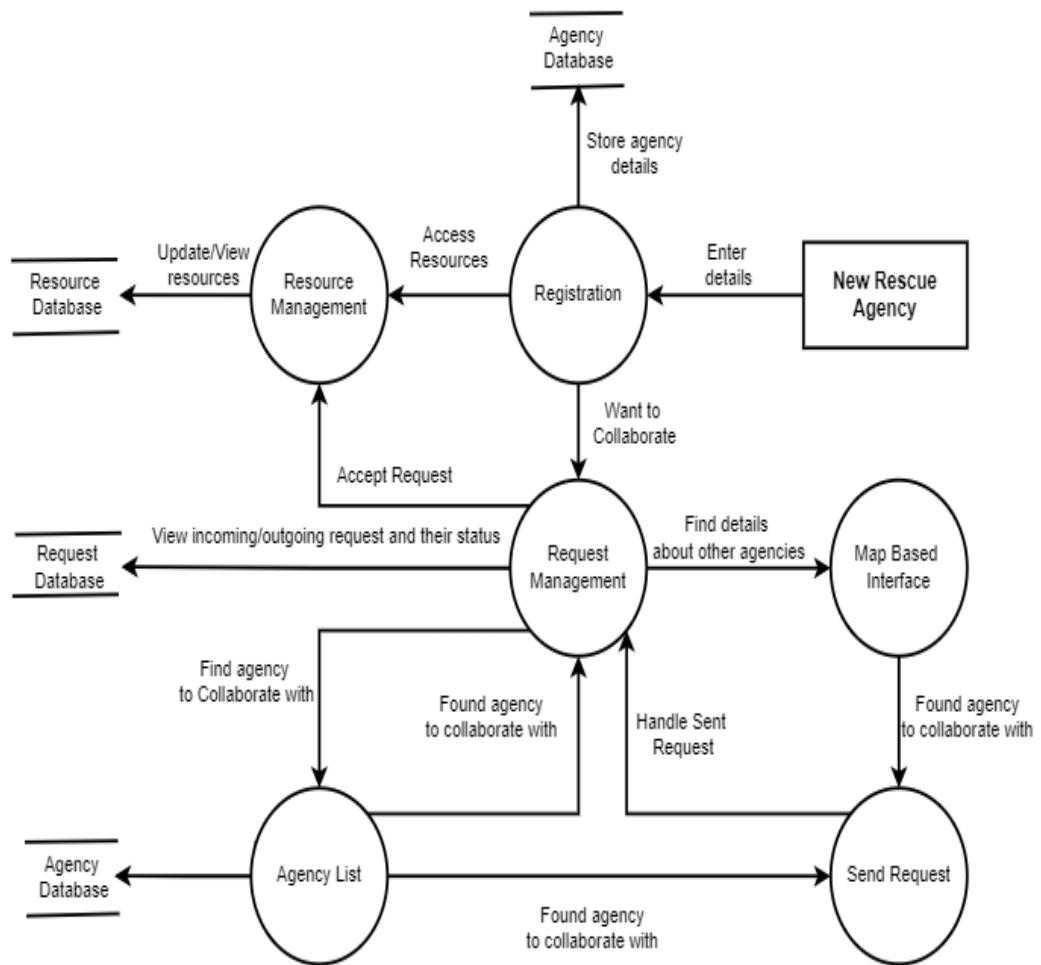
4.3.2 Level 0 Data Flow Diagram



DFD Level 0

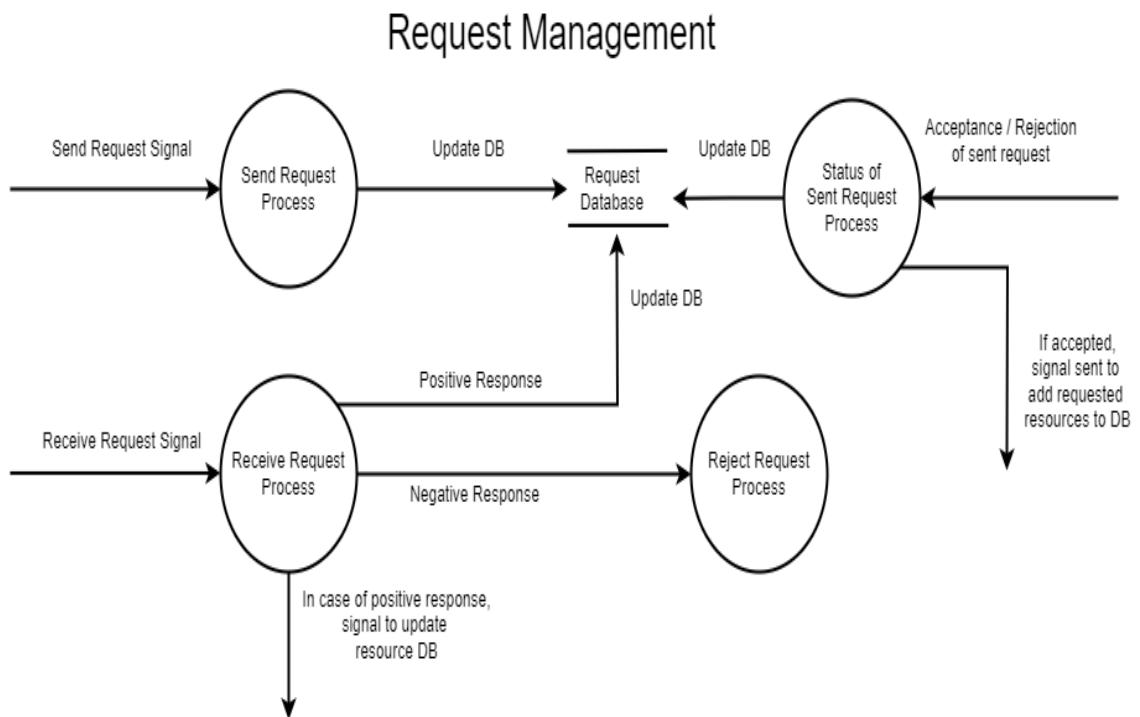
4.3.3 Level 1 Data Flow Diagram

DFD Level-1

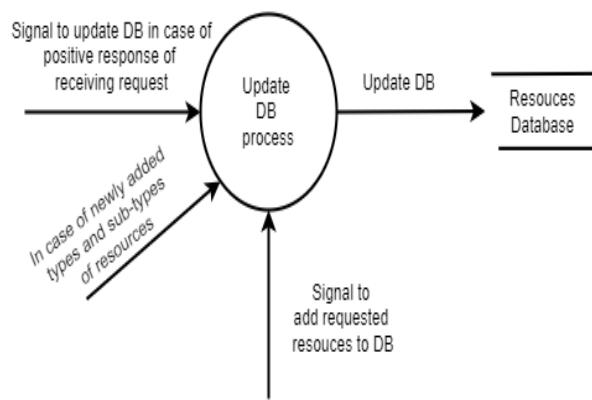


DFD Level 1

4.3.4 Level 2 Data Flow Diagram



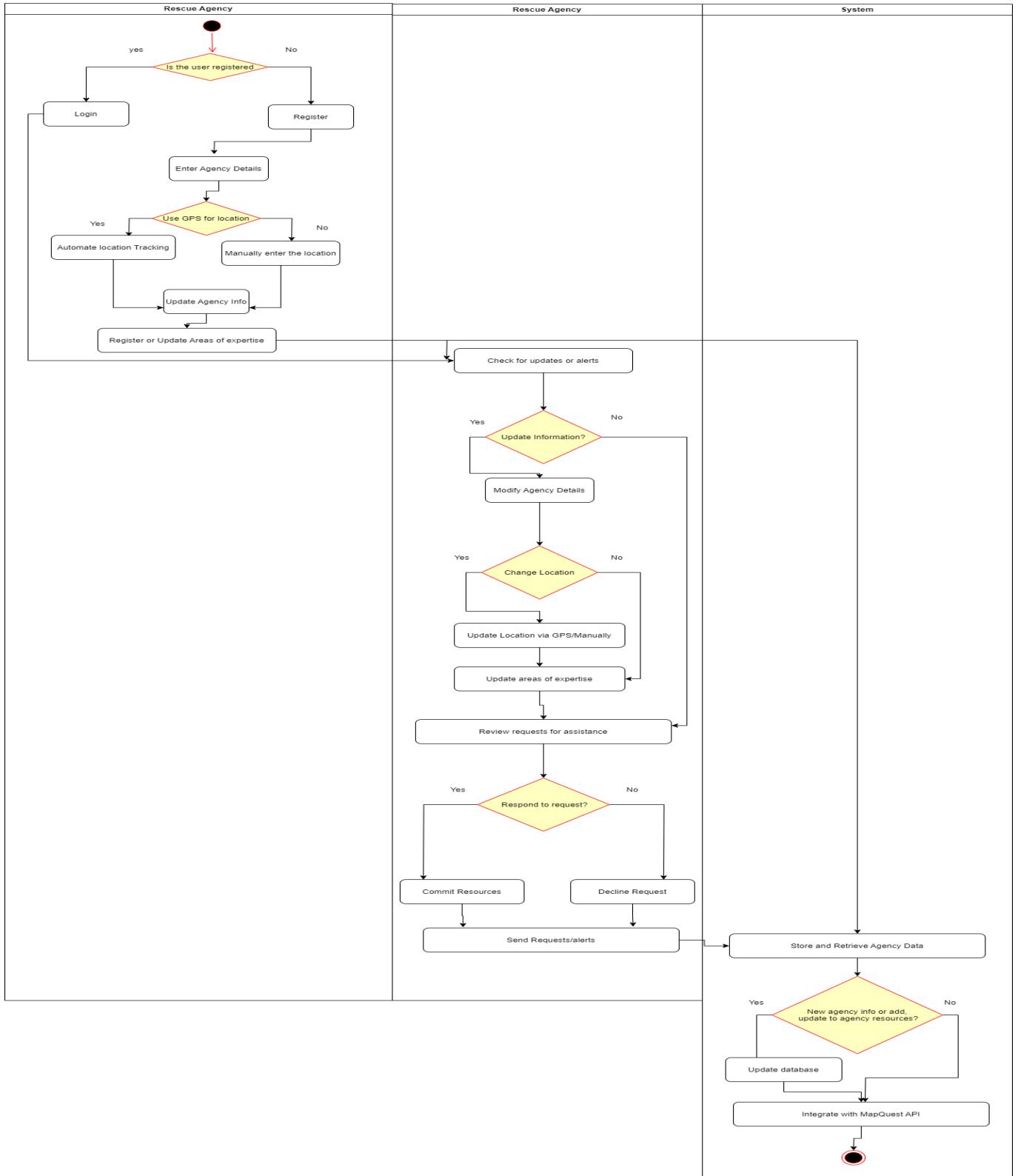
Resource Management



DFD Level 2

4.3.5 Description of functions

4.3.6 Activity Diagram:



Activity Diagram

4.3.7 Non Functional Requirements:

Performance Requirements

Response Time:

- **Requirement:** The portal will respond to user interactions (e.g., filtering, map navigation) within a few seconds under normal operating conditions.
- **Rationale:** Prompt response time ensures a smooth user experience, enabling quick access to critical information during emergencies.

Database Query Performance:

- **Requirement:** Database queries for retrieving agency information will execute within a few seconds.
- **Rationale:** Fast database query performance ensures timely access to updated agency data, facilitating effective decision-making during emergencies.

Map Rendering Speed:

- **Requirement:** The map display will render agency locations and updates within a short period.
- **Rationale:** Rapid map rendering speed allows users to visualize the current situation and plan response strategies efficiently.

Scalability:

- **Requirement:** The portal will support a significant number of users without degradation in performance.
- **Rationale:** Scalability ensures that the application can handle increased user traffic during large-scale emergencies without compromising performance.

Safety Requirements:

Data Security:

- **Requirement:** Implement robust encryption measures to protect sensitive user and agency information.
- **Safeguard:** Regularly update encryption protocols and conduct security audits to identify and address vulnerabilities.

User Authentication:

- **Requirement:** Ensure secure authentication processes to prevent unauthorized access.
- **Safeguard:** Implement multi-factor authentication to add an extra layer of security.

Location Privacy:

- **Requirement:** Protect the privacy of agency locations, allowing only authorized entities to access this information.
- **Safeguard:** Implement access controls and encryption for location data.

External API Integration:

- **Requirement:** Ensure secure communication with external APIs to prevent data breaches.
- **Safeguard:** Validate and authenticate external API requests, and regularly update integration protocols.

Security Requirements:

User Identity Authentication:

- **Requirement:** Implement a secure user authentication system to ensure only authorized individuals have access to the application.
- **Safeguard:** Utilizing strong password policies, One Time Password (OTP) based registration.

Access Controls:

- **Requirement:** Define role-based access controls to restrict access to specific features and data based on user roles.
- **Safeguard:** Implement fine-grained access controls to ensure that users only have access to the information necessary for their roles.

4.3.8 Design Constraints

- **Geolocation Accuracy and Update Frequency:** The system relies heavily on accurate and up-to-date location data of rescue agencies. The design should consider factors like GPS accuracy limitations and data refresh intervals to ensure the map reflects the real-time deployment landscape.
- **API Integration Challenges:** Aapda Sahayak integrates with multiple external APIs, including those for mapping and location services. The design must address potential challenges like API rate limits, data format inconsistencies, and error handling mechanisms to ensure smooth functionality.

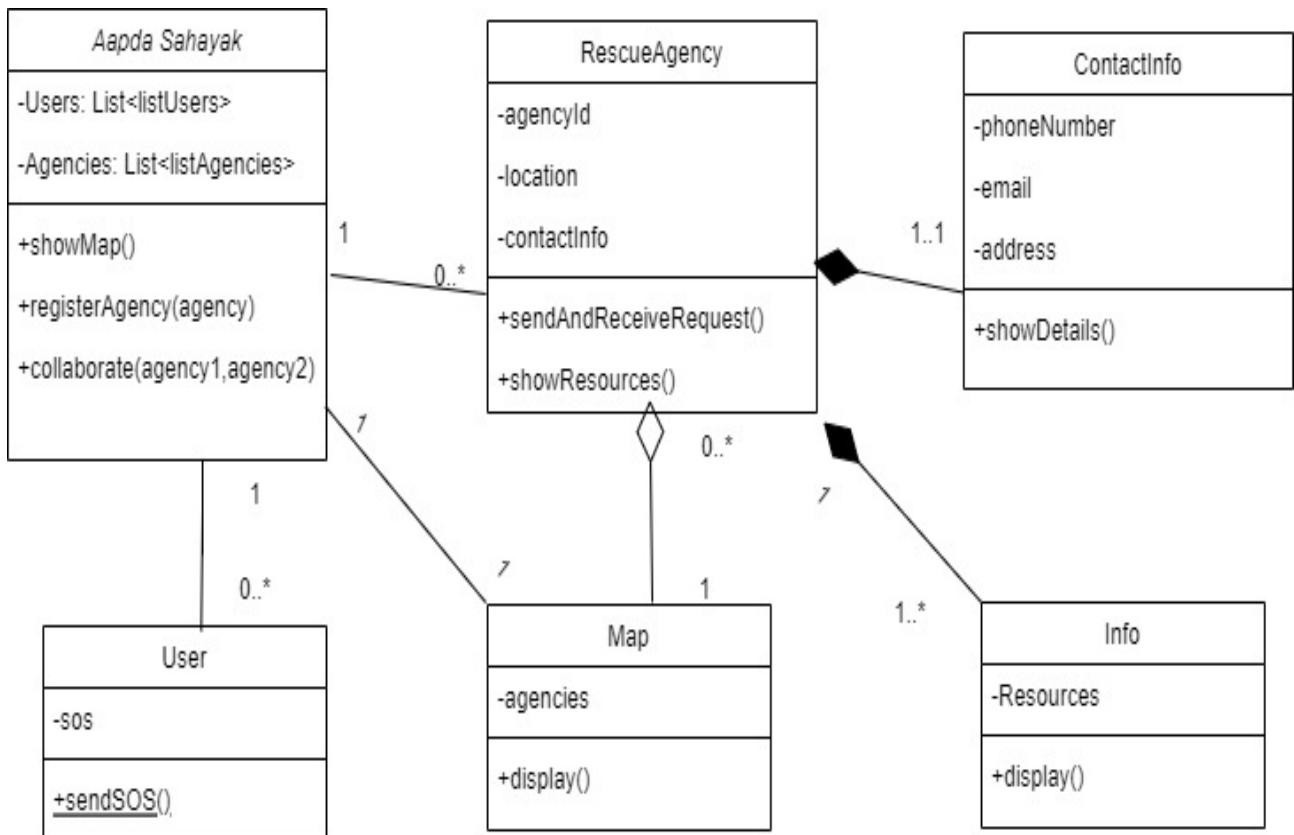
- **Offline Data Availability:** While internet connectivity is ideal, the application should function to some extent even in offline scenarios. The design must consider mechanisms for caching critical data like pre-defined agency locations or basic resource information for offline use.
- **Rescue agency Interface Complexity vs. Usability:** The rescue agency interface should balance the need for comprehensiveness, displaying various features and filters, with maintaining ease of use, especially for users under rescue agency pressure during emergencies. The design should prioritize clear information hierarchy and intuitive interaction methods.
- **Compliance and Regulations:** The system must adhere to relevant legal regulations, standards, and industry best practices governing data protection, emergency management, and privacy rights. Compliance with regulations or local data protection laws should be ensured to maintain legal and ethical integrity in handling sensitive information.
- **Interoperability and Integration:** The platform should support interoperability with existing emergency response systems, allowing seamless data exchange and collaboration among different agencies and stakeholders involved in disaster management.

Chapter 5

Detailed Design Document

5.1 Component Design

5.1.1 Class Diagram



Class Diagram

5.1.2 Sequence Diagram

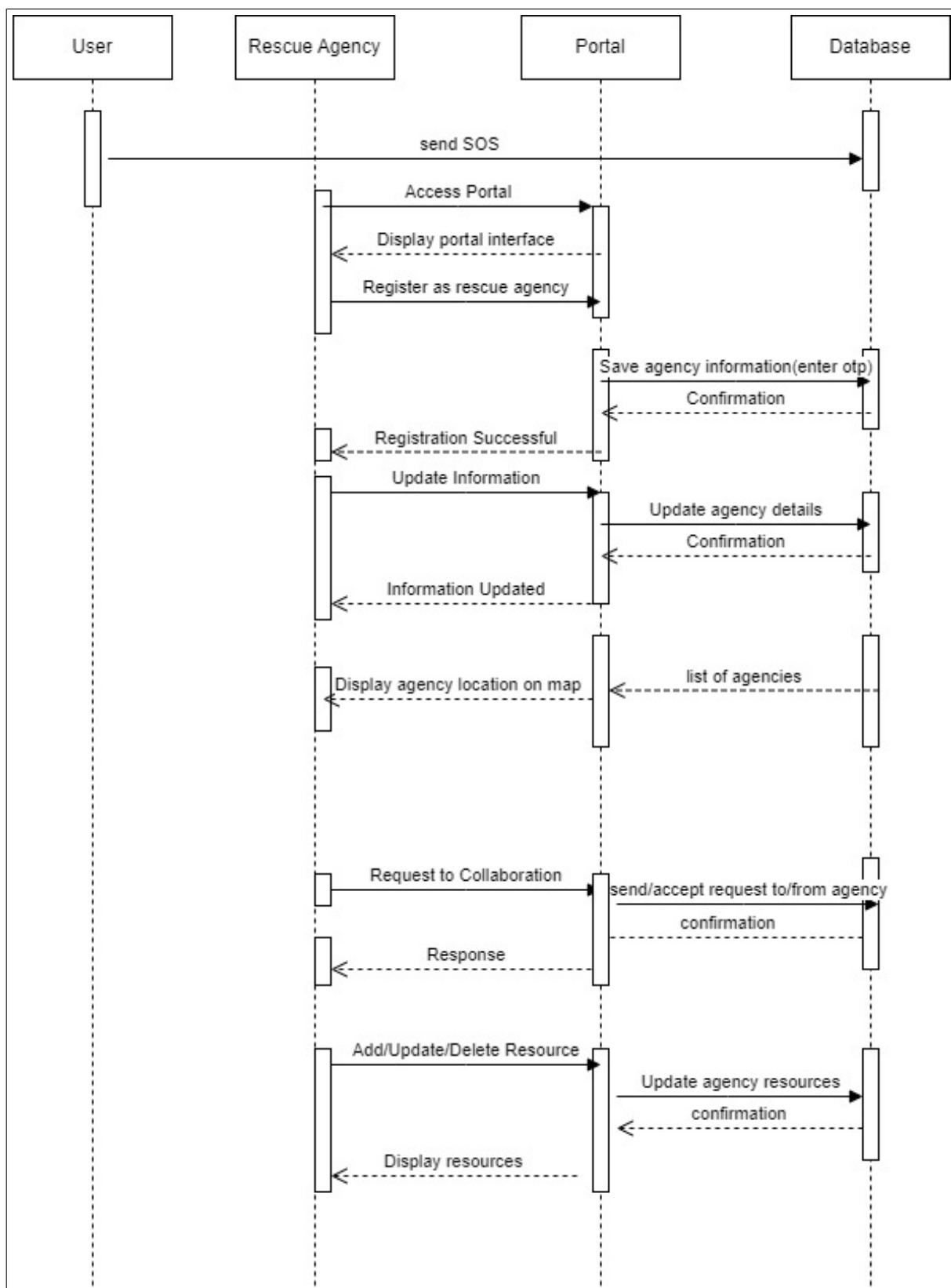


Figure 5.1: Sequence Diagram

5.1.3 Component Diagram

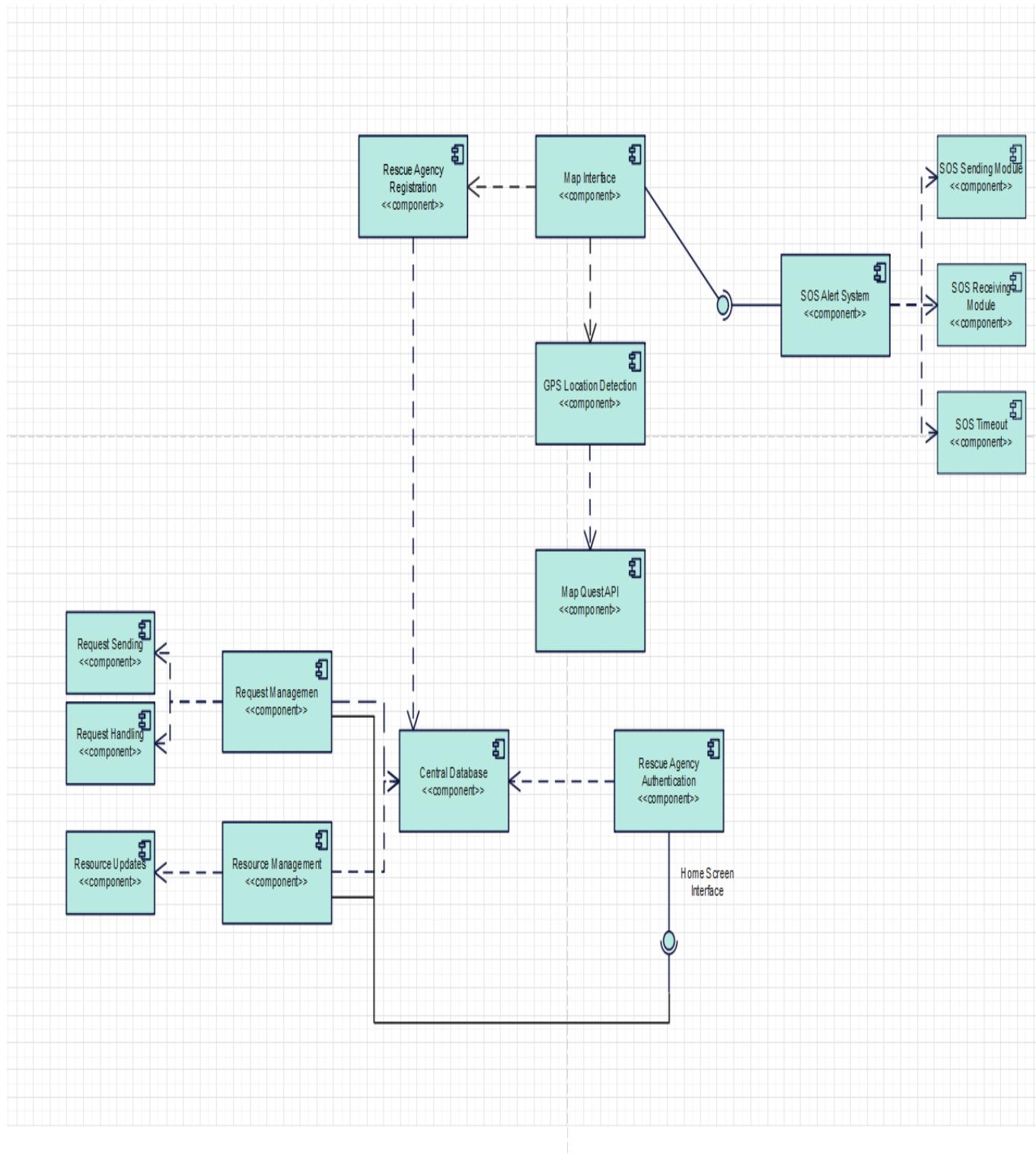


Figure 5.2: Component Diagram

5.1.4 Deployment Diagram

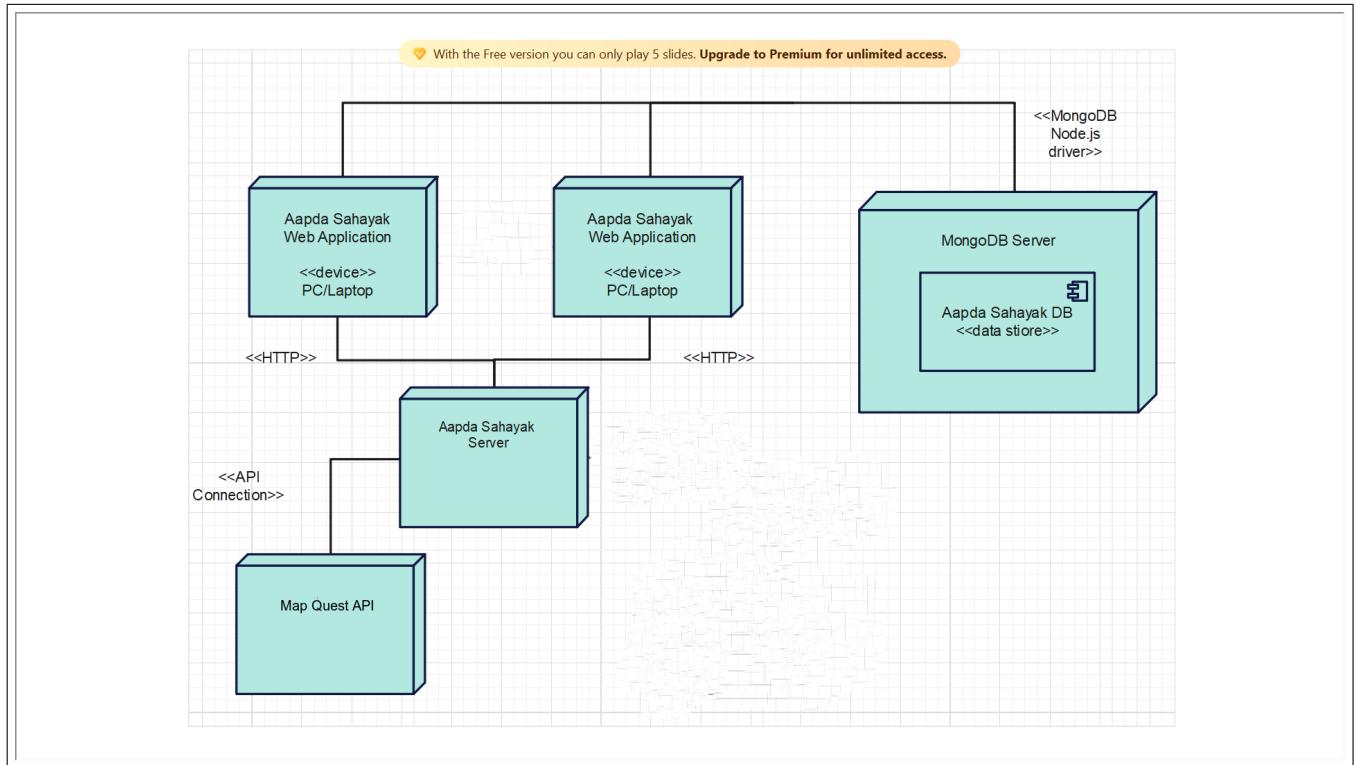


Figure 5.3: Deployment Diagram

5.2 Navigation Flow

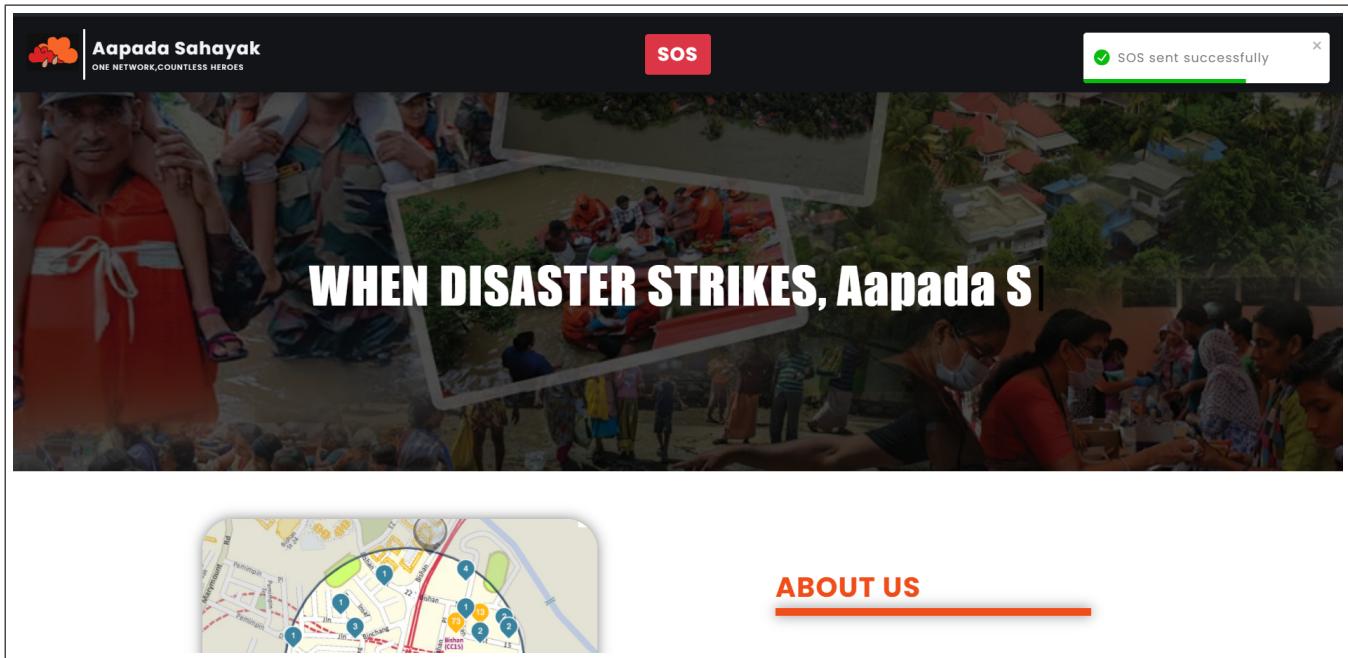


Figure 5.4: Landing Page

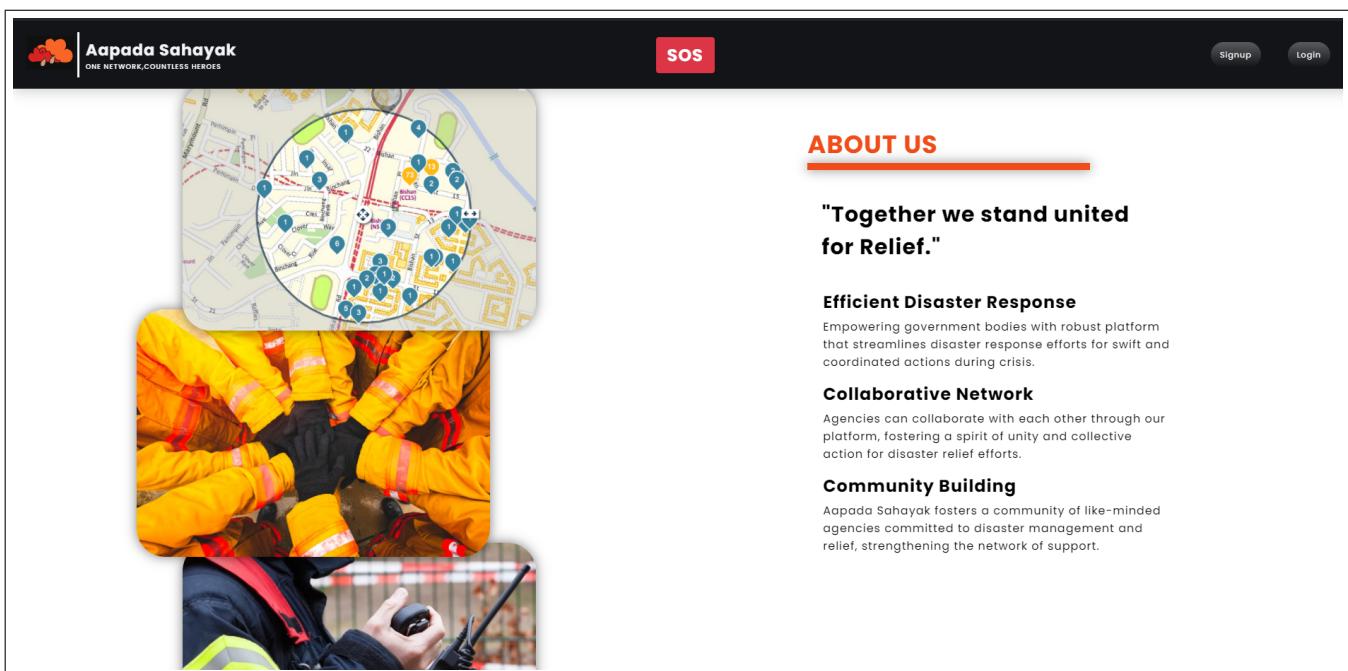
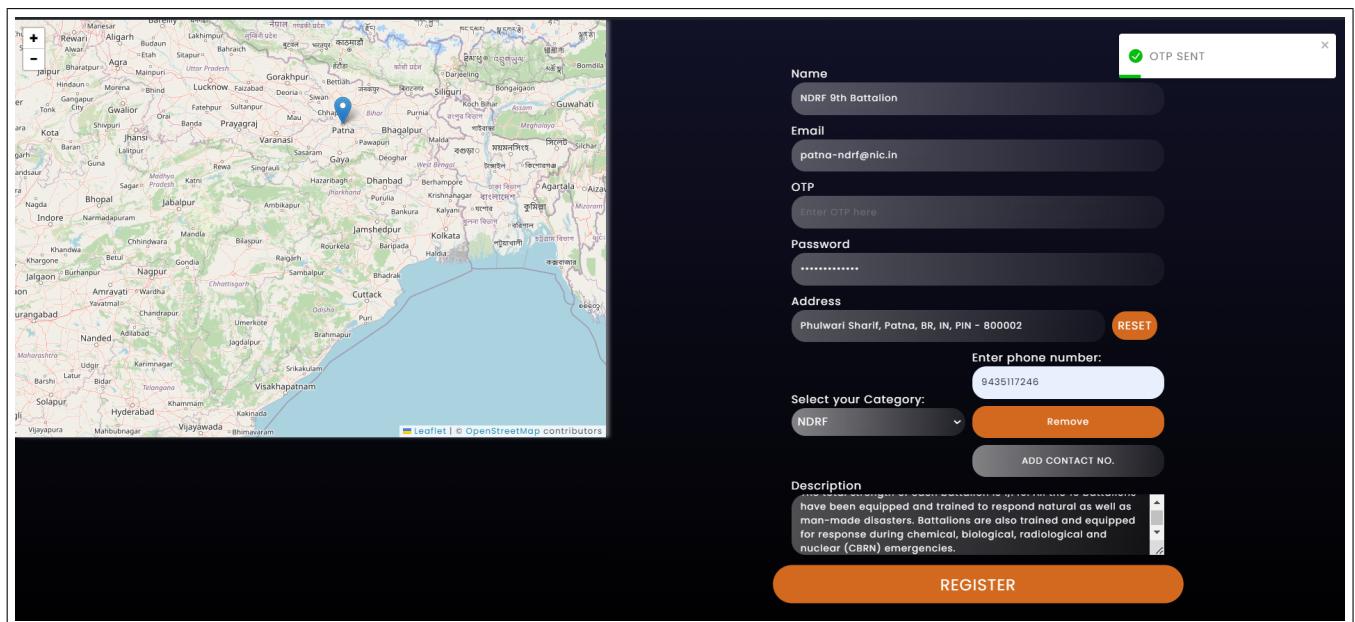


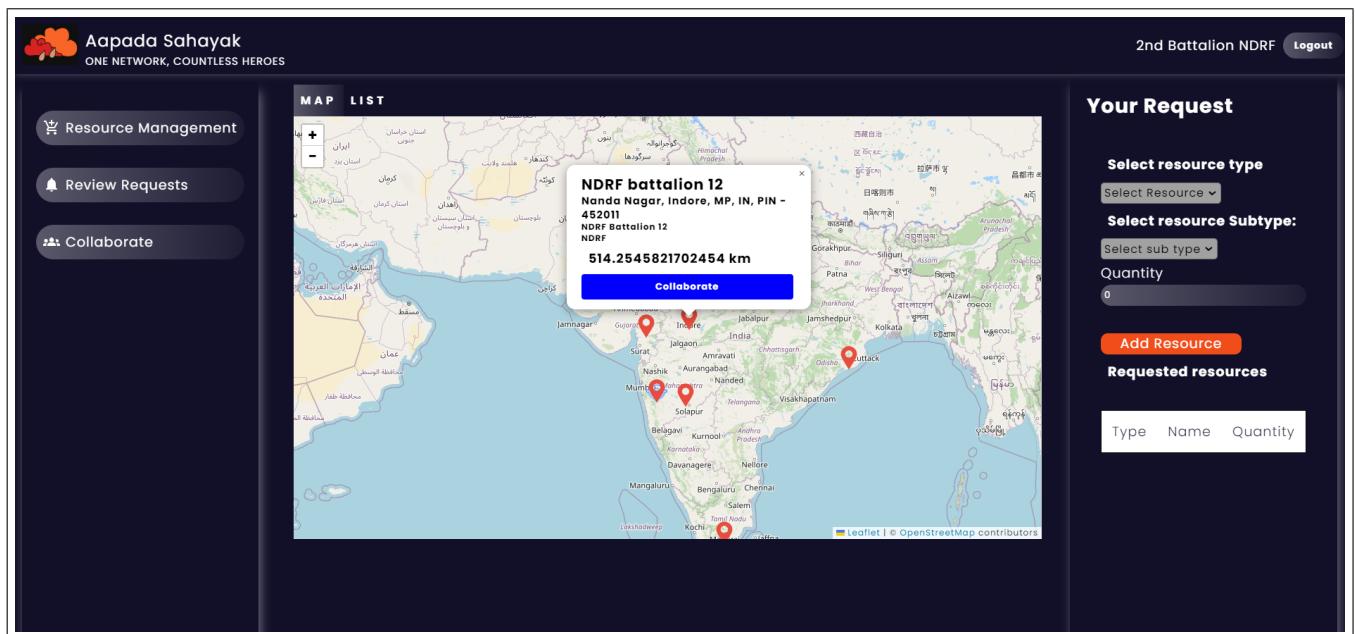
Figure 5.5: Landing Page extended



The screenshot shows the Aapada Sahayak Signup Page. On the left is a map of India with a blue marker indicating the location of Patna. The right side contains a form for registration:

- Name:** NDRF 9th Battalion
- Email:** patha-ndrf@nic.in
- OTP:** Enter OTP here
- Password:** [REDACTED]
- Address:** Phulwari Sharif, Patna, BR, IN, PIN - 800002
- Enter phone number:** 9435117246
- Select your Category:** NDRF
- Description:** NDRF battalions are well equipped and trained to respond to natural as well as man-made disasters. Battalions are also trained and equipped for response during chemical, biological, radiological and nuclear (CBRN) emergencies.
- REGISTER** button

Figure 5.6: Aapada Sahayak Signup Page



The screenshot shows the Aapada Sahayak dashboard. The top navigation bar includes the logo "Apada Sahayak ONE NETWORK, COUNTLESS HEROES", "2nd Battalion NDRF", and a "Logout" link. The left sidebar has buttons for "Resource Management", "Review Requests", and "Collaborate". The main area features a map of India with several red location markers. A central modal window displays the details for "NDRF battalion 12" located in Nanda Nagar, Indore, MP, IN, PIN - 452011, NDRF Battalion 12. The modal also contains a "Collaborate" button. To the right, there's a section titled "Your Request" with fields for "Select resource type" (dropdown), "Select resource Subtype" (dropdown), "Quantity" (input field set to 0), and "Add Resource" and "Requested resources" buttons. Below these are tables for "Type", "Name", and "Quantity".

Figure 5.7: Aapada Sahayak dashboard

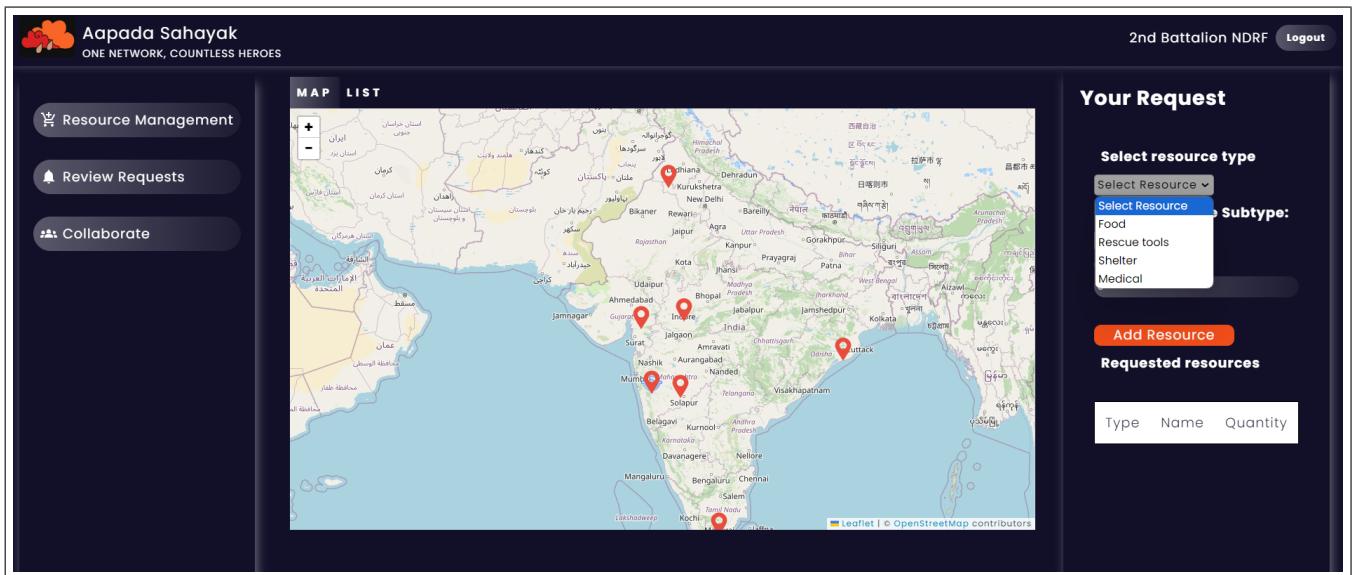


Figure 5.8: Aapada Sahayak requestresource

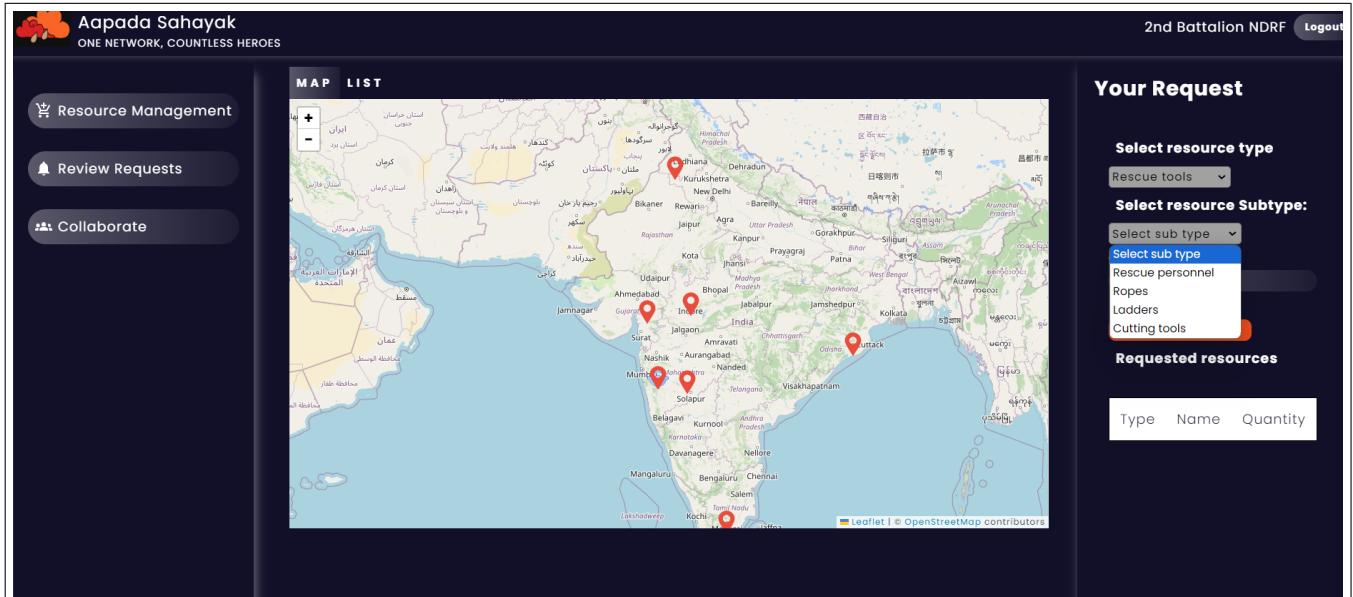


Figure 5.9: Aapada Sahayak requestresourcesubtype

Aapada Sahayak
ONE NETWORK, COUNTLESS HEROES

2nd Battalion NDRF [Logout](#)

Resource Management

Review Requests

Collaborate

MAP LIST

1st Battalion NDRF
Patagon PO - Azara,Diett, Kamrup Metro, Guwahati-781017
The professionalism shown during rescue operations in floods and cyclones and collapsed structure search and rescue (CSSR) operations, NDRF has also acquired considerable expertise in facing CBRN (Chemical, Biological, Radiological & Nuclear) challenges.. The creditable task of NDRF in retrieving Cobalt-60 radiological material at Mayapur, Delhi, during April and May 2010 has been an acid test of NDRF's CBRN capability.
Today NDRF is a distinguished, unique Force across the country functioning under the Ministry of Home Affairs, Government of India, within the overall command, control and leadership of the Director General, NDRF.

NDRF
0.6905128959820663 km

Trial
Shivajinagar
Help People
NEO
192.66120546772302 km

5th Battalion NDRF
Vadodara, Gujarat
Vadodara 5th Battalion
NDRF
425.8624852042867 km

NDRF battalion 12
Nanda Nagar, Indore, MP, IN, PIN - 452011
NDRF Battalion 12
NDRF

Your Request

Select resource type
Select Resource [▼](#)

Select resource Subtype:
Select sub type [▼](#)

Quantity
0

Add Resource

Requested resources

Type	Name	Quantity

Figure 5.10: Aapada Sahayak list of agencies

Aapada Sahayak
ONE NETWORK, COUNTLESS HEROES

2nd Battalion NDRF [Logout](#)

Resource Management

Review Requests

Collaborate

MAP LIST

To : 3rd Battalion NDRF
From : 2nd Battalion NDRF

Send Request **View Status**

Your Request

Select resource type
Select Resource [▼](#)

Select resource Subtype:
Select sub type [▼](#)

Quantity

Add Resource

Requested resources

Type	Name	Quantity
Food	Food packets	15
Shelter	Tents	12
Food	Food packets	45
Medical	Pain relievers	15

Figure 5.11: Aapada Sahayak sendrequest to other agency

The screenshot shows the Aapada Sahayak platform interface for reviewing resource requests. At the top, there's a navigation bar with the logo 'Aapada Sahayak' and the tagline 'ONE NETWORK, COUNTLESS HEROES'. On the right, it shows '3rd Battalion NDRF' and a 'Logout' button. The main area has a dark background with light-colored cards for each request.

Review Requests

Sent Received

To: 3rd Battalion NDRF
From: 2nd Battalion NDRF
On: 4/12/2024, 5:54:34 PM

Accept **Reject** **View Request**

Type	Subtype	Quantity
Food	Food packets	15
Shelter	Tents	12
Food	Food packets	45
Medical	Pain relievers	15

Close

To: 3rd Battalion NDRF
From: NDRF battalion 12
On: 4/2/2024, 4:05:11 PM

Accepted **View Request**

To: 3rd Battalion NDRF
From: 2nd Battalion NDRF
On: 4/2/2024, 2:42:23 PM

Rejected **View Request**

To: 3rd Battalion NDRF
From: 2nd Battalion NDRF
On: 4/2/2024, 2:41:45 PM

Accepted **View Request**

To: 3rd Battalion NDRF
From: 2nd Battalion NDRF
On: 4/2/2024, 2:34:53 PM

Accept **Reject** **View Request**

Figure 5.12: Aapada Sahayak ReviewRequest

The screenshot shows the Aapada Sahayak platform interface for managing resources. At the top, there's a navigation bar with the logo 'Aapada Sahayak' and the tagline 'ONE NETWORK, COUNTLESS HEROES'. On the right, it shows '2nd Battalion NDRF' and a 'Logout' button. The main area has a dark background with light-colored cards for each resource item.

Resource Management

Type	Name	Quantity	Status	+
Food	Food packets	25	Update Delete	
Rescue tools	Ladders	5	Update Delete	
Medical	Ambulances	3	Update Delete	
Medical	Pain relievers	15	Update Delete	
Food	Food packets	31	Update Delete	

Figure 5.13: Aapada Sahayak Resource Management

Chapter 6

Summary

In response to the critical need for effective coordination among rescue agencies during natural and man-made disasters, our project, "Aapda Sahayak," aims to revolutionize emergency response management. At its core, Aapda Sahayak is a comprehensive platform designed to centralize crucial information about rescue agencies, facilitate real-time collaboration, and enhance overall situational awareness during crises.

The project's objectives are clearly outlined, focusing on the development of a centralized database system for rescue agency registration, intuitive visualization of agency locations, advanced collaboration features, robust security and privacy measures, and ultimately, the creation of a comprehensive solution for effective disaster response.

Utilizing a sophisticated technology stack comprising Node.js, Express.js, MongoDB, and the MapQuest API, Aapda Sahayak ensures scalability, reliability, and efficiency in handling user requests and managing data flow. The platform's user interface prioritizes user-friendliness and situational awareness, leveraging dynamic map-based visualization and robust filtering systems to expedite resource allocation during critical situations.

Moreover, Aapda Sahayak fosters real-time collaboration among rescue agencies through integrated alert systems and resource-sharing functionalities, thereby minimizing duplication of efforts and ensuring optimal utilization of resources. Robust security measures are implemented to safeguard sensitive information, instilling trust among users and stakeholders.

The outcome of the project is a paradigm shift in disaster response management, characterized by enhanced situational awareness, streamlined collaboration, improved scalability and reliability, empowerment of stakeholders, and ensured data security and privacy.

Chapter 7

Conclusion

In conclusion, the development of Aapda Sahayak represents a significant step forward in the realm of emergency response management. By addressing the challenges of fragmented information and communication gaps among rescue agencies, our platform empowers stakeholders at all levels to contribute meaningfully to disaster management efforts.

Through its user-friendly interface, real-time collaboration features, and robust security measures, Aapda Sahayak facilitates efficient coordination of resources, swift decision-making, and effective deployment of assets during crises. Moreover, by centralizing crucial information and promoting a culture of preparedness and collective responsibility, the platform strengthens community resilience and fosters a conducive environment for collaboration and information sharing within the disaster response community.

Moving forward, we envision Aapda Sahayak as a versatile tool with applications spanning emergency response management, humanitarian aid operations, search and rescue missions, educational and research purposes, and public health emergency preparedness. By harnessing the power of technology and collaboration, we aim to minimize the impact of disasters and save more lives, ultimately building safer and more resilient communities worldwide.