1.Functional Requirements:

- **User Management Service:**
    - The system shall allow app user to view alerts, profile, accidents reports, and report a new incident.
    - User with the role admin can review the reported new incident and approves the reported incident.
- **Endpoints:**
- **User Endpoints:**

  - POST /api/users/register

  - POST /api/users/login

  - GET /api/users/viewDashboard

  - GET /api/users/viewProfile

  - GET /api/users/viewAlerts

  - GET /api/users/viewAccidentReports

  - POST /api/users/postAnIncident

  - POST /api/users/sendAlertToResponders

  - PUT /api/users/updateProfile

- **Admin Endpoints**

  -POST /api/admin/login

  -PUT /api/admin/reviewReportedIncident

  -POST /api/admin/ForwardIncidentToResponders

- **Alert Service:**
    - The system shall send real-time alerts to users regarding natural disasters and man- made accidents.

- Users shall receive alerts through the application interface whenever he wants to know weather conditions in a locality regarding current emergencies.

Endpoints:

- GET /api/alerts/getAlerts

- PUT /api/alerts/markAsRead

- **SOS Service:**
  - The system shall provide an SOS button for users to request immediate assistance during emergencies.
  - Users must be able to activate the SOS button with a single tap/click, triggering an immediate alert to local emergency services and displaying the user's location.
  - The system shall provide feedback confirming that the SOS alert has been sent.

Endpoints:

-POST /api/sos/SendAlertsToResponders

- **Location Service:**
  - The system shall provide location-based information for nearby emergency services during incidents.

Endpoints:

-GET /api/location/getLocation

-POST /api/location/setLocation

- **Helpline Service:**
  - The system shall display the user's current location and nearby hospitals, police stations, and other emergency services.

Endpoints:

-GET /api/helpline/getHelplineByLocation/

-GET /api/helpline/getHelplineByService/

2.Non-Functional Requirements:

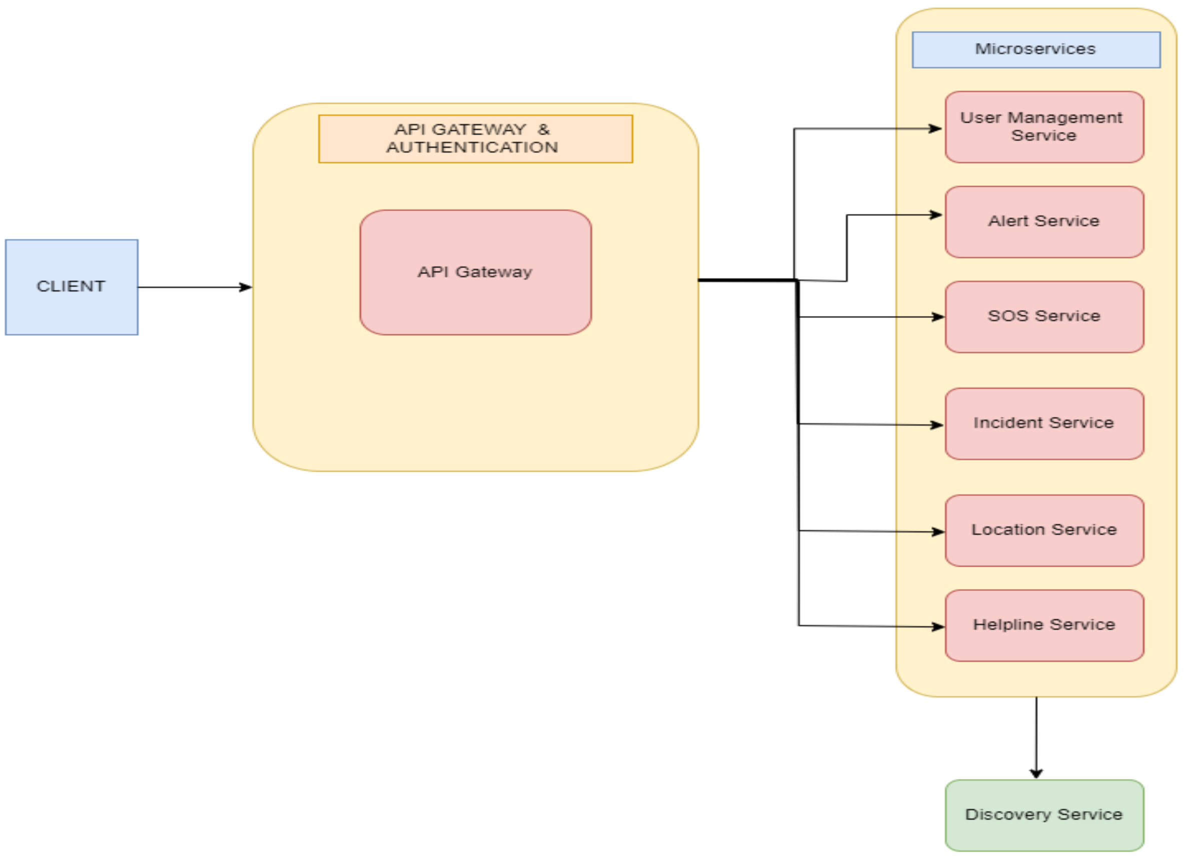
- **Performance:**
  - **Criteria:** Fast loading times, especially critical during emergencies. - Efficient geo-tracing to minimize delays in displaying location-based information.
  - **Purpose:** To ensure users can access necessary information and functionalities swiftly when needed most.
- **Scalability:**
  - **Criteria:** Ability to handle many concurrent users, particularly during widespread emergencies.
  - **Implementation:** Design the application architecture to support horizontal and vertical.
- **Security:**
  - **Criteria:** Protect sensitive user data (e.g., names, mobile numbers, incident descriptions) through encryption and secure transmission protocols (e.g., HTTPS).
  - Implement robust authentication and authorization mechanisms, especially for the admin module.
  - Safeguard against common web vulnerabilities such as Cross-Site Scripting (XSS) and Cross-Site Request Forgery (CSRF).
  - **Purpose:** To ensure data privacy, maintain user trust, and protect the application from malicious attacks.
- **Reliability and Availability:**
  - **Criteria:** Ensure high uptime (e.g., 99.9%) to guarantee that the application is accessible during emergencies.
  - Implement failover mechanisms and redundant systems to minimize downtime.
  - **Purpose:** To provide dependable access to critical information when it's most needed.

- **Usability:**
    - **Criteria:** Design an intuitive and user-friendly interface that can be easily navigated, even under stress. Ensure that forms and interactive elements are straightforward and accessible.
    - **Purpose:** To facilitate quick and effective use of the application by individuals in emergency situations.
    -
- **Compatibility:**
    - **Criteria:** Ensure the application functions correctly across various web browsers (e.g., Chrome, Firefox, Safari, Edge) and devices (desktops, tablets, smartphones).
    - Optimize responsive design to cater to different screen sizes and resolutions.
    - **Purpose:** To provide a consistent experience to all users, regardless of their device or browser choice.
- **Accessibility:**
    - **Criteria:** Adhere to accessibility standards (e.g., WCAG) to make the application usable by individuals with disabilities.
    - Include features such as screen reader compatibility, keyboard navigation, and sufficient contrast ratios.
    - **Purpose:** To ensure that the application is inclusive and usable by as many people as possible.

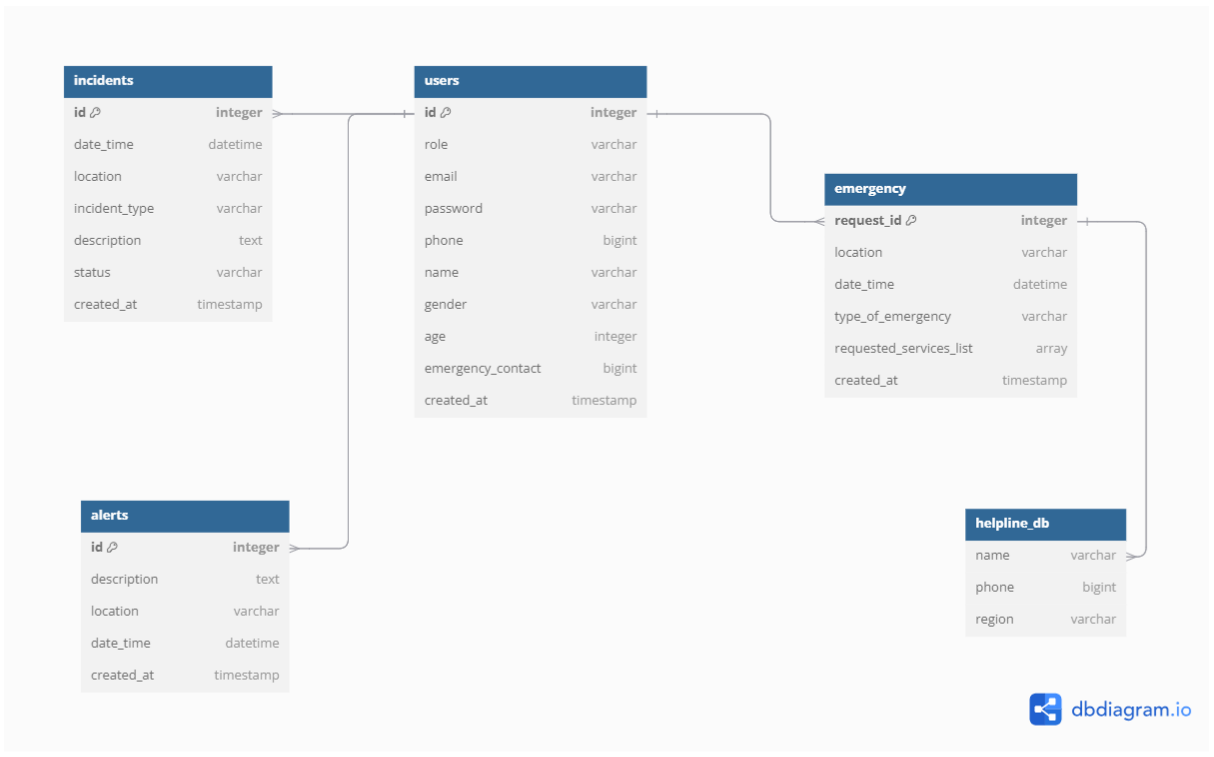
Technologies

- Frontend - Angular
- Backend - Spring-boot
- Database - MySQL, MongoDB.

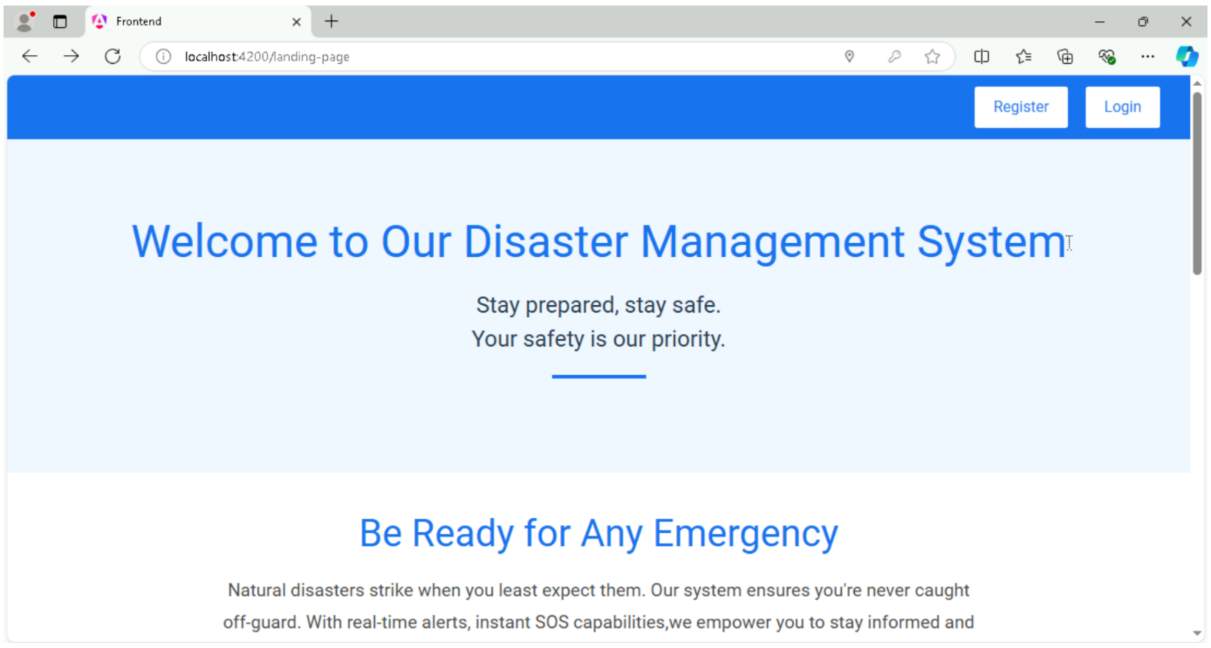
➢ **Architecture Diagram:**



➢ **Database Schema Diagram:**



➢ Screenshots:

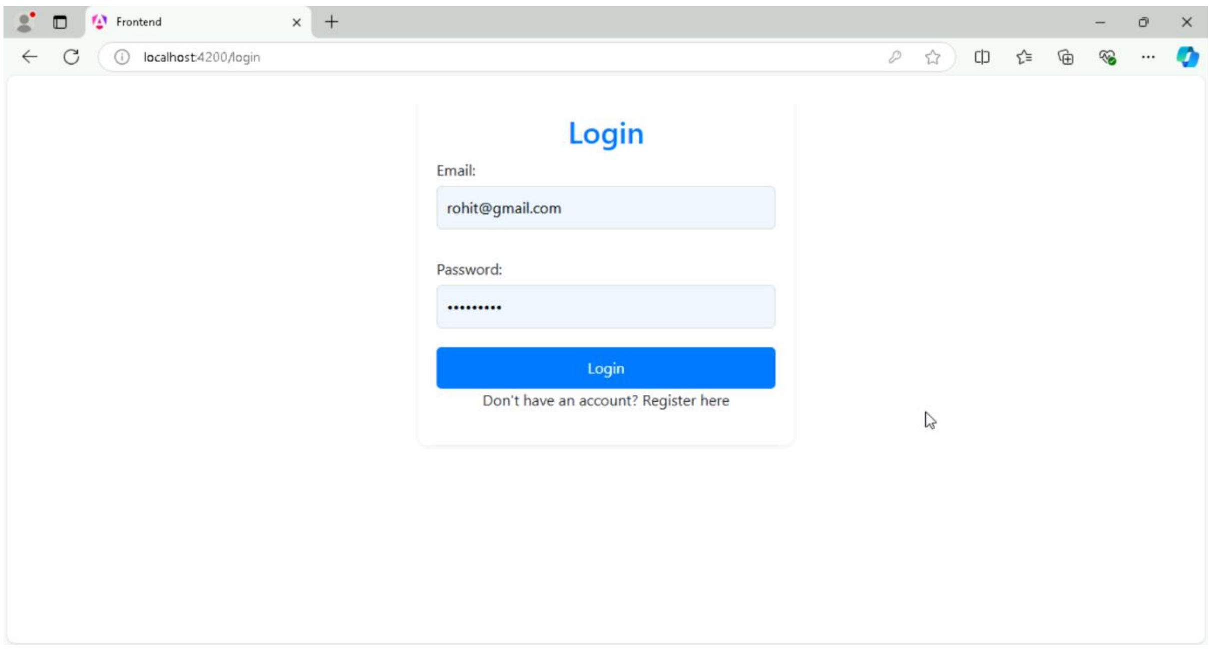


Welcome to Our Disaster Management System

Stay prepared, stay safe.
Your safety is our priority.

Be Ready for Any Emergency

Natural disasters strike when you least expect them. Our system ensures you're never caught off-guard. With real-time alerts, instant SOS capabilities,we empower you to stay informed and



Login

Email:

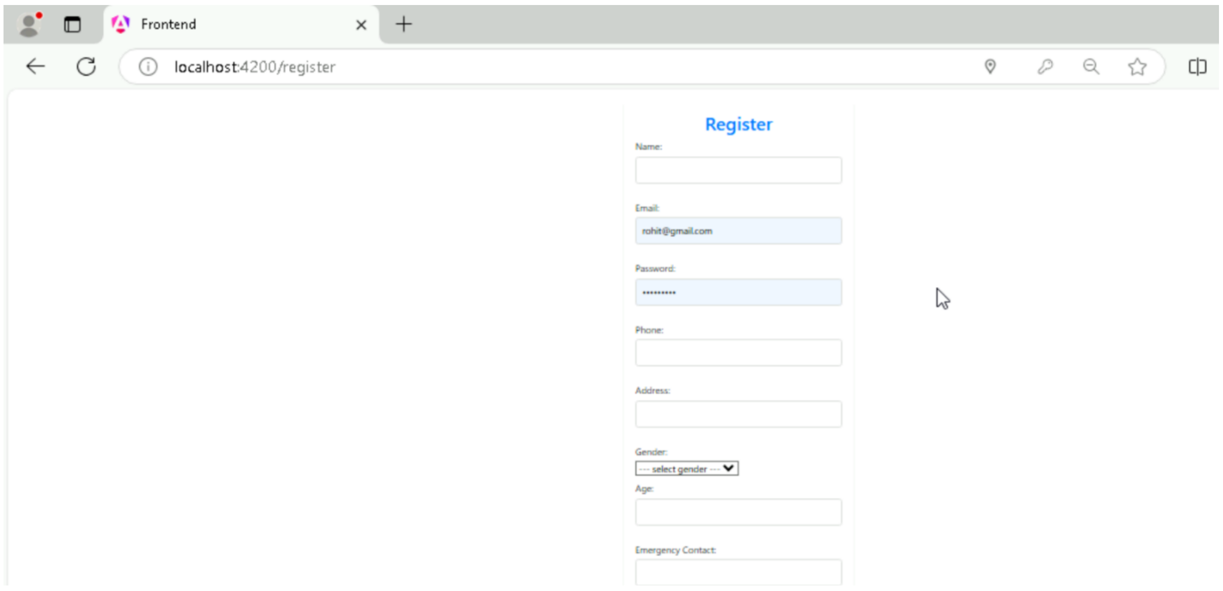
rohit@gmail.com

Password:

•••••••••

Login

Don't have an account? Register here



Frontend

localhost:4200/register

Register

Name:

Email:

rohit@gmail.com

Password:

•••••••••

Phone:

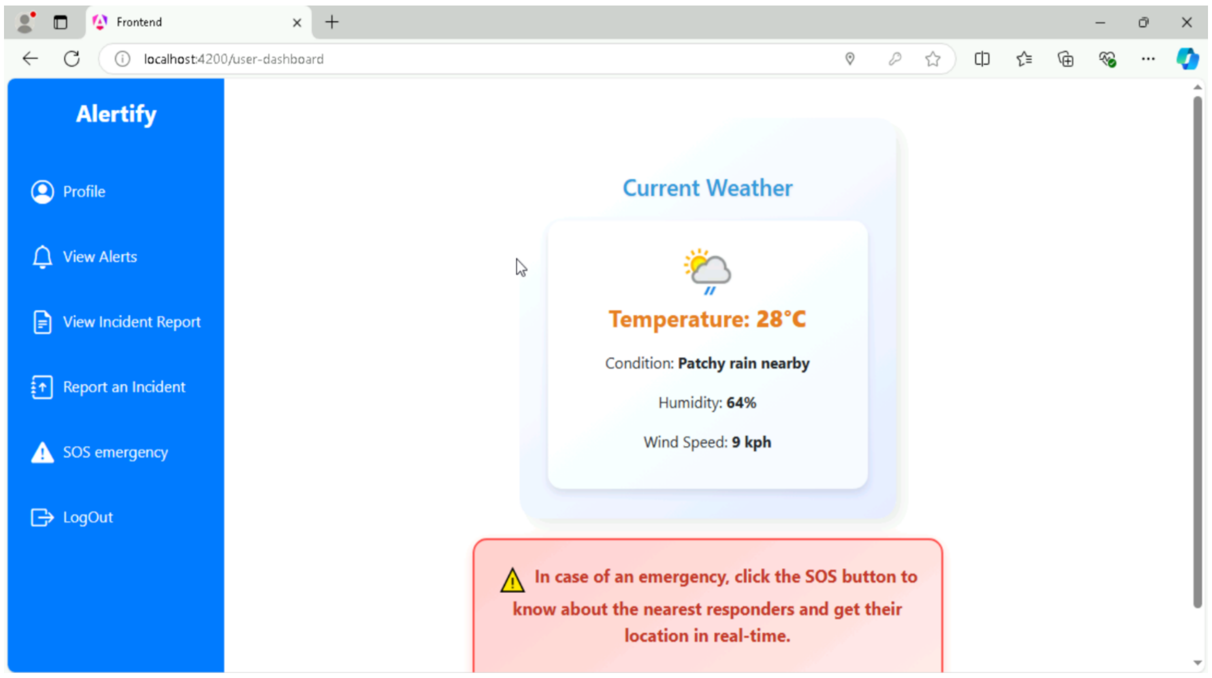
Address:

Gender:

--- select gender ---

Age:

Emergency Contact:



Frontend

localhost:4200/user-dashboard

Alertify

- Profile
- View Alerts
- View Incident Report
- Report an Incident
- SOS emergency
- LogOut

Current Weather

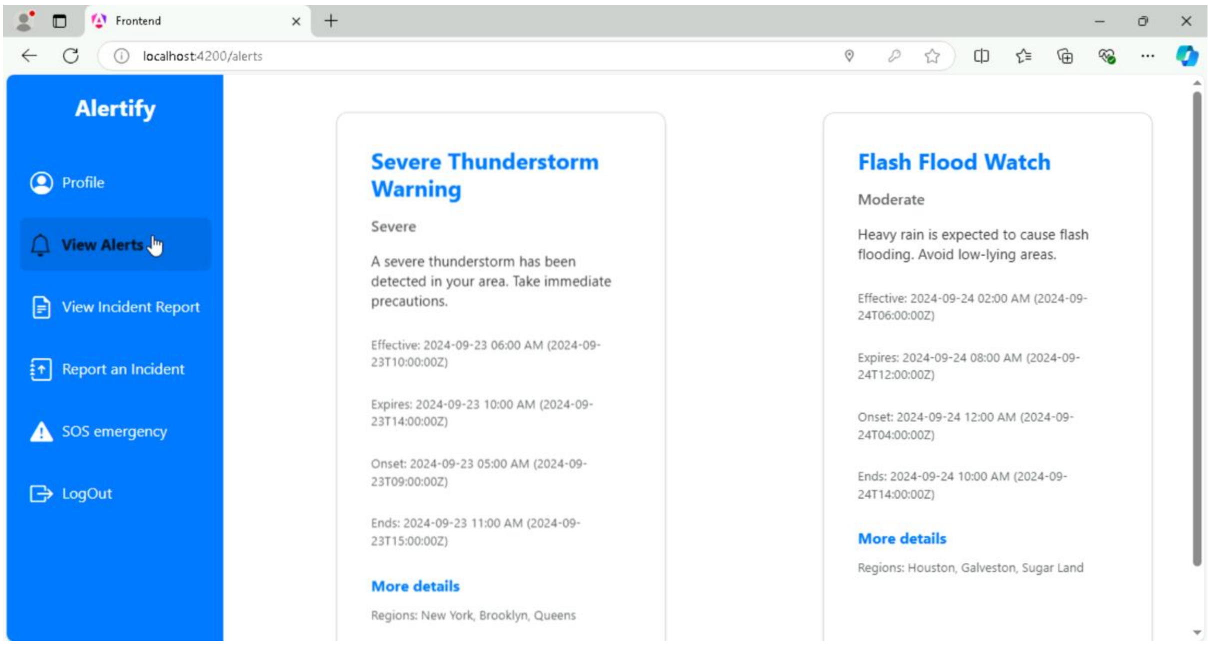
Temperature: 28°C

Condition: **Patchy rain nearby**

Humidity: **64%**

Wind Speed: **9 kph**

In case of an emergency, click the SOS button to know about the nearest responders and get their location in real-time.



Severe Thunderstorm Warning

Severe

A severe thunderstorm has been detected in your area. Take immediate precautions.

Effective: 2024-09-23 06:00 AM (2024-09-23T10:00:00Z)

Expires: 2024-09-23 10:00 AM (2024-09-23T14:00:00Z)

Onset: 2024-09-23 05:00 AM (2024-09-23T09:00:00Z)

Ends: 2024-09-23 11:00 AM (2024-09-23T15:00:00Z)

More details

Regions: New York, Brooklyn, Queens

Flash Flood Watch

Moderate

Heavy rain is expected to cause flash flooding. Avoid low-lying areas.

Effective: 2024-09-24 02:00 AM (2024-09-24T06:00:00Z)

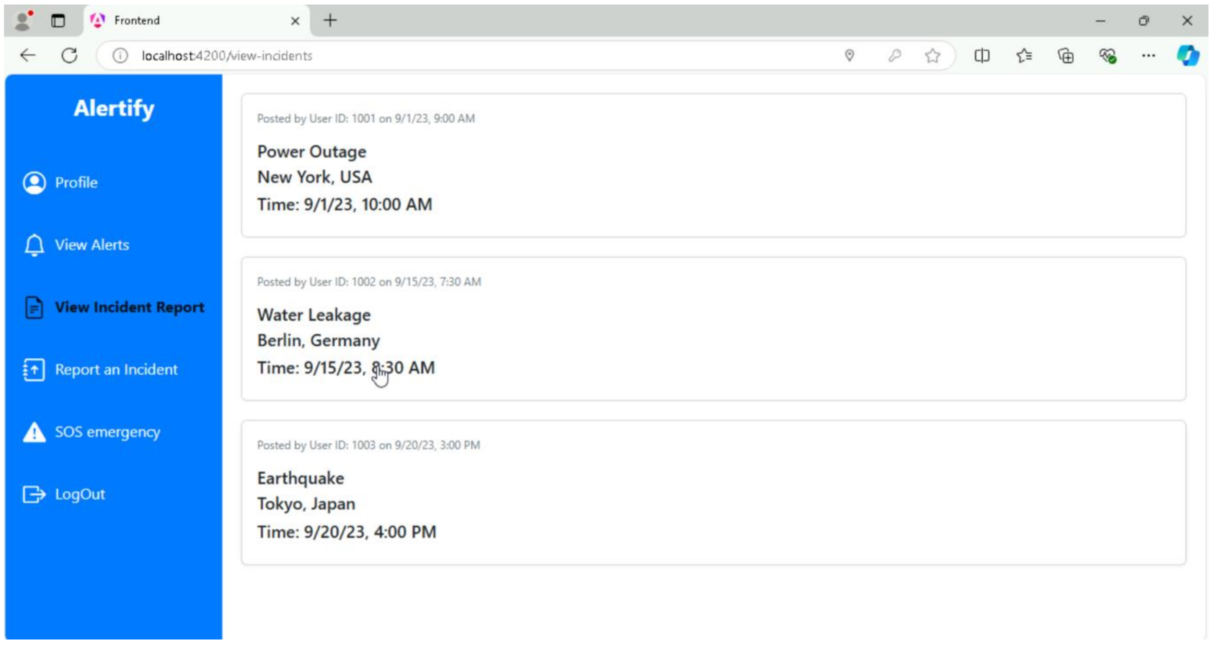
Expires: 2024-09-24 08:00 AM (2024-09-24T12:00:00Z)

Onset: 2024-09-24 12:00 AM (2024-09-24T04:00:00Z)

Ends: 2024-09-24 10:00 AM (2024-09-24T14:00:00Z)

More details

Regions: Houston, Galveston, Sugar Land



Posted by User ID: 1001 on 9/1/23, 9:00 AM

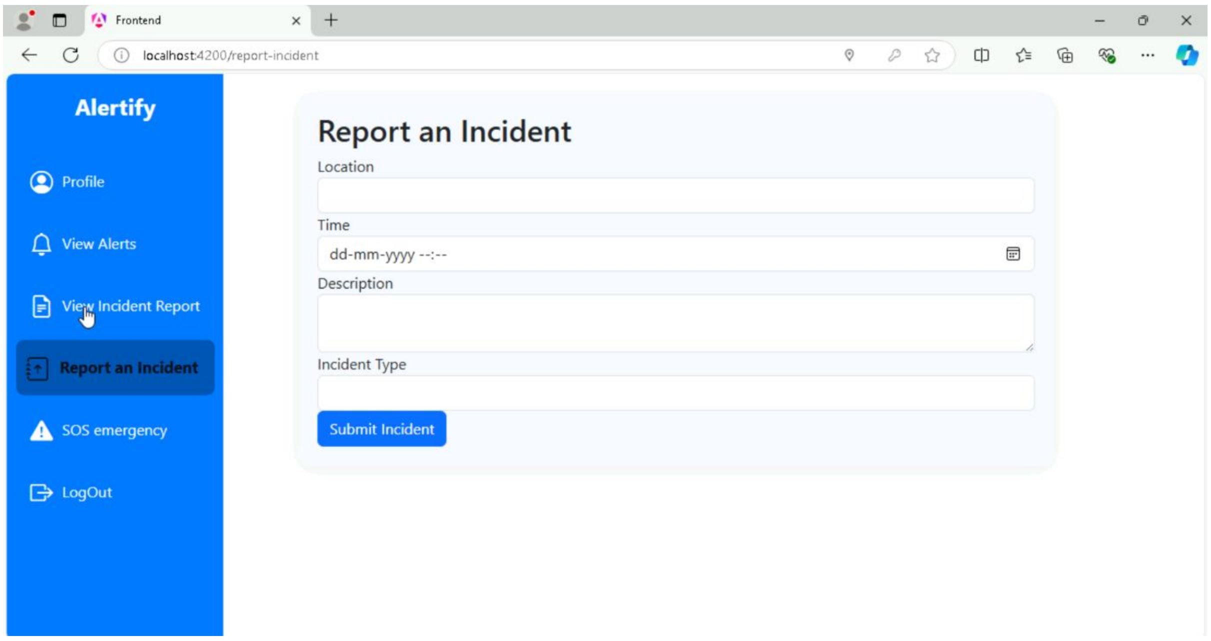
Power Outage
New York, USA
Time: 9/1/23, 10:00 AM

Posted by User ID: 1002 on 9/15/23, 7:30 AM

Water Leakage
Berlin, Germany
Time: 9/15/23, 8:30 AM

Posted by User ID: 1003 on 9/20/23, 3:00 PM

Earthquake
Tokyo, Japan
Time: 9/20/23, 4:00 PM



Report an Incident

Location

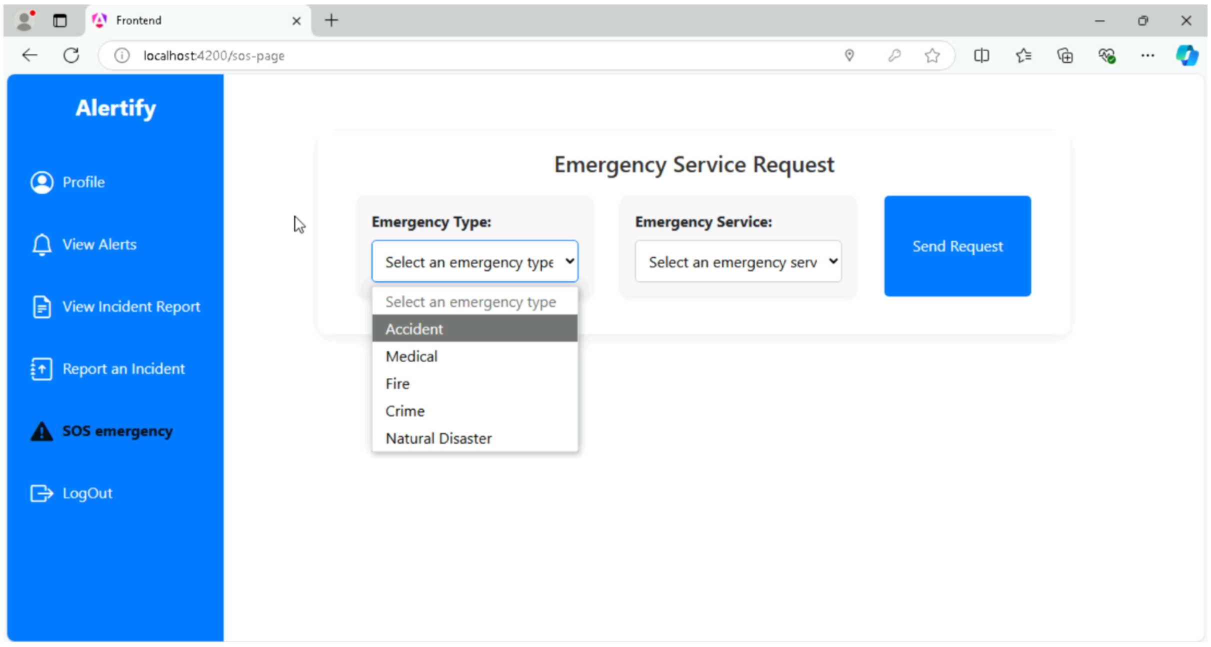
Time

dd-mm-yyyy --:--

Description

Incident Type

Submit Incident



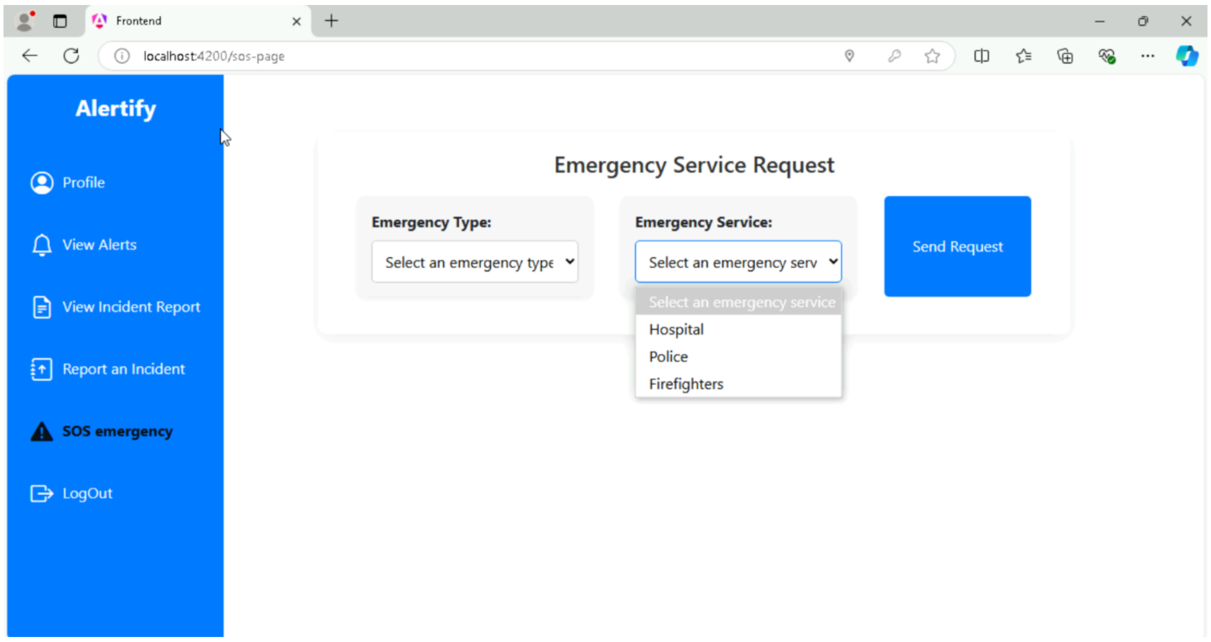
Emergency Service Request

Emergency Type: Select an emergency type

- Select an emergency type
- Accident
- Medical
- Fire
- Crime
- Natural Disaster

Emergency Service: Select an emergency serv

Send Request



Emergency Service Request

Emergency Type: Select an emergency type

Emergency Service: Select an emergency serv

- Select an emergency service
- Hospital
- Police
- Firefighters

Send Request