

---

**DHIRUBHAI AMBANI INSTITUTE OF INFORMATION  
AND COMMUNICATION TECHNOLOGY**



**IT314 - SOFTWARE ENGINEERING**

---

**SOFTWARE REQUIREMENT SPECIFICATION REPORT**

**CRIME AND HAZARD MANAGEMENT SYSTEM**

---

---

**GROUP NO: 30**

**GROUP MEMBERS**

202001410	PATEL AYUSH SANJAYBHAI
202001447	VAKANI HETAV ABHAYBHAI
202001467	JAY GROVER
202001421	PATEL KUNJ RAKESH
202001446	GONDALIYA VENIL CHANDUBHAI
202001275	AYUSH JAIN
202001458	KRIS PATEL
202001264	HARSH SANJAY MAKWANA
202001466	KALP KINJALBHAI PANDYA
202001438	NARODIA JEET NILESHKUMAR
202001457	HITARTH VYAS

# TABLE OF CONTENTS:

<b>1. Introduction</b>	<b>4</b>
A. Purpose	4
B. Intended audience	4
C. Product Scope	5
D. User Requirement	6
<b>2. Functional and Non-Functional Requirements</b>	<b>7</b>
A. Functional requirements	7
B. Non-Functional Requirements	8
<b>3. User Privileges</b>	<b>9</b>
<b>4. Assumptions</b>	<b>9</b>
<b>5. Business Constraints</b>	<b>9</b>
<b>6. Use Cases</b>	<b>9</b>
<b>7. Related Diagrams</b>	<b>9</b>
A. Use case diagram	9
B. Sequence Diagram	10
C. Class Diagram	16
<b>8. Tools and Technologies Used</b>	<b>16</b>
<b>9. Future Scope</b>	<b>16</b>

# 1.Introduction

## A. Purpose

1. **To provide a platform:** The first step in the purpose of the project is to provide a platform for users to search and compare properties based on crime and hazard data. This platform should be accessible, user-friendly, and efficient.
2. **To assess the safety of property:** The second step is to help users assess the safety of a property before buying or renting it. By providing relevant crime and hazard data, users can make informed decisions about the safety of a particular property.
3. **To provide easy access to relevant data:** The third step is to provide an efficient and user-friendly system that enables users to access and analyze relevant data easily. This includes implementing intuitive search functions, map-based searches, and visualizations of crime and hazard data.
4. **To ensure security and privacy:** The fourth step is to ensure the security and privacy of the user's data. The system should use encryption, access controls, and other security measures to safeguard the data.
5. **To provide value:** The fifth step is to provide a valuable tool that helps users make informed decisions about their choice of property based on crime and hazard data. The system should enable users to compare properties based on crime and hazard data, as well as other relevant factors like price, location, and amenities.

## B. Intended audience

The intended audience for the project would be individuals looking to buy or rent a property in the city and wanting to understand the safety and hazard profile of the neighborhood where the property is located. The website would be particularly useful for people who are not familiar with the area and want to make an informed decision about where to live.

## C. Product Scope

1. **User Authentication**: The system will allow users to register and log in with their credentials, with different levels of access for ordinary users and admins.
2. **Property Search**: The system will enable users to search and sort properties based on location, crime rate, hazard level, and other relevant criteria. The search function will be efficient and user-friendly.
3. **Map-based Property Search**: The system will provide an interactive map-based search function that allows users to visualize the location of properties in relation to crime hotspots and hazard areas.
4. **Visualization of Crime and Hazard Data**: The system will use heat maps, graphs, and other graphical representations to visualize crime and hazard data on a map. The map will also show the connectivity status of the property with emergency services.
5. **Property Rating over Time**: The system will store and display historical crime and hazard data for a property, including information about trends and patterns over time.
6. **Property Comparisons**: The system will compare properties based on crime and hazard data, as well as other relevant factors like price, location, and amenities.
7. **Security and Privacy**: The system will ensure the security of sensitive information, such as crime and hazard data, while maintaining the secrecy of the user's privacy. This will involve implementing appropriate security measures like encryption and access controls.

## **D. User Requirement**

Basic requirements of the users from the Student leave and TA assistantship management system are as follows:

1. All people visiting the web site first need to log in to the system to access it further. If visiting for the first time, he could set up his/her account with the help of basic personal details.
2. The users should then be able to view crime scores on maps for different localities on map itself on the home page.
3. Any person visiting the site will be able to see property feed that is the number of properties available for rent or to buy.
4. Also, he would be able to see the number of crimes in the incident feed. These two functions can be accessed without login.
5. A person with login credentials would gain additional functionality. He could post an incident through basic information and choosing a place on maps.
6. (S)he could post details of a property using information of address,

## 2. Functional and Non-Functional Requirements

### A. Functional requirements

- 1) **User Authentication**: This requirement ensures that the platform is secure by allowing only authorized users to access the system. Users can register and log in with a unique username and password. Admins will have more privileges than ordinary users.
- 2) **Efficient Browsing**: This requirement enables users to search and sort properties efficiently based on relevant criteria like location, crime rate, and hazard level. Users can filter their search based on different parameters to find the most suitable property.
- 3) **Map/Graph-based property search**: This requirement provides an interactive map-based search system that allows users to visualize the location of properties in relation to crime hotspots and hazard areas. The system should also enable users to view relevant graphs and charts related to crime and hazard data.
- 4) **Visualization of crime and hazard data**: This requirement enables users to visualize crime and hazard data on a map using heat maps, graphs, and other graphical representations. The system should also show the connectivity status of the property with emergency services, so users can assess the safety of the property.
- 5) **Property rating over time**: This requirement enables users to view historical crime and hazard data for a property, including information about trends and patterns over time. This feature will help users assess the safety of the property over a longer period.
- 6) **Property comparisons**: This requirement enables users to compare properties based on crime and hazard data, as well as other relevant factors like price, location, and amenities. This feature will help users make informed decisions about their choice of property.
- 7) **Security and privacy**: This requirement ensures that sensitive information, such as crime and hazard data, is secure and that users' privacy is protected. The system should use encryption, access controls, and other security measures to safeguard the data. The system should also be designed to comply with privacy regulations like GDPR and CCPA.

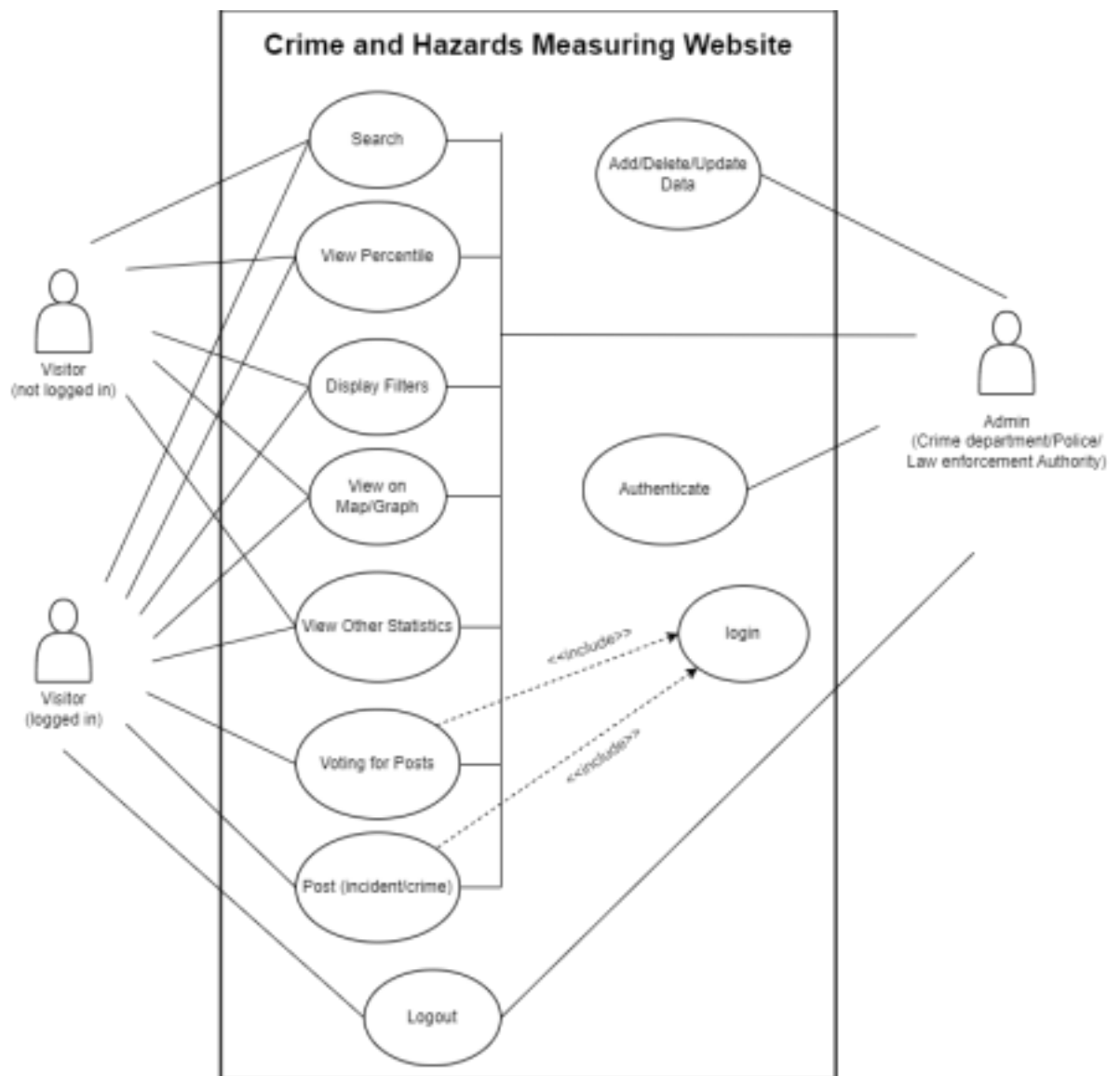
## B. Non-Functional Requirements

1. **Usability**: The system should be easy to use and navigate for users with different levels of technical expertise.
2. **Performance**: The system should provide fast and responsive performance, even when handling large amounts of data.
3. **Reliability**: The system should be reliable and available for use 24/7, with minimal downtime and errors.
4. **Security**: The system should implement appropriate security measures to protect user data and prevent unauthorized access.
5. **Scalability**: The system should be scalable and able to handle increasing amounts of data and users without compromising its performance.
6. **Accessibility**: The system should be accessible to users with disabilities, conforming to accessibility guidelines.
7. **Compatibility**: The system should be compatible with different operating systems, browsers, and devices to ensure that users can access it from any device.
8. **Maintainability**: The system should be easy to maintain and update, with minimal disruption to users.
9. **Compliance**: The system should comply with relevant laws and regulations, including data protection laws and accessibility guidelines.



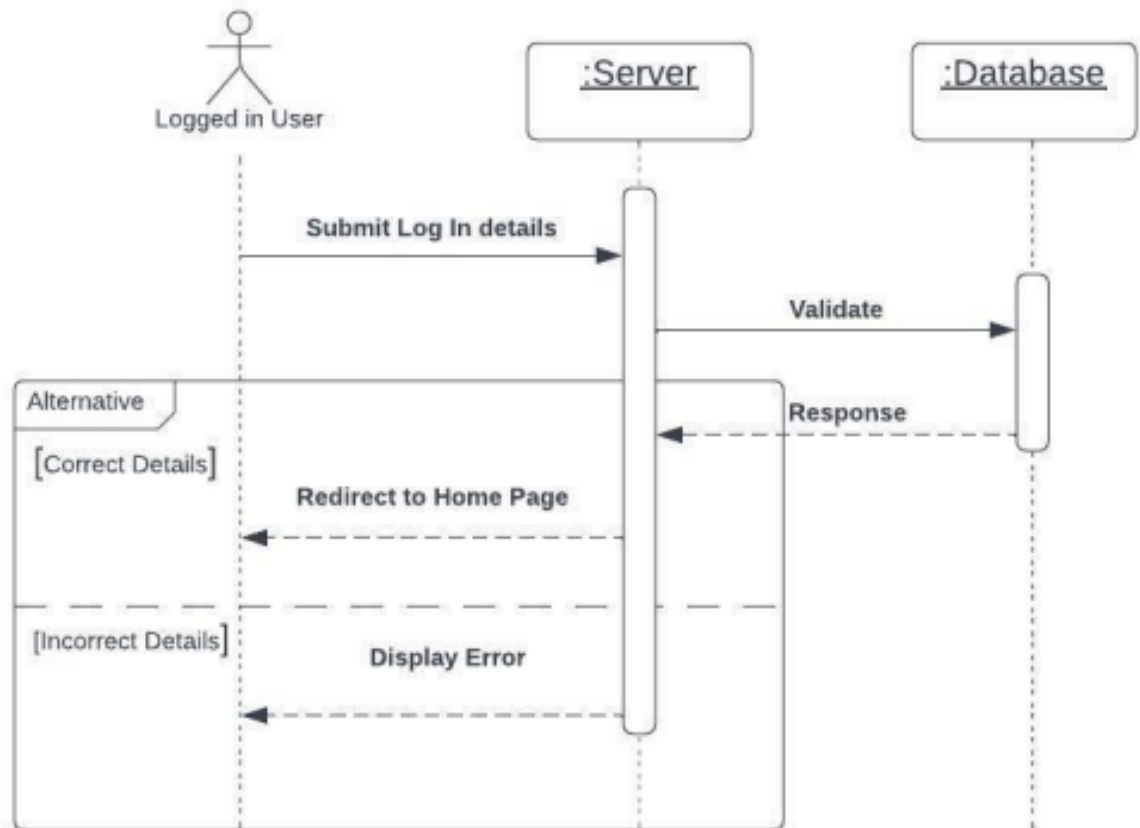
- 3. User Privileges
- 4. Assumptions
- 5. Business Constraints
- 6. Use Cases
- 7. Related Diagrams

A. Use case diagram

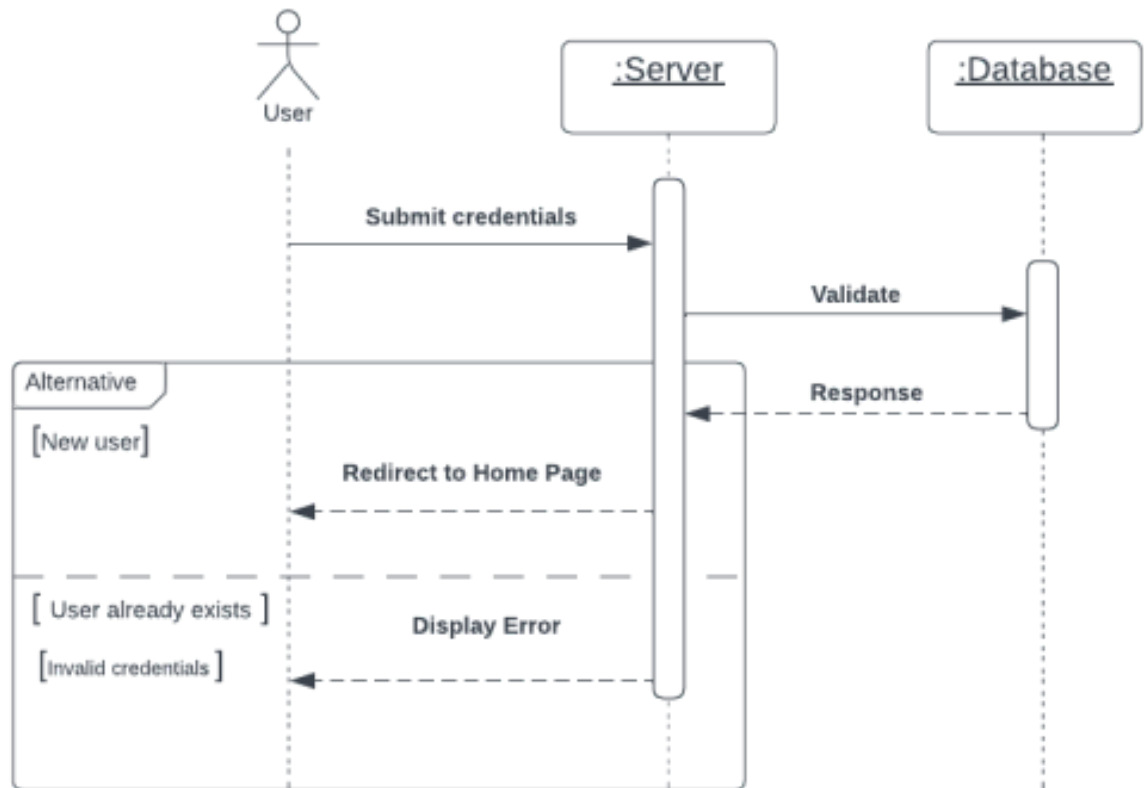


## B. Sequence Diagram

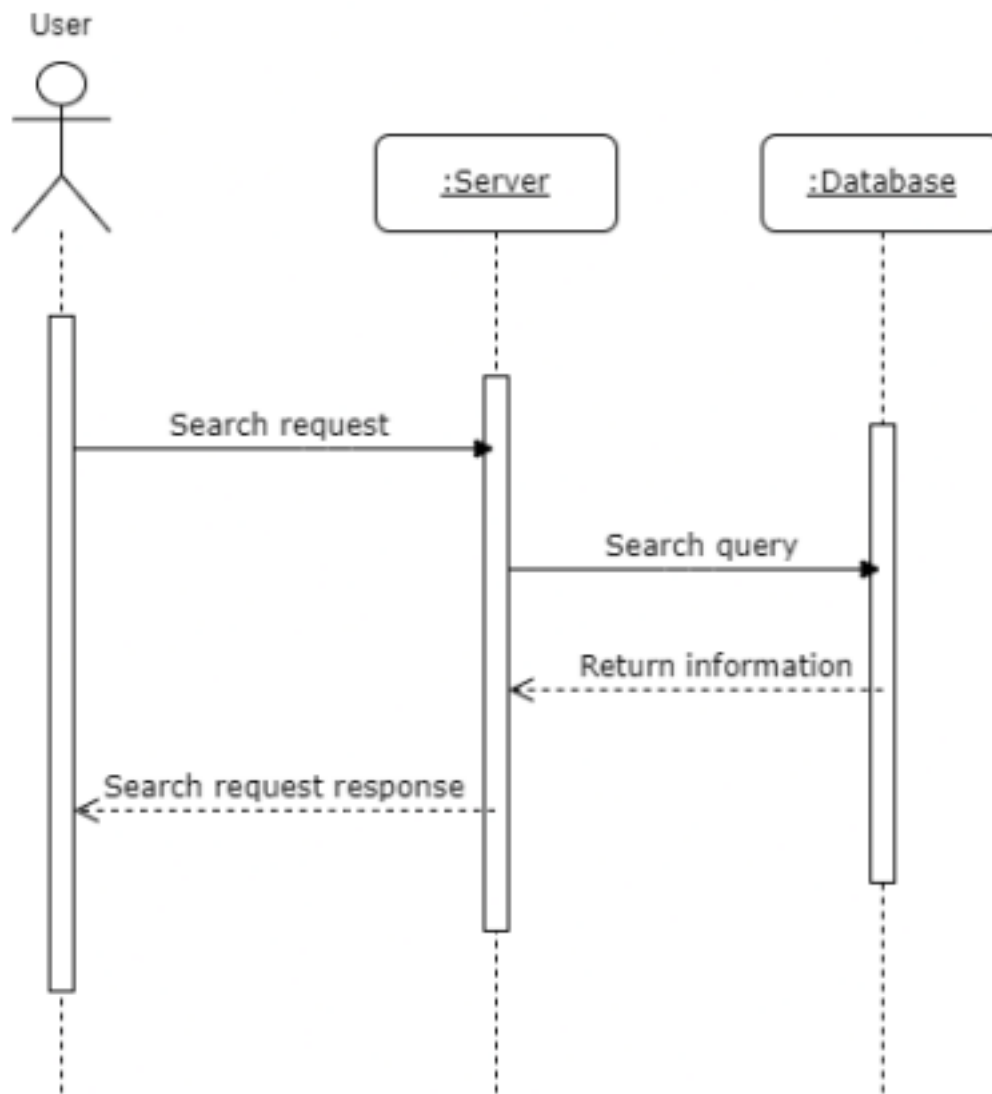
### 1. Login sequence diagram



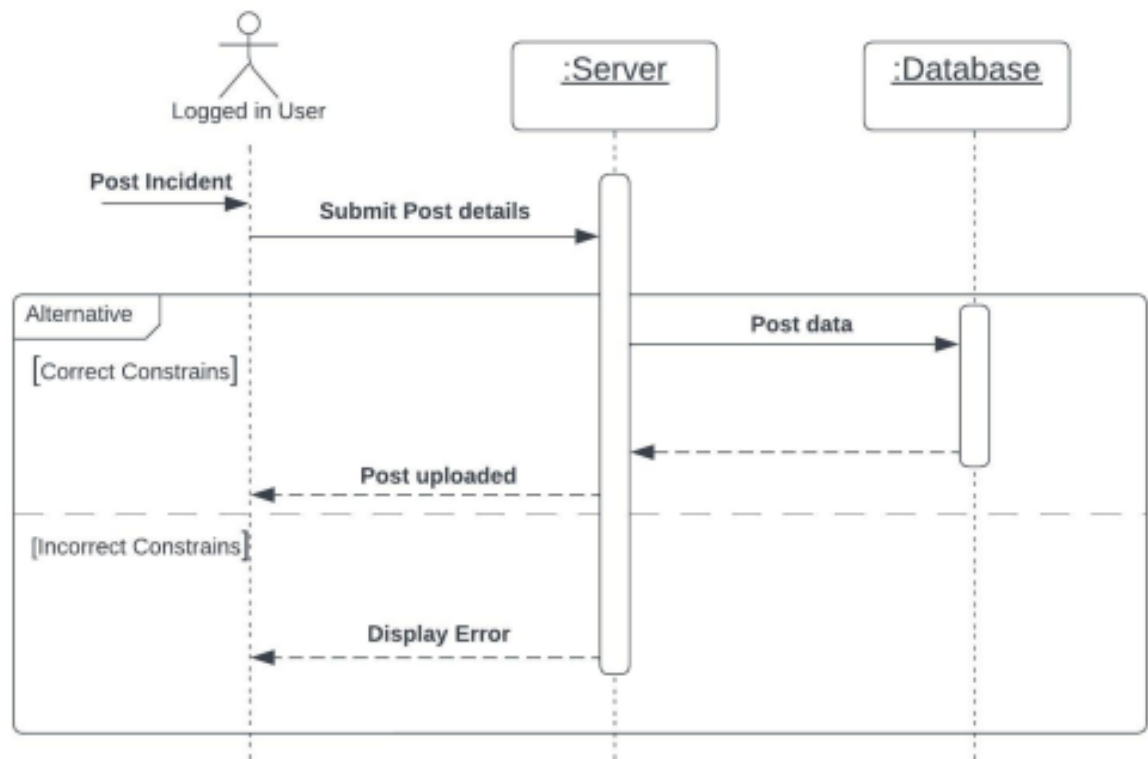
## 2. Registration sequence diagram



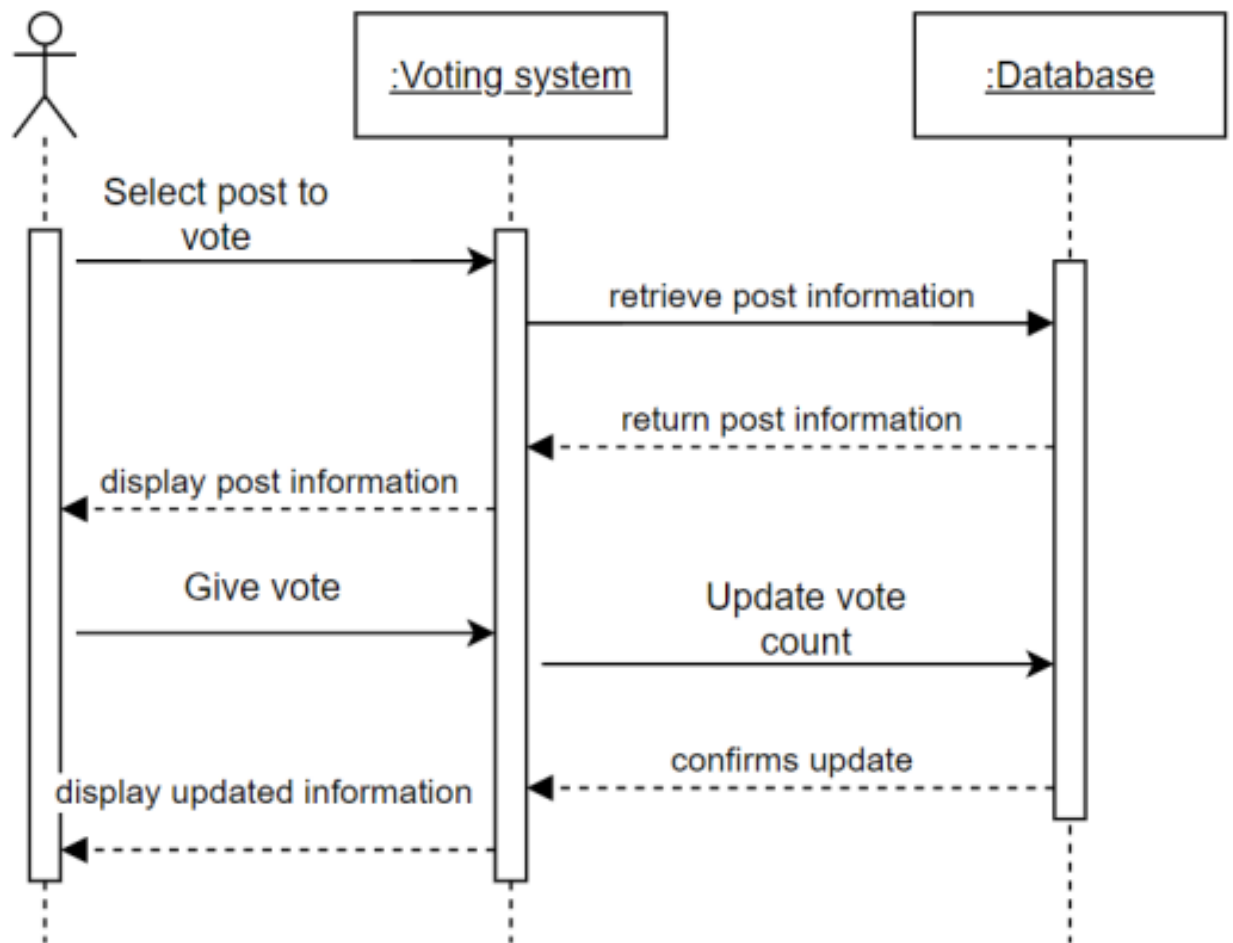
### 3. Search sequence diagram



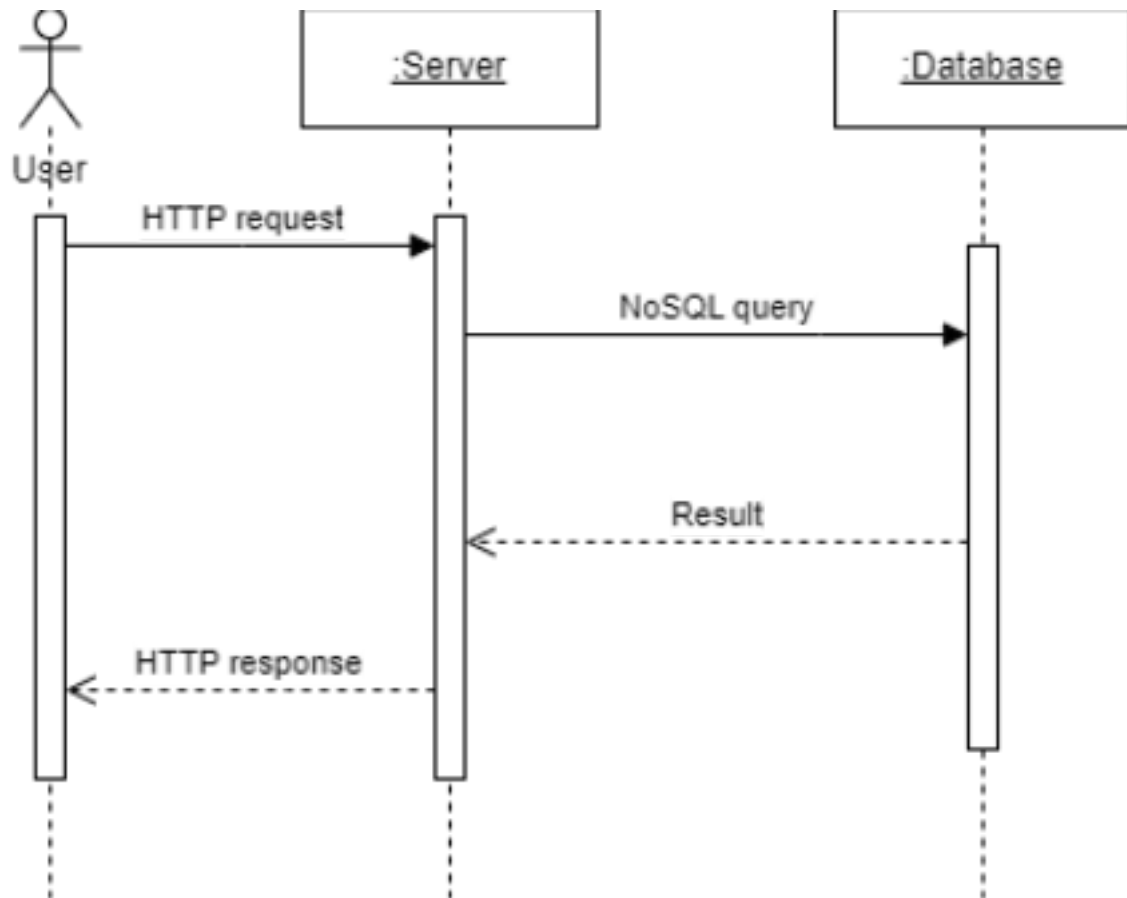
#### 4. Post incident sequence diagram



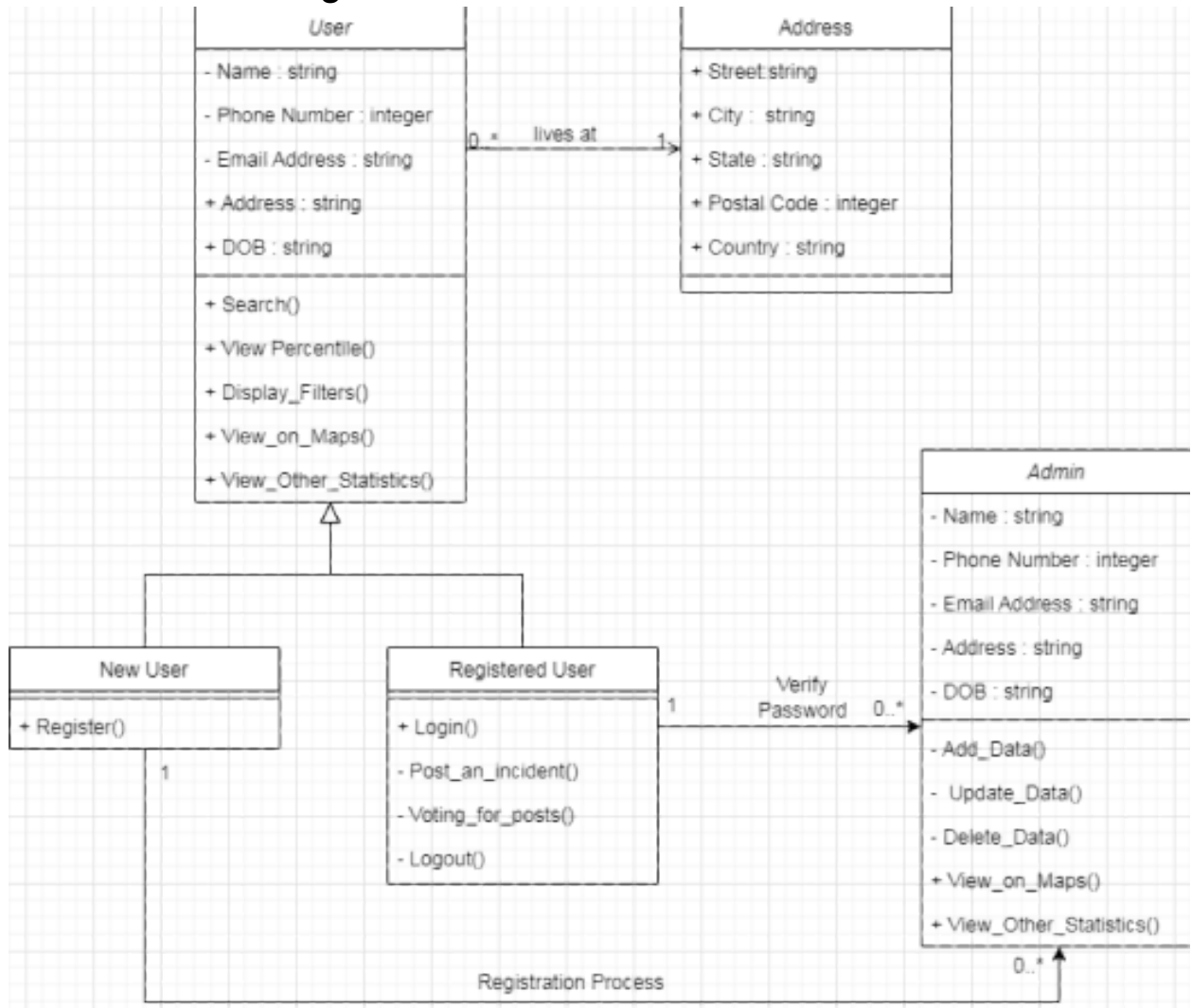
## 5. Voting for post sequence diagram



## 6. User filter sequence diagram



## C. Class Diagram



## 8. Tools and Technologies Used

## 9. Future Scope

- The system could have had a feature that compares properties based on crime and hazard data, as well as other relevant factors like price, location, and amenities.
- We should keep a buffer for a number of days to check whether a post got the threshold number of up votes to be eligible to be a verified post.



