IT314
Software Engineering

Crime and Hazard Management

Project Documentation

Group: 30

Under guidance of:
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- ## Functional requirements:

1) **User Authentication:**
   A system for registering and logging in users (according to priority, i.e. ordinary users and admins) to ensure secure access to the platform.

2) **Efficient Browsing:**
   Functionality for searching and sorting properties based on location, crime rate, hazard level, etc.

3) **Map/Graph-based property search:**
   An interactive map-based search system that allows users to visualize the location of properties in relation to crime hotspots and hazard areas.

4) **Visualization of crime and hazard data:**
   A system for visualizing crime and hazard data on a map using heat maps, graphs, and other graphical representations. The map will also show the connectivity status of the property with emergency services.

5) **Property rating over time:**
   A system for storing and displaying historical crime and hazard data for a property, including information about trends and patterns over time.

6) **Property comparisons:**
   A system that compares properties based on crime and hazard data, as well as other relevant factors like price, location, and amenities.

7) **Security and privacy:**
   A system for ensuring the security of sensitive information, such as crime and hazard data, while maintaining the secrecy of the user's privacy.

- ## Non-Functional Requirements:

1) **Performance:**
   The system has to have low latency when displaying maps/graphs and data, low search and filter times and quick response times.

2) **Scalability:**
   The system needs to be scalable in order to manage growing data and new users as well as new features and functionalities.

3) **Usability:**
   The system must have an easy-to-use interface, be intuitive for users, and be as simple as possible to utilize.

4) **Reliability:**
   System must be available and it must be dependable having little downtime and a low rate of mistakes and malfunctions.

5) **Compliance:**
   The system must adhere to all applicable legal and regulatory requirements, including security guidelines and data privacy regulations.

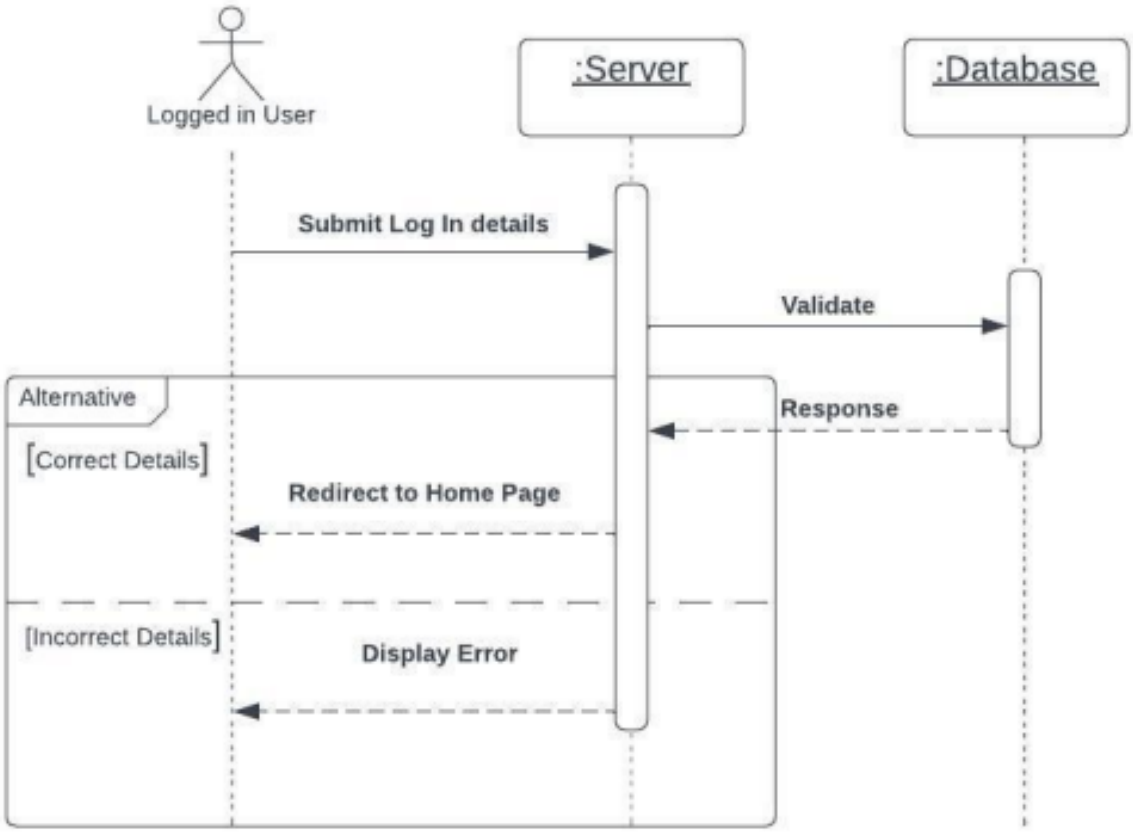
6) Maintainable:
   The developer should be able to easily update the website even after deployment.

7) Recovery:
   Should be able to recover lost data in case of failures.

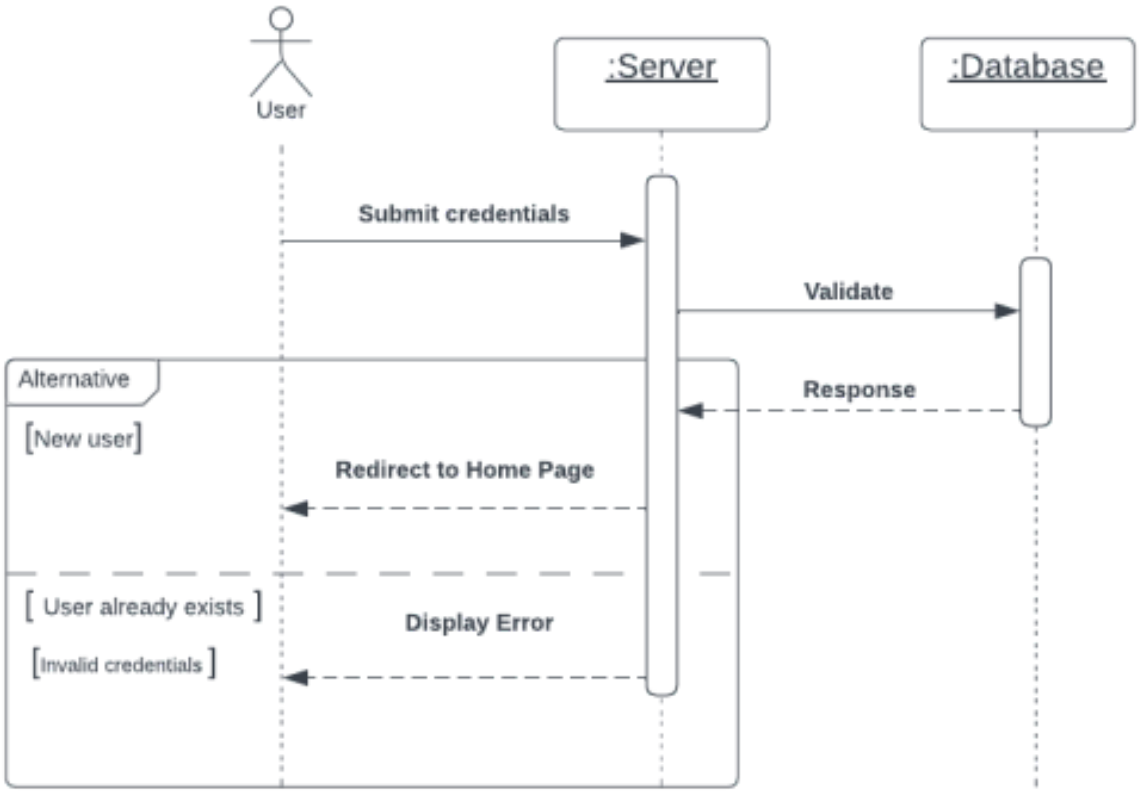
- **Use case Diagram**

- **Sequence Diagram for different features**

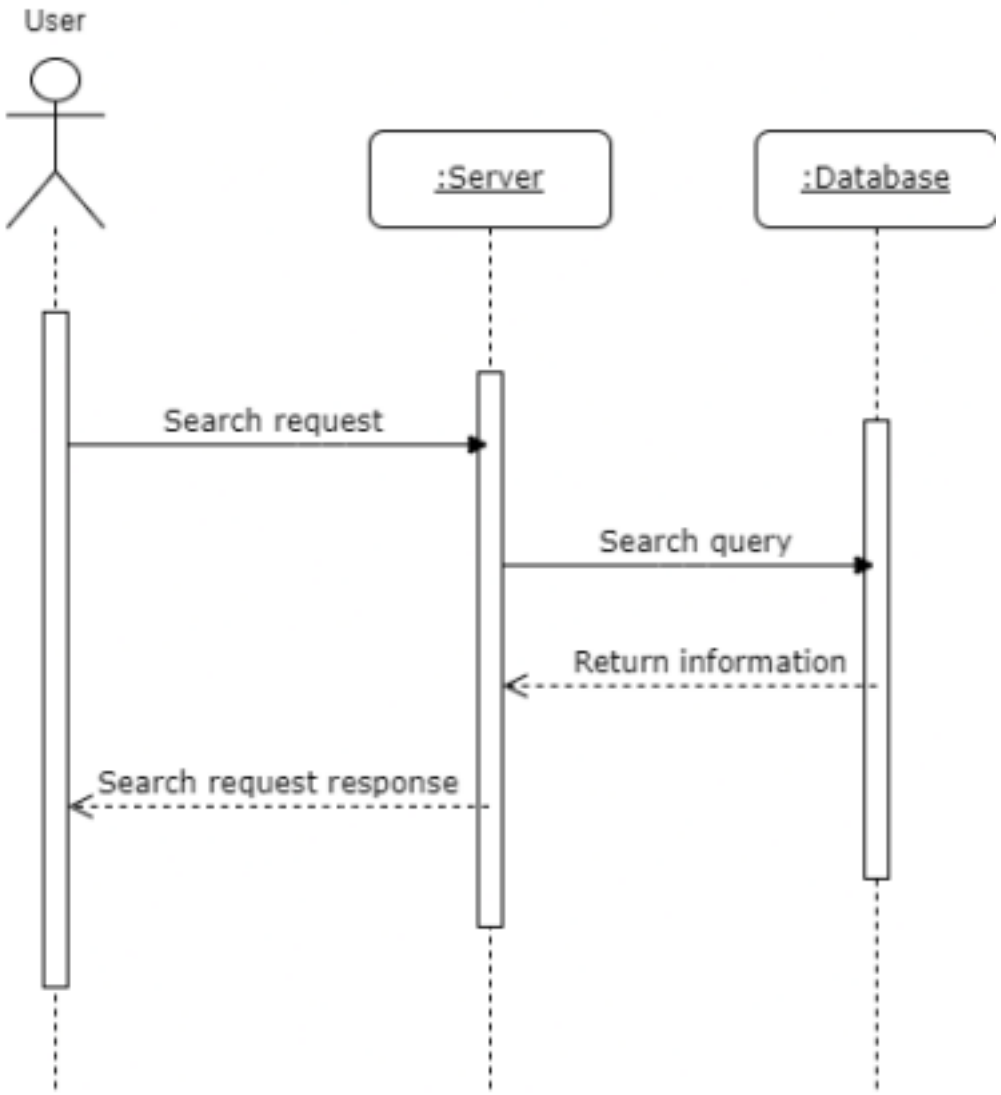
1. Login Sequence diagram



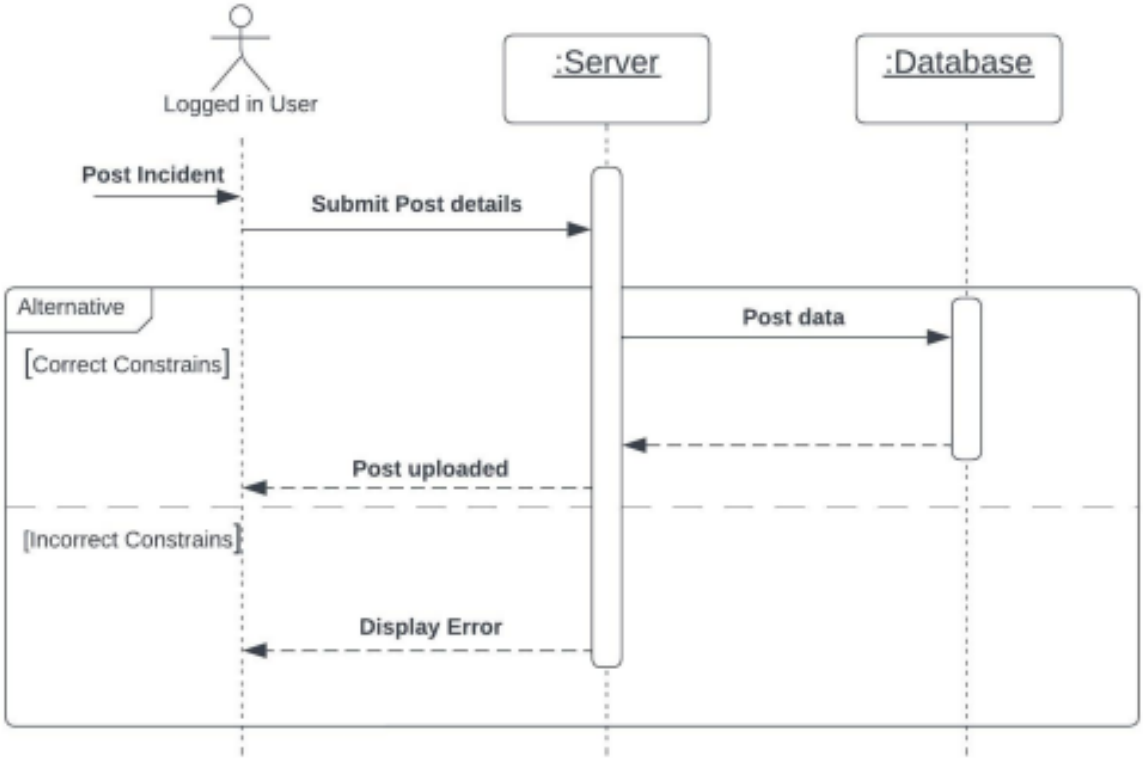
2. Registration Sequence Diagram



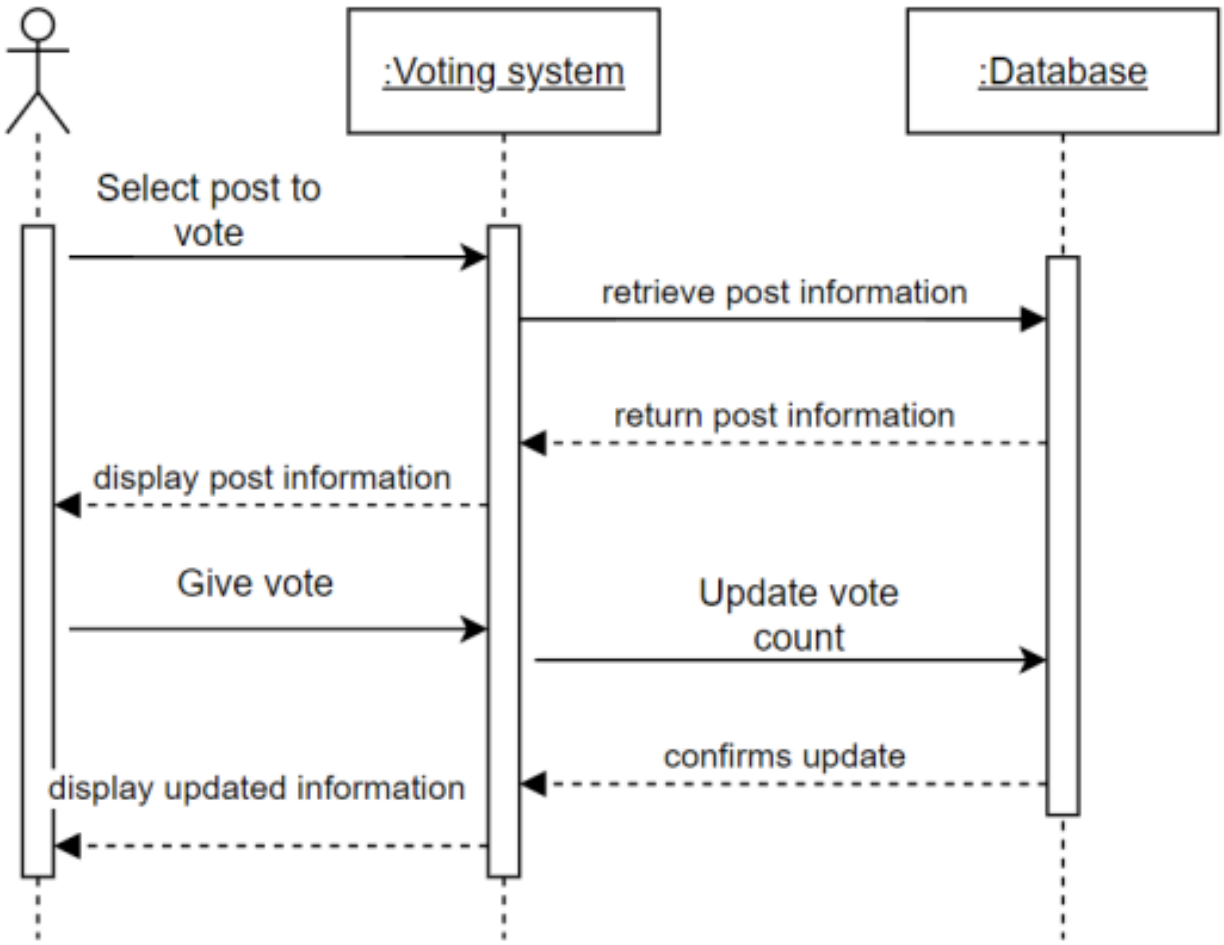
3. Search Sequence Diagram



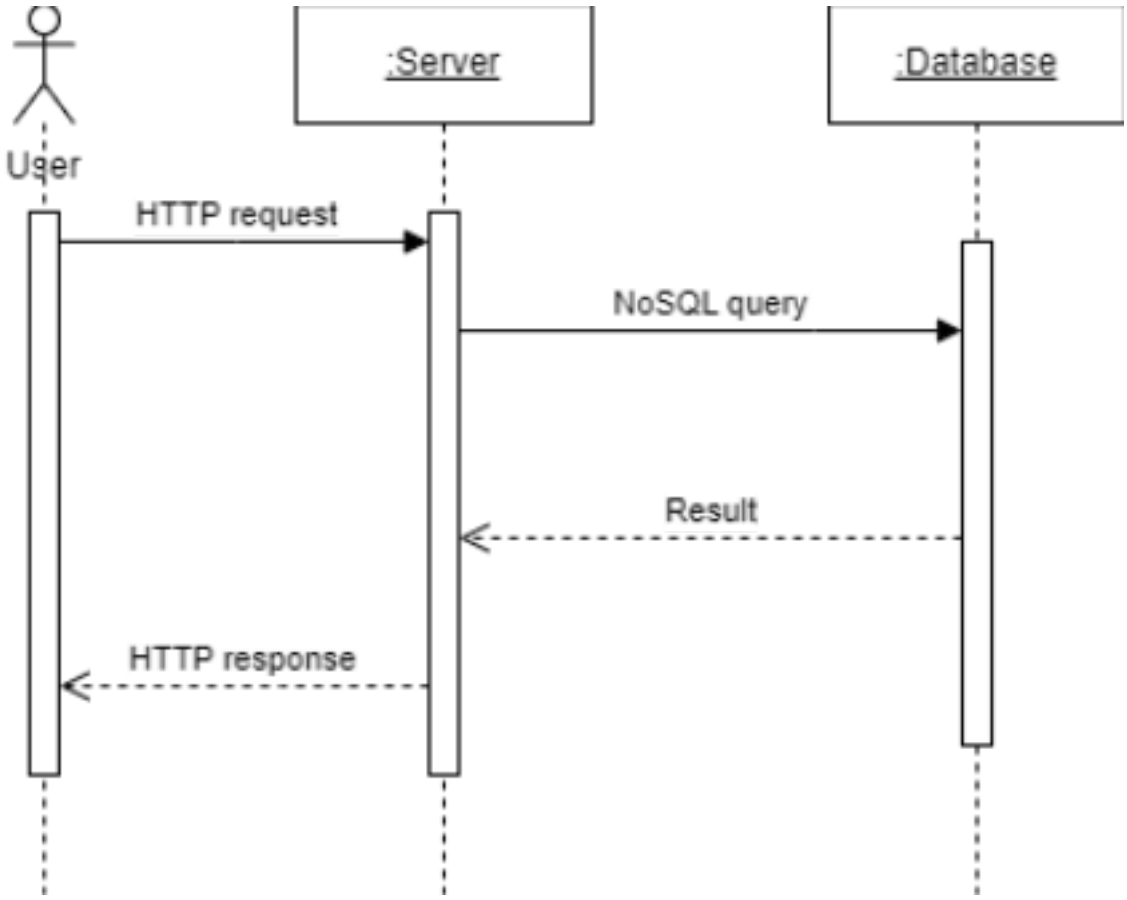
4. Post Incident sequence diagram



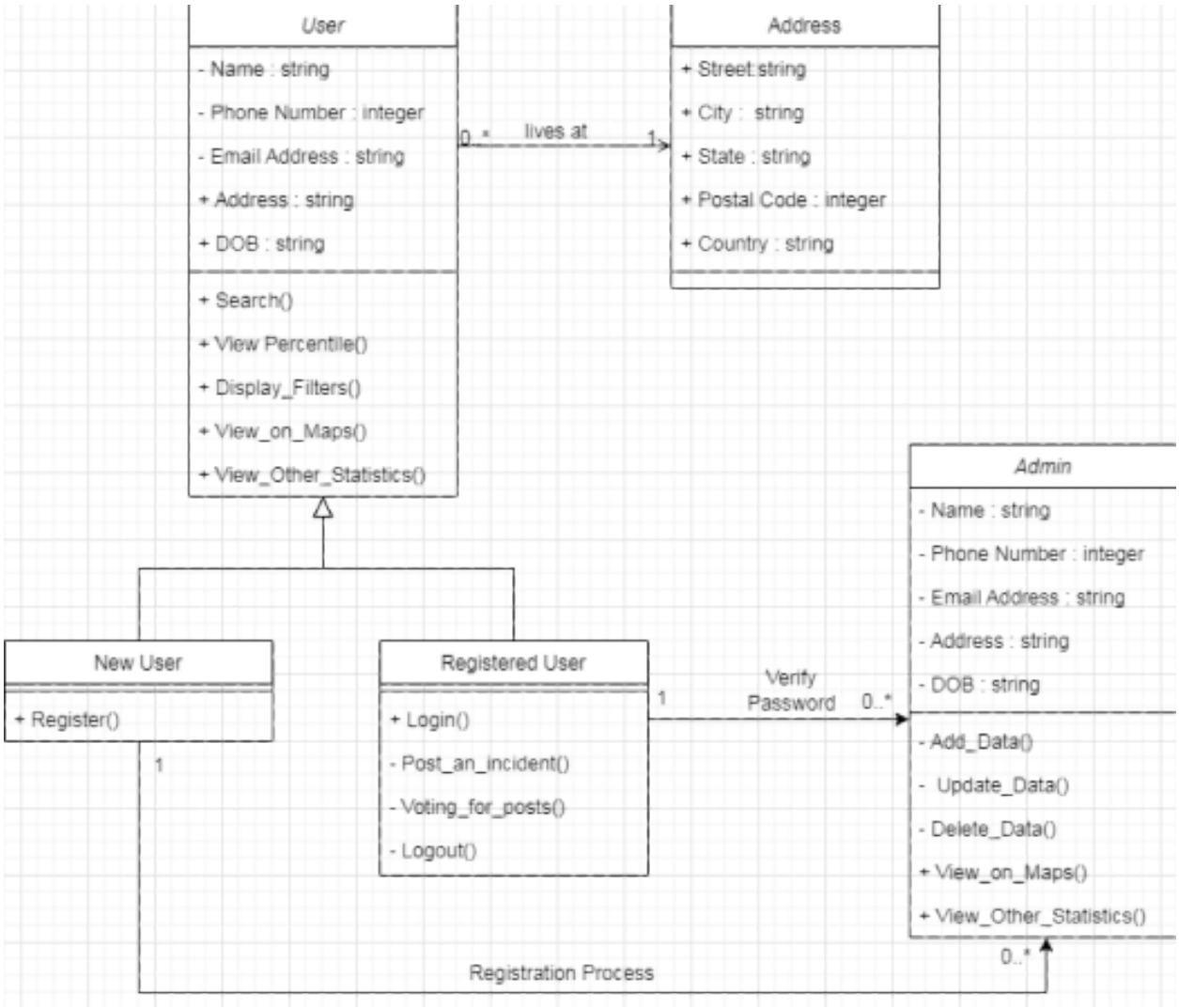
5. **Voting for post sequence diagram**



6. **User filter sequence diagram:**



- **Class Diagram**



- **Future Scope:**
    1. 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.
    2. 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.