CSE370 : Database Systems
Project Report
Project Title : Extortion Report System

Group No : 07, CSE370 Lab Section : 14, Summer 2025		
ID	**Name**	**Contribution**
22299102	Sumaia Tasrin	Frontend & Backend
22299319	Mohammad Abrar Zahin	Frontend & Backend

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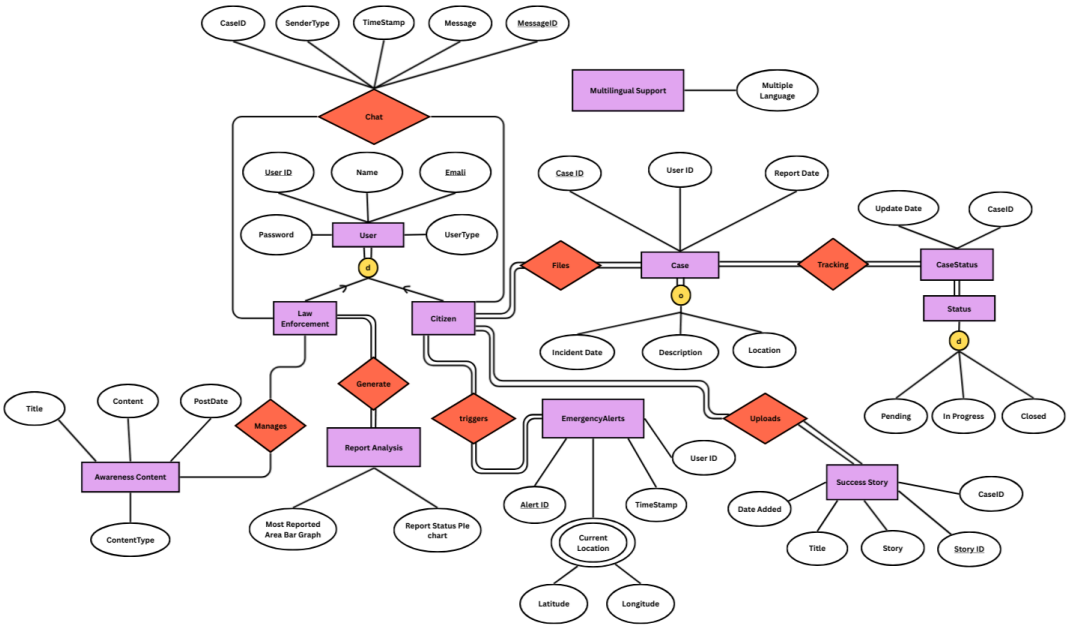
Introduction

This project is a web-based application designed to combat extortion by providing a secure and anonymous platform for citizens to report such crimes. It acts as a bridge between the public and law enforcement, allowing for the submission of detailed complaints, real-time emergency alerts, and a dedicated chat channel for communication. The system also includes tools for law enforcement officers to view and analyze complaints, respond to alerts, and review the impact of their efforts through success stories. The primary goal is to empower citizens and provide law enforcement with a centralized, data-driven system to fight criminal activities.

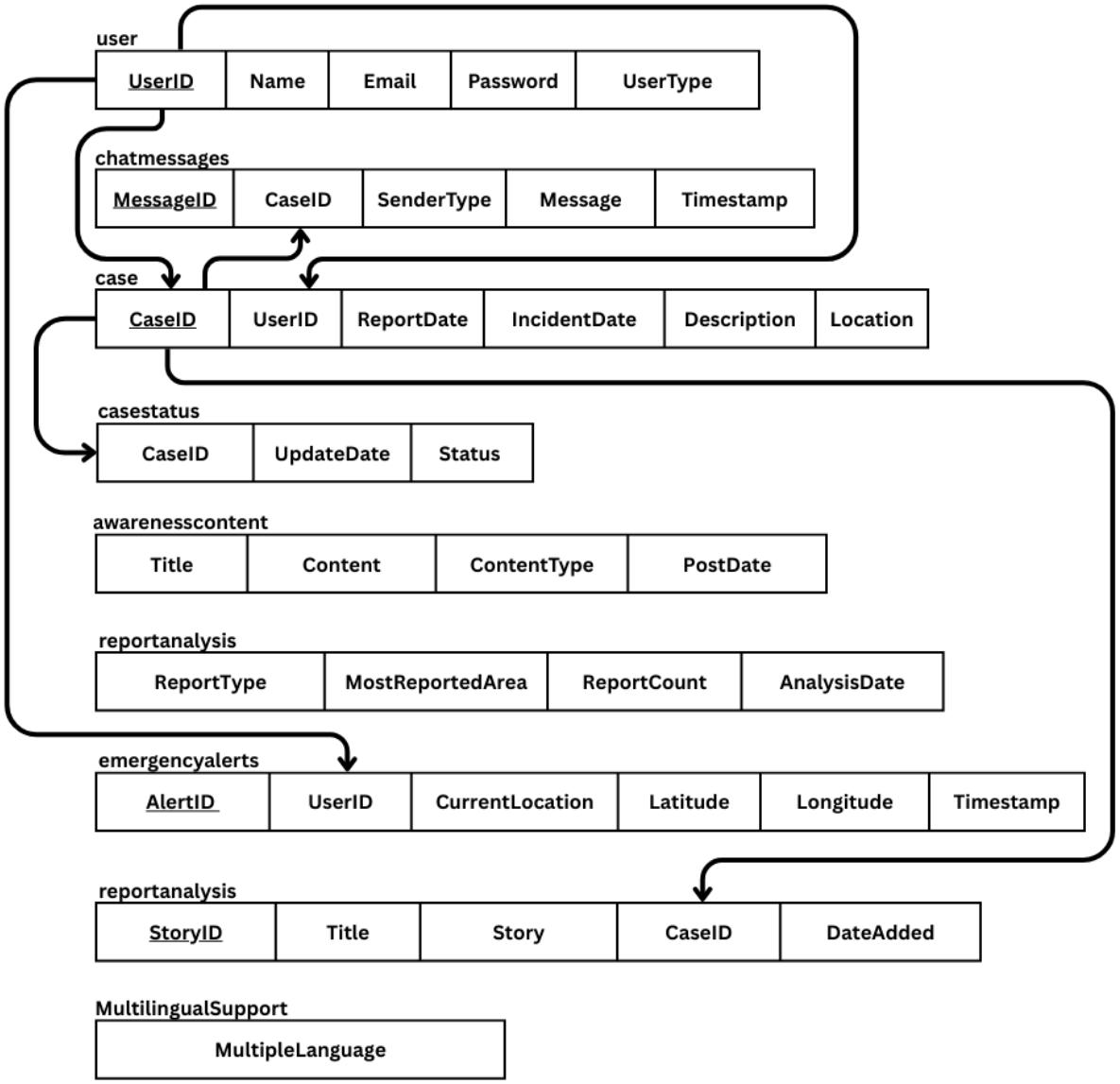
Project Features

ID, Name	Features [3 per member]	
22299102, Sumaia Tasrin	Ft 1	Extortion Complaint Submission
	Ft 2	Case Tracking Dashboard
	Ft 3	Legal Awareness Content Management System
	Ft 4	Success case story
22299319, Mohammad Abrar Zahin	Ft 1	Comment or Chat Feature with Legal Advisors
	Ft 2	Report Analytics for Admins
	Ft 3	Emergency Alert Trigger
	Ft 4	Multilingual Support
	Ft 1	
	Ft 2	
	Ft 3	

ER/EER Diagram



Schema Diagram



Normalization

1NF (First Normal Form): Our relational schema is in 1NF. Each column in every table contains atomic values, meaning there are no repeating groups or multi-valued attributes. Each row is uniquely identified by a primary key, such as **UserID** in the Users table or **CaseID** in the **Cases** table.

2NF (Second Normal Form): Our schema is also in 2NF. There are no partial functional dependencies. This is because all non-key attributes in each table are fully dependent on the entire primary key. For example, in the **Cases** table, **ComplaintDetails**, **Timestamp**, and **Status** are all dependent on the entire **CaseID**. Since our primary keys are all single columns, partial dependencies are not a concern.

3NF (Third Normal Form): The schema is in 3NF. There are no transitive dependencies in our relational schema. A transitive dependency would occur if a non-key attribute was functionally dependent on another non-key attribute. For example, if a table had **UserID**, **UserType**, and **UserLocation**, and **UserLocation** was determined by **UserType**, this would be a transitive dependency. Our tables are designed to avoid this, ensuring each non-key attribute is directly dependent on the primary key only.

Frontend Development

The frontend of this project was built using **HTML** for structure, **CSS** with the **Tailwind CSS** framework for a modern and responsive design, and **JavaScript** for all interactivity. The combination of these technologies allowed for a single-page application without the complexity of a framework like React or Angular, ensuring a lightweight and fast user experience.

Contribution of ID : 22299102, Sumaia Tasrin : Developed the core user interface for registration, login, developed the front-end for the report analysis page and the complaint submission form. Focused on form validation and a clean, intuitive user experience and designed the success stories portal.

Contribution of ID : 22299319, Mohammad Abrar Zahin: Designed and implemented the law enforcement dashboard for viewing complaints. Integrated the geo-spatial map for visualizing emergency alerts. Created the front-end for the real-time chat system using Socket.IO. Developed the user interface for sending emergency alerts.

Backend Development

The backend is powered by **Node.js** with the **Express.js** framework, providing a robust and efficient server environment. The database is **MySQL**, managed through the mysql library, which handles all data storage and retrieval. **Socket.IO** was used for real-time bidirectional communication, which is the backbone of the chat feature. The server also uses **Body-Parser** to process incoming requests.

Contribution of ID : 22299102, Sumaia Tasrin: Developed the API endpoints for user registration, login, and complaint submission. Handled user session management to authenticate requests and data for the report analysis. Created the logic to manage success stories.

Contribution of ID : 22299319, Mohammad Abrar Zahin: Created the backend logic for law enforcement features, including API endpoints to retrieve all complaints, emergency alerts. Implemented the real-time chat server using Socket.IO. Developed the API endpoint for handling and saving emergency alerts.

Source Code Repository

https://github.com/totondot/Extortion_Report_System.git

Conclusion

This project successfully demonstrates the creation of a secure and effective platform for combating extortion. By providing a safe space for citizens to report crimes and equipping law enforcement with the tools to respond and analyze data, the application serves as a crucial component in modern digital law enforcement. The seamless integration of front-end and back-end technologies, along with real-time communication features, showcases a robust and scalable solution that can make a tangible impact on community safety.