Suspicious Activity Reporting Portal: An Advanced Review

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Abstract:
One of the main causes of worldwide market distortions and financial inefficiencies is corruption in public procurement, which is the subject of this study. In order to mitigate vulnerabilities in procurement procedures, it suggests a secure platform that would allow for the anonymous submission of critical information to authorities. The platform has two primary functions: a whistleblower panel for anonymous tip submission and a government authorities panel for managing reports. Data integrity and user confidentiality are guaranteed by advanced security measures, which include defense against malware, phishing, cross-site scripting (XSS), and SQL injection. The platform seeks to increase competition, lower corruption, and raise the standard of public services by promoting accountability and transparency.

By using decentralized storage techniques, the system's functioning also streamlines and lowers the cost of criminal documentation. This reduces server expenses while simultaneously improving information security. For criminal investigators, the platform is highly helpful, especially for undercover operatives who depend on insider knowledge. The goal of the planned study is to leverage mobile technologies to improve crime reporting and response systems. In order to facilitate real-time contact between victims and authorities, it presents technologies such as a Mobile Crime Incident Reporting System and a Live Video Streaming Application (LVSA). Through user-friendly web applications, law enforcement can access the live video, GPS locations, and emergency signals that victims can convey through these systems. The technologies seek to enhance public safety, speed up police response times, and offer reliable evidence for court cases by utilizing cellphones' extensive availability and sophisticated sensors, promoting an effective and safe event management framework.

Keywords: Cybercrime, Crime documentation, Real-Time.

I. INTRODUCTION

This project aims to overcome the global reluctance to report crimes because of complicated procedures or fear of consequences by making it possible for crime witnesses to securely and effectively submit anonymous tips. By compensating anonymous tip sources, it seeks to encourage involvement and foster social responsibility. The platform uses decentralized storage to lower documentation costs and improve data security, which lowers the cost and improves the efficiency of crime investigation. The method is especially helpful for undercover agents since it protects insider information while providing criminal investigators with reliable, anonymous leads [1],[2].

In order to improve public safety, this study suggests a Web Application that would allow people to quickly call the police in an emergency. Through the website users can notify authorities of their exact GPS location and distress signals. To help neutralize the situation, users can also submit extra information in the form of text, audio, or images. This information is sent to authorities via an interactive map-based system that shows vital details like the user's location, the locations of the closest police stations and hospitals, and data analysis from the distress signal. The platform seeks to decrease response times and increase the effectiveness of

emergency handling by simplifying communication and offering comprehensive, real-time information. The increasing demand for effective crime reporting systems in light of rising crime rates worldwide. Crime reporting through mobile is made possible by current solutions in nations like Korea, Indonesia, and Pakistan; nevertheless, these solutions have several drawbacks, such as the requirement that users physically submit text or photographs, which may not be practical in urgent cases where the victim is incapacitated. The proposed Live Video Streaming Application (LVSA) aims to solve these problems by enabling victims to report crimes in real-time by simply clicking to initiate a live video stream. Police servers receive the victim's GPS location automatically through the app, allowing them to quickly analyze the situation and take appropriate action. Additionally, the streamed video is saved for use as proof in court later on. This creative idea seeks to shorten reaction times offer [3],[4].

Issues with emergency and crime reporting systems in Bangkok's 191 incident response center, such as incomplete data processing for crime prevention, phony reports, unskilled police, and a lack of essential information. A smartphone-based incident reporting tool is suggested as a solution to these problems. In order to prevent false complaints and facilitate speedier responses, the mobile apps or websites enables users to report occurrences with supporting details such incident type, identification, location, and audiovisual evidence. The technology enables inter-agency cooperation and gives cops access to expert-recommended protocols. Additionally, it processes data for better management and criminal assessment. Due to public familiarity, it is advised to supplement current phone-based systems even though it is effective. The availability of smartphones, mobile internet connectivity, and citizen-law enforcement collaboration are all necessary for the system to succeed [5].

II. LITERATURE REVIEW

Cutting-edge technologies in the domains of machine learning, blockchain, post-quantum blockchain, mobile edge computing (MEC), and the Internet of Things (IoT) are summarized in the review. IoT devices may now train data on-device by outsourcing tasks to MEC servers thanks to developments in decentralized machine learning and MEC. However, because of its scalability, decentralization, and immutability, blockchain technology seeks to address issues with user privacy and data security that are brought up by this distributed structure. The idea of post-quantum blockchain, which is threatened by quantum algorithms, is also introduced in this study[6].

Numerous applications and systems now in use for reporting emergencies and crimes. It talks about an online crime reporting system that lacks preventive elements and is complicated, yet it lets users submit evidence and file cases. Police officers participated in a small-scale test of another system that was based on UX dimensions. While a personal emergency notification app lacks explicit implementation details and false positive management, a social video streaming application for reporting street crimes has bandwidth limits. A GPS/GSM-based mobile app for car accident detection has been presented, however it needs the right sensor setups and is prone to false positives. These systems' primary drawbacks include their reliance on third-party services, false positives, bandwidth problems, and ease of use[3].

The difficulty of categorizing digital materials in different Indian languages so they may be easily retrieved. One of the main components of text mining is text classification, which is the process of classifying documents according to their content. The study emphasizes how difficult it is to comprehend content in Indian because of the intricacies of Natural Language Processing (NLP). Additionally, it mentions how well supervised learning algorithms—such as N-gram, Support Vector Machine (SVM), Artificial Neural Network (ANN), and Naive Bayes (NB)—have done for text categorization tasks in this setting[7].

According to earlier studies, those who have positive opinions of the police are more likely to cooperate when reporting crimes. According to a Ghanaian study, victims who were more satisfied with police work and had greater faith in the police were more likely to report crimes like robbery and sexual assault. Furthermore, victims' reporting behavior was influenced by age, marital status, and job, which offered valuable information for enhancing community-police relations. Beyond its usage in fungible tokens for initial coin offerings (ICOs), Non-Fungible Tokens (NFTs) have demonstrated promise in new technologies. An investigation on

NFTs in event tickets showed that they might enhance control over secondary market transactions, tokenize digital commodities, and stop fraud. The study offered insightful information, such as design guidelines and suggestions for utilizing NFTs in a range of contexts outside of events[8],[9].

The authors of [10] summarize the body of research in the areas of machine learning, secure data sharing, blockchain-based Mobile Edge Computing (MEC), and a basic introduction to post-quantum blockchain in order to present an overview of the state-of-the-art in cutting-edge technologies. A substantial amount of data is constantly being generated on the internet as a result of the development of web technology. The internet has developed into a forum for online education, opinion sharing, and idea sharing. Social networking services like Facebook, Google+, and Twitter are becoming more and more popular because they allow users to send messages worldwide, exchange opinions, and participate in conversations with different communities. Considerable study has been conducted on sentiment analysis of Twitter data, with an emphasis on examining opinions in tweets, which are.

III. COMPARATIVE ANALYSIS OF PROBLEM

3.1. PROBLEM STATEMENT

The lack of trustworthy information from witnesses, who frequently hesitate to report crimes out of concern for potential legal repercussions, makes crime solving challenging. A system that allows users to report crimes anonymously via a guest account is suggested as a solution to this problem. The system has khabri (agent) accounts for tipping, state admin accounts for city-specific reports, and super admin accounts for oversight on a national level. Messages are accepted on a public guest page without the need for login information[1],[2].

3.2. PROPOSED WORK

Despite assurances of confidentiality, many people are reluctant to report crimes because they lack confidence in the police, are afraid of drawn-out encounters, and are worried about the possible repercussions. We provide a tip-off system with four essential modules to address these problems:

The Guest Module: Protects users' identities by enabling anonymous crime reporting.
Super Admin Module: Offers oversight at the national level and makes reports from all around India accessible.
State Admin Module: Provides specialized access, allowing administrators at the state level to handle complaints from certain cities.
Agent (Khabari) Module: Without signing in, registered agents can make public remarks on the guest page and provide advice to the appropriate administrators.

This approach guarantees privacy, increases the effectiveness of reporting, and strengthens law enforcement's capacity to efficiently handle crime data.

3.3. OBJECTIVES

Our project's primary goals are:
Maintain Anonymity: Preserve the identification of those who are giving criminal tip information.
Boost Citizen Response: Make it simpler and safer for people to report crimes in order to encourage more people to do so.
Reward Valid Tips: Give people who submit reliable and helpful information incentives.
Give Law Enforcement Better Insights: Give authorities insightful information to improve the effectiveness of their investigations.
Provide a Platform for Documentation and Proofs: Establish a consolidated platform for the storage and retrieval of documents and evidence pertaining to crimes.
Minimize Paperwork: Make reporting and investigations more effective by streamlining procedures and reducing the need for conventional paperwork.

IV. SYSTEM ARCHITECTURE

The project intends to overcome the difficulties that witnesses encounter when reporting crimes because they are afraid of being involved in the criminal justice system. Users can upload crime details using its anonymous mechanism without disclosing who they are. For national-level reports, the system has a super admin account; for city-specific reports, it has a state admin account; and for tipping the appropriate admins, it has an agent (khabri) account. The project emphasizes how crucial anonymous reporting is to safeguarding witnesses and facilitating more effective police investigations. Additionally, an algorithm is introduced to differentiate between real and fake tips. The system's ultimate goals are to guarantee justice, provide witnesses with a voice, and encourage social innovation in crime reporting. Furthermore, the system might include tools to assist students in non-traditional.

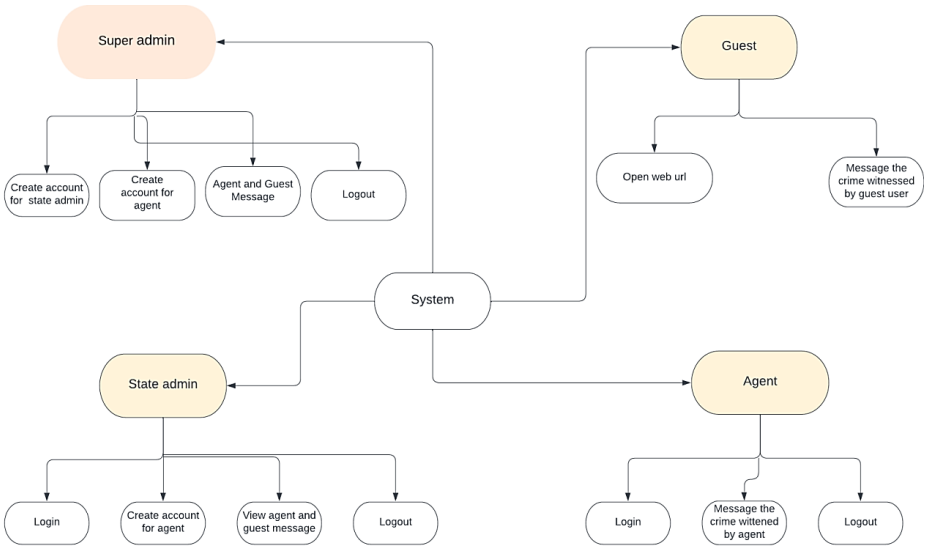

Figure 4.1: System Architecture

V. CONCLUSION & FUTURE SCOPE

The primary lesson learned from the Tip-off study's implementation is the significance of offering an anonymous platform for reporting crimes, especially for witnesses who are afraid to be involved in the legal system. Witnesses are important yet sometimes disregarded unless their names are known, although victims are frequently given priority when reporting crimes. Given the tremendous value of insider knowledge, the study suggests an algorithm to differentiate between real and fake tips, which would greatly facilitate police investigations. Every witness should have a voice and be able to disclose crimes without worrying about reprisals, according to the system. Through the use of technology, the system provides an anonymous forum for information exchange, which helps to improve crime reporting and the administration of justice. Furthermore, the study aims to increase its capacity to assist students in.

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