Project Team #: 20CSM_B04

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Project Name:

Development of an app where general public can report information on drug trafficking anonymously.

Abstract:

The existing solution for reporting drug trafficking relies on reaching out to Narcotics squads or nearby police stations. However, this approach presents challenges, as the majority of the public may be hesitant to disclose their identity or may find it inconvenient to physically visit law enforcement offices. As a result, a significant number of drug-related incidents may go unreported.

This app will also leverage machine learning models to filter out false alarms, ensuring that law enforcement authorities can focus on genuine reports. This approach mitigates the risk of inundating authorities with irrelevant or misleading information.

The development of an anonymous reporting mobile application aims to empower the general public in the fight against drug trafficking . To maintain user privacy, the app utilizes robust encryption methods for data transmission and storage, ensuring that personal information remains protected.

Through a user-friendly interface, users can submit detailed information, including incident descriptions, location data, and any supporting evidence they may have. By maintaining the anonymity of the reporters, the app fosters a safe environment for the public to report incidents truthfully.

The development of an app for anonymous drug trafficking reporting offers a robust and innovative solution to combat the illicit drug trade crisis in India. By overcoming the limitations of the existing reporting methods, the app empowers the public, ensures effective incident categorization and prioritization, and fosters a collaborative effort between the public and law enforcement authorities in making communities safer and drug-free**.**

Title	Drug Trafficking System
Clients	Narcotics Control Bureau (NCB).
Objective	The primary objective of this project is to create a user-friendly mobile app that empowers the general public in India to actively participate in combating drug trafficking. The app will allow users to report incidents of drug trafficking they observe in their localities without the need to disclose their personal information, ensuring their safety and anonymity. Through the app's GPS integration, users can provide accurate location data, allowing law enforcement authorities to respond promptly to reported incidents. Additionally, users can upload multimedia evidence, such as images or videos, to support their reports and provide vital context to aid investigations. To maintain the app's effectiveness, there will be a false alarm detection system in place, powered by machine learning algorithms. This feature will help filter out irrelevant or unintentional reports, reducing the burden on law enforcement resources and ensuring that genuine cases are appropriately addressed. The app will be designed to support multiple languages, ensuring that users from diverse linguistic backgrounds can easily access and use the platform. Ultimately, by achieving these objectives, the project seeks to foster a collaborative environment between the public and law enforcement, empowering citizens to play an active role in addressing the illicit drugs crisis in India and promoting a safer society for everyone.
Users	1. General Public 2. Anti-Drug Organizations 3. Law Enforcement Agencies
Functional Requirements	**F1:** Anonymous Reporting Firebase Authentication with Anonymous Sign-In. This allows users to submit reports without requiring them to create an account or disclose personal information. **F2**: GPS Integration Use GPS technology to automatically detect the user's location when submitting a report, ensuring accurate incident tracking .This can be done using Android Location API. **F3**: False Alarm Detection Implement machine learning algorithms to analyze submitted reports and identify potential false alarms to reduce unnecessary alerts for law enforcement. **F4**: Multi-media upload functionality

	A multimedia upload feature to allow users to provide additional evidence or context when reporting drug trafficking incidents. This feature enhances the reporting process and enables users to share images, videos, or audio recordings related to the incidents. **F5**: User Feedback and Support Incorporate a feedback mechanism to gather user suggestions and improve the app continually. Provide a support system to address user queries or issues. **F6**: Report categorisation and public Awareness Report categorization is a vital feature in the "Anonymous Drug Trafficking Reporting" app that allows users to classify their submitted reports based on different categories or types of drug trafficking incidents. Implementing public awareness strategies can increase user engagement, encourage reporting, and create a safer environment. **F7**: Multilingual Support String Resources and Localization Libraries. Utilize string resources and localization libraries to provide app content and UI elements in multiple languages. **F8**: User Registration (Optional) and Authorities login(mandatory) Firebase Authentication with Email/Password. Use Firebase Authentication for optional user registration to enable additional features. For authorities, implement a separate login system with credentials provided by relevant law enforcement agencies.
Non-Functional Requirements	**NF1**:Security Implement strong encryption algorithms (e.g., AES) for securing data transmission and storage. Use HTTPS for secure communication between th app and the server. Employ OAuth or JWT for user authentication. **NF2**:Reliability Use cloud-based hosting services (e.g., AWS, Azure) with auto-scaling capabilities to ensure high availability. Implement redundancy and failover mechanisms to handle potential server failures. **NF3**:Accessibility Follow WCAG (Web Content Accessibility Guidelines) standards to design a inclusive user interface that accommodates users with disabilities. Use responsive web design to adapt to various screen sizes.

	NF4:Response Time Employ a lightweight and efficient backend infrastructure to process user reports quickly. Optimize database queries and use caching mechanisms (e.g., Redis) to reduce response times. **NF5**:Data Integrity Use database management systems with built-in data integrity features. Apply cryptographic hashes to sensitive data to ensure data tampering detection. **NF6**:Offline Functionality Implement local data storage on the app (e.g.,Firebase) to allow users to compose reports offline. Use background synchronization when an internet connection is available to send reports to the server. **NF7**:Concurrent Usage Utilize load balancers to distribute incoming requests across multiple serve ensuring even distribution of traffic and preventing bottlenecks. **NF8**:Accuracy of Machine Learning Model: Train and deploy machine learning models using frameworks like TensorFlo or PyTorch. Continuously update and refine the model based on feedback and real-world data. **NF9**:Anonymity Assurance Use cryptographic techniques to generate unique identifiers for users to maintain their anonymity. Implement strict access controls to prevent unauthorized access to user information. **NF10**:Minimal Bandwidth Usage Compress images and media files before uploading them to reduce data consumption. Utilize data compression algorithms (e.g., Gzip) for efficient data transfer.
Software and Hardware Requirements	**Software Requirements**: 1.Frontend : Android Studio, Java/Python, XML 2.Backend & Database : Firebase, Firestore. 3.API : Android Location API. 4.Frameworks : TensorFlow or PyTorch 5.Library : Scikit-learn 6.Version control system : Git 7.Testing Framework : Android Emulator 8.Lang Support Feature : String Resources

	9.Hashing Algorithms(For security,if required) 10.User Interface Design Tools: Figma **Hardware Requirements:** 1.OS : Win 10x / Win 11x 2.RAM : 4 GB or more. 3.Storage : 256 GB SSD/500 GB HDD