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Crime Reporting Management System Using Android Studio.

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***Abstract*— The purpose of Crime Report Management System is to automate the existing manual system by the help of computerized equipments and full-fledged computer software, fulfilling the requirements of all policemen, so that their valuable data/information can be stored for a longer period with easy accessing of the same. The required software and hardware are easily available and easy to work with. This system also maintains computerized records of all the FIR filed against crime.**
The main aim of this paper is to notify each and every policeman about the release of any criminal,including his/her details, such as, criminal's id, name, type of release and so on. Additionally, it also provides the details of any new rule that has been introduced or any event that is going to take place. It can be used as an application by the police department to manage the records of different activities related to First Information Report. In this system all these activities (like registration of the complaint, updating information) are managed that saves time. This application is for the police stations that provide facilities for reporting crimes, filing FIR and maintaining prisoner records. It provides better prospective for the enhancement of organization regarding quality and transparency.

Keywords: FIR, CIR,Status of Compliants,Andriod Studio, Mobile Application.

I. INTRODUCTION

District-wide police stations are intended to employ the Crime Reporting Management System. It seeks in order to improve the processing of convictions for crimes and the identification of crimes by means of an extremely flexible information management system. The speed and caliber of information retrieved from current data have a significant impact on the system's ability to combat crime and operate efficiently. This system's objective is to maintain records regarding offenses and inmates. Authorities can log in as users and add information about prisoners, such as their name, age, address, offense, and sentence. They are also capable of writing and saving the First Information Report. Date, time, number, and contents of the fir are viewable whenever, if the individual who registered requests it. Every FIR is assigned a unique ID by this system as necessary, and each prisoner number is unique as well.Furthermore, it provides information on any crimes committed through the police complaint ID or FIR. If the offender is apprehended, the case file can be updated. A website for online complaints and automated crime record administration is called the "Crime Management System." Here in this website a person who wishes received by police, and police have the authority to notify the person who made the complaint of the complaint's status. This program allows officers to handle many offenses and A few of the manual jobs that are performed in the police station. The admin provides the police with their login password directly. The website allows users to access some modules, such as news, safety advice, missing people, and most wanted criminals, without checking in. Thus, without having to go to the police station in person, this website assists law enforcement in learning about societal issues. to file a report or file a complaint an incident must register before log in and as soon as the administrator authenticates the user he or she can login into the website and write a complaint.

This grievance shall be Records pertaining to offenders, cases, complaint histories, case histories, and other crime management system can help store information. This enables someone to access or remove the records as needed. It is possible to Maintain vigilance over all these records in just one database. To guarantee that only people having permission can access the system, security is upheld. Among the beneficial projects on which the police can rely will be this application. Obtaining the details of former felons might be aided by this website. Additionally, it can aid in reducing most of the police's workload.

The Crime Reporting Management System is an advanced and comprehensive tool designed to streamline and enhance the efficiency of police operations across the district. It is pivotal in managing criminal conviction records and crime detection processes, relying on a robust information management infrastructureThe software system is designed to satisfy the requirements of law enforcement organizations by offering rapid and simple access to comprehensive records, enhancing the efficacy of initiatives to combat crime.

Key Features and Capabilities:

Detailed Record Keeping: The system allows police officers to log in and enter extensive details about inmates, including personal information such as name, age, and address, as well as specifics about their offenses and sentences. Each inmate is assigned a unique identification number to prevent duplication and ensure accurate record-keeping.

First Information Report (FIR) Management: Officers can generate and save FIRs within the system. Each FIR includes crucial information such as date, time, and details of the incident, and is assigned a unique ID for easy retrieval and reference. The latter feature makes sure that every incidence is methodically recorded and accessible at any time.

Case Tracking and Updates: The system supports ongoing case management, allowing for updates to be made as new information becomes available. This is particularly useful when offenders are apprehended, as it enables the seamless updating of case files with the latest developments.

Online Complaint Submission: Citizens can use the online registration and complaint submission tools to engage with the system. after being verified by the administrator, users can log in to file grievances, which are then received and processed by the police. Complainants can monitor the progress of their filings, encouraging openness and confidence in the legal system.

Public Access Modules: The system provides several modules accessible to the public without the need for login. These include updates on news, safety advice, information on missing persons, and details about most wanted criminals. This feature helps in disseminating important information and engaging the community in safety and crime prevention efforts.
Centralized Database: All records, including offender details, case histories, and complaint logs, are stored in a single, centralized database. This consolidation of data ensures that information is easily accessible and manageable, reducing redundancy and enhancing data integrity.
Security and Access Control:The system is built with strong security features to guarantee the protection of sensitive data. The system only allows access to authorized personnel, protecting the integrity and confidentiality of the data.
Benefits:
Efficiency and Productivity: By automating many of the manual tasks traditionally performed in police stations, the system significantly reduces the administrative burden on officers. This allows them to focus more on core policing activities, enhancing overall productivity.
Enhanced Crime Fighting: Quick access to detailed records and The police are better equipped to respond to and solve crimes when they have real-time case file updates.
Community Engagement:The public modules and online complaint submission feature foster greater community engagement and trust in law enforcement, encouraging citizens to report incidents and stay informed about safety issues.
Data Integrity and Accuracy: Errors and duplication are minimized by the use of unique identities for FIRs and convicts, which guarantees accurate and easily retrievable records.
An important development in law enforcement technology is the Crime Reporting Management System, which offers a dependable, effective, and safe platform for handling criminal records and supporting efficient police.

II. RELATED WORK

In the current study [1] Oludeli Awodeli and Onulri Ernest discuss "A Real-Time Records Management System for National Security Agencies" in their paper [1].concentrate on putting the criminal records administration system into place. It's a database system where law enforcement maintains tabs on criminals who have been found, are apprehended, or have escaped. The police department will gain from better information management as a result. The petitioner, or the individual who submits a First Incident Report (FIR), the victim, the accused or criminal, the case, and the investigating officer are the key players in the entire procedure.

In the current study [2] Sourav Bhowmick created a web-based application in this study dubbed "Criminal Report Management System" that allows for the management of data and other details regarding offenders and their crimes. In addition, it offers details and the latest state of affairs regarding police stations. It monitors the GD, FIR, number of cases, and every single detail about the offenders. Furthermore, this system offers a search function to ascertain if someone has ever had a criminal record.

In the current study [3] Mohammad Shahnawaz created an application for use in all police stations nationwide that focuses on the topic of crime record management, as detailed in this paper titled "Crime Reporting and Crime Updates." It is common knowledge that a highly responsive information management foundation is essential to crime prevention, criminal detection, and conviction. The quality and speed at which the Police may get details from their existing records determines The efficiency of their work and how well they are able to combat crime. The system will be put into place initially in towns and cities, and it will eventually be linked together so that a police Investigators have access to information from all state databases, facilitating prompt and effective finalization of cases. The project is designed using a distributed architecture perspective and centralized database storage. The application for storing data has been organized.

In the current study [4] Srinidhi Eragam Reddy, Ramya Sahithi Amathi, and Priyanka Vakkalagadda, titled "Crime Reporting Interface Design using Mobile Technology," the authors aimed to develop a system for maintaining computerized records of all FIRs. This system, accessible through a desktop application, is designed to assist the police department in managing the documentation related to first information reports (FIRs).

In the current study[5] by R. G. Jimoh, K. T. Ojulari, and O. A. Enikuomehin, titled "A Scalable Online Crime Reporting System," the authors aimed to aid the police in solving crimes by offering timely and relevant information about offenders and their methods. The goal was to prevent criminal activities in specific areas before they occur. The resulting prototype features four types of reporting forms: an arrest report, a criminal event report, a follow-up investigation report, and a complaint or dispatch report. The system is structured around three core modules: data collection, report management and control, and data utilization. Future enhancements for the system could focus on improving accessibility.

In the current study [6] William and Millicent Akotam Agangiba founded a paper "Mobile Method for Tracking and Documenting Metro Area Crimes" with the goal of assisting in the advancement of metropolitan crime reporting and detection. The system gathers information and generates reports in real-time via mobile technology, facilitating quicker reaction times and better crime control. Law enforcement officers and the general public can report crimes and access information related to crimes while on the go because to the system's user-friendly design. The total effectiveness of crime prevention and response strategies is improved by mobile device utilization, which guarantees that crime data is readily available.

In the current study [7] "Report Crime, Track Crime, Combat Crime, Right From Your Pocket" is the title. VicPD An summary of the VicPD mobile application is given by this source. With it, users may report, track, and combat crimes right from their mobile devices. The goal of the application is to improve public safety by giving people a convenient and quick means to communicate with police enforcement. Features that support the community's and the police's efforts to prevent crime include notifications, crime mapping, and real-time reporting. The app's interface with the police department's current systems guarantees efficient incident management and smooth data flow.

In the current study [8] Anupam Shukla and Manav Singhal produced a paper titled "Implementation of Location-Based Services through GPS and Web Services in Android" created a project to investigate how to use web services and GPS to provide location-based services (LBS) in Android. It covers the technical components of creating a location-based service (LBS) a web services-based application for data interchange and GPS for real-time location monitoring. The study shows how such an application can be utilized for emergency response, location-aware information services, and navigation, among other uses. The findings show that adding web services and GPS to mobile Applications can enhance the user experience. considerably and offer useful services based on location data in real time.

In the current study [9] The "Android Bachaosos Application" title The Android Bachaosos application was developed by Mayur Dhande,Raman Dhoot and Amruta Barawkar with the goal of enhancing children's safety and emergency response. The software makes use of Android's features to offer SOS notifications, direct contact with emergency contacts, and real-time location monitoring. By allowing parents and guardians to keep an eye on their kids' whereabouts and act swiftly in an emergency, the system seeks to improve child safety. The application is a useful tool for guaranteeing children's safety and wellbeing because of its powerful functionality and user-friendly interface.

The concept of mobile cloud computing is explored in this study [10] by Pragya Gupta and Sudha Gupta, "Mobile Cloud Computing the Future of Cloud," emphasizing how it could completely transform cloud services in the future. It talks about how mobile and cloud computing are coming together, highlighting the advantages of this convergence include increased processing power, storage capacity, and scalability for mobile apps. The paper examines a range of Use cases for mobile cloud computing and applications, demonstrating the potential of these technologies offer major benefits in terms of affordability, adaptability, and accessibility. The results indicate that the development of mobile technologies and services will be greatly aided by mobile cloud computing.

III. SYSTEM DESIGN

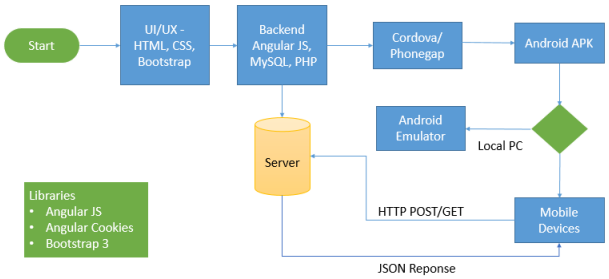


Figure 1: Workflow of System Design.

The Figure 1 illustrates the architecture and workflow of a web application integrated with mobile functionality using various technologies.

The Crime Reporting Management System operates through a series of interconnected layers and processes. The system begins with a user accessing a web interface designed using HTML, CSS, and Bootstrap, with AngularJS enabling dynamic content and user interactions. The backend is built using AngularJS, PHP, and MySQL, where PHP manages server-side logic and MySQL handles the storage of crime reports and user data.

For mobile compatibility, the web application is packaged into an Android APK using Cordova or PhoneGap, making it accessible on mobile devices. Before the mobile app is deployed, it undergoes testing on an Android emulator to ensure functionality. Communication between the mobile app and the server occurs via HTTP POST/GET requests, with the server responding in JSON format. The system also integrates libraries such as Angular Cookies to manage user sessions effectively.

Overall, the system ensures seamless interaction between the frontend, backend, and mobile components, facilitating the efficient reporting and management of crime-related information.

IV. SYSTEM IMPLEMENTATION

The initial stage in defining a system, equipment, or process in sufficient detail for actual implementation is known as the design phase. In software development, this phase involves three key technical tasks: design, coding, and testing.
These activities are essential for developing and validating the program after the requirements have been thoroughly analyzed and defined.The design activities in this phase are critical, as the decisions made here will significantly impact the software's implementation quality and ease of maintenance. The system's reliability and maintainability hinge on these choices. Design is the only way to accurately transform client requirements into a finished software product or system.Design serves as the foundation for promoting development excellence. The process of converting requirements into a software representation is known as software design, which typically involves two stages. The first stage,preliminary design, focuses on transforming requirements into data representations.

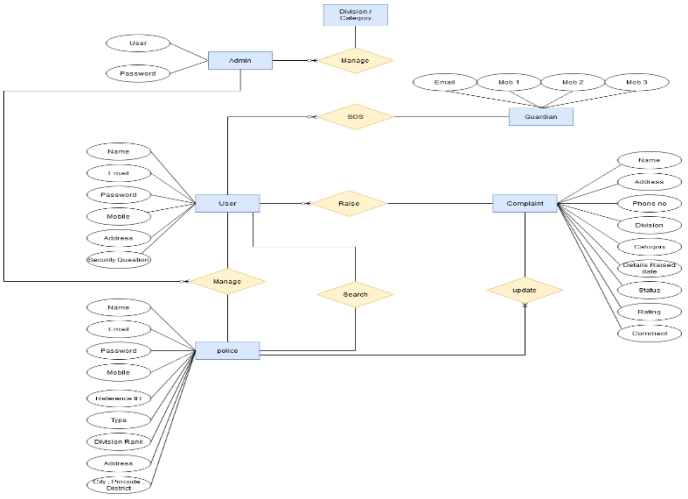


Fig2.Implementation of the architecture

The Figure 2 illustrates a workflow for the Crime Reporting Management System, as depicted in the diagram, begins with user registration and authentication, where users input details like their name, email, password, mobile number, and address. The system has three primary roles: Admin, User, and Police.
The Admin manages divisions and categories within the system, overseeing the organization of crime reports based on different criteria. They also handle the management of users and police personnel, ensuring that each entity is correctly associated with their respective roles and responsibilities.

The User can raise complaints by providing necessary information, such as the type of crime, location, and other relevant details. They can also use the system to manage their profiles, search for previously submitted complaints, and update their complaints as needed. An important feature for users is the SOS function, where users can notify designated guardians (via email or multiple mobile numbers) in case of an emergency.
The Police have their own management interface where they can update and search for complaints. They input details such as their name, email, mobile number, reference ID, and address, allowing them to manage and track complaints assigned to them. The police can update the status of complaints, ensuring that users are kept informed about the progress of their reports.
Overall, the workflow ensures that each stakeholder (Admin, User, Police) has access to the tools they need to effectively report, manage, and resolve crime incidents. The system supports seamless interaction between users and law enforcement, with all activities tracked and managed within the Android-based application.

V. SYSTEM TESTING

In the context of a crime reporting management system, testing plays a crucial role in ensuring the system's reliability, security, and effectiveness. The primary purpose of testing in this system is to identify any errors or vulnerabilities that could compromise the integrity of the reporting process, data storage, or user interactions. By evaluating the functionality of individual components, such as user authentication, data submission, and incident tracking, as well as the entire system as a whole, testing ensures that the crime reporting system meets the expectations of its users—law enforcement agencies, citizens, and administrators—and operates without unacceptable failures. Different types of tests, including functional testing, security testing, and performance testing, are employed to address specific needs, such as ensuring that reports are accurately logged, sensitive information is protected, and the system can handle high volumes of simultaneous users.

S.NO	SCENARIO	INPUT	EXPECTED OUTPUT	ACTUAL OUTPUT
1	Admin login Details	Admin enter login details	Login successfully or if incorrect login details "Login successfully"	Login successfully or Login unsuccessfully
2	Add Police Details	Admin add the police details	all the police login details "created user successfully"	created successfully or unsuccessfully
3	Update Police Details	Admin add the police details	all the police login details "updated successfully"	updated successfully or unsuccessfully
4	Add Division Details	Admin add the Division details	all the Division details "created successfully"	created successfully or unsuccessfully
5	Add Category Details	Admin add the Category details	all the Category details "created successfully"	created successfully or unsuccessfully
6	View Complaint Details	Admin Can search all Complaint details	View Complaint details	View Complaint details
7	Police Login	Email and Password	If correct directed to home page otherwise show "Login Successfully"	Login successfully or Login unsuccessfully
8	Manage Traffic	Police check and manage all traffic details	Police view traffic details	View traffic sde
9	Add FIR/CSR Complaint	Police Add Complaint Status	Update status	created succes or unsuccessfull
10	All Complaint	Police check and view all Complaint status details	user view Complaint details	View My Comp details
11	User Login	Email and Password	If correct directed to home page otherwise show "Invalid Login"	Login success or Login unsuccessfully
12	User register	Email and Password	All the user details register successfully	Register successfully Or Register unsuccessfully
13	Add Complaint Details	User will add the Complaint details	all the Complaint details "created successfully"	created succes or unsuccessfully
14	My Complaint	User check and view all Complaint status details	user view Complaint details	View My Comp details
15	Edit My Profile	User can edit and profile	If any changes or user can edit profile	Updated succes or unsuccessfully

VI. RESULTS

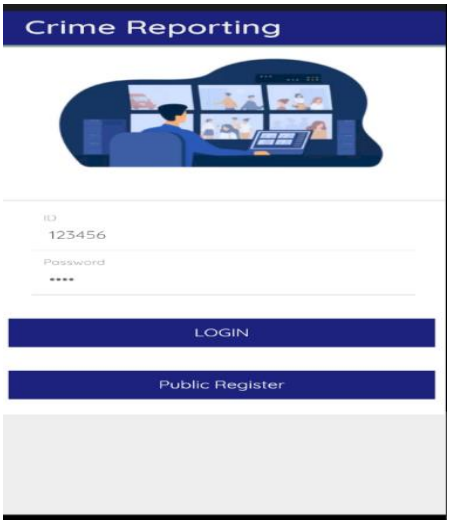


Fig 3.Login Page for Admin,Police and Public Users.

Figure 3 shows the Login Page for Admin, Police, and Public Users, providing each user group with secure access to specific system functionalities.

Fig 4. User's able to Register Complaint.

Figure 4 illustrates how users are able to register a complaint within the system. This feature allows users to submit detailed reports of crimes, including necessary information such as the type of crime, location, and additional details, ensuring that their complaints are formally logged and addressed by law enforcement.

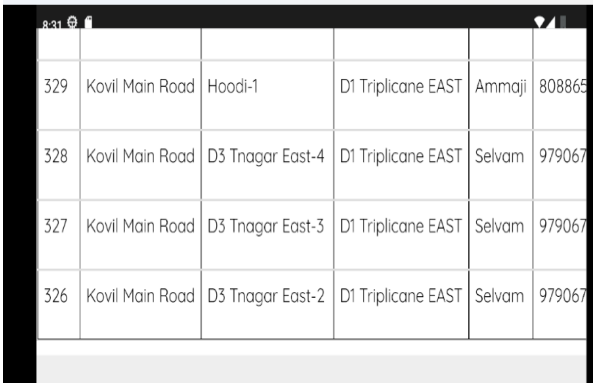
Fig 5.Users can check the status of the complaints.

Figure 5 illustrates how users can check the status of their complaints, allowing them to track the progress of their reports and stay informed on actions taken by law enforcement.

Area	Under Progress	Completed	Rejected	Forced Completed	Tota
Basavanagudi	1				1
Baiyappanahalli	1				1
Hoodi	2				2
D3 Tnagar East	0	2			4
D1 Triplicane EAST	1	1			2

Fig 6.Admin is able to view the status of all crime listed.

Figure 6 depicts how the Admin can view the status of all listed crimes, enabling them to monitor the progress and management of reports across the system.



329	Kovil Main Road	Hoodi-1	D1 Triplicane EAST	Ammaji	808865
328	Kovil Main Road	D3 Tnagar East-4	D1 Triplicane EAST	Selvam	979067
327	Kovil Main Road	D3 Tnagar East-3	D1 Triplicane EAST	Selvam	979067
326	Kovil Main Road	D3 Tnagar East-2	D1 Triplicane EAST	Selvam	979067

Fig 7. All Crime listed.

Figure 7 shows a comprehensive list of all crimes, providing a centralized view for efficient tracking and oversight by the Admin.

The crime reporting management system developed using Android Studio offers a streamlined user experience with an intuitive interface, enabling users to easily report crimes and track their statuses. The app's design, crafted with Android Studio's layout editor, ensures that all key functionalities are accessible with minimal navigation, and its responsive design guarantees a consistent experience across different devices. Users can submit crime reports through a well-validated form that captures crucial details, and these reports are securely stored in a backend database, allowing real-time updates. The tracking feature provides users with current status updates on their reports, displayed through a status page or notification center, and notifications alert users to significant changes or new incidents. The app demonstrates efficient performance with quick load times and reliable functionality.

VII. CONCLUSION

The use of smartphones and computers is growing more and more common in the current society. The crime recording system must therefore adopt the latest technologies. This program will reduce the amount of manual data entry by providing a sensitive and understandable web interface for an online crime recording system that is easy to use, convenient, affordable, and effective. It is software that makes it easier for police officers to deal with crimes and offenders. It also alerts registered police officers of the release of convicts. All of the issues pertaining to crime reports, criminal information, and their crimes are resolved by this crime management system. Additionally, because the criminal data is saved on the cloud, police officials will have easy access to it. The issue of reporting fraudulent crimes will be resolved because this program requires police authentication before broadcasting incident reports from users to other users who include using it.Better security protections for the criminal database may be provided in the future by using different security algorithms. The only issue with this proposed method is that it requires constant activation of the GPS and Internet connection. The challenges can be the focus of future research.

VIII. FUTURE WORK

As cellphones become increasingly integral to our daily lives, innovative solutions are essential to address pressing issues like crime reporting. With rapid technological advancements, crime reporting apps have emerged as a vital tool for communities and individuals to report incidents and ensure a swift response from law enforcement. This article explores potential enhancements to Android crime reporting apps that could revolutionize crime-fighting efforts.

One significant enhancement is the integration of multimedia reporting, allowing users to submit photos, videos, and audio recordings as evidence. This feature could aid investigations while promoting transparency and accountability. Additionally, incorporating real-time reporting capabilities would enable individuals to report crimes as they happen, providing law enforcement with accurate, up-to-the-minute information. Leveraging Android devices' GPS technology could further enhance response times by offering precise location details.

To address privacy concerns, anonymous reporting features could be introduced, encouraging more people to share crucial information without fear of exposure. Robust security measures and encryption protocols would ensure the confidentiality of these reports, fostering trust and encouraging wider usage of the app.

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