Android App for Crime and Missing Person Reporter

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Abstract—The rate of crime and missing cases in India is increasing day by day. A system is developed to reduce the crimes and the missing cases taking place in the locality. The proposed system is an android application, which helps a common man to file a complaint against a crime or about the missing of a person to the higher authorities. The higher authority for example, the higher authority can view the complaint filed by the user and take up the required measures to solve the case. The users need to register in order to file a complaint and further can check his account to know the developments of his/her case. This system is very useful for the investigation department to speed up in their investigation and track status of multiple cases at a time. The authorities can find the crime ratio in the society through the proposed app. In missing person cases, the user can upload the person's details along with the photograph.

Keywords- Crime Report, Android App, Missing Person App**.**

1. INTRODUCTION

The report published by the National Crime Records Bureau compared the crime rates of 1953 and 2006.The report noted that the murder rate has increased by 7.39% (from 1953 to 2006) and missing cases has been increased by 47.80% (from 1953 to 2006). At this increasing rate of crimes and missing cases, it becomes difficult for a common man to bring his case in consideration of the authority. At this stage, the person can register in to the Crime Reporter application and file a complaint with all the details required, which will be viewed by the higher authorities directly. This application helps the user in tracking any report filed to the law and takes an advantage of reporting any complaint from anywhere by bringing the whole system online. The proposed application can be installed in the systems of the higher authorities as well as the user. When a particular case is under consideration, the higher authority officer will update the progress of the considered case and the user can view these updates from any part of the world. By this quick investigation process, the crime and missing cases can be solved to a great extent. The system will have all kinds of details like summary, people involved, past criminal history, items required on scene and other details. The proposed application helps people in emergency situations.

The proposed application provides such a platform that a user can file the complaint or report a currently happening crime from any part of the world. It can assure the safety of a person at any place, at any time and at any situation, since it provides the panic mode. A person is always under a protection mode as long as the proposed application is installed in his/her device.

2. LITERATURE SURVEY

This section compares the four different papers related to the Crime Reporter Application in the market

MwangalaMwiya, Jackson Phiri, Gift Lyoko[1],"Public Crime Reporting and MonitoringSystem Model Using GSM and GIS Technologies: A Case of Zambia Police Service" IJCSMC, Vol.4, Issue.11, November 2015, pg.207 – 226 is proposing a crime reporting and management model using GSM and GIS technologies in order to mitigate the challenges faced by most developing countries in reducing the crime rates. The paper has designed a Public Crime Reporting and management System that integrates GMS and GIS Technologies. The proposed paper has developed a prototype which showed the improved results in terms of crime reporting by the public using mobile devices and improved management of reports due to automation of crime reporting and monitoring.

The proposed paper doesn't provide the facility to use the application to non-registered users, which will restrict people from using the application in emergency situation.

Syed MujtabaRaza and Prof.LeelavathiRajamanickam in[2],"A Proposed Solution for Crime Reporting and Crime Updates on Maps in Android Mobile Application" have proposed and developed an android mobile application for the general public awareness of the crime situation of their area and to provide them crime locations on the map. This application also helps general public to report a crime to law enforcement agency. This android mobile application will help public to see the locations on the map which will help them to track the current situation of their surroundings.

The proposed app shows only the crime prone area, whereas it doesn't provide a platform to register the cases. It provides only public awareness.

V. Yadagiri, C.HruthikTeja, D. Sai Suma and A.Chaithanyain [3],"Crime Reporter and Missing Person Finder" have proposed an android crime reporter which tracks the investigation status of criminal cases with logs as well as it also track complaints logged by the user. The system is proposed to help agencies like CBI, CID and other such bureau's to speed up their investigation process and track status of multiple cases at a time. In this system, the society itself helps the authority to get the crime details quickly and to proceed with investigation. They help the authorities to find out the crime ratio in the society. The system keeps logs of a case which includes case summary, people involved, disputes, past criminal history of those involved, items recovered on scene and other details. The system realizes the type of case, allows admin to update the status of the investigation, upload more images of crime and items found on scene etc. User can post their missing person's details with a photograph. User may also check for the status updated by the admin. The system is designed to aid investigation teams to work collectively on cases, coordinate and also speed up the process by suggesting logical suspects based on data provided. The proposed paper provides access for multiple cases at a time, which will result in skipping of cases according to people's interest.

WlliamAkotamAngangiba and Millicent AkotamAgangiba in [4],"Mobile Solution for Metropolitan Crime Detection and Reporting" have proposed a mobile infrastructure for detecting, reporting and tracking down criminal perpetrators using a mobile device. This is based on client-server architecture; allowing users (the general public) to exchange various categories of crime/criminal related information with law enforcement agencies in real time. In this app the database is structured to contain information units in text, picture and video data formats. The DB Analyzer Module analyses the database and establishes crime trends in the metropolis. In this app both police and the general public use same client app on their mobile devices to interact with the server. Whereas police have the privilege of accessing all sort of information on the server, the general public is not. The police is identified by their service number while special groups of IDs are generated for the general public during installation.

In the proposed application, even the police authority need to log in, in order to use the app. this paper provides mobile version even for officers, which will result in unauthorized access and thus results in misuse of the data.
The table 1 below will provide the summary of the literature survey.

Table 1: Literature Survey

Features	Paper [1]	Paper [2]	Paper [3]	Paper [4]	Proposed paper
Checking	Not present	Not present	Not present	Not present	Present
Panic mode	Not present	Not present	Not present	Not present	Present
Alert mode	Not present	Not present	Not present	Not present	Present
Number of Visible cases	Not present	Not present	Not present	Not present	Present

4. PROPOSED SYSTEM

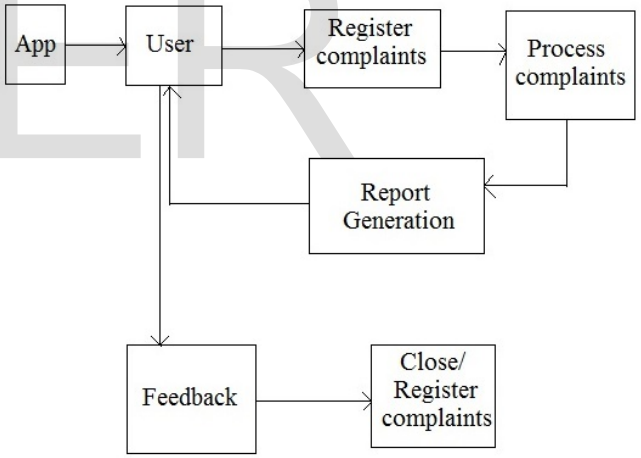

Fig 1 Block Diagram of the Crime Reporter

4.1 App

The proposed app provides a platform to register the grievances from any part of the world by just bringing the whole system online. The grievant just needs to register his complaint and wait for the status update. The grievant will notified through the app, about the status of his case. A grievant can file multiple cases through a single account. Both non-registered and registered user can use the application in emergency situations like, the user can use panic mode to record a currently happening crime or robbery, or can use alert mode to inform the authority if he/she spots a wanted criminal.

4.2 User

At first the user must verify his/her phone number through OTP. User need to register and create an account in the app in order to register a complaint. The user must provide clear and complete details with his Aadhaar card number to complete the registration and become a member of the application. A non-registered user can use the application in emergency situations.

4.3 Register Complaints

The complaints registered should be genuine and the data provided must be real. The registered complaints are provided with a case number within 24 hours of time. It is very necessary to fill in all the details required else it might result in the rejection of the case. Aadhaar card number has been made essential in order to prevent the fake registrations.

4.4 Process Complaints

The cases are forwarded to the authorities. The registered cases will be investigated by the allotted officers. The officers take their own time to solve a case. The status of the particular case is updated by the authority. The status is updated as "ongoing" when the case is considered, "solved" after the case is successfully solved and "rejected" when the case is rejected. A brief reason will be specified for the rejected cases.

4.5 Report Generation

The report related to a particular case after successfully solving the case is uploaded by the department into the page of the related case number. The user can access the report through his account. The uploaded report can be viewed both by the user and the senior officer.

4.6 Feedback

The user can provide the feedback to the authorities regarding the case report and the investigation process. A user can ask his queries and the officer can answer the queries. The feedback can be viewed both by the senior and investigation officer, whereas the queries are viewed only by the investigation officer.

4.7 Close/Register Complaints

After the access of required information the user can close the application or can even register a new case. A user can file more than one case back to back through the same account. The user can maintain his account even after his/her case is solved.

5. IMPLEMENTATION

The crime reporter app opens with a phone number verification page that verifies the phone number of the user through OTP. After verification the page leads to the home page which is common for both registered and non-registered user. A user who wants to register a complaint, can click on the icon "Create New Account" and proceed. To register, a user need to provide certain information like, the users name, date of birth, gender, passport size photo, permanent address , e-mail, designation, current city and Aadhaar number. After this first phase of registration, in second phase the user can give his/her email-id and then set a password of 8 characters. This completes the registration process. After login, it proceeds to the main page. In main page, the user should select category of the case, i.e. missing case, re-registering of case, crime or check. Once the user selects the category, the process leads to the next page, based on selection. In case of the officers of the investigation department, they need to open the app and enter the case number.

The non-registered users can use the application in emergency situations by clicking on the icon "Wanted" or "Panic". This can help the authorities to a great extend to arrest the wanted criminals or stop a currently happening criminal activity.

5.1 **Users** ***:*** The user needs to register into the app by filling the required details and then the user selects the category. The user has to fill in the details regarding his/her case. The grievant will receive a case number to the given e-mail id within 24 hours from the registered time. Further updates about the case will be notified through the provided e-mail id of the grievant. Then finally the uploaded report of the case given by the officer is retrieved.

5.2 **Senior Officer*:*** The senior officer sets the case status and allots the cases to the investigation officers under him. The senior officer receives the registered case details from the user and the uploaded case detail from the investigating officer. The officer even receives the feedback from the users.

5.3 **Investigation Officers:** The investigation officer uploads the result/details regarding the crime. He answers the queries asked by the users. He receives feedback from the user.

The proposed application is designed as an android application as well as desktop application. The general users can use the application as a mobile version, whereas for the authorities it is designed as a desktop application, which is installed in their office PC. The authorities need not register or set password in order to access the data.

The proposed app is developed in core processor. As core processor is good enough for Android studio for app developed with minimum 3GB RAM, because the android emulator will otherwise take ages to start. A Hard disk of 8 GB RAM storage capacity is used in order to store the app.

A memory of 3GB random access memory is used for storing of the information content of the developing app. The reported app can be run both on windows 10 and windows 7. Android software developer kit is used for source code, development tools, an emulator and required libraries to build the proposed app. The proposed application is written using java programming languages.

Network interface card is installed so that it can be connected to a dedicated, full-time connected network. An ample space for multiple complex projects is maintained. Users will upload images of the missing person and .Space for news feed is needed for the updating of the current affairs. Space for various profiles is needed for storing confidential information that is visible only for the investigation department.

6. RESULT

This section will present and discuss the result of the front end of the proposed system.

6.1 Application front end

Fig 2 below shows the phone number verification. User need to verify his phone number as soon as he installs the app. This helps the authority to track the location of the user while they receive a panic message or an alert message. The mobile number is verified by sending an OTP to the entered number.

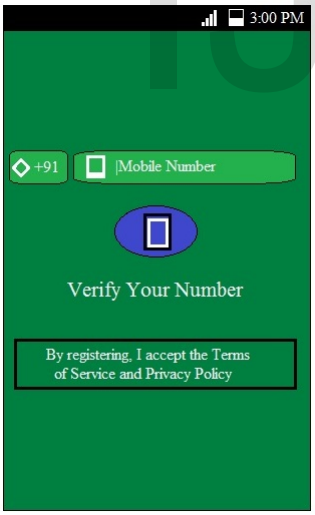

Fig2 Phone Number Verification

Fig 3 below shows the 2nd page after the phone number verification which is visible for both registering and non-registering user. This page directs to wanted list, panic mode, register and log in. The wanted button displays the photos of the wanted criminals with needed specifications uploaded by the authority. Panic mode directly opens the camera, where the user can record video or click pictures.

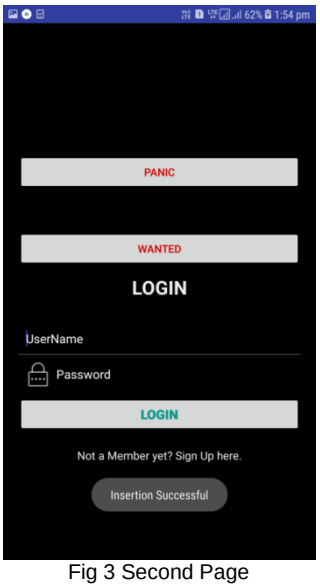

Fig 3 Second Page

Fig 4 shows the alert page, which is directed by "wanted" button in second page. This page allows a user to inform the nearest police station if he/she spots a criminal from the wanted list. The message directly goes to the nearest police station. The authority will trace the location of the number of the user and reaches the spot.

Fig 4Alert Page

Fig 5 shows the panic page, where a person can record a video or capture an image while witnessing a crime or robbery, which will be directly forwarded to the authority. A user need not register in order to use panic and alert mode. Any user who has installed and verified phone number can use panic and alert mode.

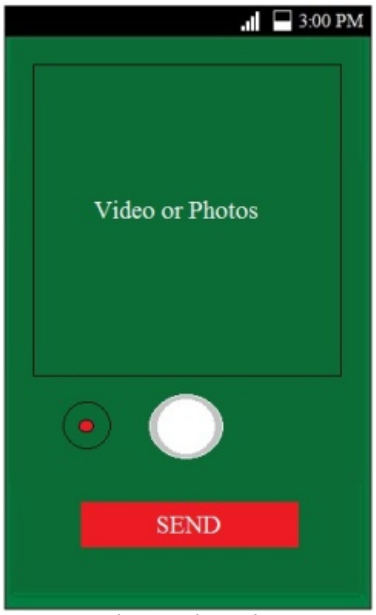

Fig 5 Panic Mode

Fig 6 shows the form for registration for users who want to file a complaint. The page should be filled in carefully without any mastakes. There are chances for the rejection of the case, if the details entered are wrong.

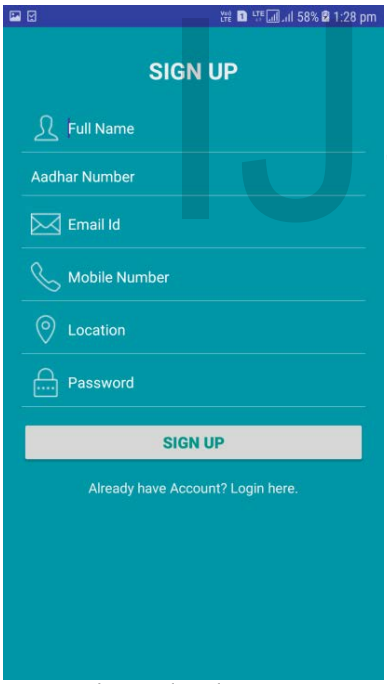

Fig6 Registration Form

Fig 7 shows the page displayed after the log in, which is directed from 2nd page. This displays the categories to be selected. The users need to fill in the required forms depending on the type of category they select. The users can directly check the status of their case by clicking on icon "check" followed by entering the case number.

Fig 7 Selecting Category

The selection of the category will lead to different type of forms to be filled. The cases are differentiated into three categories. These categories provide different kind of registration forms where the user can upload the images as well as videos related to the case. After successful registration of a grievance the user can log out or move to the previous page.

7. CONCLUSION

In this paper, we conducted a study of the Android Crime Reporter Applications available in the market. The study also looked at the crime rates and the crime frequencies in the city. From results, we can deduce that the count of the solved cases is very less compared to the registered cases, and the existing Crime Reporter Applications have some limits that restrict the easiness of using the application, which results in one or the other complication. The other reason is that some cases dominate the other cases due to influence. This leads to the increase in the pile of unsolved cases. The ultimate result of this study is therefore develop an Android Crime and Missing Person Reporter application that will be used for crime and missing person reporting, which eliminates the influences and thus no domination and provide the both registered and non-registered users, a platform to interact with the authorities.

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