

# Geographical Profiling of Locations Based on Security and Surveillance

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## ABSTRACT

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In 21st century mobile and information technology has a greater impact in our lives. From online food ordering apps to Facebook everything is customised into the palm of our hand. The emerging development of mobile application technology can be used to help the society in many ways. Presently crime is the major problem in our state. Geographic profiling is the process of determining the most probable area of an offender's base of activities through an analysis of his or her crime locations. Using mobile application methodology, we can develop a mobile application that generates and analysed crime report based on particular location. This application has a functions like search crimes by locations, posting a crime incident (record crime) on live feed through live video streaming and gives an analysed crime report based on locations through intergrated google map.

Keywords- **Android, Mobile technology, Location safety aware, crime detection, crime reporting.**

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## I. INTRODUCTION

Today's world is all about technology and human resources. Many fields like Agriculture, Travelling, Marketing uses Technology. One such area is crime area detection and storing criminal data record. In present scenario criminals are becoming technologically sophisticated in committing crime and one challenge faced by intelligence and law enforcement agencies is to locate the crimes that are happening in particular vicinity. We know that crimes are illegal part which cannot be stopped completely but at least we can make an effort to prevent it from happening by which it is notified in this application. Police have a crucial job of getting information of crime through walkie-talkie. Recently there was an android application Vic PD which was launched by the Victoria police in the Canada for people safety. In that application they had a communication gap between police officials and the investigation of crime because the data is not available remotely. Also the another proposed system is crime area detection and criminal data record in which their the system recording crime and giving alternate routes to user as soon as user enters in the particular area but this system failed to indicate a crimes locations to the user by google map [3]. In this application. It projects the analysed crime report that happened in each location. We used google map API for displaying the map of cities where the crime happened, this app also has additional features of enabling police complaint i.e. you can lodge a complaint of a crime with your details and your category of crime will be stored in the server along with your details. we also has an extended feature of broadcasting the live crime occurrences through live video streaming. We used Wonza streaming engine coupled with JW player and the live feed will be displayed on the WAMP server.

## II. EXISTING SYSTEM

In current situation there are many mobile applications for crime reporting. In recent time Tamilnadu police released an application called digicop that is used to report the crimes of theft of mobiles and two wheelers. But the main problem with the existing system is that the application is only limited to some features and does not satisfy all the end users. the main problem is that it doesn't support crime prevention and is only limited to crime reporting. At present Information age, it is not enough just to report the crime but must also recognise the crime locations.

## III. PROPOSED SYSTEM

In this paper we have proposed an android application to show analysed crime (live crime occurring at some place), view emergency number etc. The proposed system is also able to store crime details. We are also storing user input like user's name, address etc. (User's personal detail) on this application. Our system also provides an application for the user which consists of an alternate path if they are passing by crime area. Using this application users will also be able to register complaint to police officials. We are going to develop a live video streaming modules to show live feed on ongoing crime in particular location where the user can broadcast. This information is represented on the android application by mapping the result of user request on google map. Our system mainly targets general public and crime analysts for managing the incidents and crime. This proposed system will be divided into three major modules.

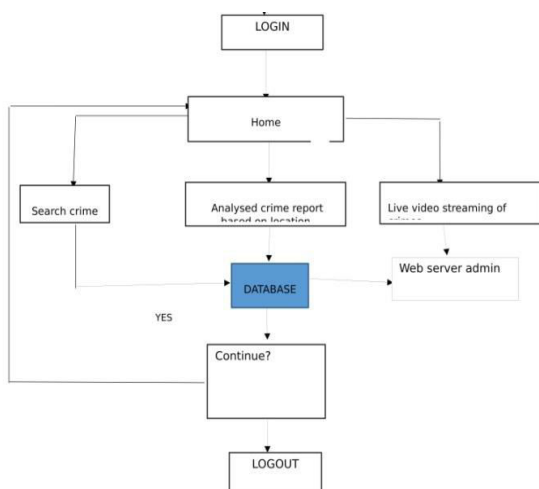


Fig:Blockdiagram

#### IV. SOFTWARE USED

##### 5.1. Android Studio

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems. It is a replacement for the Eclipse Android Development Tools (ADT) as the primary IDE for native Android application development.



Android Studio supports all the same programming languages of IntelliJ (and CLion) e.g. Java, C++, and more with extensions, such as Go and Android Studio 3.0 or later supports Kotlin and "Java 7 language features and a subset of Java 8 language features that vary by platform version."

The first stable build was released in December 2014, starting from version 1.0. The current stable version is 3.3, which was released in January 2019.

##### 5.2. Wowza Media Engine

**Wowza Streaming Engine** is a unified streaming media server software developed by Wowza Media Systems. The

server is used for streaming of live and on-demand video, audio, and rich Internet applications over IP networks to desktop, laptop, and tablet computers mobile devices, IPTV set-top boxes, internet-connected TV sets, game consoles, and other network-connected devices. The server is a Java application deployable on most operating systems



RSTP/RTP protocol is used for Wowza video streaming for Android and Blackberry users. Android mobile devices formerly supported Adobe Flashplayer, but Android no longer supports Flash. Newer Android devices support Apple HLS. HLS works best on Android 4.0 devices and above.

#### V. PROGRAM OUTCOME

##### 5.1. Module 1: Authentication

**Registration:** Registration will be done by user through his or her mobile phone. User will fill the details of Full Name, Phone/Mobile number, Email-Id, Password. Then all of the user information will be added to the Database.

**Login:** After registration, user can login into system using username and password. The username will be user's email-id provided at the time of registration process and the password is also the same that is given by the user at the registration process. Afterwards user can change the password and update their profile.

##### 5.2. Module 2: Crime Report And Information

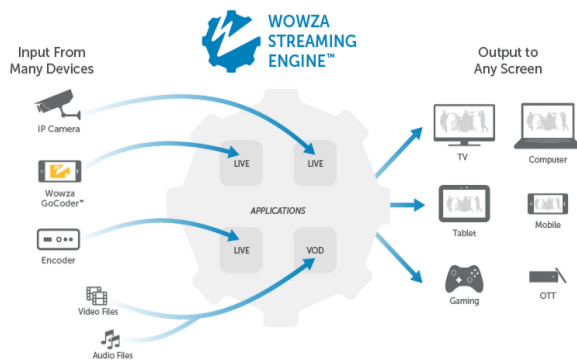
**Search Crime:** The user will be able to search the crimes based on the selected location which can be selected from the list of places. And the use of interactive google map will be able to easily display the crimes. And the users can also view the crimes based on the categories of crime (Eg: kidnap, rape, murder etc).

**Crime reporting and complaining:** The user can also register complaint through this module and they can also withdraw their complaint. Since all user information will be stored in database the crime complaints can be easily notified to the police officials who can use it if user sees some crime or got stuck himself.

##### 5.3. Module 3: Live Video Streaming

**Post Live Crime:** User can also make a live video streaming of the crimes that are happening at their particular location. The major advantage is at using its application the users can broadcast live videos of their crime which can be hosted at the admin side through wamp server. By this feature we can avoid the manual process of looking through the CCTV footage to catch the culprit and also speed up the time for nabbing the culprit as live feed will be broadcasted during the crime. This is

done using Wonza streaming engine. The live streaming can be enabled by using RTSP Protocol. The wonza Streaming engine is a software that can be used as the platform to perform live streaming, it acts as the bridge between the Application and the WAMP Server through which we will display the video. WAMP stands for "Windows, Apache, MySQL, and PHP." WAMP is a variation of LAMP for Windows systems and is often installed as a software bundle (Apache, MySQL, and PHP). It is often used for web development and internal testing, but may also be used to serve live websites. The most important part of the WAMP package is APACHE which is used to run the web server within Windows.



The Real Time Streaming Protocol (RTSP) is a network control protocol designed for use in entertainment and communications systems to control streaming media server. The protocol is used for establishing and controlling media sessions between end points. Clients of media servers issue VHS-style commands, such as *play*, *record* and *pause*, to facilitate real-time control of the media streaming from the server to a client (Video On Demand) or from a client to the server (Voice Recording). The transmission of streaming data itself is not a task of RTSP. Most RTSP servers use the Real Time Transport Protocol (RTP) in conjunction with Real Time Control Protocol (RTCP) for media stream delivery.

**Logout:** At the end, user can simply logout just by clicking logout button provided on the page.

## VI. CONCLUSION

The proposed system can reduce the communication gap between the police and the user. Furthermore, it will save the time for the user to go to the police station to register the complaint. It will also be a great use for the crime analysts for analysis of crime at particular location and also be able to pinpoint the offender's location based on the crime profile at the particular location. Another advantage is that everyone can post crime using live video streaming that will help the police to nab the culprit quickly and also reduce the animosity between public and police.

## VII. FUTURE ENHANCEMENT

- The only challenge to this proposed system is that the user's internet and the GPS should be activated 24x7.

- Some more security algorithm can be implemented to secure the data.
- The posted crime takes time to verify by local police as still it is a manual process so solution to this problem is that we can take help of video surveillance system to verify the posted crime place and the current situation of that place.
- And more algorithms can be used to predict the crimes that can take place at the particular location.

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