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DEVELOPMENT OF ANDROID BASED MOBILE APP FOR REDUCING THE CRIME RATE IN INDIA AND WOMEN SAFETY

App Name – “Third Eye”

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ABSTRACT

With Development and Urbanization of big cities towns and villages, the graph of crime rate in India is also on increase. The rise in crime in cities and crime against girls/women is a matter of concern which alarms all of us. There are robberies, murders, rapes and what not. Problems may come from any direction and anyplace. The Objective of this project is to develop an app (android, iOS and, windows based) which will track the incident and make the record, store it in the cloud and at the same time shares the record to police (nearby police station). The app must be designed in such a way that it is easy to use and has an attractive theme. The android version of the app will be built using Android Studio and Android SDK, server like XAMPP, MySQL, PHP, shall be used to collect store and handle data in an efficient way.

Keywords: *Andriod Studio, Andriod sdk, XAMPP server, PHP, MySql, iOS, Windows.*

I. INTRODUCTION

Criminalization is a social phenomenon, which is been shaped by the society. The society is divided on the basis of class, caste and creed, education has made the crime to be committed in more smatter way and in growing numbers. It is because of this reason that our constitutionally and democratic society is into an increasing crime zone. Activities like murder, rapes, robbery, kidnapping has become common in the society. And if you have power and money then you are a free bird given all rights to harm the society without any fear of conviction. The National Crime Records Bureau reports that 56 percent of crime is done by the age group of 16-25 in India, another report study shows that murder had increased by 7.33 percent. How do we find the solution or what is the solution to reduce the crime rate in India.? Well the solution is in changing the shape of society and the government. The government has to step up battle against Criminalization and have strict laws and rules. Education and responsibilities must be drilled into the new generation by the parents. The young mind needs to discover values like respect for others, kindness, and tolerance. These are the ingredients of peace.

II. CASE STUDIES

A. Crime against women in India

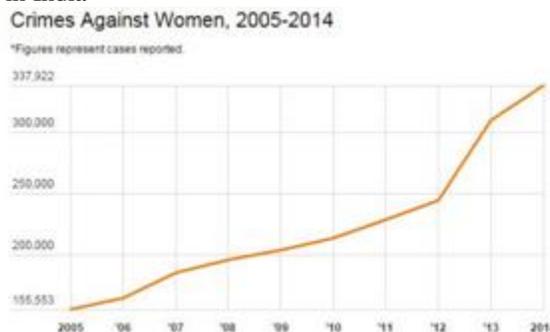


Fig 1. Crimes against Women, 2005-2014

[Source-National Crime Records Bureau]

Crime against women is marked more than double over a decade, as per the National Crime Record Bureau there are around 2.24 million crimes against women in a decade, around 26 crimes every single hour, or to make it even more simpler one complaint every 2 minute.

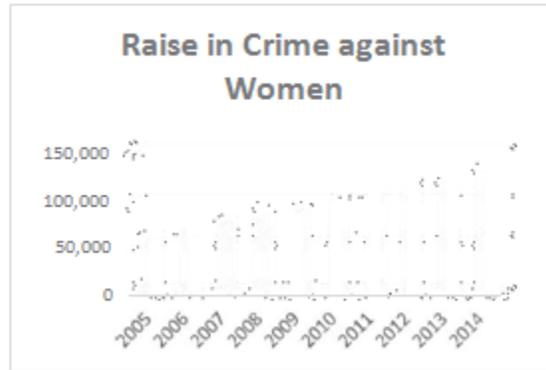


Fig 2. Major Crimes against Women

Around 35% of women world-wide have experienced either sexual or physical intimate partner violence or non-partner sexual violence, according to UN women at 2013 global review.

B. Crime Statistics by City in India

Rank	City	Crime Index
1	Gurgaon	64
2	Delhi	59
3	Kolkata	49
4	Bangalore	49
5	Mumbai	44
6	Chennai	42
7	Chandigarh	41
8	Pune	41
9	Surat	41
10	Visakhapatnam	40

11	Ahmedabad	40
12	Vadodara	38
13	Nagpur	37
14	Hyderabad	37
15	Navi Mumbai	35
16	Kochi	35
17	Mangalore	24

Fig 3. Crime index of cities in India

III. RELATED STUDIES

We have a great initiative from the Hyderabad city police, for launching an app named “Hawk eye” Currently this app features a SOS button for accessing help in Emergencies and immediately the request goes to the police department, another feature in this app is that it allows the public to add reports on Traffic violation, Happening Crimes, Criminal Information, Crime against women, Suggestion for improving police duties, report good work by police. As we see this app helps the public in many different sectors but the only leading disadvantage is that it lacks in providing evidence. If we consider a case where some criminal forces a public to write a false report on some police or on random public then this can lead to misunderstanding, this small misunderstanding can lead to any problem.

Another similar app by Delhi Government called as” Himmat” app, this app also defines and solves the problem as stated in above for the Hawk eye app, but the additional feature it adds is that you can scan the QR code of the driver of public transportation and send it to selected people as a safety measure. This app lacks in the area of providing evidence for any action.

IV. PROPOSED SYSTEM

The Proposed Application will be implemented for Android, iOS and windows operation system.

When any person feels in danger (may be a woman feeling uncomfortable around, a man encountering any kind of accident/incidents, road accidents/incidents, bribing or any such) any such kind of scenario encountered, the person shall launch the app.

The app once launched carries out various tasks like, recording from camera and tracking the GPS, face detection figures out people surrounding. Simultaneously these records with the live recording is transferred to nearby police station, any police officer available in station can view the live recording and location and can track within few minutes and can immediately make a move (decision).

The case will be solved when the police officer reaches the crime scene where the client initiated for a request and sort out the problem.

Another case is, if the crime scene is taken to any court, then the video recorded by the client can be used as an evidence of what happened around. The video recorded by client cannot be erased easily, i.e. the client cannot find

the recording in normal gallery folder, it can be viewed only from the app and should enter pass-key to unlock and view the video.

Another feature which can be used is, if anyone forces the client to delete the video (recording) from the app, then the client can enter the pass-key in reverse order and this indirectly indicates someone is forcing the user to login the app and delete the recording, after entering the pass-key in reverse way the app seizes all the authorities to view the recording, again re-authentication will be required to access the app gallery. And the recording also gets stored in the server which cannot be deleted.

The above-mentioned steps can be performed only when there is a connection established between the client and the end client (police station), and the connection can establish only when internet service is on.

Now considering case where the client cannot establish connection with end client (police station), the client launches app when it senses or see any danger or incident, the whole incident will have recorded in the app but cannot be sent to server, simultaneously a text message is sent to nearby police station, the text message carries the longitude and latitude of the client and then the police officer can enter those longitude and latitude and find the client location.

A. Working of gps

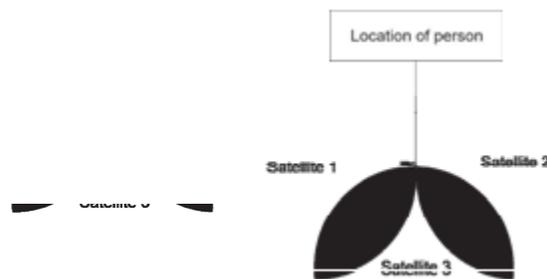


Fig 4. Tracking person using gps and satellite

At every 20,180 Kilometers above sea level is a constellation of satellites, each orbiting Earth every 11 hrs 58 min. These satellites are continuously beaming data down to us on earth, which in turn is received by devices such as our phone or navigation units in our cars, allowing us to see where we are on the planet. GPS stands for global positioning system, which works through trilateration, and not triangulation or multilateration, which is commonly misconceived. The most commonly used system is Navstar, which is USA system.

GPS satellites are setup in a way that from any point on the of Earth we can have a direct line of sight of at least three GPD satellites. Each GPD satellites broadcasts a navigational message towards Earth contains an extremely accurate timestamp (obtained through atomic clocks on-board the satellites), and the satellites also broadcasts their position at the time of broadcast, with all GPS signals broadcasting at 1.57542 Ghz and 1.2276 Ghz signal. This two information allows us to begin to work out our position on earth. With the satellites all sending exceptionally accurate time down to earth, our Phone or GPS receiver can compare the difference of time between the signal being sent and received to work out the distance between us and the satellite. By multiplying this time difference with the speed of light (as the signal is sent as the speed of light⁰, we can get the distance we are from the satellite. As the satellite are also sending whereabouts they are, you can begin to draw spheres around. As we introduce more GPS satellite into the mix we begin to get closer to where we are, by calculating the time difference between these satellites we move from having no idea where we are, to being able to pinpoint where we are, typically down to five to ten meters on average, with the potential error of 15 meters.

B. Working of Remote access

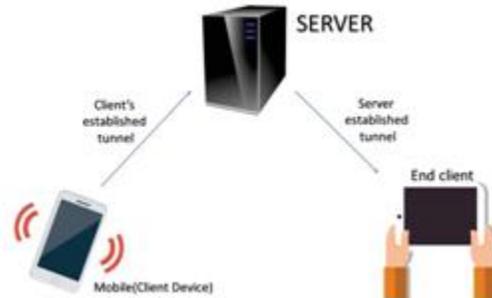


Fig 5. Working Network of remote access server

The Remote access is provided in this application which allows the police officers to have a look at the client (end server) device movements and camera recording. The recording is severely important because it acts as evidence of the situation around.

The application shall be programmed similar to any other existing remote access servers and application. The client from one end initiates an outgoing request to the server, since there is a client request initiated there is no port forwarding on the firewall required. It is easier to access devices which is outside the network. The end client (in our case the tab used by the police officer) accepts the request and establishes a connection with the client device. By doing this the end client will be able to view the camera recording and track the location of the client.

V. ARCHITECTURAL DESIGN

The Architectural design is divided and explained in two modules.

- ii. Internet Service is On.
- iii. Internet Service is Off.

Divided based on internet services, it is because we must consider the cases whether the client can establish connection with the end point (police) If not, then alternative method is used to store the recording and will be access limited.

A. Architectural design when Internet service is on.



Fig 6. Architecture design when internet service is on

The system architecture design is as follows. First the client initiates the request, this request is accepted by the end client and a connection is established, once the connection is established the live recording and location of client is

simultaneously sent to the end client and server. The server is just a database which stores all the data given by the client and can be further accessed.

B. Architectural design when Internet service is off.



Fig 7. Architecture design when internet service is off.

The system architecture design is as follows, when the internet service is off then it is merely impossible to establish connection between client and the end client, so henceforth a offline solution design will be required, the simpler and efficient way is, when the client launches the app live recording starts and get stored in the mobile in another hidden folder which cannot be accessed by any user, and simultaneously the gps (latitude and longitude values) are send via text message to nearby police station, the police officer can enter those values and get location of the client, every 2 min location details is sent through text message.

C. Flowchart

The flowchart will give the basic idea of how the flow of process happens between events. When the process starts, it starts with live recording and then proceeds further to check whether the internet service is available or not. If the internet Service is available then it shares the live location and live recording to the nearest police station and simultaneously it stores it in the database. But if the internet service is not available then it stores the live recoding in its phone storage and it is backed up once the internet Service is available.

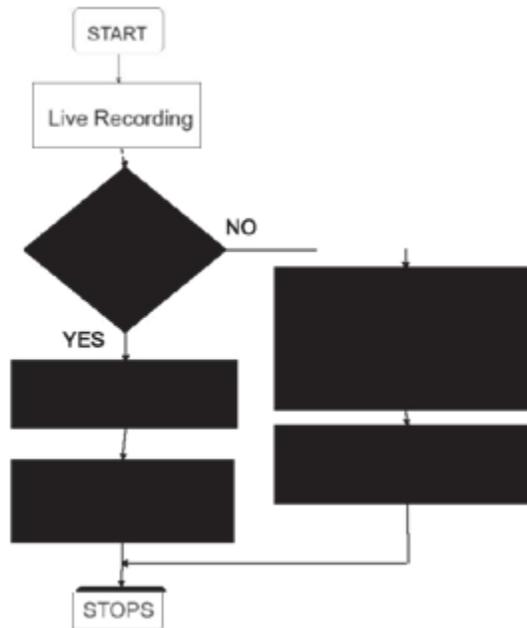


Fig 8. Flowchart representing the backend process

VI. CONCLUSION AND FUTURE ENHANCEMENT

At the end, I can affirm that this app can prove a great boon to our society and can help a lot and in all means, it can help mainly in reducing the crime rate in India, then the criminal learns that they are under surveillance everywhere and are been recorded if they perform any kind of tricks provided with evidence (the video from recording) can lead to an offendable punishment.

This app in collaboration and support of government can create a revolutionary platform for safety of women and other citizen of society.

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