Live Tracking Positioning and Security Providing Application

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Abstract: In today's modern lifestyle, where people wander to pursue their career, as a result people surround themselves among a world of strangers. That brings a treat to their safety; just to ensure their safety we are presenting our proposed idea of Feel Safe. There any many more problems people face daily, hence to make sure their safety, our idea to unmask and overcome these problems come along with an Android OS based application which can help people to trace their loved ones and to make sure where they exactly are, they can trace them and reach them in the case of emergency. Our application provides features like Live Tracking, Track proper and full Trace-route, Ensuring security of loved ones, Can easily get help in emergency. Our proposed application working in any situation like , If a person stuck in severe worst condition, like in the case of molestation it is almost impossible for women to tackle the situation, but if she has Feel Safe then here we have a special 'Hot Key' feature, this Hot Key can be used in a locked device also, user have the privilege to set what input button user want to set as Hot Key, user have option to set Volume Up, Volume Down and Power Button, user also have to mention on how much clicks user want to toggle hot key, for example if I set Volume Down and set three clicks then whenever I click Volume Down three times on my locked phone, then application will toggle Hot Key, and then internally application will send alert to nearest Police station, Nearest super privilege and Trusted contacts and also send the live location of victim and the traced path too, In the case if user's mobile data pack is off, then application internally turn data pack on and also turn on GPS too, and then send location to nearest police station.

I. INTRODUCTION

In today's modern lifestyle, where people wander to pursue their career, as a result people surround themselves among a world of strangers. That brings a treat to their safety; just to ensure their safety we are presenting our proposed idea of Feel Safe.

Feel Safe is a word from Galician dictionary that means 'Trace' in English, the idea behind this project arise among different problem scenarios, like as we know in today's world women are not on very safe side, they are facing problems like (eve teasing, molestation, acid attack, rapes, racquets etc.). Another problem scenario is, children are befooling their parents by bunking college /School /coaching and wander around here and there without knowledge of their parents.

There any many more problems people face daily, hence to make sure their safety, our idea to unmask and overcome these problems come along with an Android OS based application which can help people to trace their loved ones and to make sure where they exactly are, they can trace them and reach them in the case of emergency.

Feel Safe is a Live Tracking, Positioning and Security Providing app which helps to outbound individual from the external or internal threats and helps one to track their loved ones and can pursue a more trust to it, also helps individual in case of emergency by notifying and alerting the trusted contacts as well as the emergency numbers like police, Ambulance, and Fire brigades. So that they can be extracted out of the problem and also helps to be good responsible citizen and to nourish humanity in oneself for a betterment of mankind.

II. FEATURES

1. Live Tracking
2. Track proper and full Trace-route
3. Ensuring security of loved ones
4. Can easily get help in emergency
5. Trusted volunteer's area wise who can reach you before the emergency help arrives
6. Short gif's and videos related to daily hacks; it is based on women security, car damage, guarding you and much more.

III. PROBLEM DEFINITION

In the actual context the problems we are facing are on very serious issues of society one of them is enlisted below:

1. Women of our society are not in safe side, every day we read in newspapers about a case of eve teasing, molestation, rapes, acid attack and female racquets. So society is afraid of sending their females outside the house if they do so then them always tend to worry about them. There are already awareness camps and advertisements but still our news channels are full of these cases, we cannot take risk in the safety of women of our societies [1].

2. Parents want their children to excel in education and can grow in their career therefore they send their ward to school, colleges, and coaching classes or to any other place believing in them but the children does not worry about the same so they run from responsibilities and bunk it. In this way they are befooling their guardians and parents and also wasting the money and time [2].

3. We know that in today's fast moving world one may encounter road accidents and may need medical emergency as soon as possible, we also know other people don't generally help road accident victims, they record videos/photos and post them on social media just to show fake concern but not by really helping victims, so in this severe condition it is a major concern of someone's life [3].

4. There can be a scenario that someone see any criminal activity nearby, it may be possible that that person ignores the situation in the fear of engagement with police and also by the concern of time too, so he may ignore the scenario and let the criminal do their activity.

5. Robbery, it can be possible that one is going through an abandoned path, and suddenly that person encounter by robbers, it is almost impossible to that person to find any solution that time.

6. Trust issues between partners, It may seems not an important aspect but still it is a point of concern among partners, they may not trust about the point that where they were all the time.

7. There can be a situation where a person need someone to help, it can be possible that that person moves in an unknown city and needs help and that person don't have any relative or friend nearby, also that person cannot trust any random stranger.

IV. PROPOSED SOLUTION

The perfect solution of all above mentioned problems revolves around the point that where that person exactly is, that means location of that person on that time [4],

We need to trace that person throughout the time like where that person is going,

Also we know that we cannot be there with our loved ones throughout the time, so to rectify this issue our team will implement an Android OS based application which will maintain the trace route, that mean this app will maintain the exact current location of the person and also this app will record the route, this application can send the real time location of the person to his/her trusted contacts, trusted contacts can be his/her parents, friends, relatives etc. the real time location of the person can be seen through the mobile device of his/her trusted persons.

If a person stuck in severe worst condition, like in the case of molestation it is almost impossible for women to tackle the situation, but if she has Feel Safe then here we have a special 'Hot Key' feature, this Hot Key can be used in a locked device also, user have the privilege to set what input button user want to set as Hot Key, user have option to set Volume Up, Volume Down and Power Button, user also have to mention on how much clicks user want to toggle hot key, for example if I set Volume Down and set three clicks then whenever I click Volume Down three times on my locked phone, then application will toggle Hot Key, and then internally application will send alert to nearest Police station, Nearest super privilege and Trusted contacts and also send the live location of victim and the traced path too, In the case if user's mobile data pack is off, then application internally turn data pack on and also turn on GPS too, and then send location to nearest police station.

This application also has emergency section, where we have 3 options, Vigilant Emergency, Medical Emergency and Ask Super privilege all these option will directly contact Vigilant, Nearby Hospital and Super Privilege. Super privileged users are special users authorized by Application administrator who are distributed among different regions who are assigned to help users who need super privilege help. User can message super privilege or can call them.

Existing Solutions:

Life360 Android Application:

Life360 is a family networking app launched in 2008. It is a location-based service that allows family members to share their location with each other, and easily communicate throughout the day.Life360 is both a web and mobile application and was referred to as a "family-oriented private social network" by Business Week.

The app is a social network for families and differentiates itself in this way as it is not based around peer groups or professional networks such as Find My Friends and LinkedIn. It allows users to share locations, group message, and call for roadside assistance. It has four main features which include location sharing, circles, places, and premium [10].

Safetipin Android Application:

SafetiPin is a social enterprise providing a number of technology solutions to make our cities safer for women and others. We use apps to collect information and engage with individuals, and provide back end solutions for large scale data collection and analytics. We work with governments, NGOs, city planners, international agencies and corporate, to provide and use safety data for change.

SafetiPin provides information about factors that promote safety for women and other groups, to citizen at large and important urban stakeholders. Users can add comments while doing Audits. They can report problems such as poor/no lighting, broken/blocked footpath, open wiring etc. While travelling, they can view Safety Audits to view safe and unsafe locations, and plan their routes accordingly [11].

Researches on Live Positioning and Tracking:

Vehicle Tracking System using GPS - International Journal of Science and Research (LISR), Sathe Pooja [12]

The paper describes a practical model for positioning and tracking of mobile devices in a large area outdoor environment based on the Global Positioning System and Global system for mobile communication GSM. The supporting devices GSM continuously trace the coordinates of each position gathered and it can be fetched when required by the owner it can be communicated with the help of GSM modem which is installed in both the transmitter and receiver section GSM modem is controlled with 32-bit ARM 7 LPC 2148. The device will collect position to supervise center by the SMS (Short Message Service) or GPRS (General Package Radio Service) and which can be located in the Google maps, so the current position of the car can be known.

Enhanced RSSI-Based High Accuracy Real-time User Location Tracking System for Indoor and Outdoor Environments [13]

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Existing researches on location tracking focus either entirely on indoor or entirely on outdoor by using different devices and techniques. Several solutions have been proposed to adopt a single location sensing technology that fits in both situations. This paper aims to track a user position in both indoor and outdoor environments by using a single wireless device with minimal tracking error. RSSI (Received Signal Strength Indication) technique together with enhancement algorithms is proposed to cater this solution. The proposed RSSI-based tracking technique is divided into two main phases, namely the calibration of RSSI coefficients (deterministic phase) and the distance along with

position estimation of user location by iterative trilateration (probabilistic phase). A low complexity RSSI smoothing algorithm is implemented to minimize the dynamic fluctuation of radio signal received from each reference node when the target node is moving. Experiment measurements are carried out to analyze the sensitivity of RSSI. The results reveal the feasibility of these algorithms in designing a more accurate real-time position monitoring system. Index terms: location sensing technology, Received Signal Strength Indication, deterministic phase, iterative trilateration, probabilistic phase, smoothing algorithm, dynamic fluctuation, real-time position.
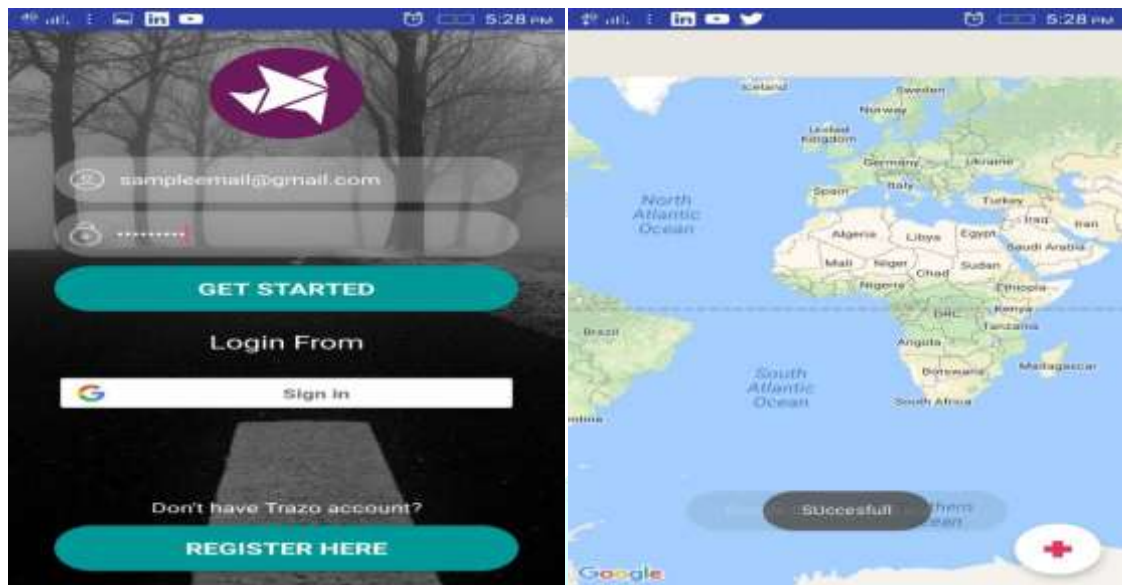
V. EXPERIMENTAL RESULT

Test cases

1. **Test 01: Successful user login**
   Login ID: sampleemail@gmail.com
   Password: sample123
   System Output (Toast): Successful Login
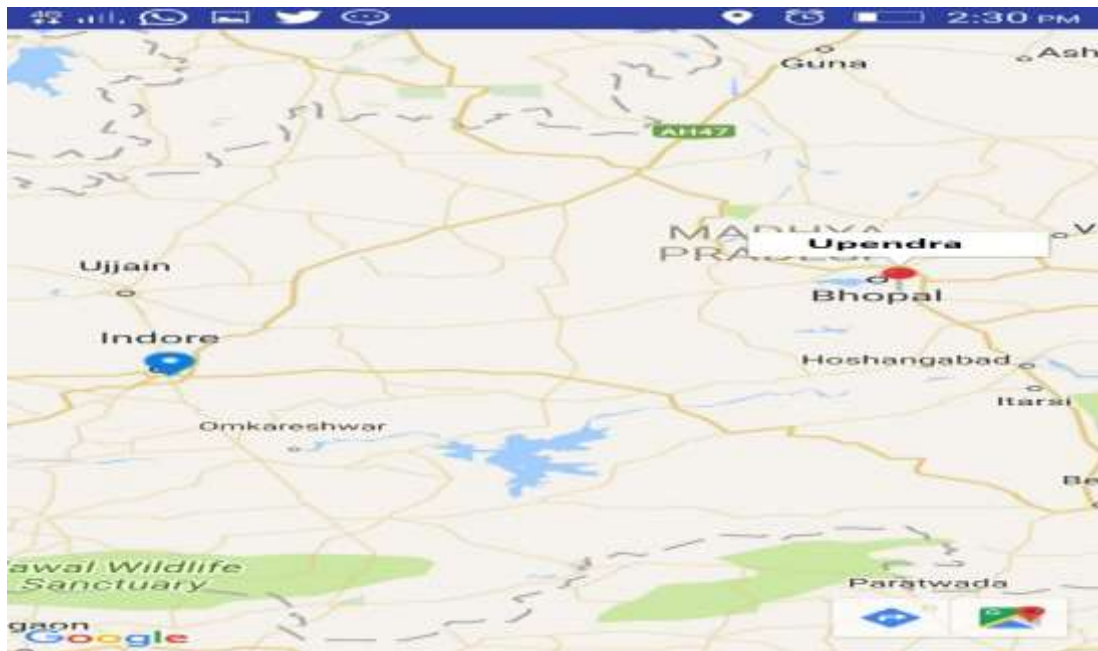

2. **Test 02: New user details submitted successfully**
   (a) **When a successful registration is done and all details submitted successfully**

   (b) **After entering home activity, app automatically show your current location**

3. **Test 03: Tracking another user**

VI. CONCLUSION

In this thesis, we addressed the current social and societal issues like molestation, eve-teasing, facing by women's, another case is parents worrying for their children, are they serious towards their career or wandering around telling lie to them, need to know where were your loved ones are all the time, then for such problems. We came up with the idea that why we shouldn't not keep eye on our loved ones so that we can address them and can reach on time in case of emergency.

And with this small idea we start exploring more and research to make this idea a big project to handle our social issues, while researching we came to know about many facts of inhumanity happening with our women's, from the year 2013 to 2018 there was a gradual high increase in cases of eve teasing, molestation and rapes which made us feel ashamed of us and our society and then with such consent of security of our women's we started to making our project for making our contribution towards society.

While working on this project we came to learn many things such as we came across towards the many new things to know while researching and generating our idea with innovations then we get to know about the new technology Android, how android works and how it is much different from the other technologies also working with its tools and IDE Android studio, got familiarity with working on XML and java concepts used in app making process, we went through the software development life cycle (SDLC) and get to know deeply about this life cycle from starting of the development of app till the end of it. We went through of almost all steps of SDLC like starting from idea, the dividing in modules, implementation and the testing

We went through a good app development process and made this app in Runnable state with lots of features in it like we can access someone location as they accept your request, you can add contacts from your phone and add them to your trusted contacts so that you can notify them when you are in need/ emergency, you can too look into a traced-route of the person you want but it lacks in some of the areas are like that we are not getting the actual traced-route with many pin points and we lacked in time so we unable to put many more features.

Our Future work for the app are like we want to put many more features such as adding settings so that person can handle the app in their own way, putting the main hot key button feature so that user can notify the trusted contacts and vigilant help on the pressing of button without getting into the app and without noticing of the attacker in case of molestation. Adding Super-privileged user feature in this feature Admin will assign the super-privileged user who can reach to the nearest help seeker in case of emergency. Need to do the field work for adding the vigilant (police)/ Medical help feature as we need to take permissions from the head of the department of police so that we can adhere the rules and regulation before implementing & launching of app.

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