Durga : An Android Based Application System for Women Safety

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Abstract - Women have ensured the stability, progress and long-term development of the nations throughout the history. If women are subjected to violence and harassment, they cannot be genuinely included in society. With increasing heinous incidents involving women and children, an advanced system is needed to serve the purpose of getting help as soon as possible. At present time, the use of smartphones has increased rapidly, making it possible to use a smartphone efficiently for security or other protective purposes. All the recent atrocious incidents have made us think about to go for the safety issues. The crimes against women can be minimized with the help of our application "Durga". It is an application for android for women's safety though men can also use it at a distress situation. It can be activated by voice command or SOS key. An alert message with location is sent to the user defined numbers in every five minutes until the system is turned off . Many cases remain mysterious due to insufficient evidence. So, we have kept audio recording option to keep evidence. Continuous location tracking, showing the victim safe zone, offline mode is some of the most useful features of this system.

Keywords—Women security, Android application, Voice command, Location tracking, Offline, Safe zone

I. INTRODUCTION

Ladies security is a significant issue in India just as other isn't safe for ladies to travel forlorn at 12 PM or pondering an obscure spot. There ought to help hand for ladies since they are not physically solid as men. As this time cell phone can be the closest companion of client and client can remain in contact with their cherished one whenever. Anyone needs to make a call or communicate some- thing specific in crisis at whenever from anywhere. We introduces an app which ensures the safety of women. This helps to identify and sms on resources to help the one out of dangerous situations. This reduce risk and bring assistance when we need it and help us to identify the location of the one in danger. The Android SDK gives the instruments and APIs used to create applications on the Android stage utilizing the java programming language. Ladies in crisis use voice-based contact list, they can work the applica- tion through voice and make the call when required. It permits sending short instant messages between cell phone gadgets. Voice acknowledgement is the fundamental procedure of this application

II. LITERATURE SURVEY

A. Paper Name : Survey On Women Safety Devices

- **Authors :** Ramya K, Vimal T
- **Description :-** Today in the current global scenario, women feel less secure to go outside. They are facing so many consequences in this independent world. Here, we are focusing on as scenario where the women walking alone in the road faces harassment either from the front or back side during day or night time. To overcome these issues, we have developed a smart portable device which can track the current location of the victim.

B. Paper Name : Design of a Smart Safety Device for Women using IoT

- **Authors :** Wasim Akram, Mohit Jain
- **Description :** Not safe anywhere and are most vulnerable when traveling alone into lonely roads and deserted places. Existing hand held safety devices for women require human intervention for activating the device such as pressing the button or shake the device etc after sensing the danger. We propose a solution which will try to over come the disadvantages of the existing systems and also aim at providing false proof safety to women.

C. Paper Name : Analysis of Women Safety in Indian Cities Using Machine Learning on Tweets

- **Authors :** Deepak Kumar, Shivani Aggarwal
- **Description :** Women and girls have been experienc- ing a lot of violence and harassment in public places in various cities starting from stalking and leading to sexual harassment or sexual assault. This research paper basically focuses on the role of social media in promoting the safety of women in Indian cities with special reference to the role of social media websites and applications including Twitter platform Facebook and Instagram

III. PROBLEM DEFINITION AND SCOPE

A. Problem Statement

One of the biggest issues women face online is trolling. Can a system be developed where this can be control led as well as there is a data intelligence to collect information about trollers and report them accordingly. The problem is to identify

the bots, and identify the trolls written in languages other than English. Another challenge is to address the language part,as Romanization (hinglish etc). Solution should be able to identify trolls preferably in two languages Hindi and English and then aspire for local languages.

B. Goals and Objectives

- **Goal :** Women's safety involves strategies, practices and policies which aim to reduce gender-based violence (or violence against women), including women fear of crime.

- **Objectives :** Identifying and delivering campaigns to end violence against women and girls in all forms in Lewisham working in collaboration with others to tackle violence against women and girls in Lewisham Protection against bad people.

IV. PROJECT PLAN

A. Project Estimates

The Waterfall Model was first Process Model to be introduced. It is also referred to as a linear-sequential life cycle model. It is very simple to understand and use. In a waterfall model, each phase must be completed fully before the next phase can begin. This type of model is basically used for the for the project which is small and there are no uncertain requirements.At the end of each phase, a review takes place to determine if the project is on the right path and whether or not to continue or discard the project.In this model the testing starts only after the development is complete. In waterfall model phases do not overlap.
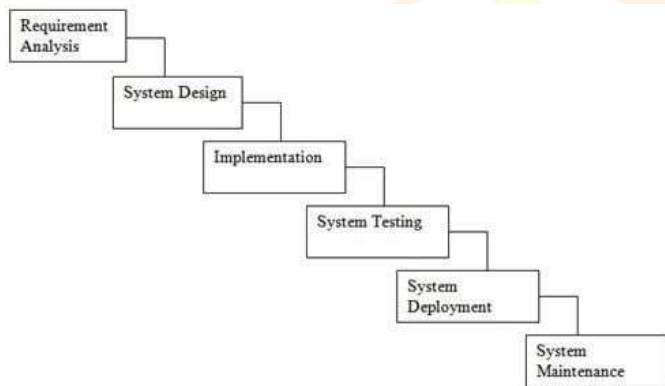

Fig. 1. Waterfall Model

1) Advantages

- This model is simple and easy to understand and use.
- It is easy to manage due to the rigidity of the model each phase has specific deliverables and a review process.
- In this model phases are processed and completed one at a time. Phases do not overlap.
- Waterfall model works well for smaller projects where requirements are very well understood.

B. Risk Management w.r.t. NP Hard analysis

- In appropriate database -
  To overcome this risk we are trying to use well organized and complete dataset.
- Security -

To overcome and improving security we use multilevel security like access permissions of user.
- P Class
- NP-hard Class
- NP-Complete Class

V. SOFTWARE REQUIREMENT SPECIFICATION

- **Hardware Resource Required**
  1] RAM : 8 GB
  2] Hard Disk : 40 GB
  3] Processor : Intel i5 Processor

- **Software Resource Required**
  1] Frontend: xml
  2] Language: Kotlin
  3] Database: Firebase
  4] IDE: Visual Studio

VI. DETAIL DESIGN

A. Architectural Design

This paper suggests a new technology to protect women. It focuses on their security so that they never feel helpless.
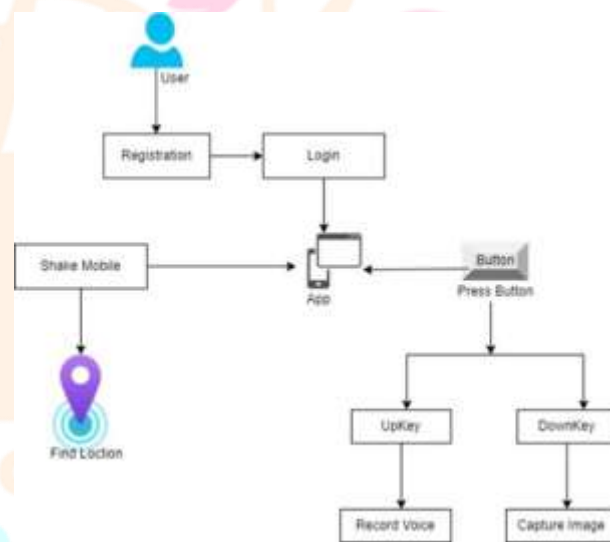

Fig. 2. Architectural Design

B. Modules

1) **Registration:** User-non-User should compulsory Registered
2) **Login:** If registered User Login successfully
3) **Location Track:** While Shaking phone we can track the location
4) **Capture Image And Audio:** Pressing Up-Key Record Voice and Pressing Down Key Capture Image
5) **Safe Route :** Pressing back button Safest route from Source to Destination

C. Usecase

The use case defines how actors use a system to accomplish a specific objective.

Figure 5 depicts the screenshot of Login Page.

Fig. 6. Capture Image and Police Station

Figure 6 represents the screenshot of Capture Image and Search nearby Police Stations.

Fig. 3. Use Case Diagram

VII. RESULTS

Here are some screenshots of the design of our proposed system by which our system can be more understandable.

Fig. 4. Register Page

Figure 4 represents the Sign Up form of the application. After filling it, user details will be saved into the database.

Fig. 7. Safe Route

Figure 7 displays the Safe route to travel from source to destination.

Fig. 5. Login Page

Fig. 8. Location Tracking

Figure 8 represents Location Tracking

Fig. 9. Logout Page

Figure 9 shows the Logout Page

VIII. CONCLUSION

This paper proposes a new women's safety model that aims to provide a very safe environment. Many unfortunate incidents took place in the case of women. Problems can come from anywhere. This paper analyzes the key needs of the intelligent security system with technology demand and system building challenges. Since the prediction of such incident is not possible hence to minimize it our proposed mobile application will be very helpful. It will not only help the women but also the children as it can work with voice command which is easy for a child to operate.And men can also use it when they face any big trouble and need help.

Not only in sexual related problem, it can be used when someone faces accident or hijacking or public attack. Whenever anyone is in any kind of danger, our system will help to decrease the risk and make the world a better and safer place.

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