

Advanced Women's Security System

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Abstract: Many of the real world problems are solved by the electronic world jointly with the computational science. The research paper aims in designing the unique advanced technology aided security system specially designed for safety of women (also useful for children safety). Here, it is mainly focused and designed for women employees of metropolitan cities for their safety considering the problems they face such as robbery, kidnap, sexual harassment, rape, etc... which nowadays are decorating the first page headlines of the newspapers.

Keywords: Women Safety, Technological aids, GPS, email, SMS

I. INTRODUCTION

A. *Challenges faced by Women*

Women insecurity has been the hurdle for nation's development. Challenges that women face is increasing in numbers. Specially, women employees and women of metropolitan cities face great number of challenges such as rape, sexual harassment, kidnap, dating abuse, sexual violence on college campuses and in workplaces. Conclusions of some of the reports of surveys on women insecurity are as follows:

- In USA, sexual violence on college campuses(refer in [1]) has been the major problem. The Campus Sexual Assault (CSA) Study concludes that women at universities are at considerable risk for experiencing sexual assault.
- The National Crime Records Bureau(refer in [1]) says that 24,923 rape cases were reported across India in 2012, 13,766 cases of child rape in 2014 and everyday around 93 women are being raped in India (published in Times of India).
- As per the survey conducted by IDFC Institute (refer in [2]), titled Safety Trends and Reporting of Crime (SATARC), 87% of households worry in Delhi if female member of that family is 9pm if a female member is out after 9 pm. Whereas its 54% in Bengaluru, 48% in Chennai and 30% in Mumbai for the same case.

B. *Technology as a Solution*

1) *Technological Solutions:*

There exists many technological aids, such as apps and electronic devices, to solve these problems. But still the problem remained unsolved as the statistical trends say. This is due to lack in features they offer as an individual solution.

2) *General Operation:*

In emergency situations such as being kidnapped, blackmailed, ATM robbery, sexual harassment, etc... if a woman pronounces/speaks the given unique keyword, the android smartphone that she carry recognises and further instructs the android to request help by sending SMS/s to mentioned phone numbers & capture some pictures and records video of the current situations and mail them to emergency/family members' email Ids which will be mentioned by the woman. This soon activates the GPS tracking, which will also be mailed, to locate the geolocation where woman is in problem/s. As a result, public/family/police can protect the woman.

3) *How relevant this approach is? :*

The following informative points justifies the relevancy in solution approach-

- ★Increasing women population in workforce and metropolitan cities. Ensuring the safety of these working women is the highest possible priority for all of us.
- ★ Increased usage of Smartphone.
- ★ Increased demand for safety.
- ★About 30% of internet users in India are women(refer in [3]).
- ★A free SMS-based safety or safety app services are becoming common as well.

II. TECHNICAL PARTS

A. *Structure of Process*

01-Start

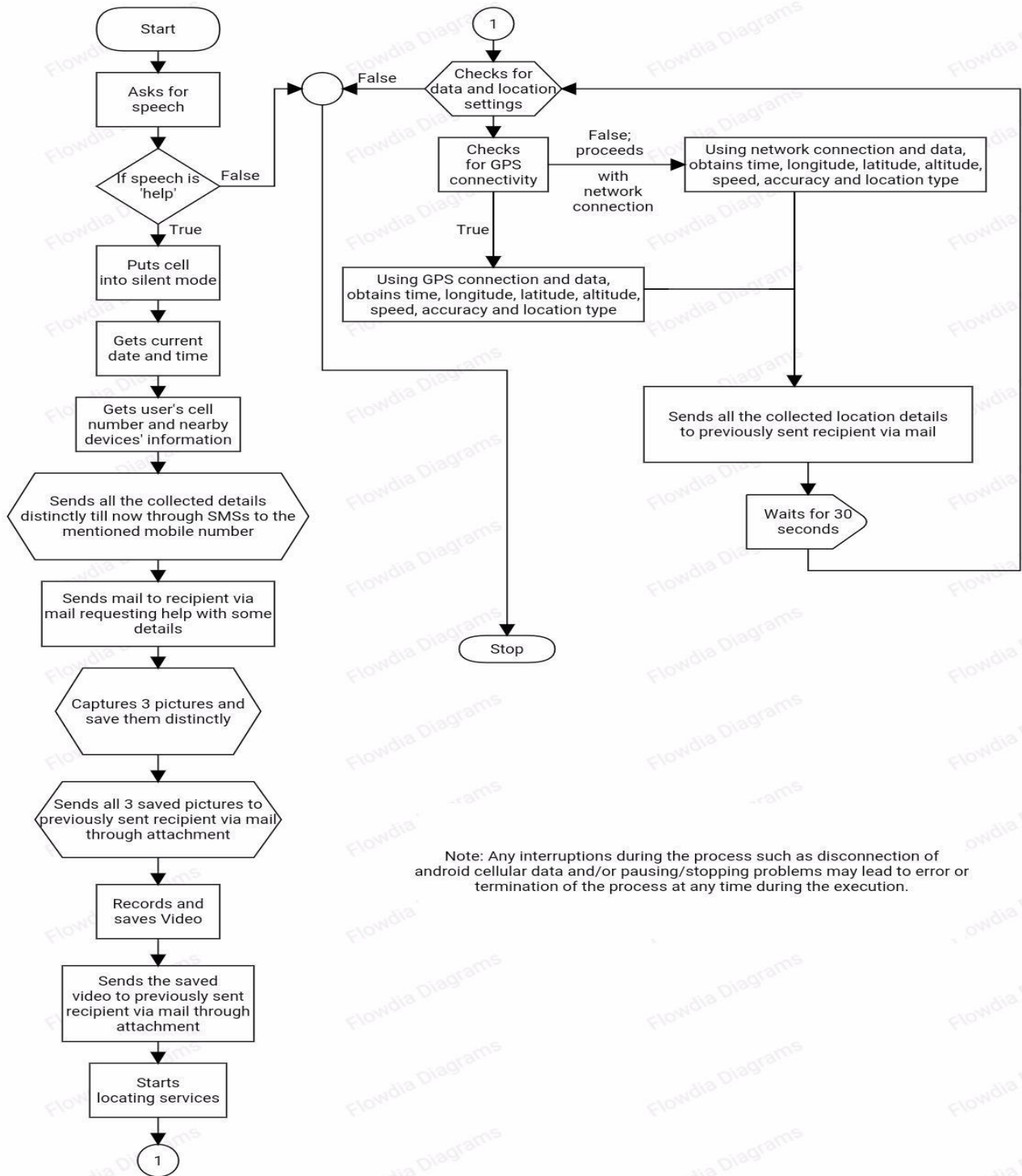
02-Asks for speech on waiting for 3 seconds



- 03-If speech is 'help', silent mode will be automatically turned on android cell
- 04-Current date and time is obtained
- 05-Time count starts
- 06-Prints obtained current date and time
- 07-Reads and obtains android cell number of the user
- 08-Attempts to collect information of nearby found devices
- 09-Prints the obtained user's cell number
- 10-Prints the obtained information of nearby found devices
- 11-Sends 5 SMSs in loop to mentioned cell number/s regarding the emergency
- 12-Email ID of user is logged in automatically
- 13-Sends mail/s to mentioned email id/s with the date, time and the cell number which is in emergency
- 14-User is logged out of email automatically after sending mail successfully
- 15-Prints 'done'
- 16-Captures 3 images continuously (in loop) and are saved in preferred format through mentioned path
- 17-Email ID of user is logged in automatically
- 18-These images are sent to mentioned email id/s through single mail using multiple attachments
- 19-User is logged out of email automatically after sending mail successfully
- 20-Prints 'done'
- 21-Time count is stopped and prints time elapsed
- 22-Video recording starts
- 23-Records for mentioned duration
- 24-Video recording stops
- 25-Video is saved in preferred format through mentioned path
- 26-Email ID of user is logged in automatically
- 27-This video is sent to mentioned email id/s through mail using attachment
- 28-User is logged out of email automatically after sending mail successfully
- 29-Prints 'done'
- 30-Starts fetching GPS data
- 31-Prints 'location data...'
- 32-Starts locating
- 33-For True, try is made to obtain GPS data preferably whose failure leads to obtain network based data
- 34-In both cases, location details is obtained serially in the format of time, longitude, latitude, altitude, speed, accuracy and location type (GPS or network)
- 35-Prints location details which is obtained with location type
- 36-The obtained location data is decoded and gets geolocation in words with all address details
- 37-Prints decoded geolocation/address details
- 38-Time count starts
- 39-Email ID of user is logged in automatically
- 40-Sends mail/s to mentioned email id/s with the location and geolocation/address details
- 41-Email ID of user is logged in automatically
- 42-Prints 'done'
- 43-Time count stops and prints time elapsed
- 44-Steps from 30 to 44 are repeated continuously with time gap of 30 seconds for updating situation and/or location details till the process is disturbed.
- 45- If process is disturbed, locating feature is stopped.

Note: Any interruptions during the process such as disconnection of android cellular data and/or pausing/stopping problems may lead to error or termination of the process at any time during the execution.

B. Operation Flow



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Fig.1. Operation Chart

III. MERITS AND DEMERITS

A. Merits

1. Captured images and video act as strong evidence if they are clear enough.
2. Puts mobile phone into vibration mode automatically.
3. Date and time along with mobile number is extracted and noted.
4. Basic information of nearby devices is extracted and can be used in healthy manner as per necessity.
5. GPS data is obtained and with the help of that exact address/geolocation is also obtained.

6. SMS and/or Email are/is sent to mentioned receiver/s asking help by sending date, time, mobile number, captured images & video, GPS data in terms of latitude & longitude as well as address/geolocation.

B. Demerits

1. The state of android smartphone must be good with respect to camera, microphone, battery, internet & GPS connectivity, processor.
2. Android smartphone must be data and GPS enabled (better internet connection is expected) throughout the process.
3. If speech recognition fails, the entire system becomes helpless.
4. Recipient's data connection also matters.

IV. IMPROVEMENT OPTIONS

1. Calling emergency numbers' feature can be developed.
2. Usage of multiple languages for speech recognition.
3. Many other additional options can be developed so as to initiate the process when speech recognition fails such as initiation by changing physical configuration of device, gesture control, touch & body sensor.
5. Automatically data and GPS turning on feature can be developed, if one did not turn on it before.
6. Post a help request along with captured images (optional) in social media such as Facebook, Twitter.

V. FUTURE SCOPE

As the world is moving towards technological advancements, technological aids gain more importance. So, the solutions offered by Technology for real world problems are widely accepted by the earth's population. Hence, the scope for such advanced technology based system is evergreen.

VI. CONCLUSION

Advanced Women's Security System acts as virtual body guard for women which may help them in the dangerous times and can save their lives. This also helps in gathering the effective evidences or proofs for punishing the criminal without any discrimination.

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BIOGRAPHY

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