

# Raspberry pi Based Women Safety Jacket Using IoT.

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**Abstract :** The usage of good phones equipped with GPS navigation unit have multiplied apace from three-dimensional to over 2 hundredth within the past 5 years. Hence, a sensible phone is used with efficiency for private safety or varied alternative protection functions particularly for girls. This project presents Safe Women: AN application for girls safety, a private safety application developed for good phones of automaton platform. By exploitation the pressure device, camera and automaton application Police get message and video of the victim. Message additionally forward to contacts in portable of the victim. This application communicates the user's location to the registered contacts within the type of message.

**Keywords:** Pressure sensor, Camera, Smart Phone, Android, Registered Contacts, GPS location, Database.

## I. INTRODUCTION

Women unit adept at mobilizing varied groups for a customary cause. They generally work across ethnic, religious, political, and cultural divides to plug peace. we've got an inclination to tend to tend to face live all aware of importance of women's safety; but we've got an inclination to tend to tend to own to be compelled to know that they need to be compelled to be properly protected. Women's are not as physically sturdy as men, in Associate in nursing emergency state of affairs a facilitate would be a relief for them. The only real due to minimize your potentialities of fixing into a victim of violent crime (robbery, domestic violence) unit to identify and switch resources to help you out of dangerous things. Whether or not or not you're in immediate hassle or get separated from friends throughout a night out and don't astuteness to urge home, having these apps on your phone can prune your risk and switch out facilitate once you'd find it irresistible. Although several were originally developed for college students to chop back the danger of crime on field, they are applicable for all women among the sunshine of recent outrage in city that barrel the state and woke USA to the protection issues for our daughters, individual's unit train up in varied that} during which throughout which to fight back. Quite recent apps unit developed to supply security systems to girls on their phones. Here we've got an inclination to tend to tend to introduce Associate in nursing app that ensures the protection of ladies. This helps to identify and invoke resources to help the one out of dangerous things. These prune risk and switch out facilitate once we would find it irresistible and facilitate USA to identify the position of the one in peril.

This project designed to supply security to women main purpose of this technique to supply the notice on the time of necessary state of affairs for women. Question in each girl's mind, considering the ever rising increase of problems on girl's harassment in recent past is usually concerning her safety and security. The sole real thought haunting each lady is once they are getting to be able to move freely on the streets even in odd hours without concern concerning their security. This project suggests a replacement perspective to use technology for women safety. By victimization the pressure device, camera and humanoid application Police get message and video of the victim. Message conjointly forward to contacts in transportable of the victim. This application communicates the user's location to the registered contacts within the sort of message.

On a usual once media broadcasts any of women's achievements instead of harassment, it's associate action achieved Since we've got an inclination to tend to (humans) can't respond capably in essential things, the need for a tool that mechanically senses and rescues the victim is that the venture of our organize throughout this paper.

## 1.1. Problem Statement

To develop GPS/GSM based smart android application for women tracking purpose and if the person got into unconscious situation then with help of this app it get help services from nearest police station, relatives and friends.

## 1.2. Goals and Objectives

To easily tracing women location.

To send SMS alert to police, relatives, friends.

Capture the current movements via camera.

## II. OVERVIEW

This application uses GPS for distinctive the situation of the person in hassle and also the system are often divided into 2 modules initial module are often the pressure sensing element i.e. the basis device that activate the the raspberry pi camera once sensing element is ironed. Second module are often the mobile app that send sms of close to location police headquarters and registered contacts either police or friends or members of the family that receive the message containing URL of location of victim.

## III. LITERATURE SURVEY

### 1. Paper Name: Women Safety Application Designed Using IoT and Machine Learning.

This paper fulfils the objective of women security and moreover this device can be used by women while travelling alone on roads, in public transport or even at workplaces. It helps us to analyse the severity of crimes against women and also be beneficial for reducing rate of sexual harassment. Secondly, another problem lies with these solutions are that they won't work if at all there is no internet. To provide the solution for that this paper has used zigbee and created mesh network which helped us to transfer the vital information related to women safety to a much larger distance.

### 2. Paper Name: A Mobile Application for Women's Safety: WoSApp.

The safety of girls could be a concern of accelerating urgency in Republic of India and different countries. The first issue within the handling of those cases by the police lies in constraints preventing them from responding quickly to calls of distress. These constraints embrace not knowing the situation of the crime, and not knowing the crime is happening at all: at the victim's finish, reaching the police assuredly and discreetly could be a challenge. To assist within the removal of those constraints, this paper introduces a mobile application known as WoSApp (Women's Safety App) that gives ladies with a reliable thanks to place associate emergency decision to the police. The user will simply and discreetly trigger the vocation perform by shaking her phone, or by expressly interacting with the computer program of the applying via an easy press of a push on the screen. A message containing the geographical location of the user, additionally as contact details of a pre-selected list of emergency contacts, is straight away sent to the police. This paper describes the applying, its development, and its technical implementation.

### 3. Paper Name: Women's safety app in mobile application.

The usage of sensible phones equipped with GPS navigation unit have hyperbolic speedily from three-D to over two hundredth within the past 5 years. Hence, a wise phone may be used with efficiency for private safety or numerous alternative protection functions particularly for ladies. This paper presents Saver, a private safety application developed for sensible phones of golem platform. This app may be activated by one click once the user feels she is at risk .This application communiqés the user's location to the registered contacts for each few seconds within the style of message. Thus, it acts sort of a lookout following behind the person until the user feels she is safe. The key options of this application area unit alongside the user's location, one among the registered contacts gets a decision. Also, the registered contacts and GPS location area unit saved from time to time in an exceedingly information.

#### 4. Paper Name: Android Application For Mitigate Probability Of Threatening To Women In Unwilling Situations.

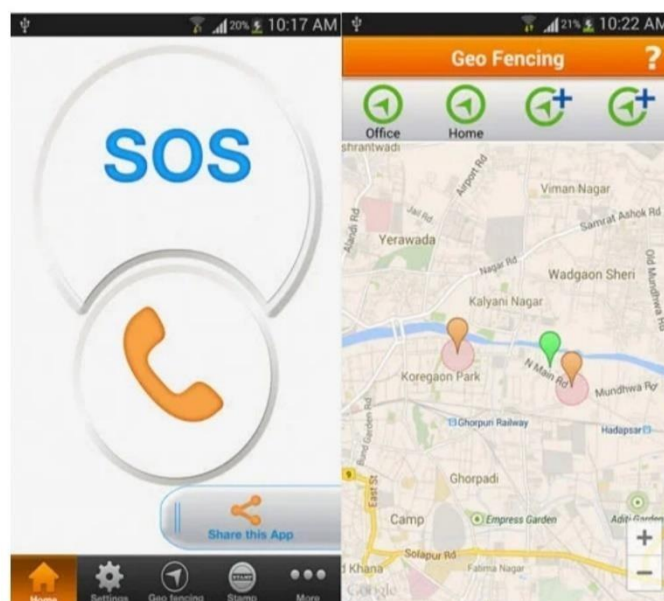
Women's security could also be an important issue in today's world and it's considerably needed for every individual to be acting over such a haul. This document describes a GPS and GSM based girl's security system that provides the mixture of GPS system furthermore as offer alerts academic degree messages with an emergency button whenever someone is in hassle. They might not have most time all that they have to undertake to be pressing the number key. Particularly girl's security has become the foremost priority of the world. System uses the globe Positioning System &#40; GPS&#41; technology to hunt out matters of women. The info of girl's position provided by the device is viewed on Google maps exploitation web or specialized code. The IT Corporation's area unit wanting forward to the protection drawback and wish systems which is able to expeditiously security operative in night shifts, movement alone. We tend to tend to target the projected model which is able to be accustomed have an effect on the matter of security issue of women exploitation GPS and GSM based chase system. Our country has new technology development but still there are a unit some crimes con to women, risky neighbors and violence.

#### 5. Paper Name: An Android Based Application for Women Security.

In today's world, folks mistreatment sensible phones have enhanced quickly and therefore, a sensible phone are often used with efficiency for private security or varied different protection functions. The atrocious incident that angry the whole nation have waken America to travel for the security problems and then a number of latest apps are developed to produce security systems to girls via their phones. This paper presents girls security Associate in Nursinging mechanical man Application for the security of ladies and this app are often activated this app by a shaking the mobile, whenever want arises. This app identifies the placement of place through GPS and sends a message comprising this location URL to the registered contacts and conjointly send messages to close by mobile that area unit having this app.

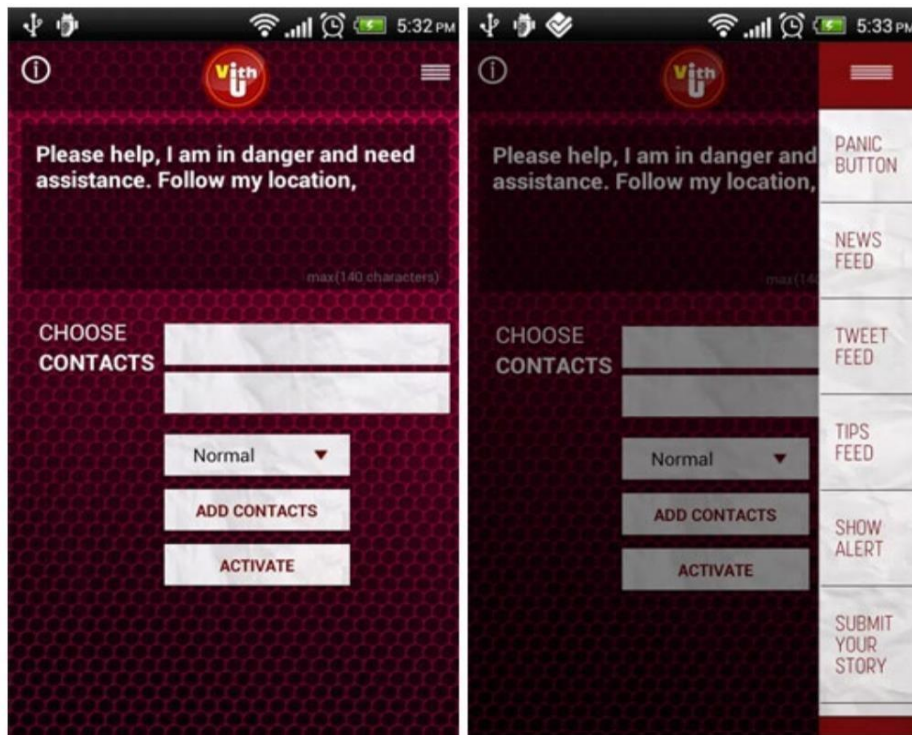
### IV. EXISTING SYSTEM APPROACH

#### 1.1. Nirbhaya : Be Fearless App



The Nirbhaya App is another app that lets the user send an sms alert with a single touch in the event of an emergency .When activated ,it will send your GPS location to your pre-selected contacts, with your exact location.

### 1.2. VithU App



The VithU App let a potential victim skip through the number-punching, and lets you push your power button twice to instantly send an SOS alert to contacts. Alert messages are sent out every two minutes to listed contacts, who will received a message along with your physical location ,which will get updated each time the messages goes out.

### V. PROPOSED SYSTEM APPROACH

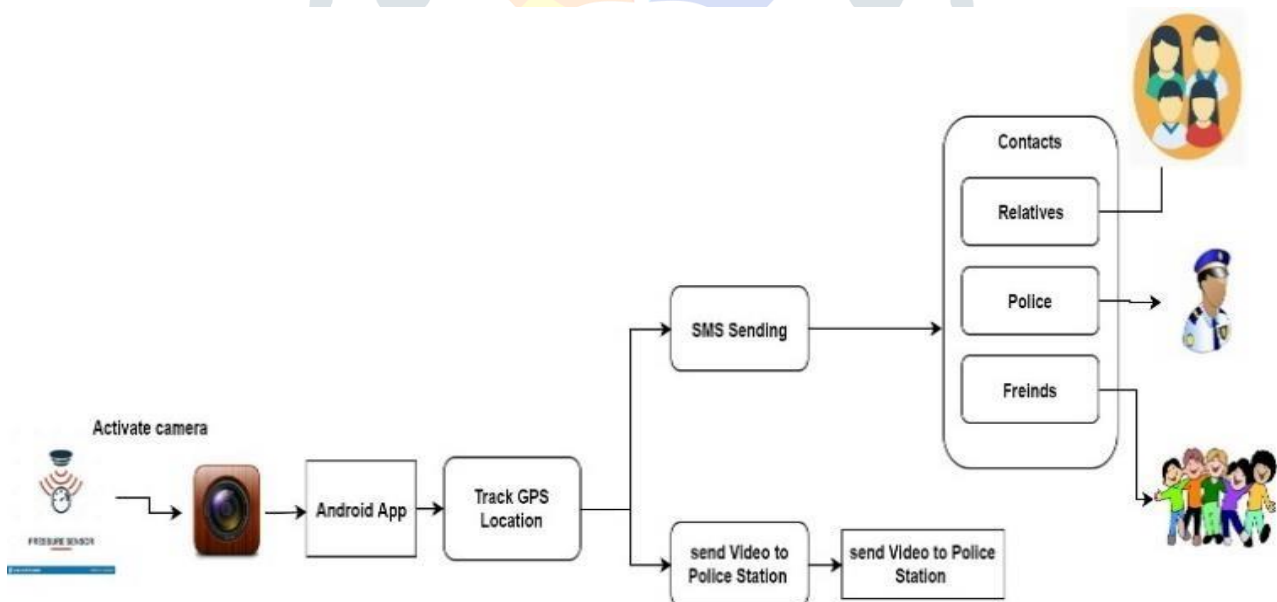


Figure 4.1: Proposed System Architecture

To develop a system for robot users for keeping track through many applications. This application uses GPS for distinctive the situation of the person in hassle and also the system are often divided into 2 modules initial module are often the pressure sensing element i.e. the basis device that activate the the raspberry pi camera once sensing element is ironed. Second module are often the mobile app that send sms of close to location police headquarters and registered contacts either police or friends or members of the family that receive the message containing URL of location of victim.

Here, registered contacts suggests that the contact details that are saved within the Safe ladies application throughout its data formatting.

The received device, by clicking on the URL within the message, it spots the precise location of the victim.

## VI. METHODOLOGIES/ALGORITHM DETAILS

### Haversine Algorithm:

Calculate geographic distance on earth. If you've got two different latitude – longitude values of two different point on earth, then with the assistance of Haversine Formula, you'll easily compute the great-circle distance

**Input** : User Longitude and Latitude, Police Stations Longitude and Latitude

**Output** : Distance calculate and get nearest police station

**Process:** haversine(lon1,lat1,lon2,lat2)

lon1, lat1 = coord1 lon2, lat2 = coord2

```

R=6371000 #Radius of earth in meters phi_1=math.radians(lat1)
phi_2=math.radians(lat2) delta_phi=math.radians(lat2-lat1) delta_lambda=math.radians(lon2-
lon1) a = math.sin(delta_phi / 2.0) ** 2 + math.cos(phi_1) * math.cos(phi_2) * math.sin(delta_lambda /
2.0)
**2
c=2*math.atan2(math.sqrt(a),math.sqrt(1-a))

meters = R * c #Output distance in meters
km = meters/1000.0 #Output distance in kilometer
meters = round(meters,3) km = round(km, 3)

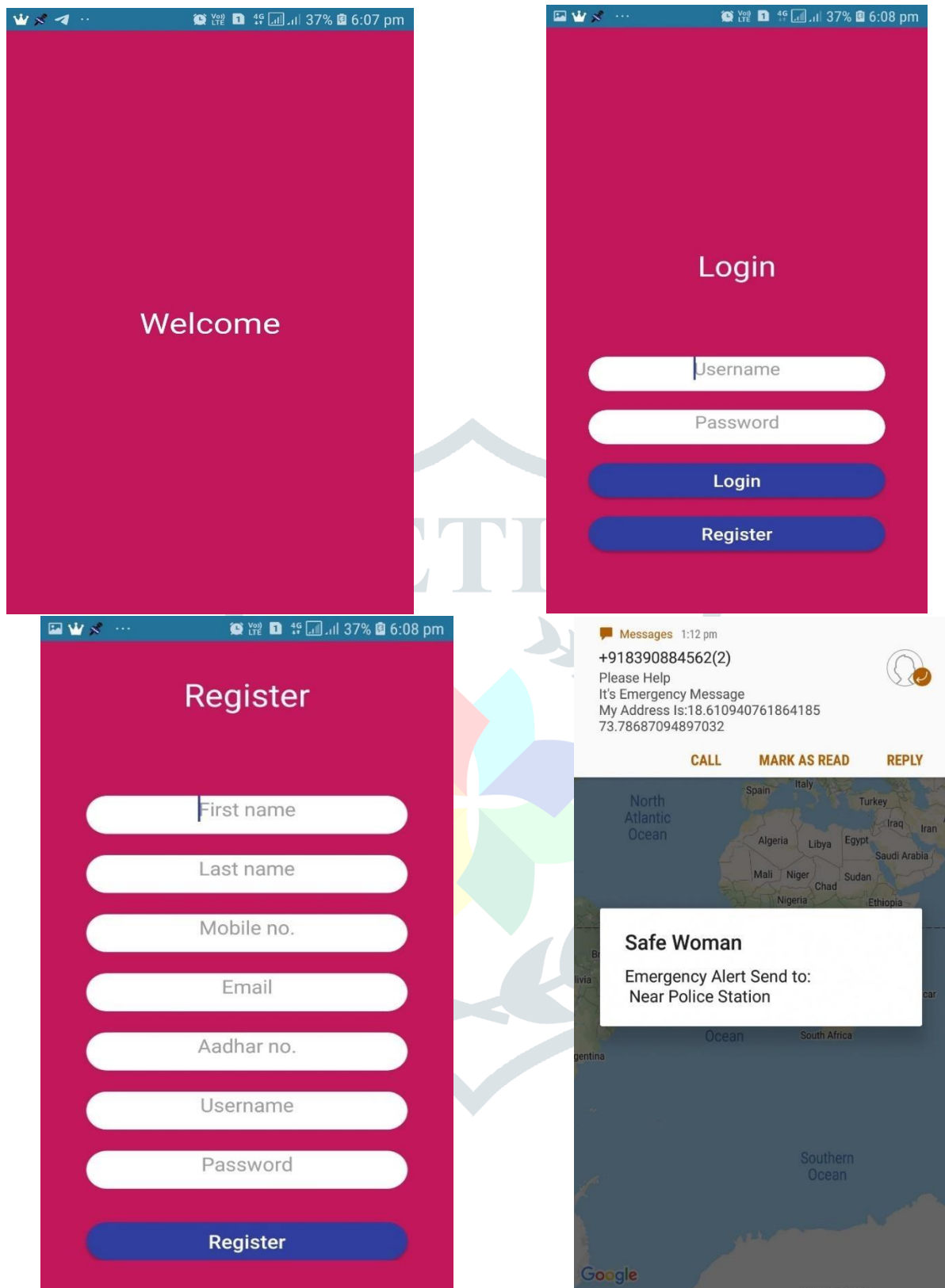
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### Mathematical Model:

Let S be the system and it consist of following:

- S={I, P, O, Su, Fc}
- I= Input
- I={User, Attacker}
- P= Process
- P={ ApS,Co,Sp,Sm }
  - ApS= Attacker press users hand which have pressure sensor.
  - Co= Camera on using raspberry pi0 and capture attacker.
  - Sp=Send That to nearest police station.
  - Sm= Send Emergency message to police, family members and friends.
- O= Output
- O={O1,O2,...On}
  - Send Emergency message to police, family members and friends.
- Su=Success cases
  - Send Emergency message to police, family members and friends.
- Fc= Failure Condition
  - Fail to send Emergency message to police, family members and friends.

## VII. RESULT



## VIII. CONCLUSION AND FUTURE WORK

### 1.1. Conclusion

This project describes the appliance, Survey that's designed in robot platform for safety of girls with the help of recent enhancements in mobile technology. This application facilitates the following of the foundation device through GPS which can help the enforcement authorities to rescue the person at risk as quickly as doable from the anti- social components. For future development, this application may be integrated with the enforcement info rather than experimental database used here within the project. Also,

some any upgrade may be done once the mobile network isn't on the market and conjointly if the foundation device means that pressure detector and camera isn't operating. Thus, this system will facilitate in a very massive thanks to rescue the ladies or men from unsafe conditions.

## 1.2. Future Work

Enhance security for victim details.

Instead of pressure sensor use a body sensing devices.

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