WOMEN SAFETY DEVICE AND APPLICATION- SHAKTI

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ABSTRACT

In our Country, even though it has super power and an economic development, but still there are many crimes against women. The atrocities against the women can be brought to an end with the help of our product "Shakti". This device is a security system, specially designed for women in distress. Method/Analysis: Using ARM controller for the hardware device is the most efficient and it consumes less power. We use radio frequency signal detector to detect hidden cameras. Findings: We analyzed that there are no security device for our total safety. The user has to carry multiple devices. We found an ALL-IN-ONE security device which has all the features in one click. Applications/Improvements: In this paper we used ARM controller and android application in which both the device and the smart phone are synchronized using Bluetooth, hence both can be triggered independently. We can record audio for further investigation and can give an alert call and message to the pre-set contacts with the instant location every 2 minutes and can be tracked live using our application. Hidden camera detector is also a distinct feature using which we can ensure our privacy.

Keyword: - *Application, Emergency, GPS Tracker and Bluetooth Access, Security, Sensors etc….*

1. INTRODUCTION

Introduction of our "Shakti" is a security device specially designed for women in emergency and in distress. It is simple and easy to use and carry with various functionalities. The numbers of smart phone users are turning into greater in amount all over the world. A smart phone has many applications which is useful to people in which our "Shakti" will become one of those. It is a personal safety product designed to keep you and your friends safe 24/7. It is packed with features for both everyday safety and real emergencies, making it an ultimate tool for all. This user-friendly application can be accessed by anyone who has installed it in their smart phones as well as who has our device. Our intention is to provide you with fastest and simplest way to contact your nearest help. By considering above issues it can be conclude that to design a successful traffic sign recognition system, different types of image processing operations should be applied for the detection and classification of the traffic signs.
So they can help human drivers to understand traffic rules and regulation and to increase road safety. location and a distress message to the cops and the preset numbers, so that unfortunate incident can be averted and to provide real time evidence for the action against the perpetrators of crime against women. This device can also be miniaturized in future and can be embedded in jewelries, mobile phones etc., in order to make this device.

This can also help police department reduce the crimes, which are against women and the evidence can be used to trace the crime. “Shakti” is a guide, which aids people to take preventive measures as soon as possible during:
• Being stalked while walking.
• Attempted physical or sexual assault.
• Unsafe neighbors.
• Domestic violence.
• Hidden camera detector.

1.1 Motivation

The motivation behind this project stems from the desire to leverage modern technology to create a comprehensive safety tool that can be readily available to anyone in distress. With rising awareness around personal security, there is a growing demand for solutions that offer discreet yet powerful security measures. This project aims to develop a tool that not only offers immediate support in emergencies but also serves as a preventive measure, potentially deterring harassment or violence. By focusing on user-centric features and ease of use, this project seeks to provide peace of mind and promote a safer environment, particularly for those who may face higher security risks in everyday situations..

1.2 Relevance

In recent years, personal safety has become a pressing issue, especially for vulnerable groups, including women. Reports of assaults and harassment have highlighted the need for effective, accessible safety tools that empower individuals to respond to threats and seek help immediately. Traditional safety devices and mobile applications often require multiple devices or fail under certain conditions, such as limited internet connectivity. The project addresses these gaps by providing an integrated solution that combines real-time location tracking, hidden camera detection, and emergency alerts into a single device. Its design enables individuals to access safety features without needing to rely on multiple gadgets, increasing its practicality and user-friendliness.

1.3 Problem Statement

To design and implement a project addresses the lack of a reliable, all-in-one personal safety device that enables individuals to discreetly signal for help, share their real-time location, and detect hidden cameras, particularly for vulnerable groups like women in high-risk situations.

1.4 Scope

The scope of this project encompasses the design, development, and deployment of a compact, wearable safety device equipped with GPS, GSM, Bluetooth, and hidden camera detection features, synchronized with an Android application. The device will allow users to trigger emergency alerts, record evidence, and send location updates to pre-set contacts without requiring internet connectivity, enhancing accessibility in diverse environments. Future expansion of the project may include miniaturized versions, increased compatibility with wearable forms (e.g., as jewelry or integrated into clothing), and expanded functionality to incorporate additional safety features based on user feedback and emerging needs.

1.5Aim of Project

The aim of this project is to design and develop an all-in-one, compact safety device integrated with an Android application, specifically aimed at enhancing personal security and providing immediate assistance in emergencies. This device will allow users to discreetly signal for help, share their real-time location, detect hidden cameras, and record evidence, thereby empowering individuals, particularly women, to feel safer and more protected in various situations.

2. METHODOLOGY

1.Hardware Device: It represents the methodology used in our paper. The device can be activated by just merely pressing the emergency button once. This device gets activated and sends instant location with a distress message to the police pre-set numbers through a GSM module shows the triggering button and how the device looks like and when the emergency button is double clicked, the device sends both the distress message with instant location and records the audio of the incident. When the same button is long pressed it activated call to the police and sends message to the police instant location. The location is located using GPS (UBLOX). The audio is recorded using audio recorder and call is made from GSM modem respectively. This GSM Modem (sim 900) can accept any GSM network operator SIM card and act just like a mobile phone with its own unique phone number. The plus point of using this modem will be that you can use its ESP32 port to communicate and develop embedded applications. It can be used to send and receive SMS4 or make/receive voice calls. The hidden camera detector can be used anytime to find whether there is any hidden camera in the surrounding to help our privacy.

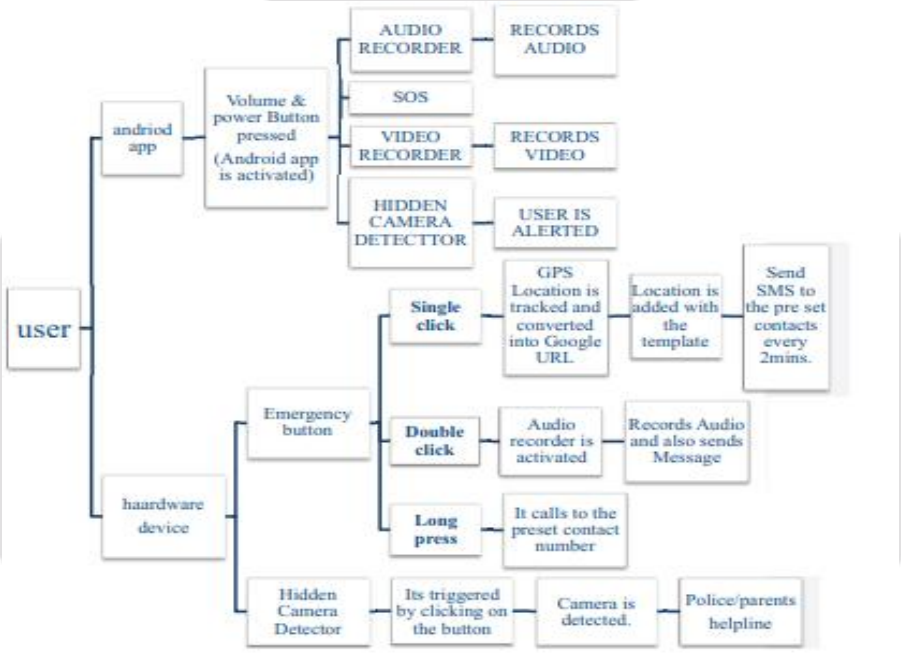

Fig -1: Block Diagram

The hidden camera detector works with the help of RF signal interface. When the RF signal is interrupted, camera can be detected. We can also connect the device with our mobile (through Bluetooth HC05), to find our location even if our mobile is lost which can be activated by clicking tracking your mobile button5 and the location of the mobile is sent to the pre-set number.

2.Android Application: It represents the general methodology of the application. When you click on the application, there is a thread and then it leads title main page, which consists of simple user interface. Depending upon the problem, we can choose the icon, which will guide the user during emergencies When you click on the following icons the following pages like hidden camera detector, women Security, SOS message, video recorder pages will be opened. In our application, the user gives the input either manually or by the volume button. First the user starts the application by going inside it by clicking on the application icon. Then a thread of 2 seconds is rendered which displays the name of the application. Then after this process ends, the user interface where the user can interact with the application is displayed. This page lets the user interact with our application. When the user clicks on the each icon, it leads to that respective 4 different icons used in our application is the woman safety, SOS message, video recorder, hidden camera. When you click on the emergency button (volume key+ power button), the application gets opened automatically then sends an emergency message and audio is recorded and sent to the pre-set contacts.

3. RESULT

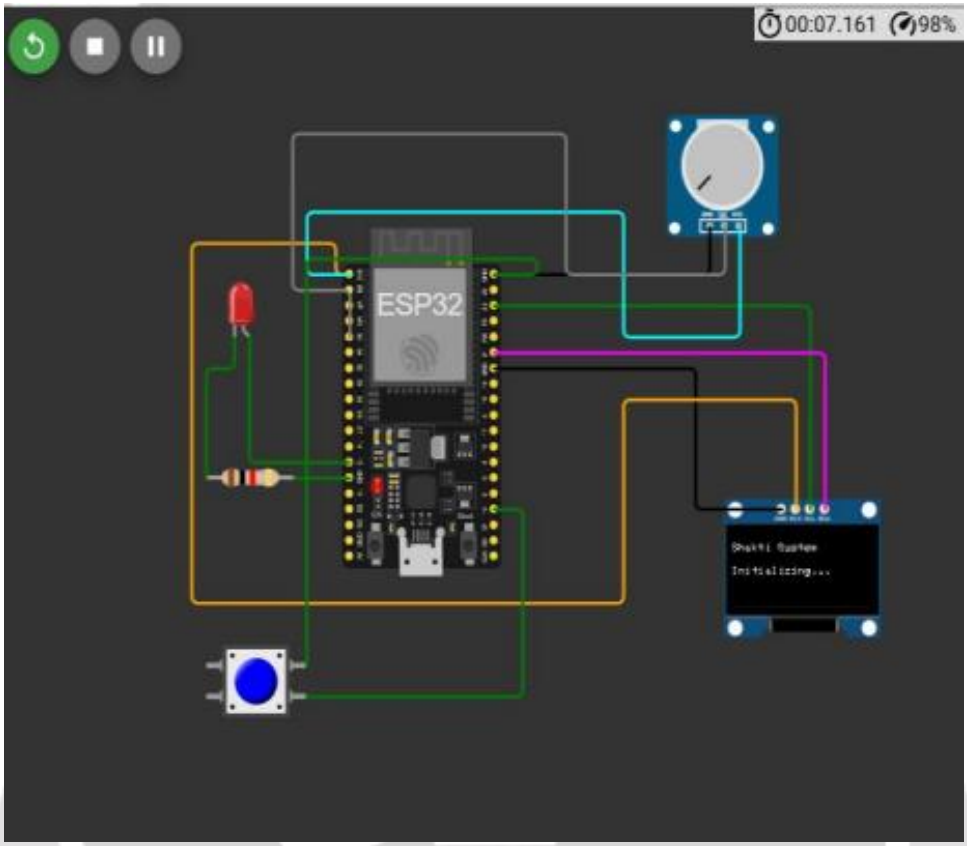

Fig-2: Output

This circuit simulation features an ESP32 microcontroller connected to various components, including a potentiometer, an LED with a resistor, a push button, and an OLED display. The potentiometer, located at the top right, is likely used for adjusting input values, while the push button at the bottom left serves as a trigger for specific actions. The LED, positioned on the left side, may act as a status indicator, turning on or off based on certain conditions. The OLED display, found at the bottom right, is currently showing the message "Smart System Initializing...", suggesting that the system is in its startup phase. This setup appears to be a prototype for a smart system, possibly for monitoring or controlling a process based on user inputs. The ESP32 plays a crucial role in processing signals from the potentiometer and button while displaying relevant information on the screen.

4. CONCLUSIONS

Our primary goal of this project is to ensure every woman in our society to feel safe and secured. According to the survey in India 53% of working women are not feeling safe - Women is working in night shift (Bangalore56%, Chennai-28%, Hyderabad-35%, Mumbai-26%). In Overall 86% of working women in India, women facing hurdles are high in Delhi, Mumbai, Hyderabad, Kolkata and Pune comparatively to other places. SHAKTI can play a major role by providing women a safe environment in all situations for example (detecting hidden camera, physical threatened, harassed, robbery, stalked). Implementing real time application and a device, we can solve the problems to an extent. With further research and innovation, this project is used as a small wearable device like watch, pendent etc.

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