Smart E-jacket For Women Safety

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ABSTRACT
In general, the era in which we live is the worst one for women's safety. Women are constantly on guard in the home, on the streets, in public areas, and even in company. When women are alone, their primary concern is their safety. Many NGO's, helpline centres, and helpline lines have been established for the safety of women, however none of them are the ideal solution to harassment of women.There are certain mobile applications that can send messages to contacts that have been saved, but none of them are very efficient. The goal of this project is to develop a security system that is specifically designed to give women a sense of security and safety as they deal with social difficulties.This project uses the ARDUIN NANO, GPS modem (NEO6MV2), GSM modem (SIM800L), and Push button switch to create a Smart Protective Jacket. If a woman feels threatened, she can use this jacket at any time. The push button switch is used to turn on the jacket. The GPS modem is then used to begin tracking the location.When the buzzer sounds, the GSM modem assists in sending alarm messages and making calls to the registered contact numbers, enabling those in the area to act quickly and assist the sufferer. Moreover, a shock circuit is employed for defence.If a woman is unable to hit the push button, the fall detection sensor, which is also included into the jacket, will assess the lady's position in relation to the moment of her fall and transmit location and alarm messages to the registered contacts via GPS and GSM modems.

KeyWords: A push button, an ARDUINO NANO, a GPS or GSM modem, a fall detection sensor, a buzzer, or a shock circuit

I. INTRODUCTION

Over the past few millennia, there have been significant changes to the status of women in India. Women still face societal discrimination and are frequently the targets of violent crimes in contemporary India.Due to the rising crime rates in our nation, women are still hesitant to leave their homes even in the modern period.

Women who work in the corporate sector, in particular, have more trouble with security during night shifts.In today's society, women have the same rights as men to participate in every sector, and even news concerning women's harassment is more important than women's accomplishments. The main objective of the project is to design a wearable coat that would guarantee women's security.Which is a major cause for concern for our nation. The Position Of Women In India Has Undergone Changes During The Last Few Of Decades. Women work really hard to survive and support their families in order to maintain some portion of the fast lane.The historical background of women has been significant from ancient times. They Work At Better Locations Such Bpo's, Phone Centers, It Companies, and Many Other Locations. Despite the fact that women have achieved top positions in employment and society, such as those of Prime Minister, Speaker of the Lok Sabha, Leader of the Opposition, and the Prime Minister of India, women still face many social challenges in India today.Each young woman's main concern in the current world situation is her safety and potential for provocation. Every young lady always thinks about the time when they will be able to travel freely on the roads, even at odd hours, without worrying about their safety. Wounded Person in a Crisis Situation of Any Kind.

BLOCK DIAGRAM:
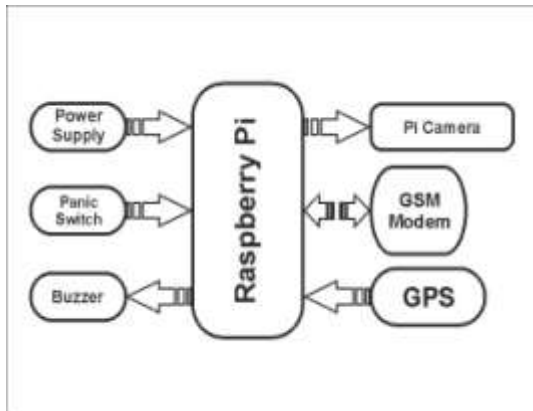
DESCRIPTION:

A microcontroller board called the Arduino Nano uses the ATmega328p microcontroller. The board has a set of 8 analogue input output pinsand 14 digital input pins. For varied uses, it is interfaced to a variety of expansion boards and other devices. The board is powered utilising a small USB connection with a 5V output.An 8-bit microcontroller built on the AVR RISC architecture is the ATmega328p. It is a top-tier AVR controller that is found on numerous ARDUINO boards. Global Positioning System, or GPS. The user's location is tracked via GPS. Coordinates of latitude and longitude are used to pinpoint the location. Inbuilt features of the GPS NEO6MV2 include a ceramic patch antenna, EEPROM memory, a battery, and an LED indicator. GPS operates between 4.3V to 5.7V in voltage. Global System for Mobile Communications, or GSM.. NG The GSM SIM800L's operating voltage ranges from 3.4V to 4.4V. The alarm calls and texts are made using GSM and are delivered to the registered contact numbers. The GSM modem's operation is based on AT (ATtention) commands, which are transmitted to the modem via a microcontroller.A SENSOR DEVICE WITH A HARDWARE COMPONENT THAT DETECTS BODY POSITION, MOTION, AND FALL MOMENT IS THE FALL DETECTION SENSOR ADXL335. It runs on an extremely low 3Vpower supply. BUZZER: The ARDUINO board and buzzer are directly connected.. A buzzer is used to provide a continuous sound that is audible between 40 and 80 decibels. In an emergency, it is mostly utilised to notify those in the immediate area. Liquid crystal display is abbreviated as LCD. A 16x2 LCD display, in which each character is represented by a 5x8 pixel matrix, is a widely used device.. It runs at 4.7 to 5.3 volts. It has sixteen pins. SHOCK CIRCUIT: When a push button is pressed, a shock circuit produces some voltage. It is advantageous for the woman to defend herself against the offender.PUSH BUTTON: This emergency button activates the women's safety jacket and can also deliver an electric shock or sound a buzzer.

WORKING:

The emergency button on the smart protective jacket activates the micro controller when a lady in danger presses it. The micro controller will issue commands to the GPS MODEM, GSM MODEM, buzzer, and shock circuit, which will then carry out the appropriate tasks.The victim will be able to defend herself from the attacker thanks to the buzzer indication's continuous siren, the shock circuit's production of some voltage, and the GPS's tracking of her location and transmission of the information to her parents and other family members via GSM modem in the form of calls and messages.

The fall detection sensor will be used whenever a lady is unable to press a button, such as when she has been assaulted or has come into contact with any chloroform.This sensor detects the user's movements. If there isn't a moment in the user's body for a predetermined threshold limit, such as when she falls, then this sensor recognises the readings and sends them to the micro controller based on the user's bending angle and location.Afterwards the buzzer, GPS, and GMS modems receive instructions from the microcontroller once more, and the identical action is carried out.

GSM MODEL:

GPS RECEIVER:

METHODOLOGY:

Every girl's top concern in the current world is for their safety and the problem of harassment. Every girl's only persistent thought is the day when they would be able to walk freely around the streets at all times without having to be concerned for their safety.In order to protect women, this initiative recommends a novel technique.The goal of this project is to provide women with security so they never experience helplessness

The system is made up of a number of modules, including a Raspberry Pi-3 module, a memory card, a shock circuit, a buzzer, and a camera. Wireless technology is being used in this project for security reasons.When travelling at strange hours or when they feel helpless, users of an electronic women's safety jacket can utilise it to defend themselves. Our project is focused on protecting women because it is common knowledge that harassment of women occurs frequently.Although an Android based application on Women security is already out in the market but for non-android users, I thought an idea for developing a project based on women security using Raspberry pi model.

CIRCUIT DIAGRAM:
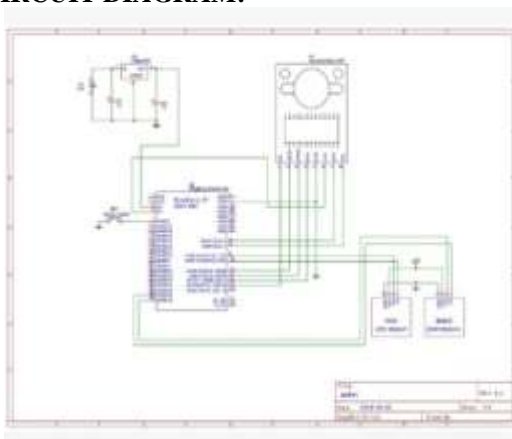
FLOW CHART:
The women's safety jacket flowchart is displayed below.
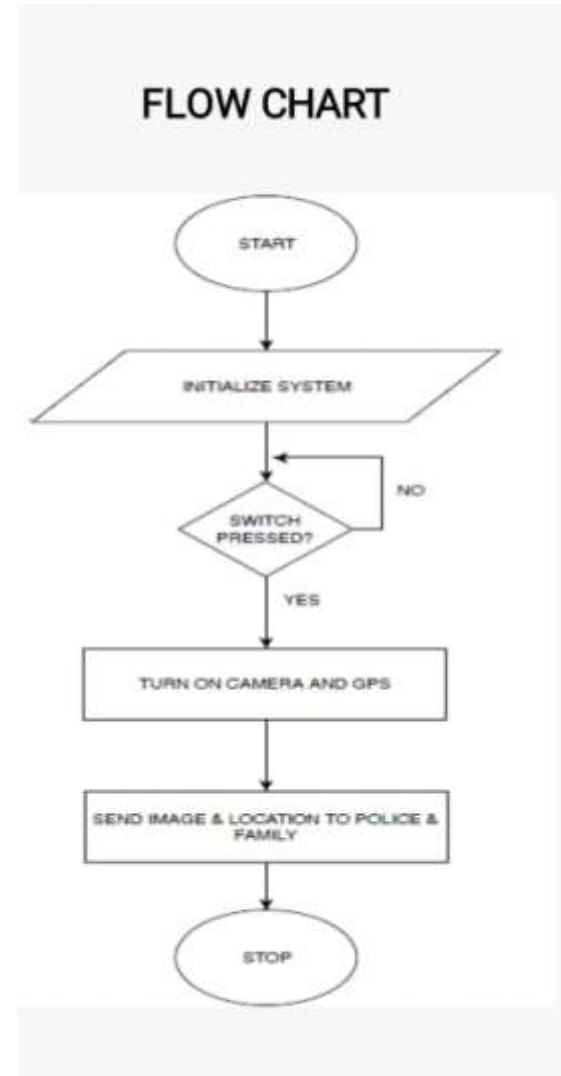
II.   RESULTS AND CONCLUSION:

The woman who genuinely needs it will benefit greatly from the suggested smart protection jacket.The victim's location is tracked using GPS modem (NEO6MV2), which also uses GSM modem (SIM800L) to forward messages to the appropriate contact numbers. This information is obtained from Google maps.

III. FUTURE SCOPE:

The design of this kind of jacket is highly practical, but the size of the device needs to be very small. This can be accomplished with further VLSI size reduction, at which point every woman in the globe can use this gadget in their daily lives.Since children's safety is a top priority for parents and teachers at their children's schools, smart protection

jackets can also be employed to keep children and the elderly safe.

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