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IOT based Womens Safety Device

Rupesh Mali[1], Viraj Jangam[2], Kaushal Mishra[3], Prof. Joslyn Gracias[4]
[1, 2, 3, 4]*Electronics and Telecommunication Department, Atharva College, Mumbai University*

Abstract: ***The status of women in India has gone through many great changes over the past few years. But still women are facing social challenges and are often victims of abuse and violent crimes. A thousand of incidents of physical abuse are happening to women's daily. The fundamental approach during this project is to intimate instant location and in conjunction with a message to a predefined variety like oldsters, friends, media, and girls' cell to avoid unfortunate incidents. The Nirbhaya case in city triggered the whole nation was the best motivation for this project. Neither girls nor their families got to worry regarding the time or places after they leave. All they have could be a device that may be carried around simply and worn whenever the lady feels unsafe. This project we to tend to gift style & implementation of a wrist joint wearable device by desegregation a couple of sensors to sense the worry or anxiety and a bank of capacitors that area unit able to shock the assaulter if they are available in a controlled contact. This info regarding the attack is distributed to the sensible phone, so the appliance on that will send messages to a couple of emergency numbers. And shortly assistance is on its way!***

Keywords: Arduino, IOT, Shock Mechanism, Health Monitoring, GSM/GPS

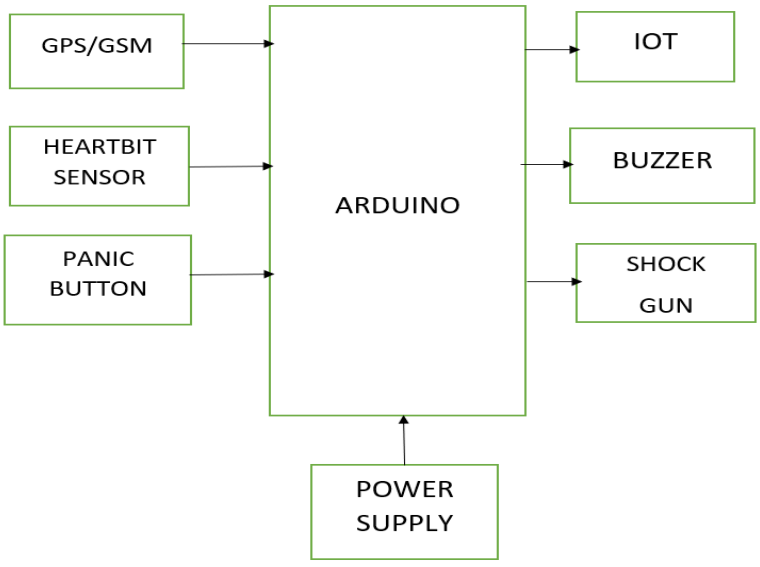
I. INTRODUCTION

The proposed system consists of two modules: touch sensing system &amplifier; Android based mobile phone. The first module consists of a touch sensor; whose properties change when touched violently (i.e. twisted or hit hard) one can figure out if the person is in danger. Once it is established that the person is in danger, the proposed touch sensing system strobes Android based mobile phone to send a message to preselect number. At the same time, a couple of capacitors in concern sensing system begin charging and every one able to discharge into the wrongdoer UN agency makes a physical contact with the victim. However, this inborn reflex is nice enough to incapacitate the wrongdoer for a decent few seconds that are crucial for fight or flight and not injury any a part of the body.

II. MOTIVATION

The difficult things face by every girl now-a-days gave motivation to return up with a security device to assist the ladies to try to do the work they likable to try to do. the appliance helps girls to beat their worry and may rove freely.

III.BLOCK DIAGRAM



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A. Arduino

Arduino may be a small controller to that sensors are connected. It will be purchased either online or in any stores. Arduino seems like a MasterCard sized board. There are several versions of Arduino. During this application Arduino-Uno board is employed. BY victimization cable Arduino board is connected to laptop computer to urge power. Arduino-UNO board is employed during this application.

B. GPS

GPS (Global positioning system) is employed to urge the position of the convenience regarding latitude and meridian. GPS receiver employed in our project is SKG13C from Skylab, it operates at 1575.42MHz frequency and three.3V or 12V DC offer. It's interfaced via USB port to Arduino, has low power consumption usually 45mA at three.3V and NMEA-0183 compliant protocol. This module operates at temperature vary of -40oC to 85oC. Latitude and meridian values are extracted from NMEA sentence.

C. GSM

In this project GSM SIM300 electronic equipment will be wont to send SMS, receive SMS and build the calls. The straightforward GSM operations are through with employment of AT commands. It's commonplace RS232 interface similarly as serial UART interfaces alongside SIM holder and external antennas. Operates at three.4V to 4.5V DC offer.

D. Heartbeat Sensor

In this project heartbeat sensing element (TCRT1000)it finds the heartbeat rate of the center. It's infrared (IR Sensor) light-weight electrode diode (LED) and detector organized aspect by aspect during a leaded package that blocks the encircling close light-weight which can have effect on the sensing element performance.

E. Panic Button

It is another choice for triggering Arduino just in case of emergency to require applicable and necessary actions.

F. IOT

The Internet of Things is ready to make new world, a quantitative and measurable world, wherever folks, and their Businesses will manage their assets in higher au courant ways that in no time expeditiously, and may build longer and higher au courant selections concerning what they need or have to be compelled to do. By sensing our close setting, the IOT can and may produce several sensible enhancements in our world, increasing our convenience, health, and safety, whereas at the equivalent time, up energy potency and luxury. The IOT are a replacement supply of wealth creation. Wearable are the good devices that folks carry or wear them, that typically connect via Bluetooth or Wi-Fi to a sensible phone, and from there to the net.

G. Buzzer

Buzzer can make a noise when women press It when they are in any kind of attacking.

H. Shock Mechanism

Electric shock will produce which affects to the attacker but not the victim because the ring is covered by insulating material. Inside the electric shock circuit, circuit isolated is used to avoid the raspberry pi damage from high voltage shock wave.

IV. WORKING

This is a women-safety wrist band that protects its user against any, and all physical attacks or assaults. The device is designed to look simple and not sophisticated like any other fancy robotic device. It is a plain wristband which when touched violently (i.e. twisted or hit hard), will react to the attacker's action, thus giving him enough lifelong lesson. When received any violent contact from the attacker, the capacitors will start charging and the microcontroller starts taking the input from touch sensors. The input taken is then processed and output is given to the Bluetooth Module or NFC sensors, which then connects the device to the victim's mobile phone. After a secure connection is established, the GPS module shares the location of through this connection, and these details of location along with an alert message, be relayed to all the emergency contacts, and a Police station's contact number that the user has set. The Capacitors, now charged to a certain level, will suddenly start discharging itself, thus giving a Tazer-like effect to the attacker. This device makes sure that the user remains safe, and the attacker gets a life-long lesson.

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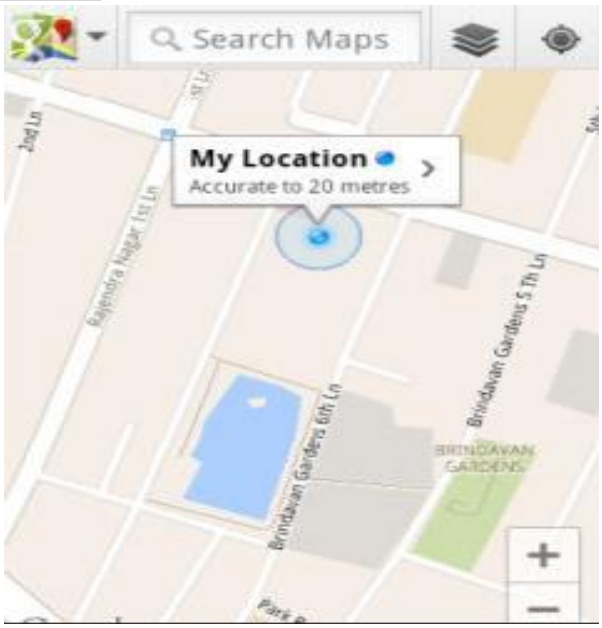

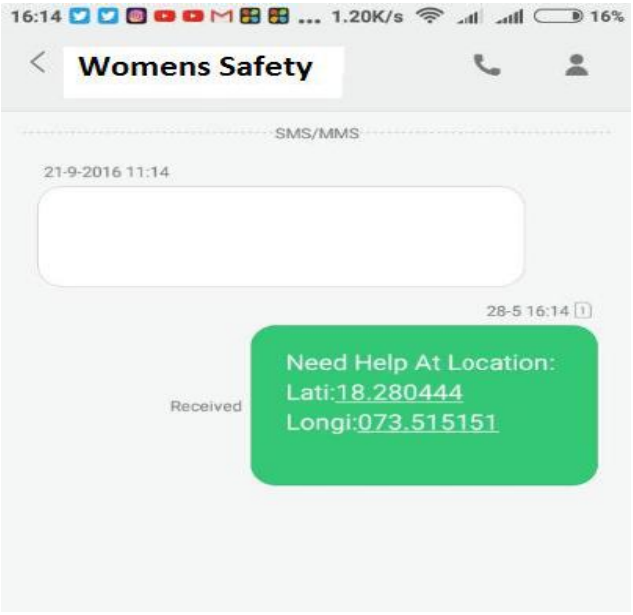

V. HARDWARE & SOFTWARE COMPONENTS

A. 4 GB RAM.
B. 100 GB HDD.
C. Intel 1.8 GHz Processor Pentium 4
D. Arduino UNO
E. Heartbeat Sensor
F. SIM808
G. Buzzer
H. Windows XP, Windows 7,8
I. Visual Studio 2013
J. MS SQL Server 2012/14
K. Arduino IDE

VI. CONCLUSIONS

In this project, we are developing a portable and easily wearable device interfacing touch sensor which when touched violently (i.e. twisted or hit hard) it considers as the occurrence of an event and a bank of capacitors is ready to shock the assailant if they try to touch. This information can be sent to the listed contacts by the way of SMS. The proposed band is capable of monitoring the touch whether it is a twist or whether hit hard. The shock gun helps the victim by giving a physical electric shock to the attacker or assaulter. The estimated cost of the device won't be very high since we make use of available user's Smart phone (not added to the cost of the device) and a few capacitors and sensors making safety affordable.

VII. FUTURE SCOPE

We can make the existing module in to a smart Device like a hand watch, ring, pendent or fit bit. We can conjointly create associate degree app for girl's security and Safety applications.

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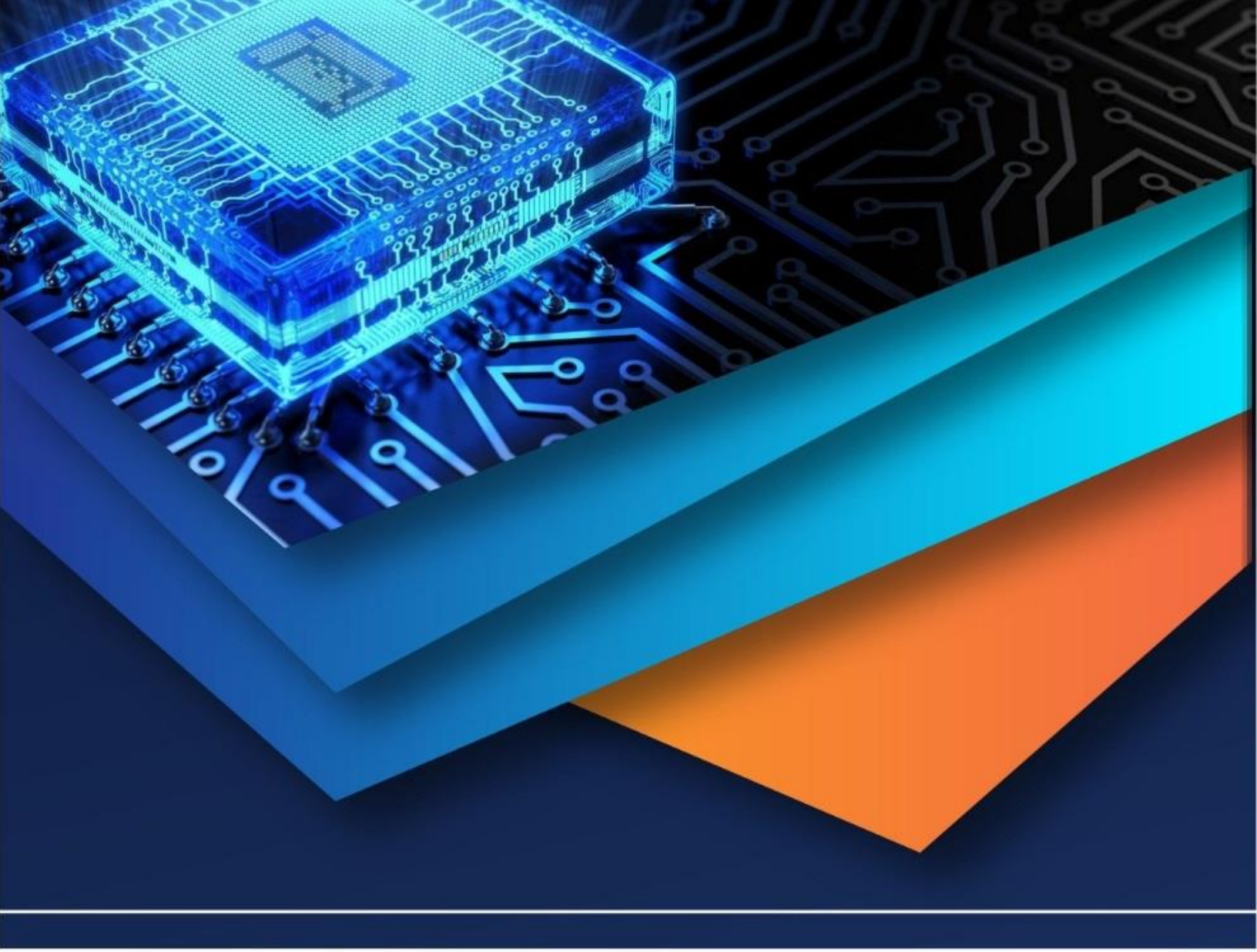

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