PANIC BUTTON ON TWO WHEELER'S FOR WOMEN

MINI PROJECT REPORT

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Submitted in partial fulfilment of the requirements for the award of degree

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in

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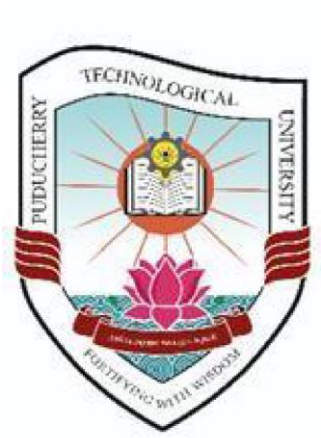

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This is to certify that this Mini Project report titled "**PANIC BUTTON ON TWO WHEELER'S FOR WOMEN**" is a bonafide work done by **SIVASUBRAMANIAN G (19EI1017), NIRUBASRI C (19EI1036), DEVANADANE S (19EI1014)** in partial fulfilment for the award of the degree of Bachelor of Technology in **INSTRUMENTATION ENGINEERING** during the academic year 2022-2023 in Puducherry Technological University and that this report herein does not form part of any other thesis/ dissertation on the basis of which a degree or award was conferred on an earlier date on this or any other candidate.

Mini Project Supervisor **Head of the Department**

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Submitted to the Evaluation committee held on 24 / 11 / 2022

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ABSTRACT

The project aims to develop safety and security for women while driving two wheeler's. More than a quarter of new scooters are being registered in the names of women buyers. The actual share of women using scooters is estimated at about 35 per cent and growing gradually.78% of the victims who are abducted are WOMEN. Many women and even minor girls have been abducted while driving. There are many reasons for kidnapping like women trafficking, physical harassement, two wheeler theft, etc. In order to overcome all these incidents panic button on two wheeler's can be fixed. Both men and women can be benefited when installed on a two wheeler. An alarming device is set up in such a way that it can be operated easily by women when in distress. This device can send an alert message and simultaneously raise an alarm. It is a device that lets the user send an alert message to quickly convey about the situation to their closed one by using GSM and GPS and seek for help from the people around them with the help of an high decibel buzzer. This can also be used as an emergency button for all the riders who use the vehicle at times of difficulties.

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LIST OF ABBREVIATIONS

S.NO	ACRONYM	ABBREVIATION
1.	GSM	Global System for Mobile Communication
2.	GPS	Global Positioning System
3.	LED	Light Emitting Diode

CHAPTER – 1
INTRODUCTION

1.1 OVERVIEW:

64% of women scooter buyers are below 30 years old or above as well as majority of women are been abducted in the same age group. Even minor girls are kidnapped while driving scooters. In order to escape from the threat, the riders even go to an extent to jump from the vehicle which leads to severe injuries at times loss of life. To overcome this situation a panic button in two-wheeler is very much required.

1.2 FEATURES OF EXISTING METHODS :

Bosch introduced automatic emergency call system for motorcycles. The system will help reduce crucial emergency response time in the event of a motorcycle accident. The Bosch Help Connect system features an 'intelligent crash algorithm' that's installed in the motorcycle's inertial sensor unit. The system, along with the Bosch Motorcycle Stability Control (MSC), measures acceleration and angular velocity one hundred times a second. In the unfortunate event that the motorcycle meets with an accident, the system detects the sudden change in speed and angular position of the motorcycle, and automatically sends out an alert via the Bosch Vivatar smartphone app. The Help Connect sends the rider's exact GPS location and other details to the Bosch Service Centre which then relays the information to emergency services.

1.3 PROPOSED METHOD:

This project aims to develop a safety and alarming device that can be operated easily, especially by WOMEN when in distress. This device can send an SOS call and simultaneously raise an alarm. The device most often used for such a purpose is the SOS button. It is a device that lets the user send an SOS alert to quickly communicate for help from a trusted person by using GSM, GPS.

1.4 BLOCK DIAGRAM:

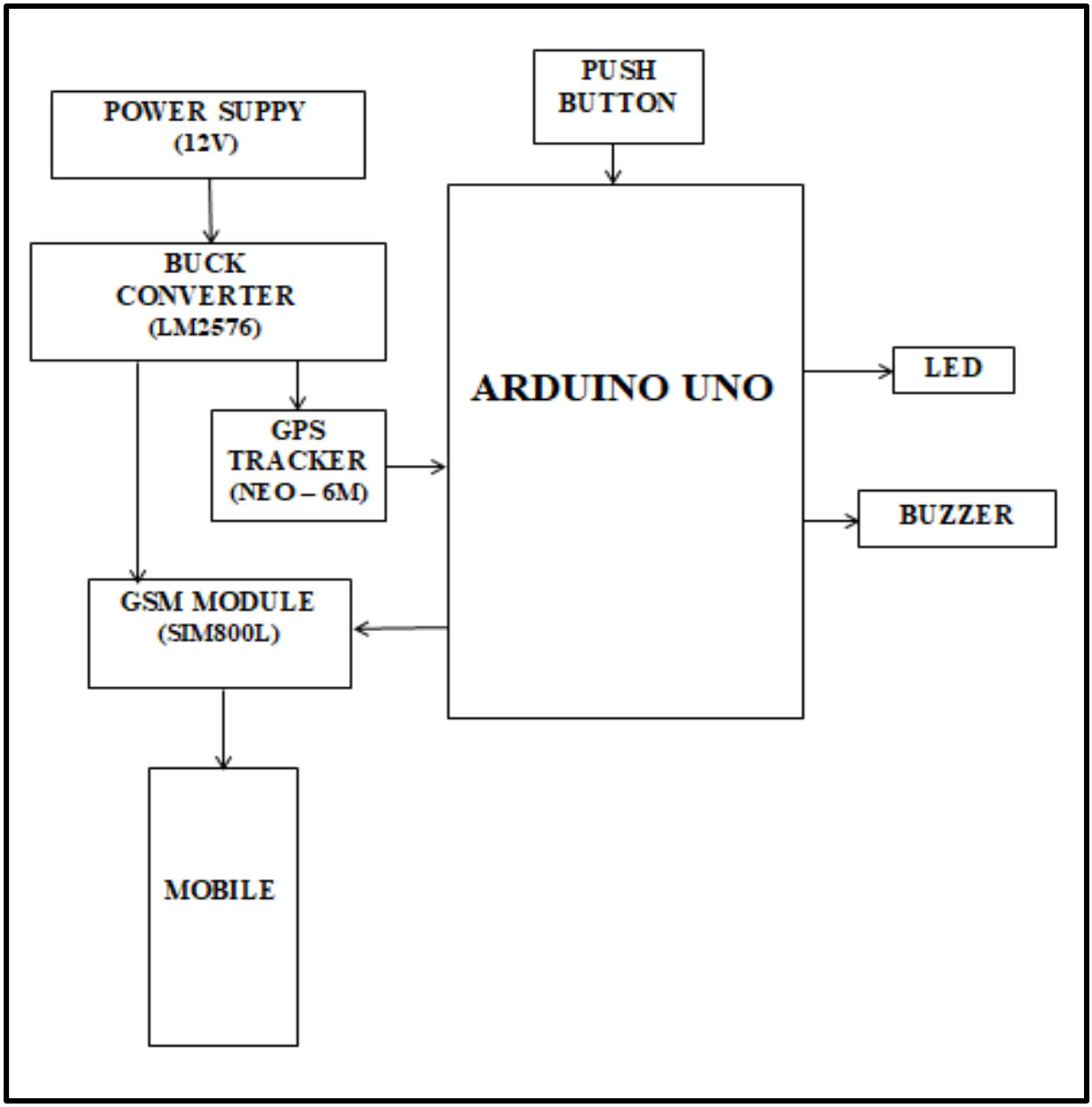


Fig 1.1 Block Diagram

1.5 PRINCIPLE OF WORKING:

Whenever the push button is pressed by the victim, at first the ARDUINO produces a high decibel buzzer to alert the people around, then the information about the caller, like her location and emergency SMS to the registered number in GSM module. As a result, the receiver mobile receives caller's alert message.

1.6 SCHEMATIC OF THE PROJECT:

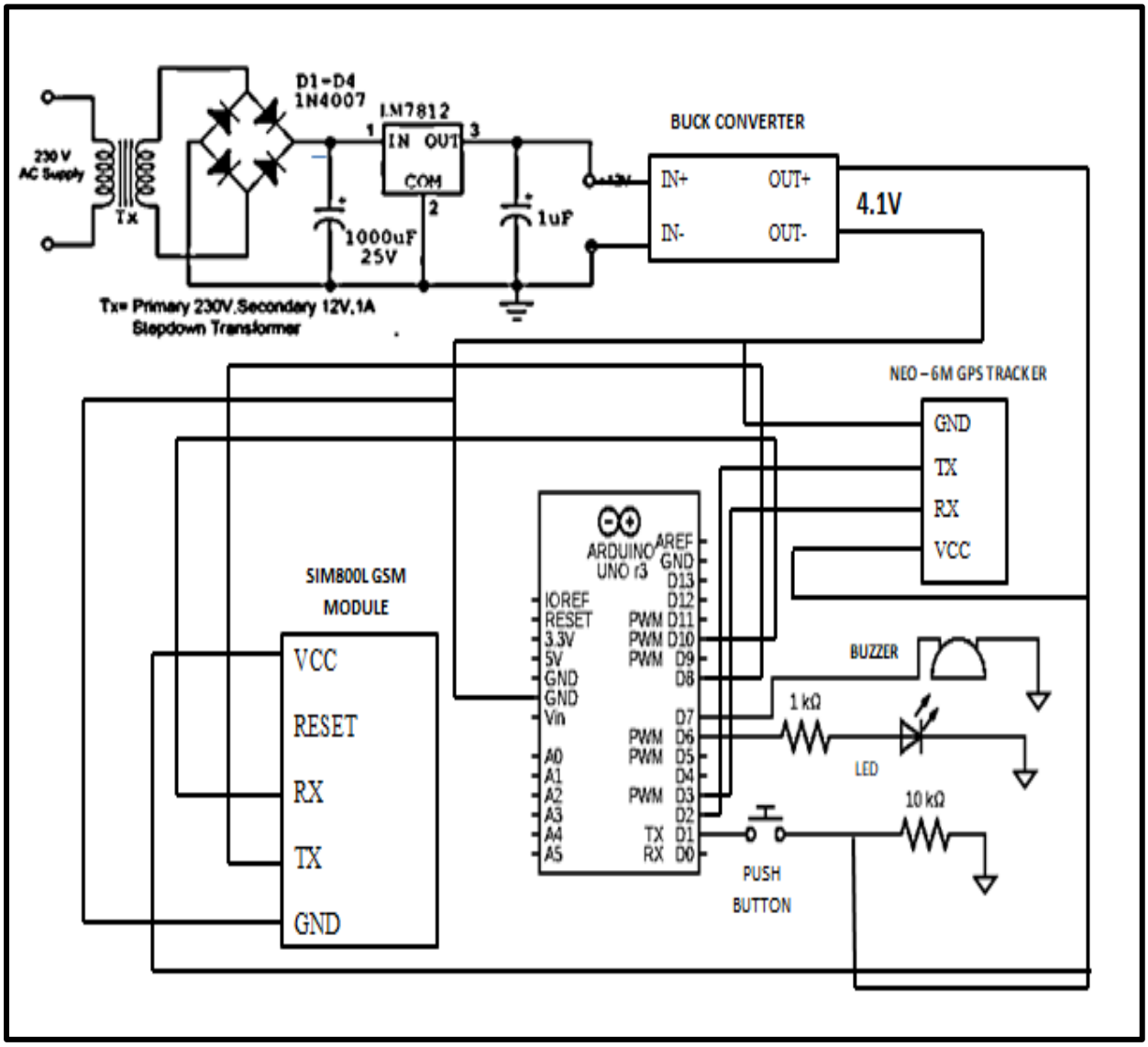


Fig 1.2 . Schematic Diagram

1.7 SUMMARY:

Thereby, the existing method of the project, features of proposed method, principle working of the project are stated above in Chapter1. The exact replica of the schematic diagram is also given in this Chapter.

CHAPTER – 2

HARDWARE IMPLEMENTATION

2.1 INTRODUCTION:

In this project, a customised and cost-efficient version of the alert button is built , which is stealthy and uses the best in class GSM-GPS modules along with a high-decibel buzzer.

2.2 HARDWARE COMPONENTS USED:

Table 1.1. Hardware Components

S.NO	COMPONENTS	QUANTITY
1.	Step Down Transfer	1
2.	LM2596 Buck Convertor	1
3.	SIM800L GSM Module	1
4.	Neo-6 GPS Module	1
5.	Buzzer	1
6.	Push Button	1
7.	LED	1
8.	Arduino UNO	1
9.	Resistors	2 (1k – 1 , 10k - 1)
10.	Capacitors	2 (1uF - 1 , 1000 uf - 1)
11.	LM7812	1
12.	Diode	4

2.3 SPECIFICATIONS OF HARDWARE COMPONENTS:

STEP DOWN TRANSFORMER:

A Step Down Transformer is designed to reduce the voltage from the primary winding to secondary winding. A Step Down Transformer is used as it converts a high voltage & low current alternating source to a low voltage & high current alternating supply. Rectifiers are

used to convert an AC power to a DC power. The bridge rectifier is used as it is the most efficient rectifier circuit for converting AC power to DC power.

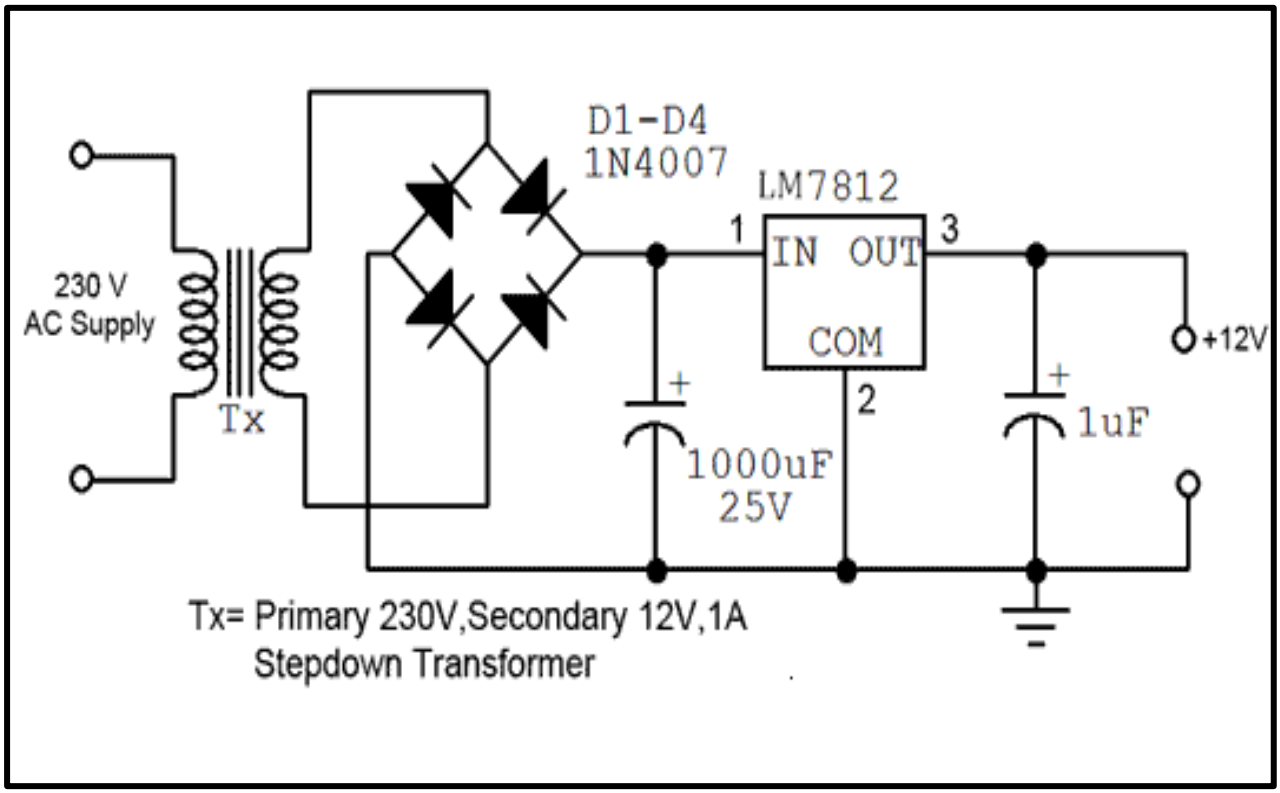


Fig1.3. Step Down Transformer

LM2596 BUCK CONVERTOR:

The LM2596 regulator is monolithic integrated circuit ideally suited for easy and convenient design of a step−down switching regulator (buck converter). It is capable of driving a 3.0 A load with excellent line and load regulation.

Fig 1.4. Buck Converter

SIM800L GSM MODULE:

SIM800L is a miniature cellular module which allows for GPRS transmission, sending and receiving SMS and making and receiving voice calls. Low cost and small footprint and quad band frequency support make this module perfect solution for long range connectivity.

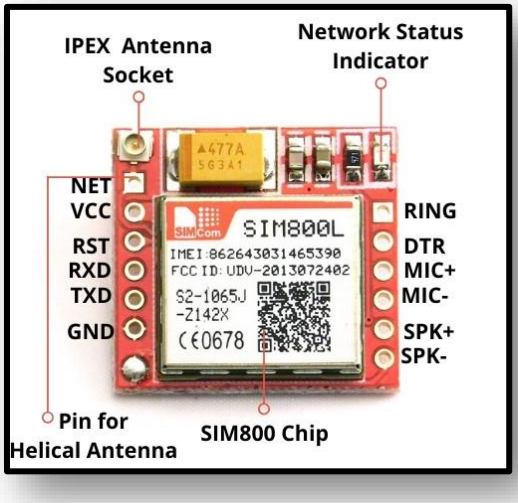


Fig 1.5 Sim800l GSM

NEO – 6 GPS MODULE:

The NEO-6MV2 is a GPS (Global Positioning System) module and is used for navigation. The module simply checks its location on earth and provides output data which is longitude and latitude of its position.

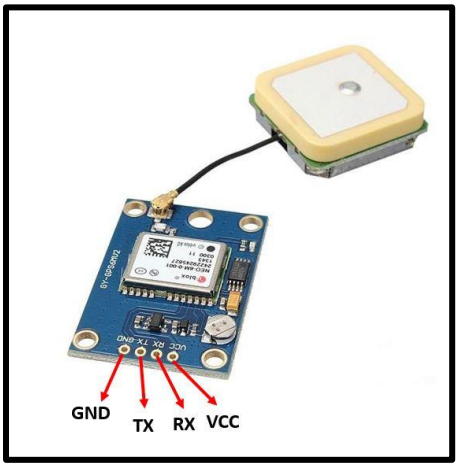


Fig 1.6. Neo-6M GPS

BUZZER:

An audio signaling device like a beeper or buzzer may be electromechanical or piezoelectric or mechanical type. The main function of this is to convert the signal to sound. Generally, it is powered through DC voltage.

Fig 1.7. Buzzer

LED:

LED (Light Emitting Diode) is a two terminal semiconductor device. The functionality of LED is as same as normal diode but it emits light when current passes through it. It is used in this project as a sign or visual representation to know that circuit is working properly.

PUSH BUTTON:

A push button is easy to use as they require only a simple touch to operate the equipment. This can be explained as simple power controlling switches of a machine or appliance.

ARDUINO UNO:

Arduino UNO is a low-cost, flexible, and easy-to-use programmable open-source microcontroller board that can be integrated easily The board consists of digital and analog Input/Output pins (I/O), shields, and other circuits. The Arduino UNO includes 6 analog pin inputs, 14 digital pins, a USB connector. It is programmed based on IDE, which stands for Integrated Development Environment. It can run on both online and offline platforms. In this project the USB port in the Arduino board is used to connect the board to the computer using

the USB cable. The cable acts as a serial port and as the power supply to interface the board such dual functioning makes it unique to recommend.

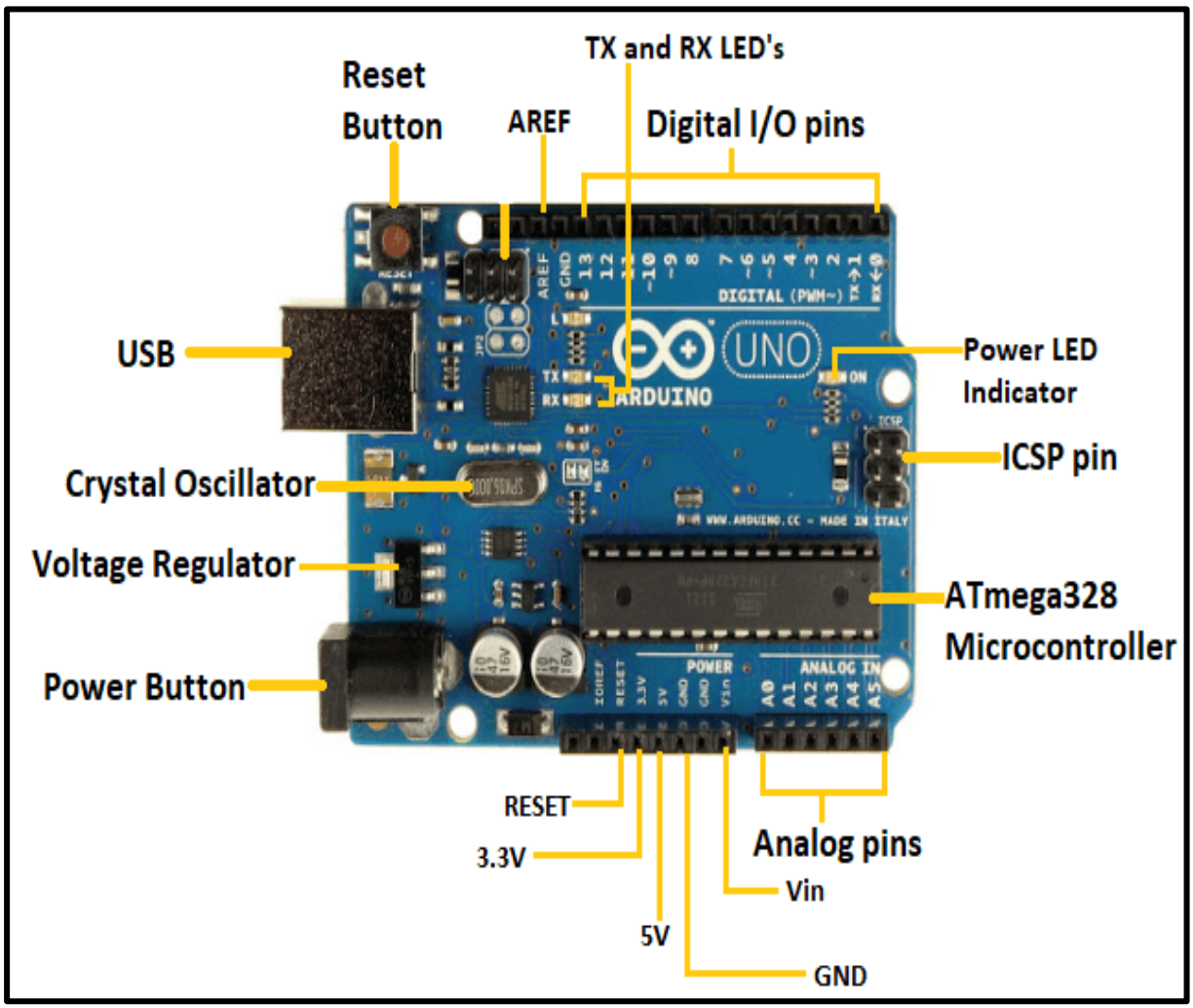


Fig 1.8. Arduino UNO

2.3 SUMMARY:

The above hardware components and their specifications listed in this chapter helps to give a good understanding of the components used in the project. These components are assembled together with the help of the software platform.

CHAPTER – 3

SOFTWARE IMPLEMENTATION

3.1 INTRODUCTION:

In this Chapter, the hardware components are assembled together and they are executed with the help of Arduino IDE which is an open source software Integrated Development Environment. The Arduino language is C++.

3.2 SOFTWARE USED:

The Arduino Integrated Development Environment or Arduino Software (IDE) - contains a text editor for writing code, a message area, a text console, a toolbar with buttons for common functions and a series of menus. It connects to the Arduino hardware to upload programs and communicate with them. Arduino IDE is an open-source software program that allows users to write and upload code within a real-time work environment. The code will thereafter be stored within the cloud, The system is fully compatible with any Arduino software board. Programs written using Arduino Software (IDE) are called sketches. These sketches are written in the text editor and are saved with the file extension .ino. The editor has features for cutting/pasting and for searching/replacing text. The message area gives feedback while saving and exporting and also displays errors. The console displays text output by the Arduino Software (IDE), including complete error messages and other information. The bottom righthand corner of the window displays the configured board and serial port. The toolbar buttons allow to verify and upload programs, create, open, and save sketches, and open the serial monitor.The displays serial sent from the Arduino board over USB or serial connector. The data is sent by to the board, by selecting text and click on the "send" button or by pressing enter. The baud rate is selected from the drop-down menu that matches the rate passed to Serial.begin in the sketch. The Serial Monitor does not process control characters; if the sketch needs a complete management of the serial communication with control characters, an external terminal program is required and connected to the COM port assigned to the Arduino board.

3.3 ALGORITHM:

Step-1: Start the program.

Step-2: Include all the header file required for the program.

Step-3: Declare the pin details of the port using data type “int”.

Step-4: Declare the receiver and transmitter pin of the Arduino UNO.

Step-5: Initialise the Baud Rate for the GPS module.

Step-6: Declare a variable for storing the Latitude and Longitude using data type”double”

Step-7: Declare the input and output pins used.

Step-8: Read the value for the input(button).

Step-9: Check the input is HIGH, if high get the GPS data, set the buzzer and LED to HIGH.

Step-10: A message alert to the number loaded in the program is set to the value of 1.

Step-11: If the input(button) is LOW, set the buzzer and LED to LOW.

Step-12: This loop runs continuously, while the code is always TRUE with a delay of 500ms

Step-13: Else the while loop fails.

Step-14: End the program.

3.4 SUMMARY:

In this Chapter, all the hardware components are interfaced in the bread board with the help of the source code. The code is compiled and was checked for errors, later it was compiled successfully and uploaded in the Arduino UNO board.

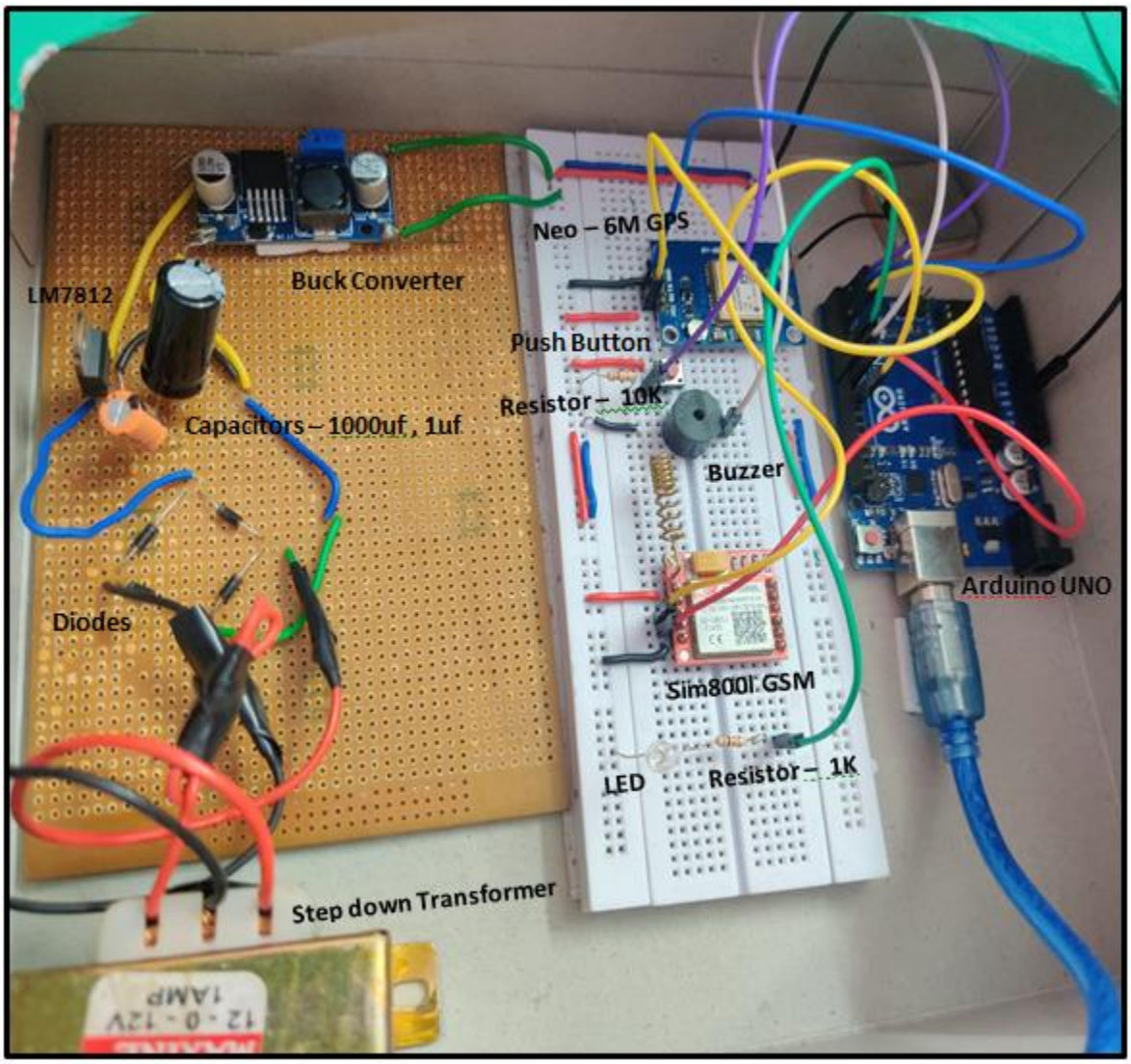
CHAPTER 4

RESULT AND CONCLUSION

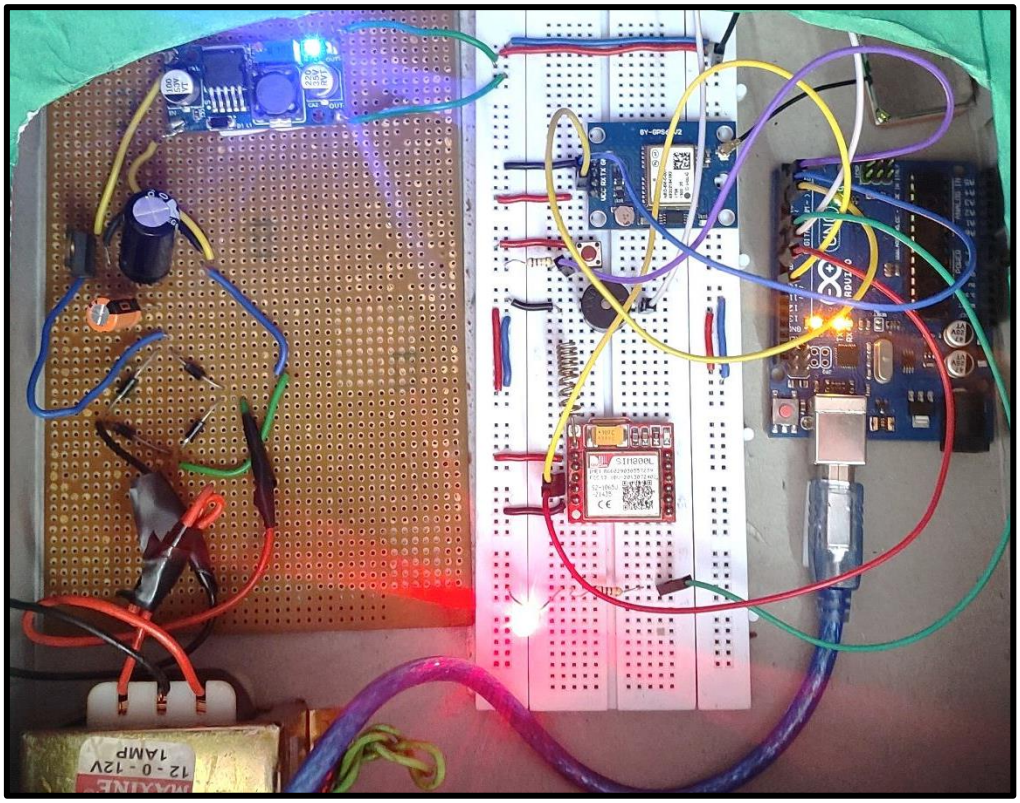
4.1. INTRODUCTION:

In this Chapter, the project is demonstrated as per the requirements and the prototype is completed. The proposed model enables to send an alert message and the location of the victim as well as produces an high decibel sound to alert the surrounding environment.

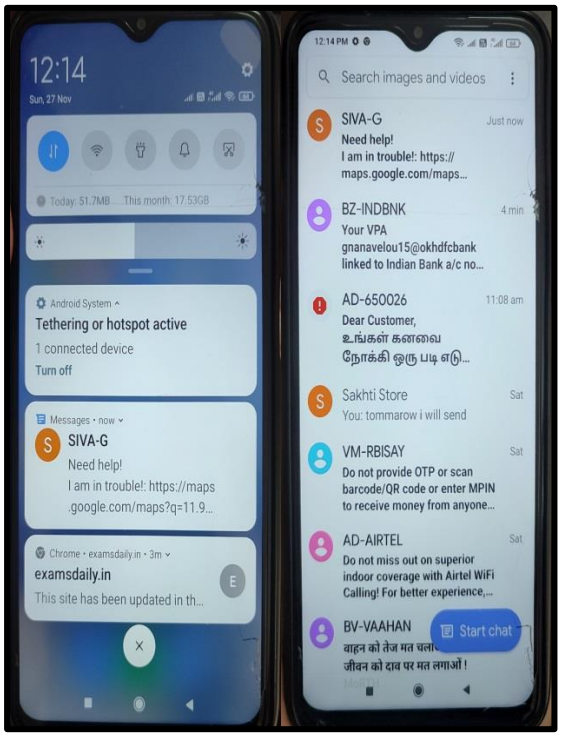
4.2 RESULT:



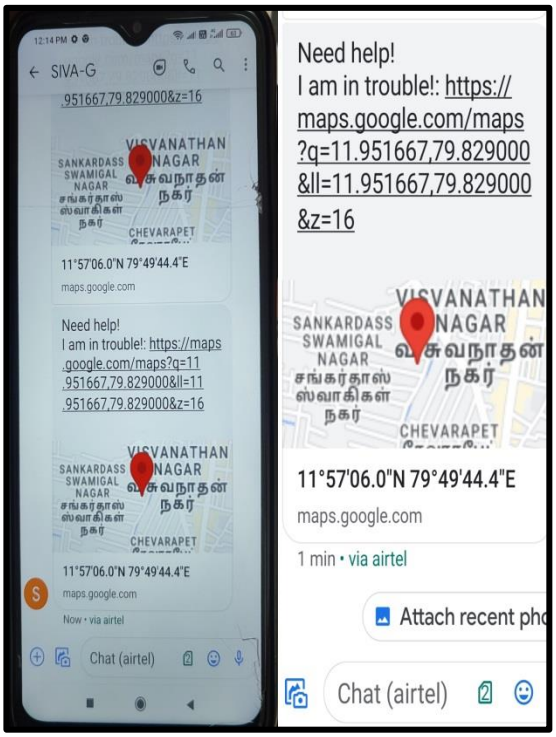
2.1 Proto model of Panic Button in Two Wheeler's



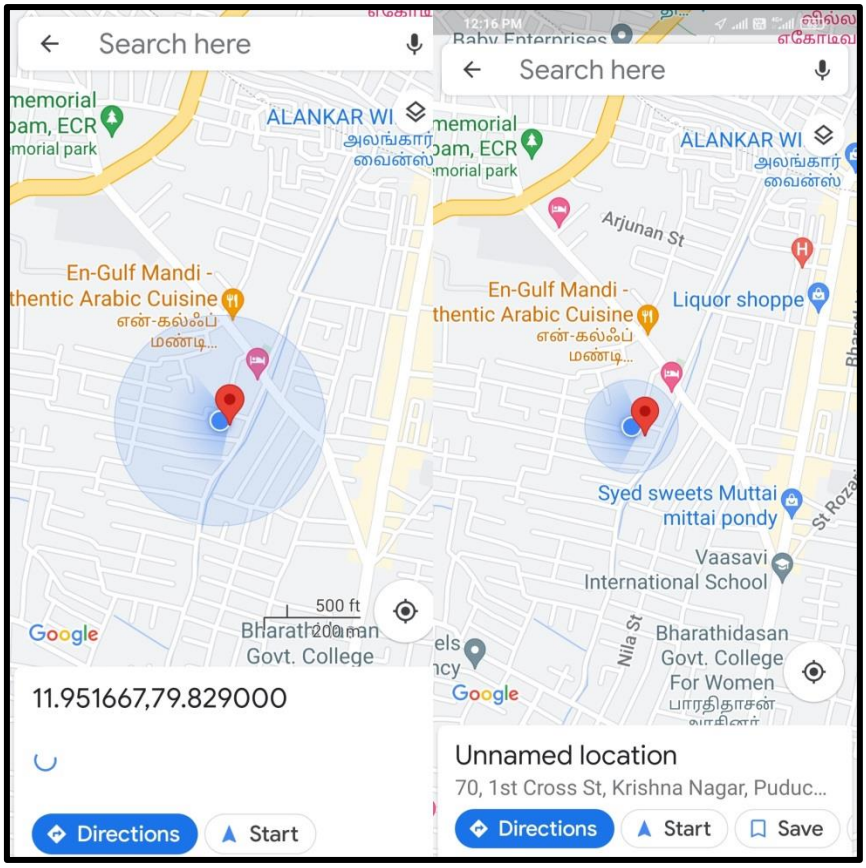
2.2. Output When the Switch is Pressed



2.3. SMS Received in Mobile



2.4. GPS Location link in SMS



2.5. GPS Location in Google Maps

4.3 CONCLUSION:

An attempt has been made to make a prototype of an emergency panic button in two wheeler's for women when in distress. Hence, it ensure safety while driving at any time of course and reduces human trafficking and crime activities. The total cost of the prototype was approximately Rs.1500 only.

4.4 INFERENCE:

It is inferred that by using basic and cost efficient components, a prototype is demonstrated in such a way that it esures safety for women and people who ride the two wheeler's.

4.5 FUTURESCOPE:

At present, Bosch has introduced automatic emergency call system for motorcycles where the system will help reduce crucial emergency response time in the event of a motorcycle accident. As time passes away, this prototype demonstrated can be implemented on two wheeler's not only for the safety for women but also for others facing emergency situations.

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