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SELF DEFENCIVE GLOVE FOR WOMEN SECURITY

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Abstract—Out of 100 more than 81% of women population has experienced some sort of harassment so that the women are becoming more afraid of stepping out of their homes. Women must have a capability to be free from violence, harassment, and discrimination; keeping this as a goal an IOT based device is introduced to solve this social problem. The solution is "SELF DEFENCIVE GLOVE FOR WOMEN SECURITY". This idea is to design a system which makes every place and every hour safer for women. Previous methods used GPS and GSM modules which increased the system complexity and size. Thus, to bring up the portability feature into existence this proposal uses mobile app connectivity through Bluetooth HC-05. This system sends geotag and SOS alert to the nearest police station, emergency contacts. The unique feature is the ESP32 Camera, which helps in capturing the images of the culprit. The idea is to make up for the time it takes police to arrive at the location.

Keywords—Glove, Bluetooth HC-05, Emergency, Women security, ESP-32, SOS alert.

I. INTRODUCTION

The safety of women matters whether it is at home, outside or at workplace. A lot of NGOs, rehabilitation centers and helpline numbers have been made operational in the past years but they are all cures to the harassment that has already happened and not the 'preventions' that we need. According to the National Crimes Records Bureau (NCRB), India recorded 88 rape cases every day in 2019. NCRB report highlights that rape vulnerability of a girl or woman has increased up to 44% in the last 10 years. The crime rate is skyrocketing. Women are not safe either at home or outside. Female travelers from other countries also find themselves in a precarious position when traveling to India. But these fears cannot stop them from social activity. There are laws, but there must be adequate security measures that must be strictly followed to protect against violence against Women.

II. LITERATURE SURVEY

There were many methods to get over the problem of women safety in the past days. Some of them used different kinds of sensors to measure the body parameters to generate the shock voltage (Reference 1). Then the shock circuit was incorporated in the heel of the footwear so the victim has to protect themselves with the kick with foot (Reference 2). Then the shock circuit is embedded in the glove but the alert messages were sent with help of GPS and GSM modules (Reference 3). Keeping all this in mind this approach is implemented.

Design a Self-Defensive Glove for Women Security. The primary purpose of this device to ensure that Women can protect themselves using a Smart Glove. An application named "Trace me" is developed to send the SMS to Emergency contacts. The hardware circuit incorporated in the glove that consists of electric shock circuit. The electric shock is enabled by click of push button that weakens the attacker.

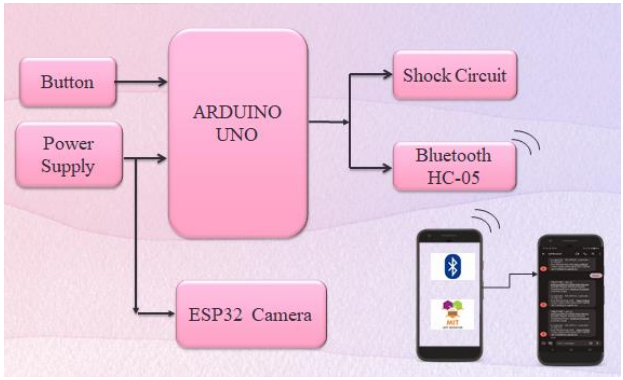
Self-Defensive Glove for Women Security overcomes the demerits of the current situation for Women Safety. This proposed project deals with a quick responding, economical protection system for an individual and especially for women. Self Defense module for women safety with location tracking. It could help women with technologies that are embedded into a compact device. Specially designed for women safety and protection this device is also provided with a shock mechanism to produce non – Lethal electric shock. The camera module is used for capturing and storing the picture of the culprit for further reference. All they need is a device that can be carried everywhere easily. An application named "Trace me" is developed to send the SMS to emergency contacts. The electric

shock is also generated by click of push button that weakens the attacker.

To equip women with a gadget that can give them a sense of protection**.** Self-Defensive Glove for women safety. It has the potential to help women with technologies that are embedded. Women are at risk of violence both in public and private spheres, in and around the home in neighborhoods and at city level. Risk is influenced. Women experience a higher degree of security which can restrict their Living. By using Self Defensive Glove for Women Security problem can be solved efficiently**.**

III. PROPOSED SYSTEM

This electronic glove is specially designed to protect women from attackers. This electronic glove is compact, light in weight and can easily be carried and the components used in this project are easily available and very economical. This smart glove restrict attackers by gives the shock without killing them. Input supply of 3 V with 3 to 5 Amp is given to the device. Current intensity and output are of the device are range of 100 to 500 mA and 600 V. Due to that the movement of attacker will be restricted. Other electric shock weapons available for women's safety are Compact stunt gun, Electric shock pads, Stun belts and Stun shield. This device uses a low current electric discharge and high voltage temporarily to affect muscle functions by giving minor pain without affecting major injury. By triggering a push button switch it will supply a shock through the projection tips. Once the shock is generated, a signal will be sent by Bluetooth to the MIT app, it will send the coordinate message as a SMS to the pre-defined person's mobile number with location of victim, which used for tracking purpose. This app makes this device light weighted and portable since GPS and GSM modules are replaced by MIT app. In this system ESP_32 camera is used as main source and illegal use of the weapon will be prohibited as well as the same evidence can help the user. Uses Arduino as a main source to give signal to the user defined person using MIT app in the Android phone connected to the Arduino wirelessly. The important features are Light weight and
Portability.



IV. IMPLEMENTATION METHODOLOGY

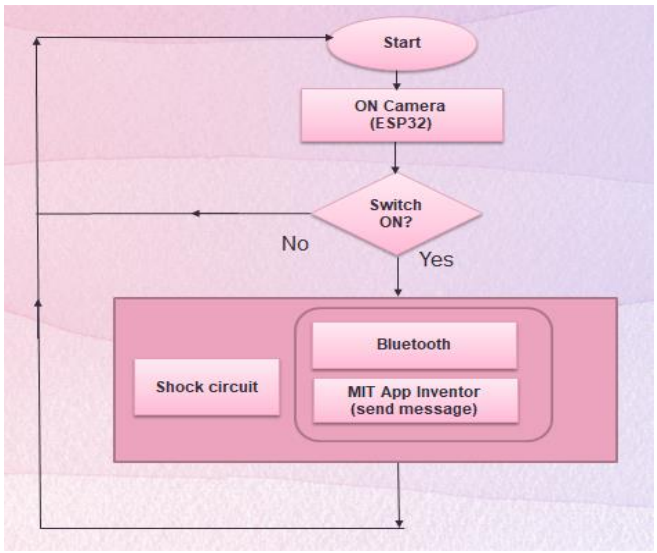
Many gadgets are in existence in order to provide women safety. This proposed system is used to reduce the time for help to arrive the location where the trouble is being caused. The system works in the following manner

Step 1: The Camera module is always ON and records the surroundings.

Step 2: When there is an emergency situation the button is pressed.

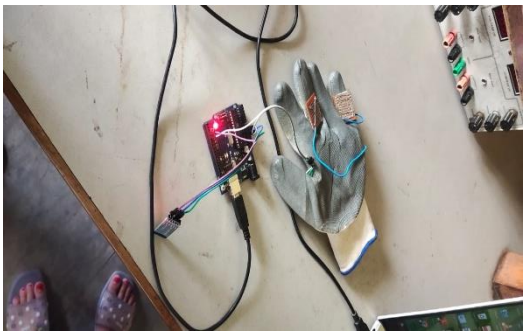
Step 3: The shock circuit gets enabled and TRACE ME sends the alert messages to the saved contacts via Bluetooth.

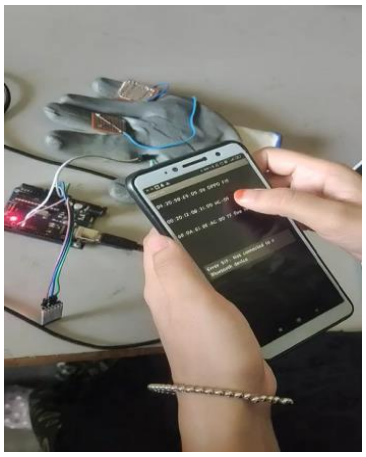
Step 4: The message consists of live streaming link which is used for further investigation.



V. HARDWARE IMPLEMENTATION OUTPUTS

The interfacing of shock circuit and the mobile app via Bluetooth connectivity is as shown below



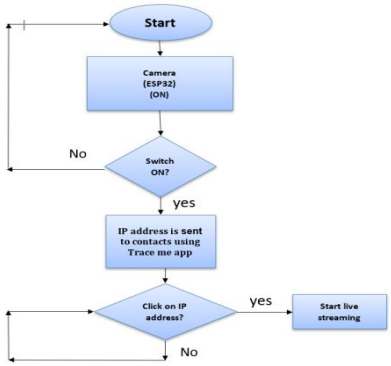


A push button is connected to Arduino UNO. Now the output of Arduino is connected to the shock circuit, Bluetooth, and ESP 32 camera through the required drivers.
Bluetooth receives the signal from Arduino, mobile app reads the location data like latitude and longitude of the person along with the live streaming link. After getting the data of the user location the data will be sent to the predefined numbers.

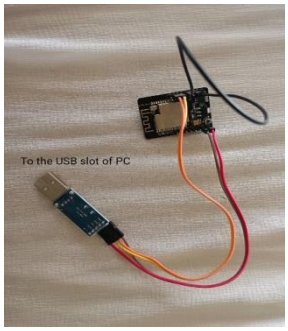
ESP32 CAMERA

Arduino IDE is used to program the ESP32-CAM board. So, you need to have Arduino IDE installed as well as the ESP32 add-on. After that, write the code to the Arduino IDE. Before uploading the code, need to insert the network credentials. Then, select the AI-THINKER camera module. Connect the ESP32-CAM board to your computer using USB to TTL converter.

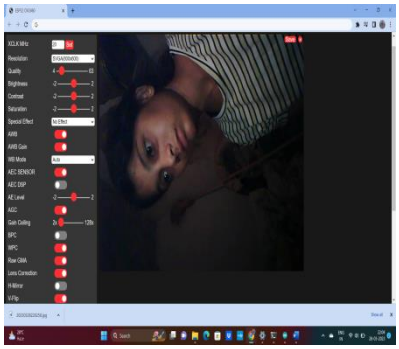
Flow chart (ESP32):



The connectivity and the streaming are shown below



USB to TTL convertor	ESP32 Camera
+5v	+5v
GND	GND
TXD	UOR
RXD	UOT
GPIO-0 to GND	-



VI. SOFTWARE IMPLEMENTATION OUTPUTS

MOBILE APPLICATION
DESIGNER SECTION

The Design Window, often known as "Designer," is where you define the style and feel of your program and the features it needs to have. Here, the user interface needsa list picker for Bluetooth connection, first button for disconnection, and second button to store the phone number. The instruction "input the mobile number" is displayed on a label, and the user's mobile number is displayed in a text box. The Bluetooth client is used in the connectivity section to connect to the Arduino controller.

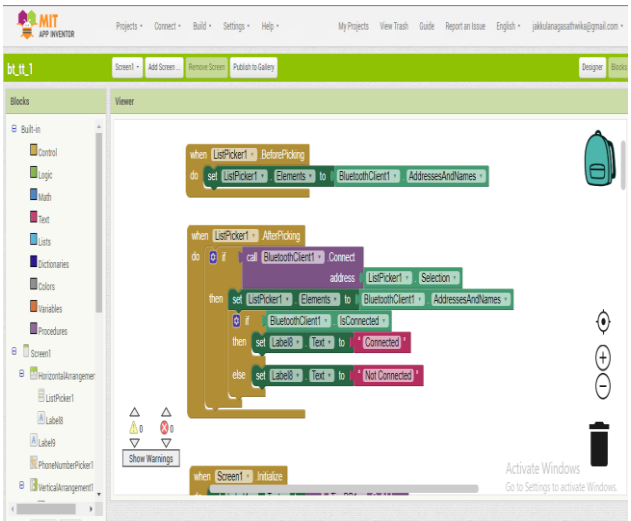
BLOCK SECTION

The Blocks Editor is a place where you program the behavior of your app. There areBuilt-in blocks that handle things like math, logic, and text. Below that are the blocks that go with each of the components in your app. In order to get the blocks for a certain component to show up in the Blocks Editor, you first have to add that component to your app through the Designer. A signal will be sent by Bluetooth to the MIT app, it will send the coordinate message as a SMS to the pre-defined person's mobile number with location of victim, which used for tracking purpose.

The below figure shows the application named TRACE ME before establishment of Bluetooth Connectivity

The below figure shows the TRACE ME application after the establishment of Bluetooth Connectivity

The below figure shows the Block section of the application after Bluetooth Connectivity.



MESSAGE SENT BY TRACE ME APP

VII. CONCLUSION

The main purpose of the project is to give the victim a sense of protection to defend themselves from the situation while the help arrives. The glove which is the main part of the project consists of the shock circuit that generates the voltages that give the attacker a shock.

The ESP cam is used to monitor the situation for the further references to the police. The app is used to send messages having address, longitude, and latitude of the location where the help is needed. This is a step taking forward to say that there is no need to be afraid of anything and provide them a helping hand that will be always there with them all the time whenever they are in need.

VIII. REFERENCES

[1] Sunny Deval, Tanuj Maglani, Imran Khan Smart Glove for Women Security International Journal for Research in Applied Science & Engineering Technology (IJRASET) Volume 6, Issue III, 2018, 2418 – 2421.

[2] Rishika K.K Smart Security Device for Women Safety International Journal for Research in Applied Science & Engineering Technology (IJRASET), 2019,Volume 7, Issue XII, 766 – 771.

[3] Ashlesha Wankhede, Ashwini Velankar, Priyanka Shinde, Portable Device for Women Security International Journal of Research in Engineering and Technology, Volume 4, Issue 3, 2015, 65 – 67.

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[5] Annu Kumari, Shikha Tripathi, Sandeepti Singh, "Eve Teasing Avoidance Gadget Along with Healthcare", International Journal Of Engineering Research& Management Technology ,Electronics and Communication Engineering, SRM University NCR Campus Modinagar India, March 2014.