

Team Name – **IoTinkerers**

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HEALTH TRACKER DEVICE

Based on the needs of problem statement and our team's vision, we have made a Health tracker device, and linked to it is an android application, connected via Bluetooth.

The hardware, which is simulated in proteus consists of the following components: -

- 1) SIM900 GSM module
- 2) GPS module
- 3) Thermometer LM35
- 4) Pressure sensor MPX4115 to simulate blood pressure
- 5) Heart Beat Sensor
- 6) Arduino UNO
- 7) Bluetooth Module HC05

When device is switched on, Arduino receives all the parameter's input. These parameters are then transmitted to our mobile app via the Bluetooth Module in real time.

Also, there are conditions set on the data inputs. If the Heart beat per minute value falls below 60 or rises above 110, or the blood pressure value falls below 80 or rises above 120, or the body temperature diverts from its ideal range (36-37.2 degrees Celsius), an SMS is immediately sent to the hospital's number via the gsm module. The contents of the SMS contain all the above health parameters and the device's GPS location, which is received from the GPS module.

This is the SMS sending procedure, that proceeds automatically and the content of the SMS can be seen on the Virtual terminal connected to the GSM output

Since the SMS is independently sent from GSM module by the device, critical health condition can be reported to hospital even if the Bluetooth connection between device and mobile disconnects, which increases the device's dependability.

The android app developed with this device also has a step counter that can keep track of steps taken, distance covered by the person, and can be set/reset whenever required.

Also, there is an emergency button which takes user to separate page, has a call button which can be used to directly call the hospital in case the patient is able to operate his phone, or to report casualty of any other person. The same page also has Google Maps window which can be used to check the location of nearest hospital.

Software Used-

- 1) Proteus version 7.7
- 2) Arduino version 1.8.19
- 3) MIT app inventor

Attached are all required HEX files, Proteus design file, Arduino code, and the APK developed.