Problem System:
Innovate to develop an effective and integrated healthcare system.

Name of the Project:
Smart Health Kit

1. Why are you choosing the particular theme (data as reference)?

There are many patients in India that suffer from common but dangerous diseases that affect their health and life, so they need to continuously keep up with their health status, or immediate relief in some emergency cases, to avoid serious complications of the disease on patient's health.

There are many problems that face patients from getting proper medical care:

- Lack of Tools for Doctors and Hospitals.
- Late arrival of ambulances.
- Lack of services.
- Lack of immediate treating of critical cases.

2. Briefly explain salient features of the proposed solution and how the proposed solution solving the problem statement?

The Smart Health Kit is technically feasible to the people. This system is very useful for common people. It gives availability to the people to take out their Heart rate , Temperature etc. It is easy to operate and can save a lot of time and money of common people. It is transportable so it can be very useful for the people who love traveling. No individual person needed for maintenance .

3. What makes your solution innovative and different?(research and write the difference).

This system will make it easier for the patient to follow up his health status on a regular basis, help him contact the nearest hospital or emergency center in critical situations, and connect with the doctor.

The proposed system can also do a report on a continuous basis for the patient to be able to follow his condition first hand. Also, the doctor can find out the patient's health status and to what extent it reached.
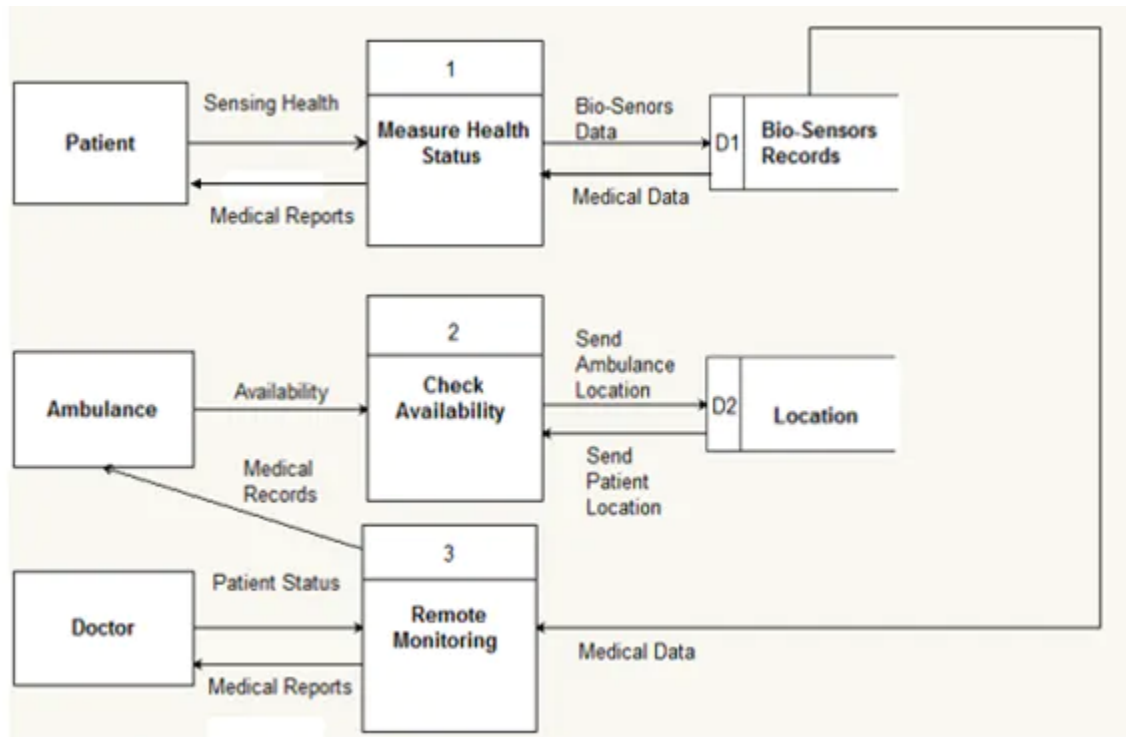
4. Describe the application areas of your solution such as the locations, scenarios and user profiles where their prototype can be deployed?

This concept is very much useful in day to day life for common people.

- This is useful for the people who love tracking and traveling.
- This can help people where the dispensary is not in a suitable distance from the house.
- This can help people who live in mountains or desert etc.
- Patients whose temperature has to be checked immediately .

## 5. What ATL tools/technologies have you used in the development?

1. <u>Hardware</u>
   a. Raspberry Pi 3 Model B
   b. Arduino Uno
   c. Pulse sensor
   d. DS18B20
   e. NodeMCU ESP8266 Breakout Board
   f. GPS U-Blox 6
   g. Nokia 5110 LCD 84x84
   h. Adafruit RGB Backlight LCD - 16x2
2. <u>Software</u>
   a. Raspberry Pi Raspbian
   b. WCF

A. <u>Pulse Sensor:</u>

Heart Pulse sensor is a heart-rate sensor for Arduino. We connect the sensor with Arduino and start to measure the number of beats per minute. When the heart beat status changes from stable to critical, the Raspberry-pi sends a relevant message to the web services to deliver an Ambulance.
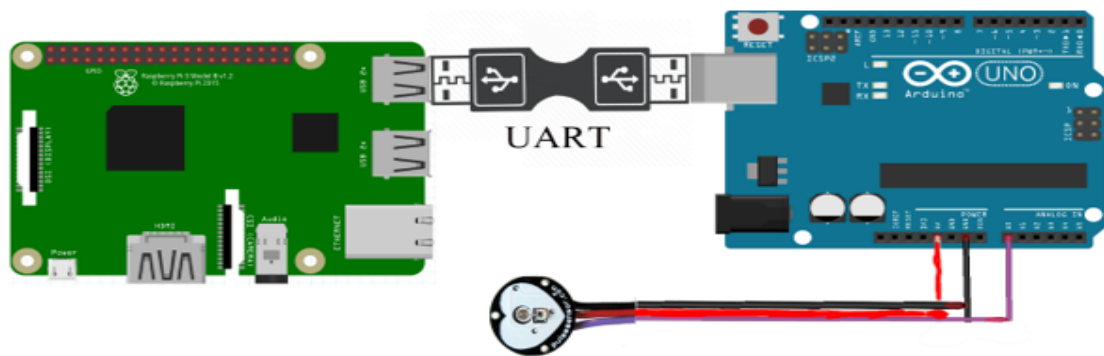
Heart rate pulse sensor Connection
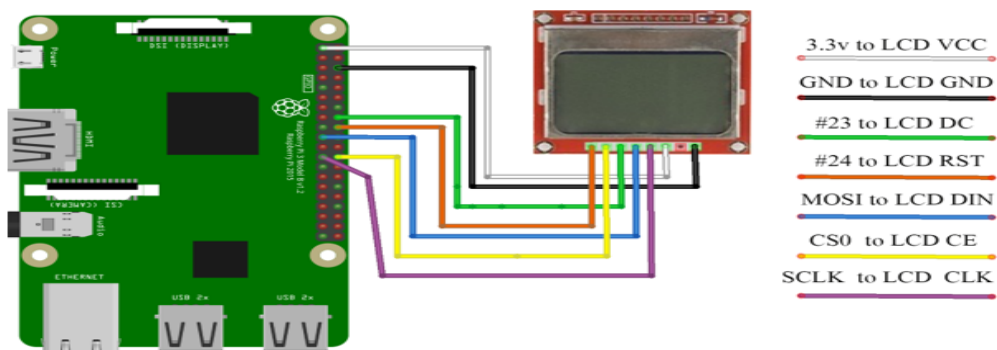
B. <u>Temperature sensor:</u>

_____ A temperature sensor is an electronic device that measures the temperature of its environment and converts the input data into electronic data to record, monitor, or signal temperature changes. There are many different types of temperature sensors.
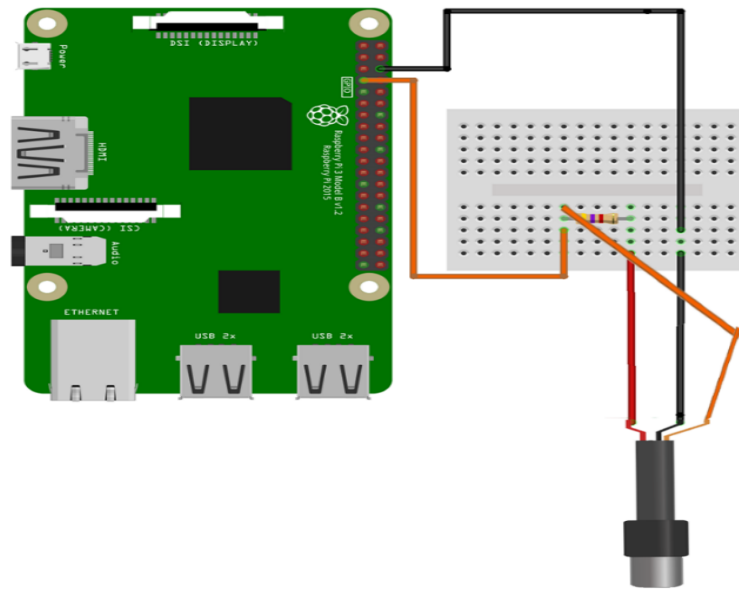
Temperature sensor connection

C. **Nokia 5110 Graphic LCD:**

The **Nokia 5110** is a basic **graphic LCD screen** for lots of applications. It was originally intended to be used as a cell phone **screen**. ... The PCD8544 is a low power CMOS **LCD** controller/driver, designed to drive a **graphic display** of 48 rows and 84 columns.

3.3v to LCD VCC
GND to LCD GND
#23 to LCD DC
#24 to LCD RST
MOSI to LCD DIN
CS0 to LCD CE
SCLK to LCD CLK

Nokia 5110 Graphic LCD Connection

D. GPS with NodeMCU:

Alphanumeric LCD displays are used to display alphabets and numbers. The 16×2 intelligent **alphanumeric** dot matrix displays are capable of displaying 224 different symbols and characters.
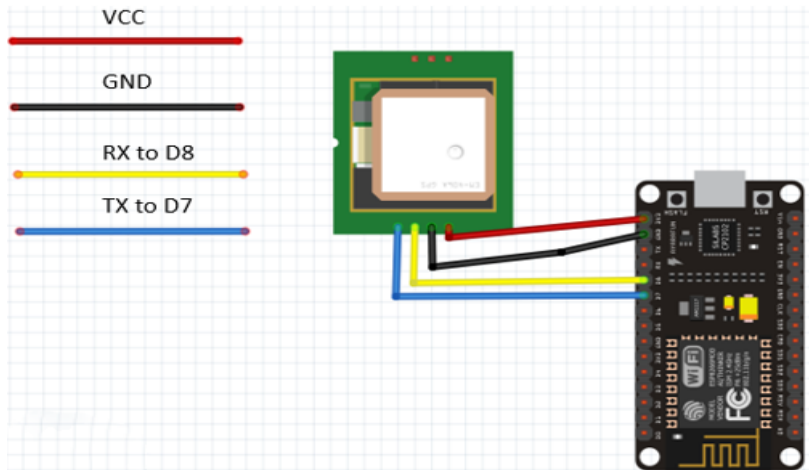
GPS with NodeMCU Connection

6. If you are selected in Top 100, how will you further refine your prototype?

We will further refine the prototype by-
1. Making it cost effective.
2. Adding some more tools.
3. Contact the government for approval and installation.

7.Briefly explain key job roles and contributions from each team member.

A-Empathy-Teacher and student
B-Brainstorming- Teacher and Student
C-Ideate
D- prototype
E- Documentation

Reference:

https://create.arduino.cc/projecthub/akatsuki/smart-health-kit-4be597?ref=search&ref_id=healthcare&offset=21#toc-how-does-it-work-0.