Group 24 Idea doc File

1. **> Group Members**

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1. **> Problem Statement**

**Graphical user interface, text

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1. As we all know, Covid-19 is not stopping and has proved to be very dangerous. This has greatly affected mindset of people. They are taking various precautions. They do not want to risk themselves in anyway. They want to be assured that they are 100% safe.

**B)**People are getting more and more health cautious. This is because this disease isn’t as obvious and people can be passively infected. Unfortunately, these people also greatly influence the spread. This is because they do not quarantine themselves and think that they are not a carrier.

**C)**Thus, as a precaution, and as a remedy to not knowing about being infected, people need to monitor various health aspects of their body. This is just to be sure that they are not infected without going through complicated tests. Some of these health aspects include Heart/Pulse Rate and Body Temperature.

**D)**Wherever possible, they need to monitor some health aspects of the people around them too. At the least, we need an estimate of temperature of people around us to be sure that they do not have fever and are probably not infected with the virus.

**E)**There are many devices available in the market for these purposes. For example, Oximeter for blood oxygen level and heart rate; thermometer for body temperature; IR thermometer for temperature of other people.

**F)**But there is a major problem here. All these devices are discrete and inconvenient to use. One can’t be pointing an IR thermometer to people all the time. One can’t place a thermometer on their body continuously – it’s weird! Besides this, one can’t be looking at the readings of so many devices all the time.

**G)**A good device is one which does not require the user to consciously operate it. It must do everything itself without making it inconvenient to the user. It must not require user’s continuous attention. It must not disturb the user in any normal situations. It must not require the user to look at the readings continuously, and it must only disturb user when something is wrong or abnormal. It must not look awkward in the society and must not draw unwanted attention. It must be convenient to use and easy to carry everywhere.

1. Thus, we came up with an Arduino based system which uses various sensors and Bluetooth communication with a smartphone in order to make device which does it job without attracting anyone’s attention- A Fitness Cap!

**4->Solution in theory**

**Graphical user interface

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With the help of IOT devices and module I have linked various modules that keep track of the wearer’s health and display’s it wirelessly on the user’s smartphone.

1. IR Temperature Sensor -> It senses the temperature of the approaching body and alert’s the wearer if the approaching target has any kind of fever based on the temperature.
2. Temperature Sensor -.> Monitors the wearer’s temperature and notifies if the wearer is having any symptom of fever .
3. Distance Sensor -> Helps maintain the social distancing as covid has still not completely gone.
4. Pulse Rate -> Replaces heavy machines and other devices that monitor your pulse as well as notifies your max and min pulse in the set time.
5. Gyroscope ->Calculates the number of head rotations the wearer has made while sleeping and predicts what type of sleep the wearer has .
6. Smart Phone Display-> All the data is wirelessly connected to your smartphone app which can help you keep track of your health .
7. **Steps/Algorithm**

The Steps that are being followed are :-

1. Design the Cap and the how the components will fit in.
2. Code and Connect Each module Individually to the micro controller ( Arduino Lily pad) and check it’s functioning on the bread board.
3. Connect all the modules and test run the modules all together.
4. Make an app via MIT app-inventor to display the output.
5. Connect the blue-tooth module and the app and check the results.
6. Remove the circuit from the breadboard and solder as well as stitch the components to the cap.

A close-up of a circuit board

Description automatically generated with medium confidence