**IETE SUMMER PROJECT PROPOSAL**

**PROTEGO**

**FACE RECOGNITION, TEMPERATURE MEASUREMENT AND NON-CONTACT SANITIZER DISPENSER SYSTEM**

**Introduction:**

We are currently at a point in time where public and private institutions, offices, and other establishments have begun to open despite the fact that the pandemic still remains and this calls for proper precautionary measures to prevent any further spread. This project aims to do that. In spaces such as schools, colleges, offices, etc where an attendance registry and conventional screening is needed, this setup will help to automate that process and make it simpler for the host to monitor this data.

**Components and Software required:**

1. Raspberry PI 3 Model B
2. Raspberry PI 5MP Camera Board Module
3. IR Sensor Module
4. Temperature Sensor MLX90614
5. OpenCV
6. Python 3
7. Raspberry Pi OS

**Idea:**

To create an All-In-One setup that would allow attendance taking, subject in-out time monitoring, temperature screening and sanitizer dispensing to all be compressed into one compilation which will result in the automation and increased efficiency in carrying out the functions that it entails.

**Method of Implementation:**

Due to the unavailability of necessary components, this project will be limited to its code and wherever possible, simulations/ diagrams.

There are approximately 4 modules to this project and the whole process is triggered by the Proximity Sensor (which is executed using the IR Sensor Module), if the subject enters the range of the device, the process will begin with the face of the subject being recognised (using the Camera Module and OpenCV code) followed by temperature detection using the MLX90614. The temperature will be checked to see if it lies within the safe limit and if not, the host will be notified and a message will be displayed. The temperature and name of the subject (obtained via face recognition) along with the entry time will be inputted into the host system which can be accessed at will, for monitoring purposes. Following these processes, the proximity sensor will trigger the dispensing of sanitizer. With that, the purpose of the circuitry will conclude.

**Time flow:**

Week 1- Acclimation of data, components and code required

Week 2- Coding of Temperature Measurement and Proximity Sensing Modules

Week 3- Integrating Proximity Sensing with beginning of the entirety of the process and coding of Sanitizer Dispensing Module

Week 4- Coding of Face recognition Module and subsequent testing

Week 5- Integration of Modules and determining procedure of tabulating/processing output data

Week 6- Testing and final prototype