CRITERIA A

CLIENT FOR PROJECT

My client for the project is the owner of a general store near my house. The client runs a moderately sized general store that sells important utility goods which are especially instrumental for the pandemic. As a result of relatively small size of the store, it does not turn in large enough profits for my client to buy testing kits for the multiple visitors and to ensure that they stay at least 6 feet apart from each other, at least at the entrance of the shop. Since my client's shop is the only shop that provides the abundance of goods that it does in the nearby vicinity, many people from the area visit the shop.

In the current situation of the novel coronavirus, some form of testing is extremely crucial to ensure the physical and medical safety and security of the shop's visitors. Since testing kits are expensive as mentioned earlier, one way to ensure this is to test a symptom of the virus – higher temperatures. For this to take place, the temperature of each person who enters the shop needs to be noted and anyone whose body temperature is higher than the average normal body temperature, 97.5 degrees Celsius, should step away from the shop.

RATIONALE FOR PROPOSED SOLUTION

The software used to measure the temperature is a temperature sensor with the OpenCV software installed in it. This would ensure that the sensor would measure the temperature of the person as well as record it in a tabular form, generally for further analysis. OpenCV requires the use of the programming language Python which would also help me connect it to a hardware product that will notify the owner when the temperature is higher. This is done by scanning the image for a person using a face scanner. When there is a person on screen, the person is stopped, their temperature is measured and their image is taken. When the temperature is higher, the owner stops the person from entering the shop or there is a buzzer rung automatically telling the person not to enter the shop. The facial recognition software requires machine learning and the programming language of Python.

In order to recognize faces, the tools required are an IP camera and a wire. The IP Camera requires Open CV technology using the Python programming language. In case any additional facial recognition sensors are required to complete the task, Arduino may be used. The procurement of these resources has been completed and the details and functions of the technology have been thoroughly learnt. The second part of the project, measuring temperature, requires a temperature sensor and the aforementioned Open CV technology. Since it requires a sensor, wires, breadboard, and Arduino-related electrical tools are needed. Similar to the first part, this aspect of the project requires Python programming language, and the procurement of necessary resources and learning of related technologies has been completed

SUCCESS CRITERIA

- Use machine learning to determine when a person nears the entrance
- Upon a person reaches a certain, send alarm via a buzzer
- Measure distance between two visitors

- When distance > 6 feet or 12 feet (based on government guidelines), send alarm via another buzzer
- Take a picture of person
- Adds image to another cell
- Measure temperature
- Take note of temperature
- Enter temperature into cell next to face
- When temperature > 97.5 degrees Celsius, send alarm via the second buzzer