Final demo plan: COVIDoor [Team 93]

VideoLink: https://youtu.be/ws5zLY3xrC4

Requirements

1. Must differentiate a face with a mask on to those without a mask on.
2. Must accurately measure a person's temperature.
3. Must automatically decide whether to open the door or not.
4. Must have a working automatic door controlled by the system.

Demonstrations

1. The Software Demonstration

Requirements: 1 to 3

Demo

The demonstration will be performed through the computer testing the CPU logic if it works with decent timing and quality meeting all requirements. The video will show if all subsystems are integrated pertinently and functions as each subsystem are designed to be. The two improved factors from the mid-term demo are temperature sensor and central decision logic.

Expectation

The expected performance of the software is that it takes the inputs of camera and IR sensors and makes the right decision following the instructed condition. The software should open the door if the person has a mask on and have a normal temperature.

Result

The result was very successful, and the software was able to take in the inputs and correctly decide when to open the door.

2. The Full System Demonstration

Requirements: 1 to 4

Demo

The demonstration will contain a fully functioning integrated physical system of our project. The completed system includes all software of subsystems introduced in previous demo and the automatic door subsystem. Four people will attend the operation testing for the demo.

Expectation

- When a person without a mask comes, the door will not open and a message will be printed to wear a mask.

- If a person with a mask and a normal body temperature come, the door will open and he or she will be able to pass the door.

- If any of the above conditions are not met (for example a high fever or not wearing a mask), the system will not open the door indefinitely.

Result

The demonstration was successfully done. The automatic door subsystem operated as expected, and the system only opened the door to users who had a mask on and have a normal temperature.

Block Diagram

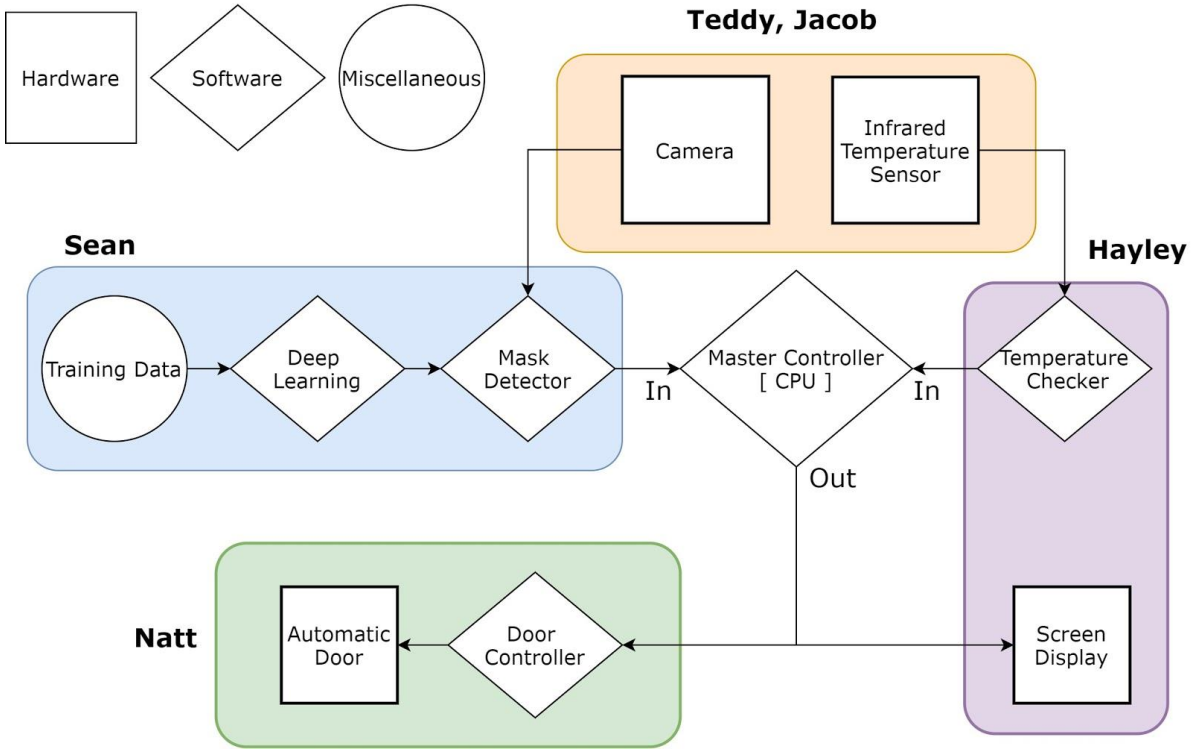


Figure 1.1: System-level UML2 Block Diagram

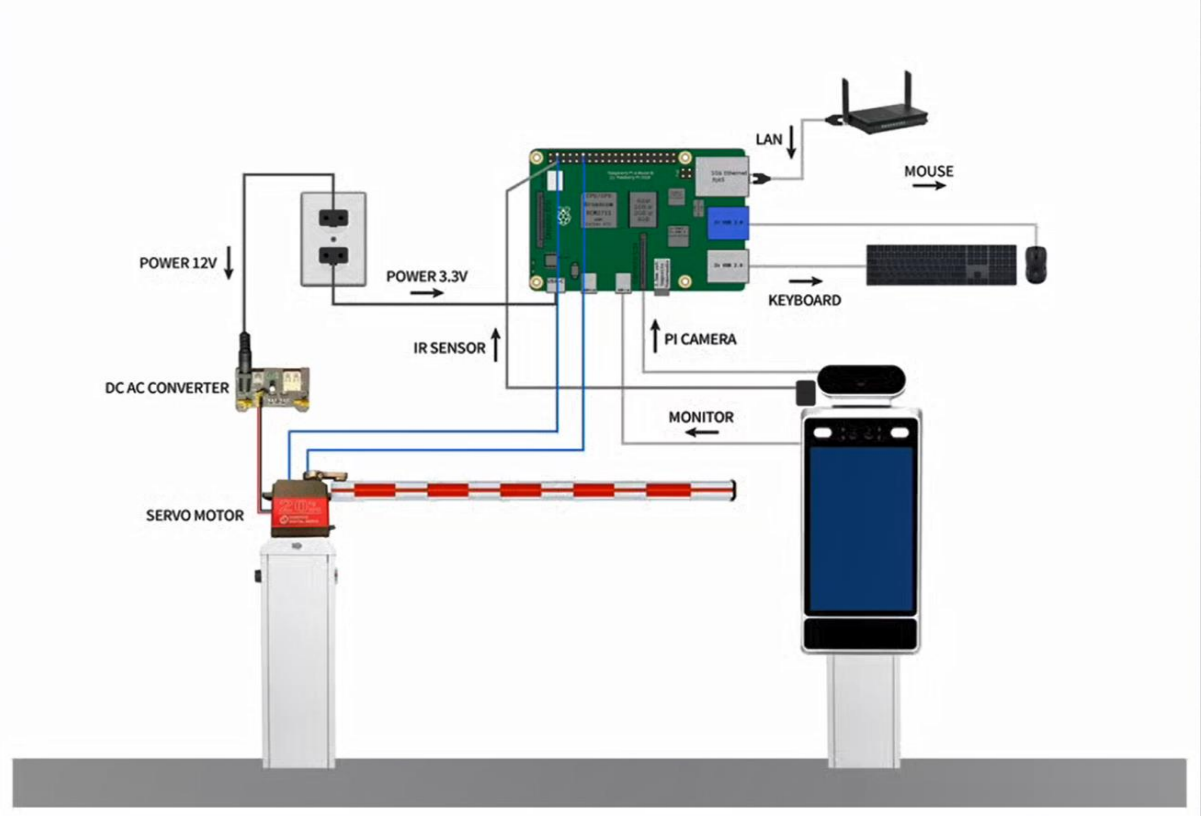
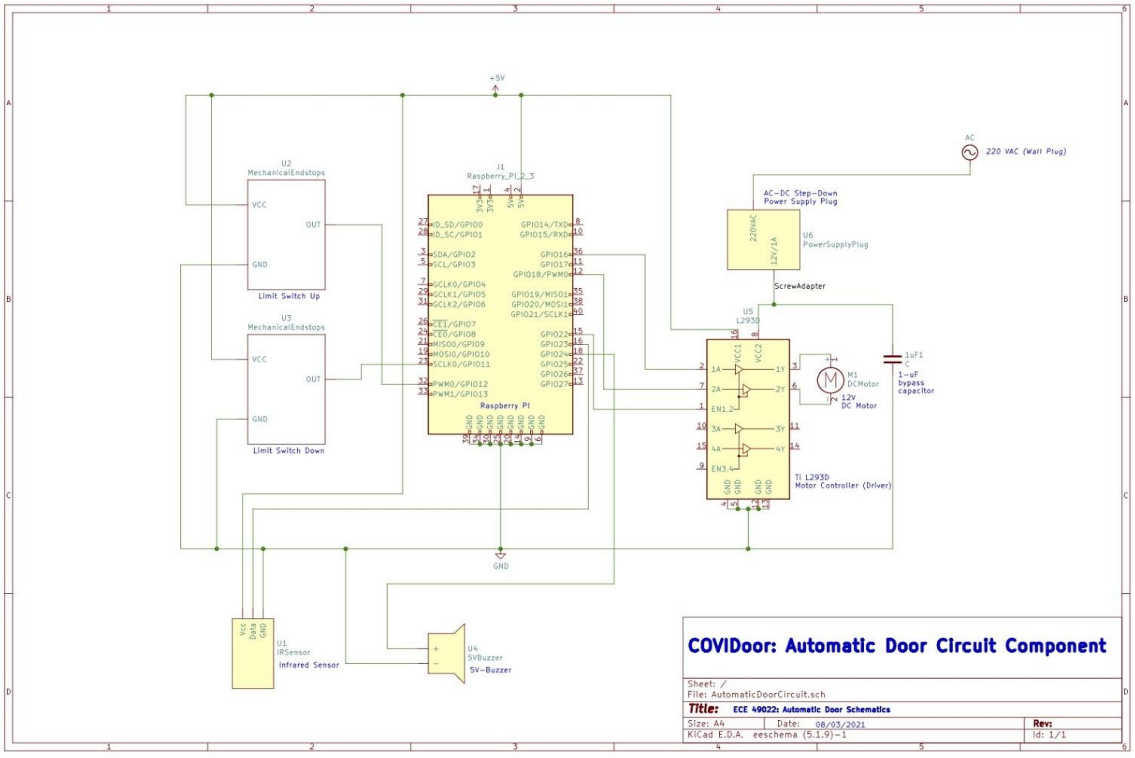


Figure 1.2 Full project diagram

Circuit Schematic



1.3 Circuit Schematic to be used for PCB