Covid Safe Entry System

Introduction

In recent years, humanity was hit by a pandemic where everyone is supposed to wear a mask. Covering the face with a mask becomes mandatory while every institute, every organization, and every industry is using manpower to surveillance certain social norms(COVID protocols) such a Wearing masks, and checking the temperature. This project's main aim is to reduce the manpower by replacing them with a IoT device.
Our project is a Covid Safe Entry System, where the software checks the temperature and mask status of every person entering the compound and alert the administration if any person violates the Covid Protocol(Wearing mask, having normal body temperature).

System Design

Requirements

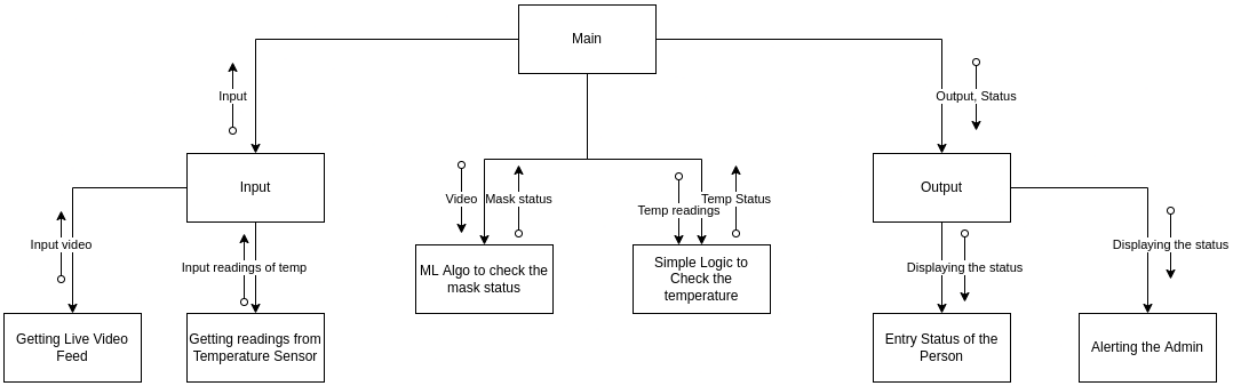
For Software Interface:
We are using Raspbian OS as an operating system and using flask (Python API) for hosting the web page in the raspberry pi(Server). For frontend we are using basic HTML, CSS, Javascript.

For Hardware Interface:
We are using Raspberry Pi 3 model B V1.2, one webcam for video input, and one temperature sensor (for measuring the temperature of each individual).

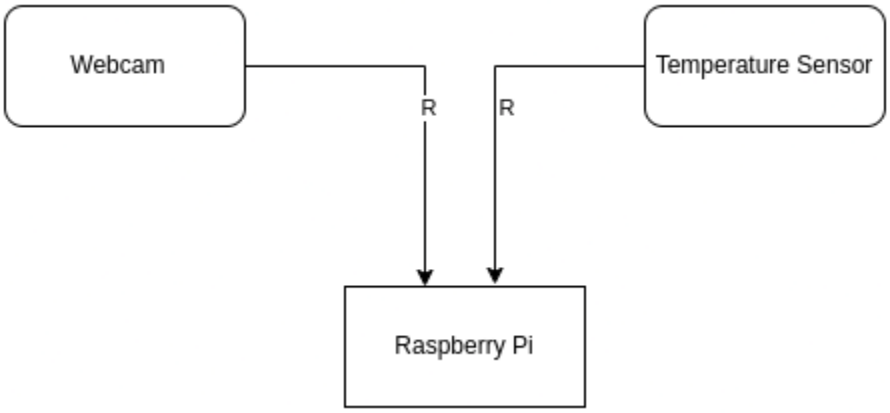
We are using the SSH protocol for communicating with RPi.

High Level Design

Structure Chart illustrates the various modules in the system and the interaction between them.

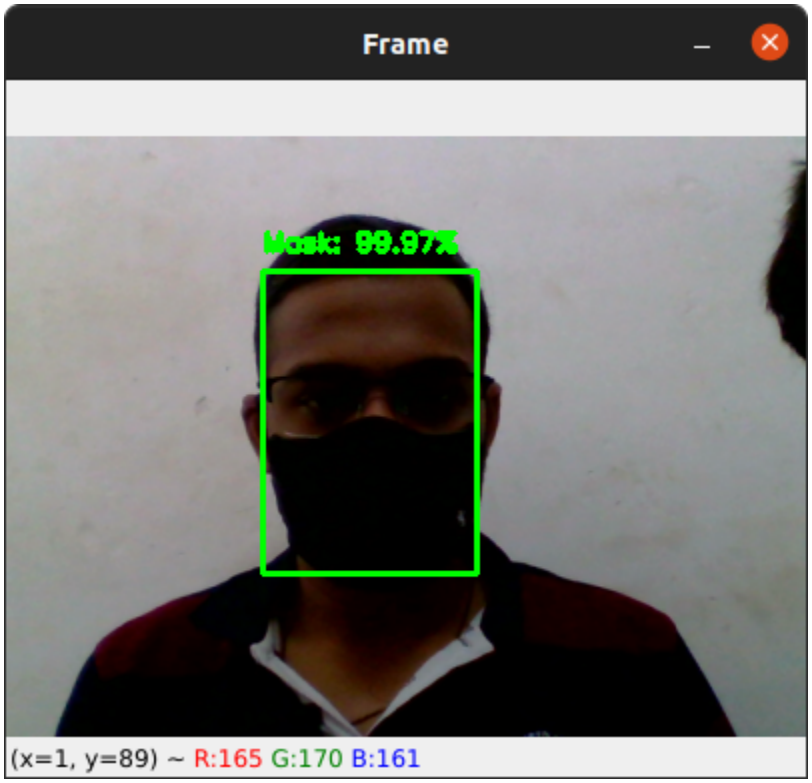


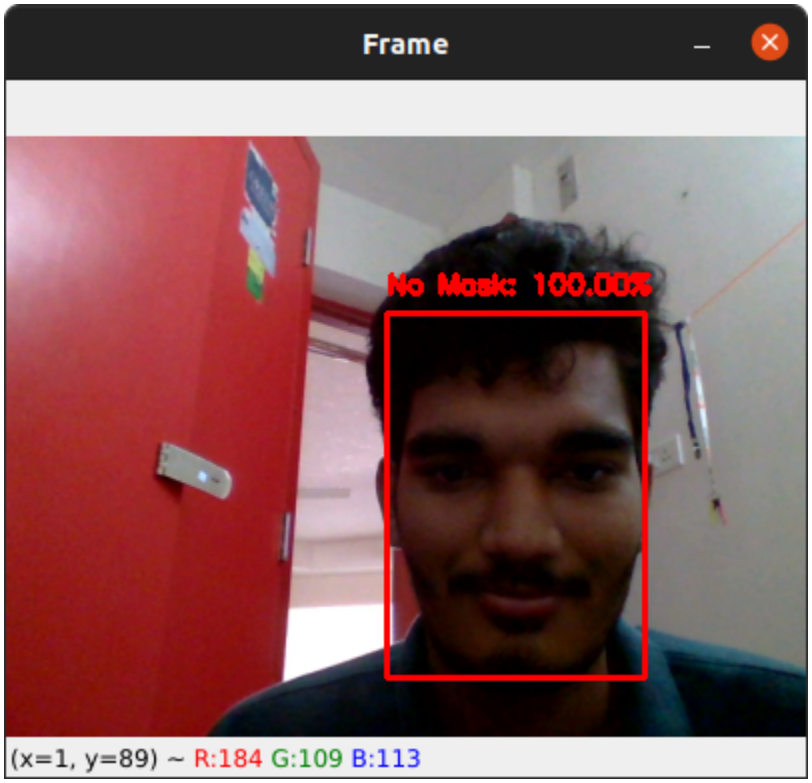
Low Level Design

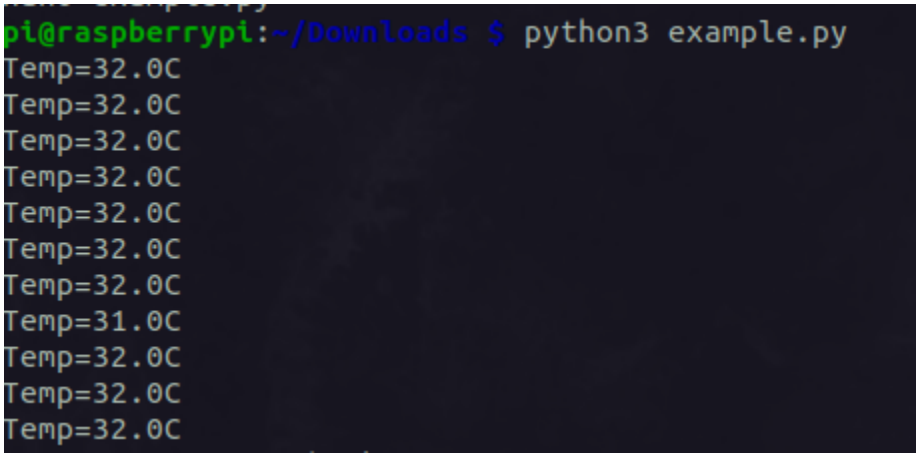


Component	Component Type	Description
Raspberry Pi	Processor/server	It is a small device which is capable of performing high computations. It also acts as server
Temperature sensor	Data collection	Collects the temperature data
Webcam	Data collection	Records the videos/images

Screen Shots






pi@raspberrypi:~/Downloads $ python3 example.py
Temp=32.0C
Temp=32.0C
Temp=32.0C
Temp=32.0C
Temp=32.0C
Temp=32.0C
Temp=32.0C
Temp=31.0C
Temp=32.0C
Temp=32.0C
Temp=32.0C