Low Level Architecture of Social Distancing

Document Version Control

Date Issues	Version	Description	Author
29 March 2022	1	Initial LLD	Mohamed Naji Abo

1. Introduction

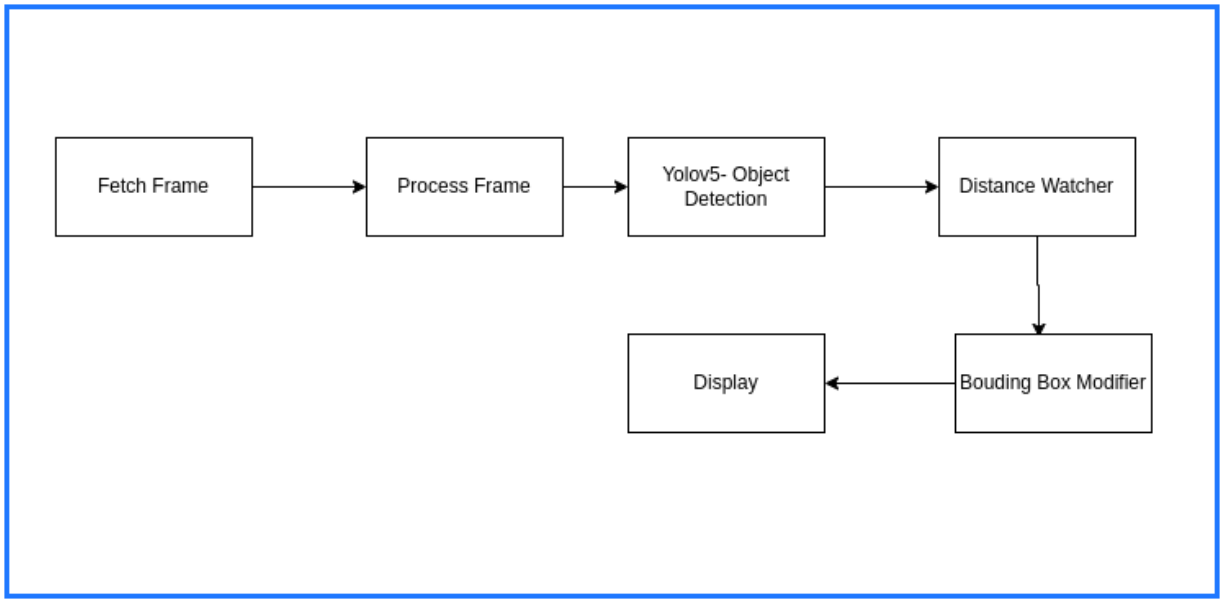
1.1. What is a Low-Level design document?

The goal of LLD or a low-level design document (LLDD) is to give the internal logical design of the actual program code for Social Distance System. LLD describes the class diagrams with the methods and relations between classes and program specs. It describes the modules so that the programmer can directly code the program from the document.

1.2. Scope

Low-level design (LLD) is a component-level design process that follows a step-by step refinement process. This process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organ

2. Architecture



3. Architecture Description

3.1. Frame Grabber

Frame grabber is a module, which will fetch the frame from the video stream. We will be using OpenCV to fetch the frame

3.2 Process Frame

Once the frame is received, which shall be converted to an jpg format and send to YoloV5 pipeline to detect object

3.3 Yolov5 - Object Detector

Yolov5 detects objects and checks if two or more persons are showing in the frame. If we have more than one person showing in the image, we should be checking central of the image. We shall be using Euclidean distance to check the distance between the two persons. If it's more than predefined value, it will show in red color bounding box

3.4 Distance Watcher

Distance watcher always watch the distance between persons in the image

3.5 Bounding Box Modifier

Based on the distance threshold, bounding box modifier shall draw a bounding box over the person