

# ENHANCED CROWD MONITORING AND RISK ASSESSMENT SYSTEM

Domain: Machine Learning

**FINAL PRESENTATION**

GROUP GUIDE:  
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# Abstract

- In today's digital age, many locations still rely on traditional approaches to count crowds, such as manual register maintenance, people counters, and sensor-based counting at entrances. However, these methods prove inadequate in areas where the movement of people is sporadic, highly unpredictable, and constantly changing. These methods are time-consuming and tedious. This Application checks the total count of people and gives the count of people in closer proximity. When the closer proximity count is near to total count it might lead to stampedes or accidents. This System also helps us to monitor the people with more risk based on their distance between each other. In this project we use neural network based predefined model for better accuracy. YOLOv3 algorithm adopts an architecture which detects each person in crowd, spot location with a bounding box, and does the counting. Deploying it on current surveillance systems and drones used by police to monitor large areas can help to prevent stampedes by allowing automated and better tracking of activities happening in the area. It can also be used to alert police in case .It offers real-time insights into the area of an uncontrollable situation in a particular area.

# Existing Systems

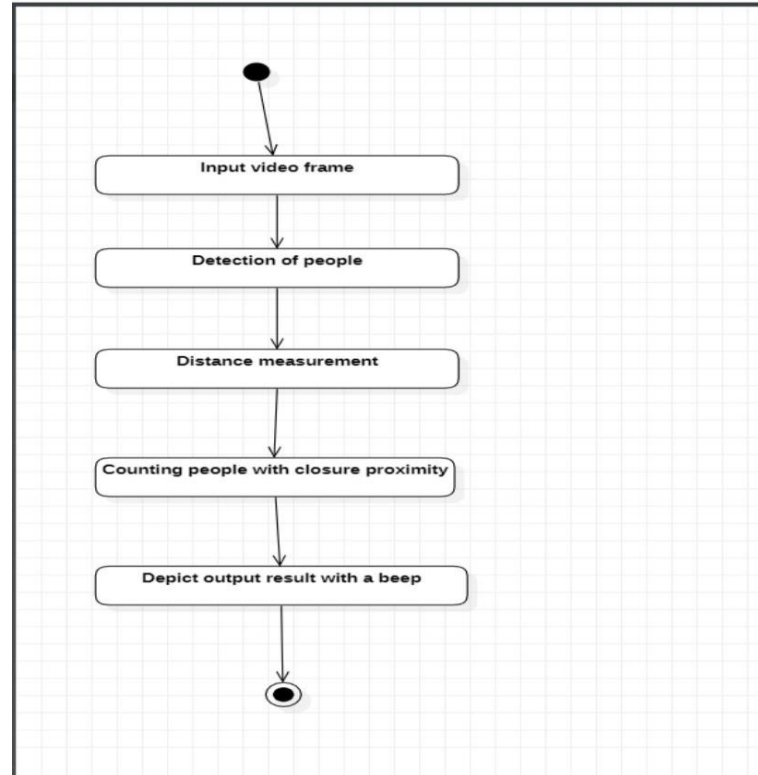
- ▶ In traditional days they used registers to know the count of people in a crowd.
- ▶ Currently the existing systems work on just detection of people and management of risk is taken care of.
- ▶ Presently, we work on counting the number of people in a crowd and maintaining it.
- ▶ Live video and Live detection of crowd is being added to the present work.

# Our Proposal

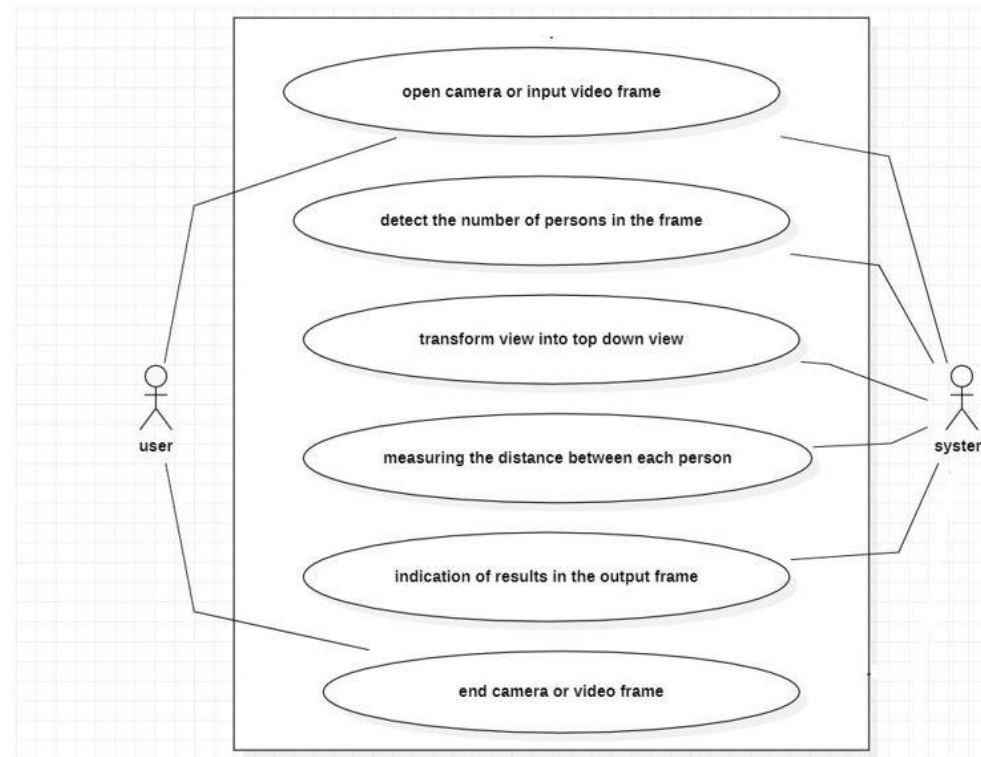
- ▶ This Proposed System Monitors the live video using openCV library and detects the people using yolov3 object detection and predicts the count of people with high risk based on their closer proximity
- ▶ It gives the count of people with high risk and low risk and gives an alert when the number of people with the high risk count is high.

# UML Diagrams

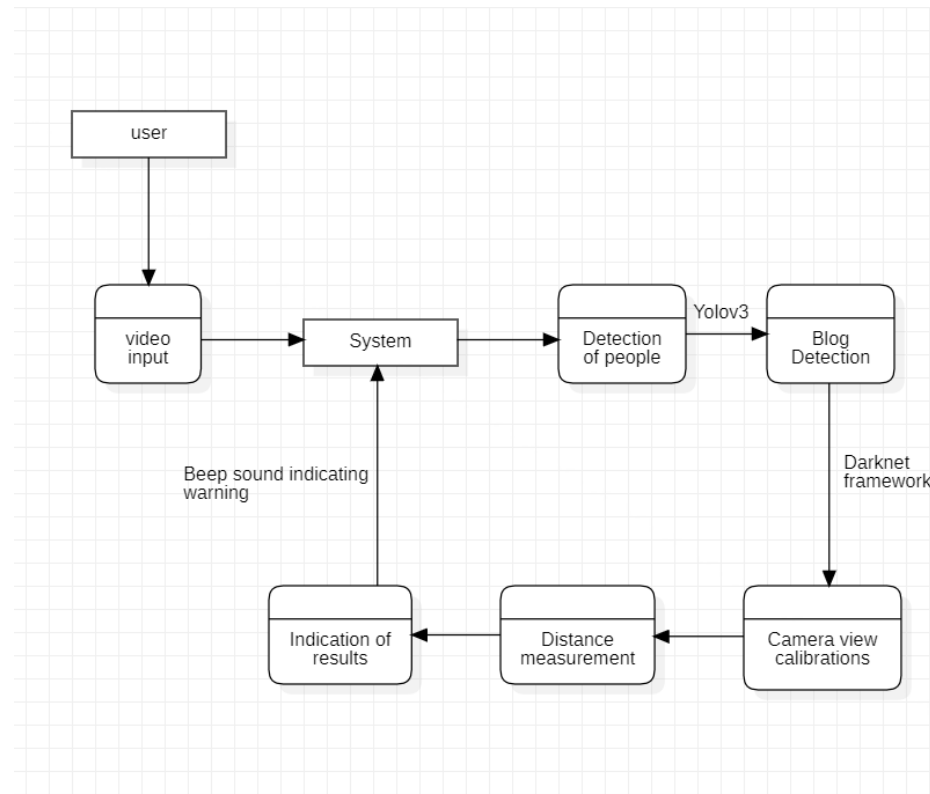
## Activity Diagram



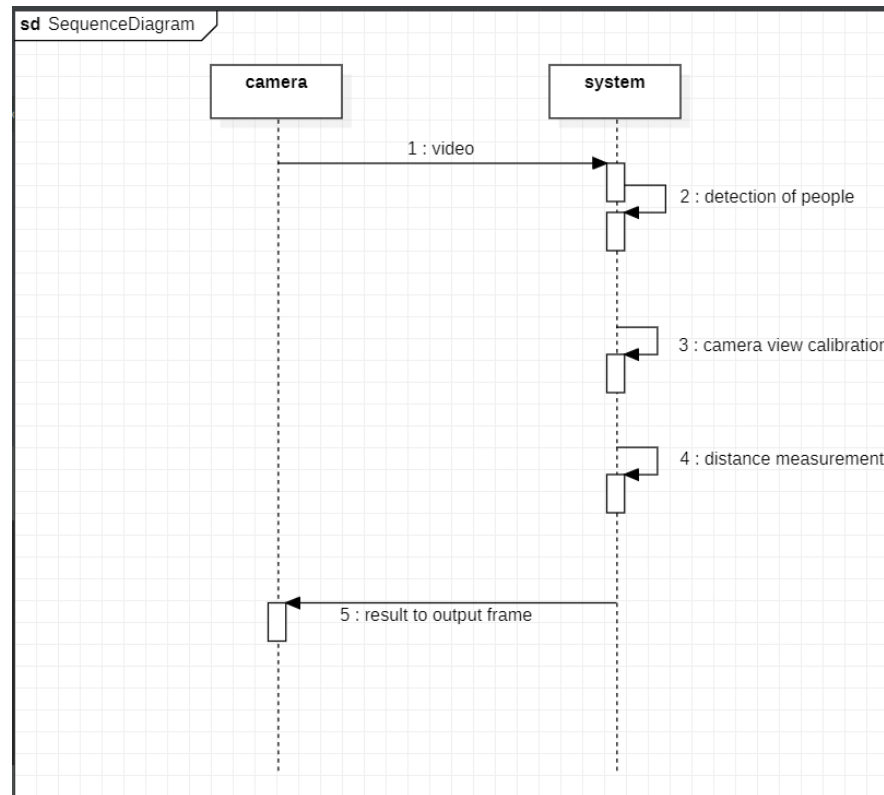
# Use case diagram



# Data Flow Diagram

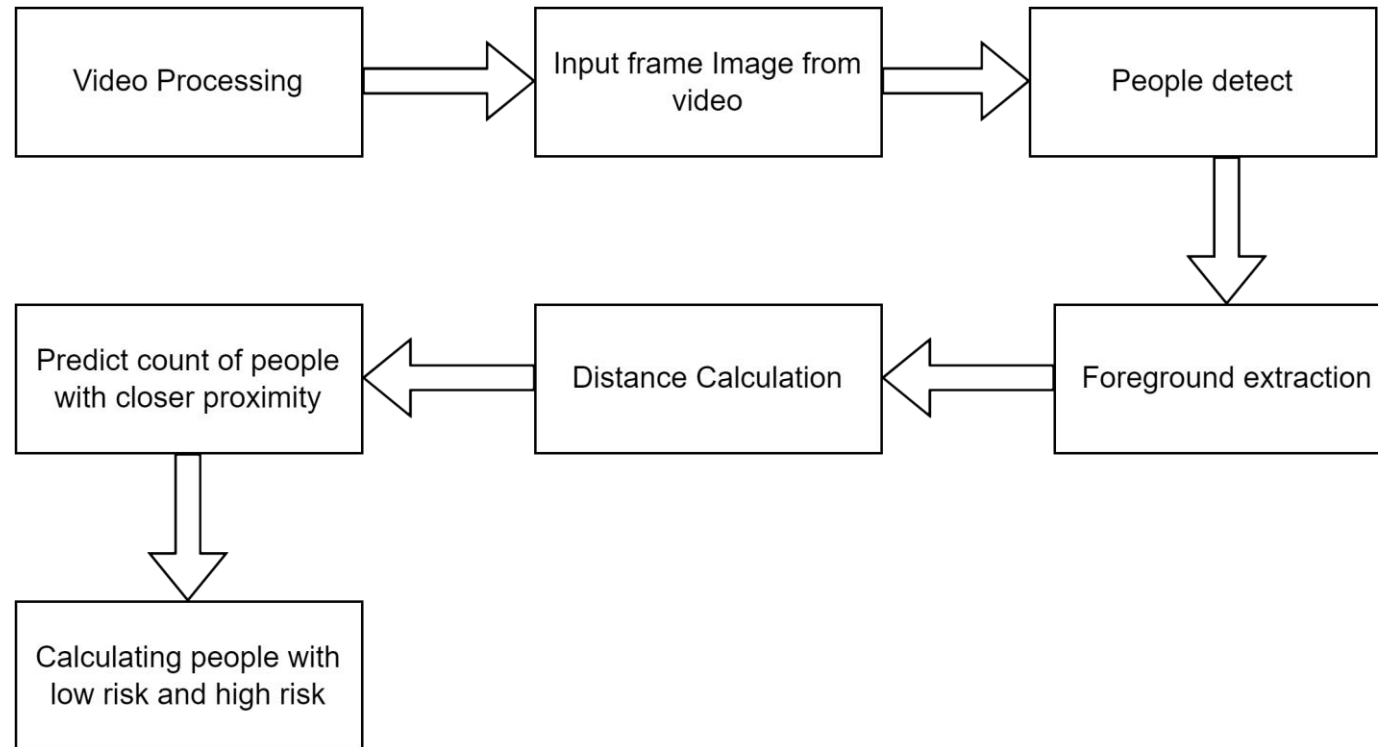


# Sequence Diagram





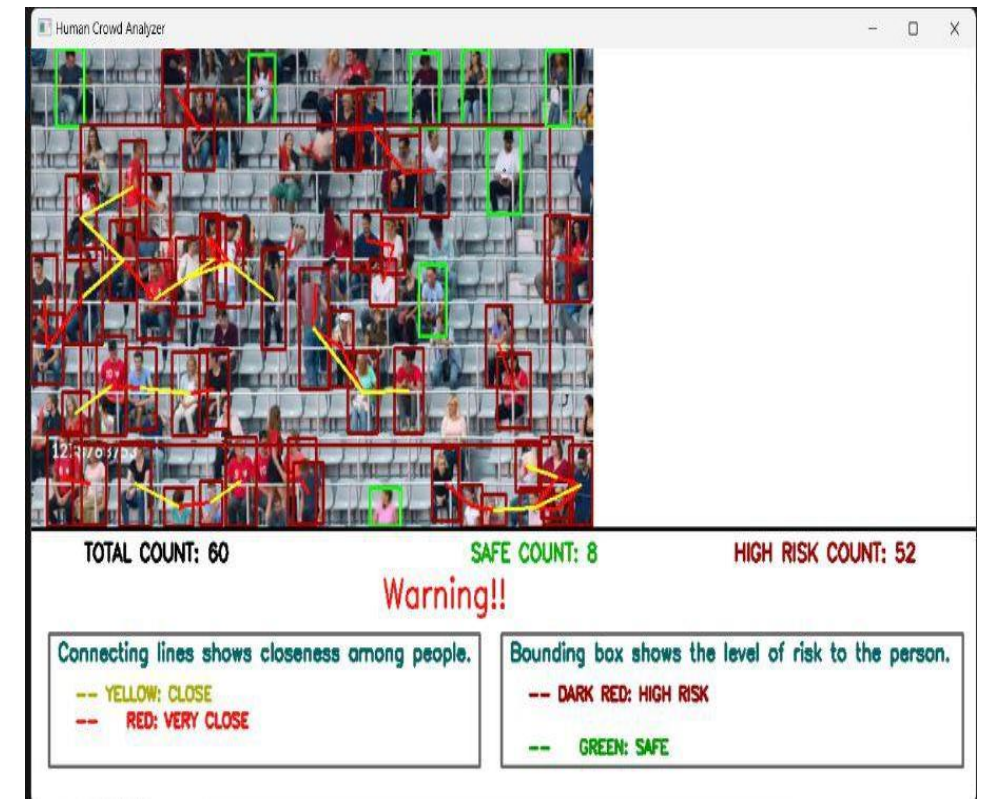
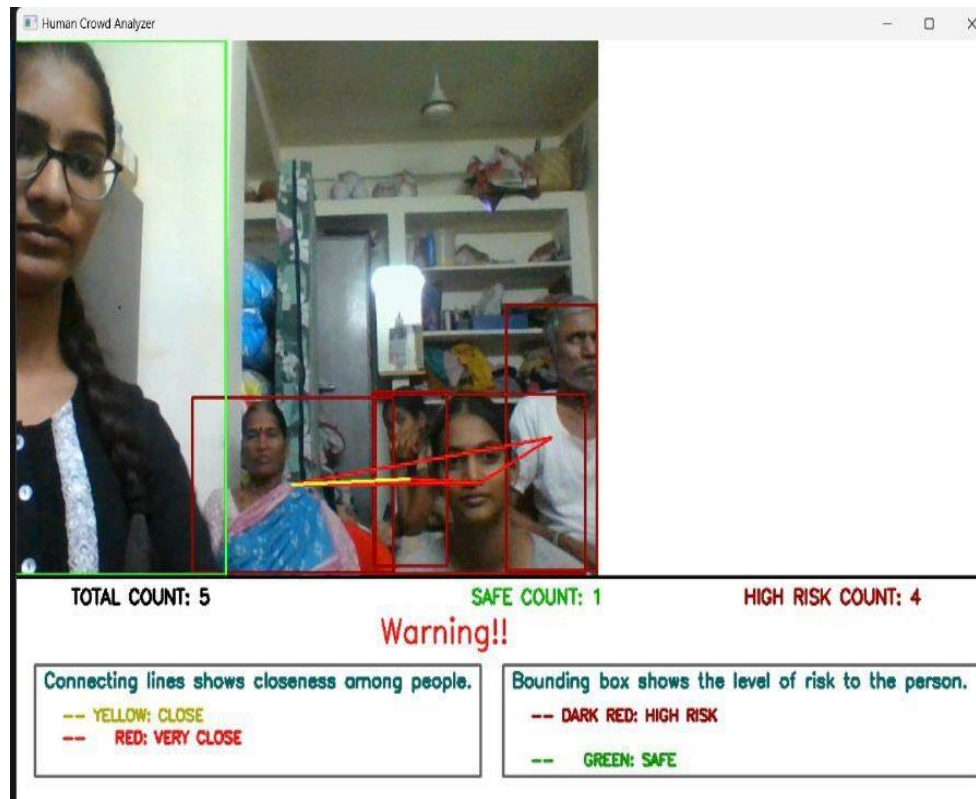
# Design Architecture



# Implementation

- ▶ The live video using openCV library and detects the people using yolov3 object detection and predicts the count of people with high risk based on their closer proximity
- ▶ It gives the count of people with high risk and low risk and gives an alert when the number of people with the high risk count is high

# Implementation



# Team Roles

- ▶ Mallela Mounika: Code Implementation
- ▶ Thota Gayathri: Resource Gathering
- ▶ Srikhakollu Vyshnavi Srija: Documentation



# Thank you

## **Project guide:-**

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