PRELIMINARY TASK

Task: Your task is to build a vehicle count model that takes an input of the path of the video and two coordinates (these coordinates are used to create a line you have to count the vehicles crossing this line) using any Deep Learning approach that you deem appropriate.

You are required to create a detailed report that includes-

- **Your approach to the model**.

I wanted to try out different lightweight object detection models which works on real time video feed and also doesn’t compromise on accuracy. I also tried out open-cv based object detectors.

**- Why you choose that model?**

Finally, I choose 2 models. One was Deep Learning based SSD Mobilenet V1 FPN. It gave the best accuracy out of the models I tried which included SSD Mobilenet V2 COCO, SSD Inception V2 COCO and SSD Mobilenet V1 COCO and also gave reasonable FPS which worked well for a live feed.

**- What other model you could have used for the same?**

There are plenty of object detection and tracking methods that could have been tried out. There are some slightly heavier models which give better accuracy but compromise on speed. Also, could have tried YOLO based models (YOLO V4 in general), Retinanet, FasterRCNN, MaskRCNN, etc.

**- Why your current model is better than other models?**

It is better than others because it gives a balance between speed and accuracy. And it gives less False Negatives compared to other variants

**- Link of output videos:-**

**https://drive.google.com/file/d/1aj6eT13Mzk91Ah1pZT9PYls\_ItjyjQRT/view?usp=sharing**