Plan Image Processing: - Video Data Extraction

**1st Approach**

1. Use the shape or color or any feature detection to detect any vehicle and draw a rectangle around it
2. Specify a region of interest in the video (ROI) which for our case would be line of interest or reference line.
3. Record frame numbers that are associated with the identified vehicles reaching and therefore touching the line of interest.
4. Frame numbers can then be exported in excel for further extraction of information.

The above can be applied easily for circulating vehicles as well as exiting vehicles

**How to go about approaching vehicles?**

Two events are marked with approaching vehicles: **Arrival** and **departure**. Hence

***Departing event***

This can easily be identified since a vehicle reaching a departure line, will be actually making a departing move.

***Arrival event***

Approaching vehicles have a tendency to slow down and eventually stop before the yielding line. Others may reduce speed significantly when they are past the yield line. Hence waiting for them to touch the line, might not adequately capture the arrival event.

**Proposed:**

Prior to the yield line few lines (say 4 more) separated by say 1 meter apart to be marked two prior to the yielding line and two after the yielding line.

**2nd Approach**

Choose a region of interest (like a window) surrounding the reference line of interest. The reference line should cut through the middle of the window

The region should not be too big to accommodate the whole vehicle, just a window enough to show a vehicle image.

A frame number should be recorded when the vehicle image fills the window approximately halfway in the window.