Question/need:

- The model will be built to detect the license plate and extract the text of the license plate number using YOLOv4 custom trained model to recognize the regions of interest of license plates within an image, and then using OpenCV and Tesseract to pre-process the image and extract the license plate number from the image.
- This model could be linked with a real-time camera and monitor the traffic violations easily.

Data Description:

- I will use 620 images, from 2 different sources:
    - The first one from Kaggle with 433 images: Car License Plate Detection: https://www.kaggle.com/andrewmvd/car-plate-detection
    - The other 200 images collected from Open Images Dataset: https://storage.googleapis.com/openimages/web/index.html and downloaded using OIDv4 toolkit: https://github.com/theAIGuysCode/OIDv4_ToolKit
    - I will use 80% of the images (496) in the training, and it will be labelled manually using Labelimg toolkit: https://github.com/tzutalin/labelImg The other 20% (124 images) will be used in the testing.
- At the training, a pre-trained model will be used to improve the model.

Tools and Algorithms:

- YOLOv4 algorithm to build the model
- OpenCV library
- Tesseract OCR