Computer Vision Task

The task consists of two parts:

Part A:

Refer to the video in the following link:
https://drive.google.com/file/d/1d94RWNnugkPx9cuoHkORaewY7-6D6zYO/view?usp=sharing

Using Deep Learning develop a pipeline to do the following:

- Count the number of the passing cars (only cars not any other type of vehicles)
- **Bonus**: Compute vehicles velocity (pixels/s) and direction.

Important notes:

- Don't use algorithms like HAAR features Cascade classifiers (such as: the implemented in OpenCV) for this task.
- Don't do any training from scratch (use pretrained models).

Part B:

Using Numpy & Matplotlib:
Given a 1-d array,

- Compute the number of occurrences of any subset array.

_____For example:

```
array =  np.array([0, 1, 1, 1, 2, 2, 2, 1, 1, 3, 3, 3])
subset = np.array([1, 1])
return: 3
```

- Plot a histogram of the unique values of the 1d-array

Note: Don't use np.histogram or pyplot.histogram or any already-made histogram functions.

Deadline: Thu. 1st. Jul. 2021
Deliverables:

- **Part A:**
  - **A working and tested version of your code with the result video.**
  - **A brief report describing your methodology and any used algorithms/models.**

- **Part B:**
  - **A code file (.py file or jupyter notebook) for your code and results.**

Send the deliverables by the deadline to the following email address:

ahmed.nasr9677@gmail.com

Good Luck