Hardware Mini Project

(Nouf Alamri and Quentin)

**Estimate the system performance with regard to false detection and false negatives, i.e. compare with what you counted by manually looking at a short segment of video.**

The system is accurate by about 39.6%.

Actual car count (per 30s period): 38, 54, 51, 54,

Car count by the script (per 30s period): 18, 21, 18, 21

**How do you think the system could be improved? (E.g. accuracy, energy)**

Using the current method, if one car is following another, motion compression detection will recognize it as one object and count only by one. This results in a much lower detection rate than what is on the recorded video. To improve upon this system, cascade classifier in the openCV library could be utilized. The algorithm is more computationally intensive, however, it is still possible with low power computer. Additionally, with good training dataset and model, accuracy could be relatively high.

**Explain a bit about your chosen algorithm. Chances are you're using library functions--why did you choose them? (Performance, accuracy, ...)**

We followed the presented instructions and copied the functions in the given example libraries to implement the code and make the raspberry pi function.

**Plot of the compressed detected traffic rate vs. time**