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ECE 515 HW #4 EC 4
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Extra Credit Problem 4:

A. I ended up choosing the traffic video that was used in the MATLAB documentation. I also used the Horn-Schnuk method that they used in the example.

B. In order to make it so that it only did two frames, I had to change the while loop header. Instead of leaving it as a ‘while hasFrame’, I introduced an index and changed the header to ‘while index < 2’, and then iterated the index inside the loop. I also changed the pause duration so I would have enough time to observe the optical flow vectors between the two different frames.

C. As far as I could tell, they used this custom way of making a plot so that they could change the width of the borders and just customize the plot appearance to their liking. I don't believe that changing these parameters would change the behaviour of the code. The code will still run no matter what the plot looks like.

D. In this example, they use the Horn-Schnuk method of Optical Flow.

E. I believe they were trying to demonstrate how one could use optical flow to demonstrate the velocity matrices of moving objects. Since observing cars and traffic is such a huge industry (red light cameras, license plate detection, autonomous vehicles, etc..), I would assume that they implemented this specific example to demonstrate how Optical Flow could be used in such a field of research. By having a sample video of a traffic camera, they could skip to the frames of the video where there is a car on the screen that is currently moving. That way, one could see the change in vectors from one frame to the next as the car moves along. This could greatly assist researchers with object localization and object following.