1.a.)

This project was about understanding how to implement a Convolutional Neural Net in Matlab. I think it was a light introduction into understanding how a CNN functions, what CNNs are used for, and how well CNNs perform their intended task. We first started out by implementing generalized functions for to perform each layer of the CNN. We made sure that each function was general enough so that it may be reused on multiple layers of the CNN, but we did not make all of the functions as general as they could have been. After that, we basically just made a script that calls each of the aforementioned functions to create the CNN in the project description. We then ran the given 10,000 images through the CNN and observed how the CNN performed. Then we collected some pictures online, 110 pictures to be exact, and we tested how the CNN performed on pictures outside of the set as well as how the CNN performed on pictures that contained objects that it was not designed to classify. Overall, I think we were disappointed at the performance of the CNN. The CNN was able to correctly identify objects in the 10,000 images 43.71% of time; which seemed low to us. We were however very surprised at how well the CNN worked on pictures taken from online that contained objects that fell into one of the 10 given classes. We wish we had more time to try to teach the CNN to identify the unknown classification, but the exercise gave us a greater appreciation for how difficult it is to get a program to classify objects.