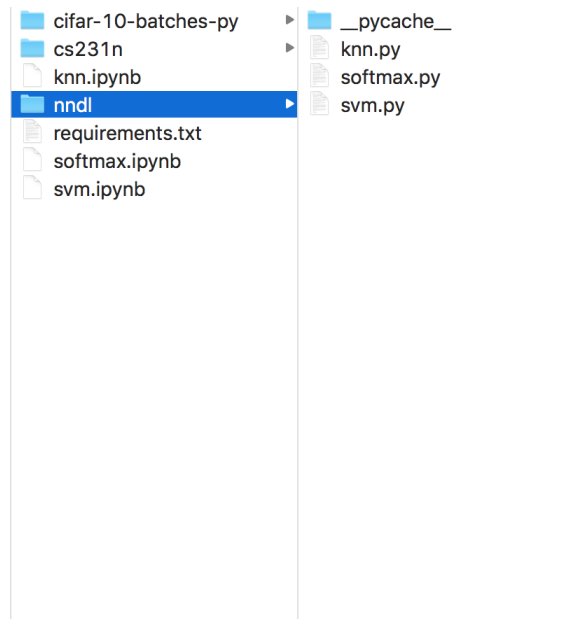Due Monday, 27 Jan 2020, by 11:59pm to Gradescope.
100 points total.

1. (20 points) k-**nearest neighbors.** Complete the k-nearest neighbors Jupyter notebook. The goal of this workbook is to give you experience with the CIFAR-10 dataset, training and evaluating a simple classifier, and k-fold cross validation. In the Jupyter notebook, we'll be using the CIFAR-10 dataset. Acquire this dataset by running:

    ```
    wget http://www.cs.toronto.edu/~kriz/cifar-10-python.tar.gz
                tar -xzvf cifar-10-python.tar.gz
                    rm cifar-10-python.tar.gz
    ```

    If you don't have `wget` you can simply go to: `https://www.cs.toronto.edu/~kriz/cifar.html` and download it manually.

    We have attached a screenshot of the paths the files ought to be in, in case helpful (though it should be apparent from the Jupyter notebook).

📁 cifar-10-batches-py ▶	📁 __pycache__ ▶
📁 cs231n ▶	📄 knn.py
📄 knn.ipynb	📄 softmax.py
📁 **nndl** ▶	📄 svm.py
📄 requirements.txt	
📄 softmax.ipynb	
📄 svm.ipynb	

    Print out the entire workbook and related code sections in knn.py, then submit them as a pdf to gradescope.

1

2. (40 points) **Support vector machine.** Complete the SVM Jupyter notebook. Print out the entire workbook and related code sections in svm.py, then submit them as a pdf to gradescope.

3. (40 points) **Softmax classifier.** Complete the Softmax Jupyter notebook. Print out the entire workbook and related code sections in softmax.py, then submit them as a pdf to gradescope.