Things To Do

- Get external data

- Find way to detect nodules using features, shape, tracking

- Try pyCharm

- Optical flow/tracking

- Calculate separate features for nodules/vessels

- Add special dimensions into features

Things I've Done

- Download data

- Read/Implement processing tutorials

- Separate cancer/non-cancer patients

- Load labels into python

- Manually try to identify slices with nodules

- Watershed Segmentation

- Several features of selected ROI for single slice

Notes/Ideas

- CAD systems can identify slices with potential cancerous nodules. Possibly use CNNs or other machine learning methods to use the output of CAD systems as input to classify the potential nodules as cancerous or non cancerous.

- The CAD systems derive a set of input features such as contrast, area, circularity of the nodules and feed them into ANNs.

- Use gray level and object shape for nodule detection

- Maybe find way to get 3D bounding box of nodules from a 3D matrix and use shape

- Features used for cancer diagnosis: Energy, Entropy, Contrast, Inverse Difference Moment, Mean,

Std. Deviation, Dissimilarities, Homogeneity, Correlation. (From CAD paper)