Lab Assignment 3 - Logistic Regression

- Create Logistic Regression model for the problem of “cat vs dog” classification data.
- You can download the data from “https://tinyurl.com/yxd8e265”
- If you want to work with any other dataset, you are free to work with it.

 CAT	 DOG

Steps

1. Select similar images (as shown in example above) for each class, 10 images per class and store them in separate folders.
2. Read the images using OpenCV, format their height and width etc.
3. Split the dataset (75% training and 25% testing) into training and testing sets with images as input, image class as target label.
4. Train a Logistic Regression model (using either Sklearn or Tensorflow or Keras) for 100 epochs.
5. Run different Logistic Regression models with image sizes as 500x500, 100x100, 50x50, 25x25, 10x10 (you can use OpenCV for resizing within code i.e. do not use MS Paint). For all the models plot the number of parameters learned, training accuracy, testing accuracy and running time for testing in bar chart. Analyse the results and discuss what you discovered!

Suggested Libraries:
Python packages such as Numpy, Pandas, Sklearn, Tensorflow/Keras (recommended)

Evaluation:
Lab evaluation will be based on the performance in the lab as well as the submitted assignment.