Lab 1 Assignment, ECE 614, Spring 2021. Due date 2/23/2020

This Assignment is done in groups of two students

The data file Realestatevaluationdataset.csv needs to be used to build a MLP-based nonlinear regression model to estimate house prices based on the existing transactions record. The data source is UC Irvine ML repository https://archive.ics.uci.edu/ml/datasets/Real+estate+valuation+data+set

Use the Mean Square Error Loss Function for training on 80% of data pairs. Set aside 20% of data for testing. The row index and transaction date are irrelevant; all columns need normalization, especially the geo data.

Tasks:

1. Try several architectures for this 5-inputs 1-output model. Select the most accurate model and for the best one implement tasks 2 and 3. Be flexible with the number of training epochs to lower the error - if needed
2. Produce a cross-scatter plot $price_{pred}$ *vs* $price_{actual}$. Mark the training points blue and the test point red. Make sure to denormalize the outputs to get actual process on both axes.
3. Find the slope and the intercept of the linear regression line $price_{pred} = m\ price_{actual} + b$ (and draw the line) for the model-produced cross-scatter cloud