How to run the code

1. git clone https://github.com/Elliott-Hendrickson/CPTS440FinalProjectWSU.git
2. Traverse to the folder “NeuralNetwork”
3. Make sure you have all required libraries downloaded
3. Run “regressionModel.py”

This is the process of how the code for the Neural Network works:

1. Data Preparation:
    a. Data was read using pandas dataframes ignoring rows with empty values
    c. Split data for testing, and training.
    d. Convert into a numpy matrix.
    e. Load Into Dataloader

2. Define the Neural Network:
    a. Define the initialization, including hidden layers, and nodes in those layers
    b. Define forward pass definition

3. Define Additional Data:
    a. Define that Im training using a CPU
    c. Define the loss function as being RMSE
    d. Define the optimizer function

4. Train:
    a. For each batch compares the value predicted with the true value, then calculates loss, and optimization.

5. Test:
    a. Compares the prediction to the true value, then saves that information to a .txt file.

5. Save:
    a. Saves the Neural Network for future loading without training