Assignment 1

I have implemented a linear regression model to predict restaurant profits based on demographic data and a multi-variate linear regression model to estimate housing prices. The feature used to predict restaurant profits is population. The number of bedrooms and the square footage of the home are taken into consideration to predict housing prices.[[1]](#footnote-1)

## The files I have completed:

plotData.m - Function to display the dataset

computeCost.m - Function to compute the cost of linear regression

gradientDescent.m - Function to run gradient descent

computeCostMulti.m - Cost function for multiple variables

gradientDescentMulti.m - Gradient descent for multiple variables

featureNormalize.m - Function to normalize features

normalEqn.m - Function to compute the normal equations

## The framework files supplied by the course:

ex1.m - Octave/MATLAB script for this first assignment

multi.m - Octave/MATLAB script for the later parts of the exercise

ex1data1.txt - Dataset for linear regression with one variable

ex1data2.txt - Dataset for linear regression with multiple variables

submit.m - Submission script that sends your solutions to the Coursera servers to verify the code

# Skills attained

## In this assignment, I have learned how to:

### Load data from .txt files into Octave

### Plot data in Octave

### Implement the linear regression cost function:

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### Implement the hypothesis function:

### 

### Implement the batch gradient descent algorithm with multiple variables:

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### Plot the values of regression parameters (theta) to ensure the gradient descent algorithm is functioning properly

### Create a feature normalization algorithm

### Implement the normal equation to find the optimal values of theta

1. This data has been provided in this assignment via *Machine Learning by Stanford University.* Course link: https://www.coursera.org/learn/machine-learning/home/welcome [↑](#footnote-ref-1)