Assignment 1: Linear Regression with One Variable

1. Problem Description

Suppose you are the CEO of a restaurant franchise and are considering opening new branches in different cities.

    a. You want to expand your business to cities that may bring higher profits to your restaurant.

    b. The chain store already has restaurants in different cities, and you have profit and population data for these cities.

    c. You also have some city data, which are candidate cities for new restaurants. For these cities, you have data on their population.

Can you use this data to help you determine which cities are likely to bring higher profits to your business?

2. Dataset Introduction

File Assignment1data.txt is the dataset. The first column represents the population of a city times 10,000, and the second column represents the profit of restaurants in that city times 10,000.

3. Requirements

    a. Visualize dataset.

    b. Use linear regression models to fit the data and show the visualization.

    c. Predict what the profit would be in areas of 35,000 and 70,000 people, respectively.