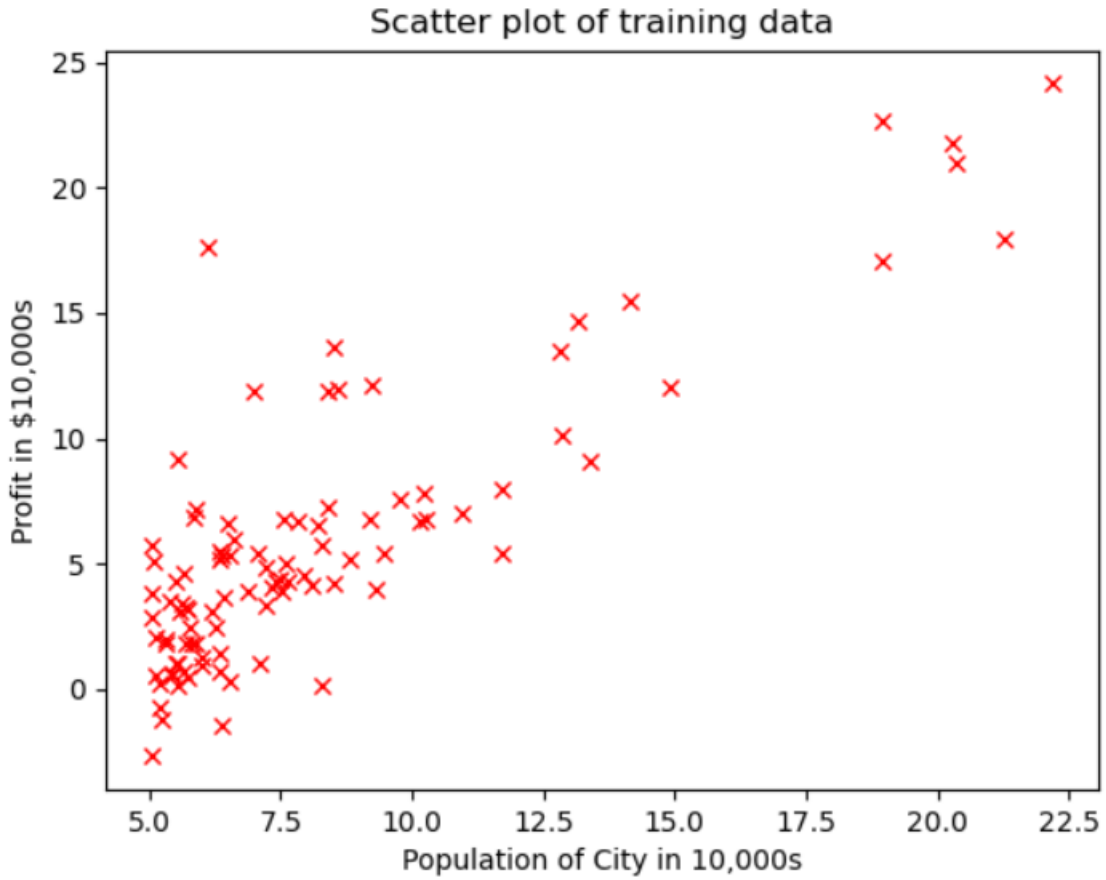
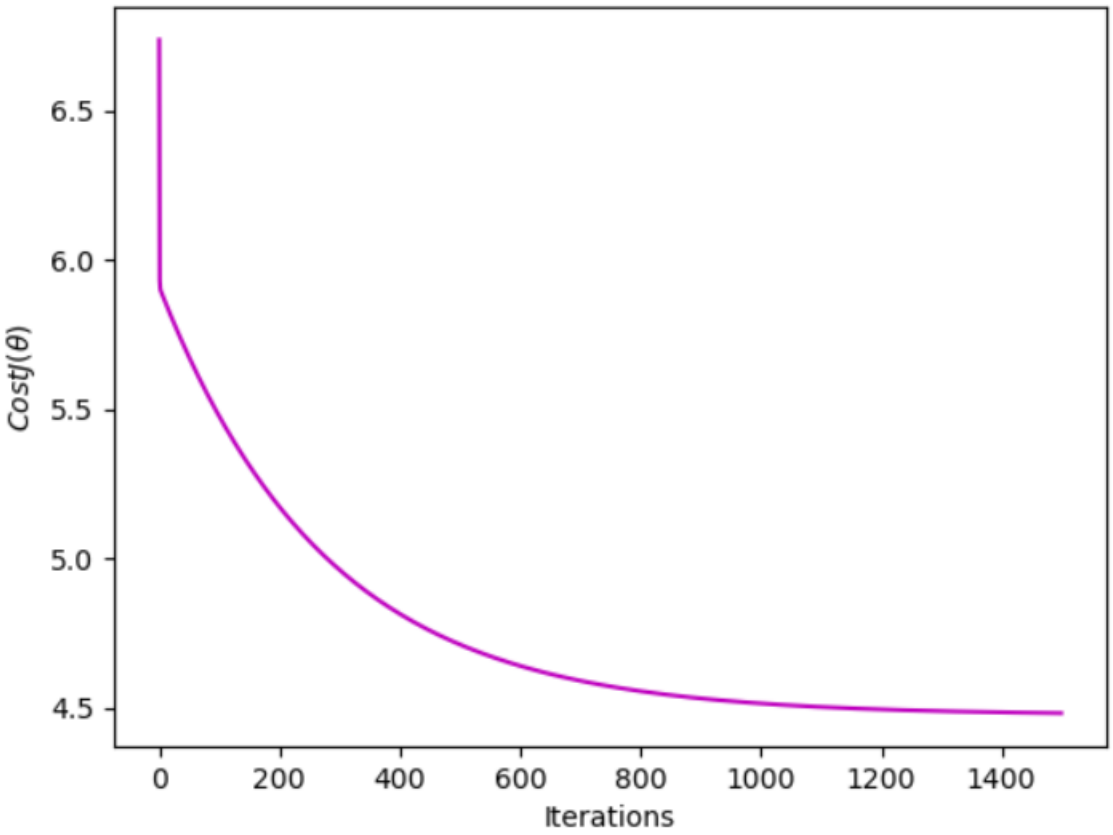
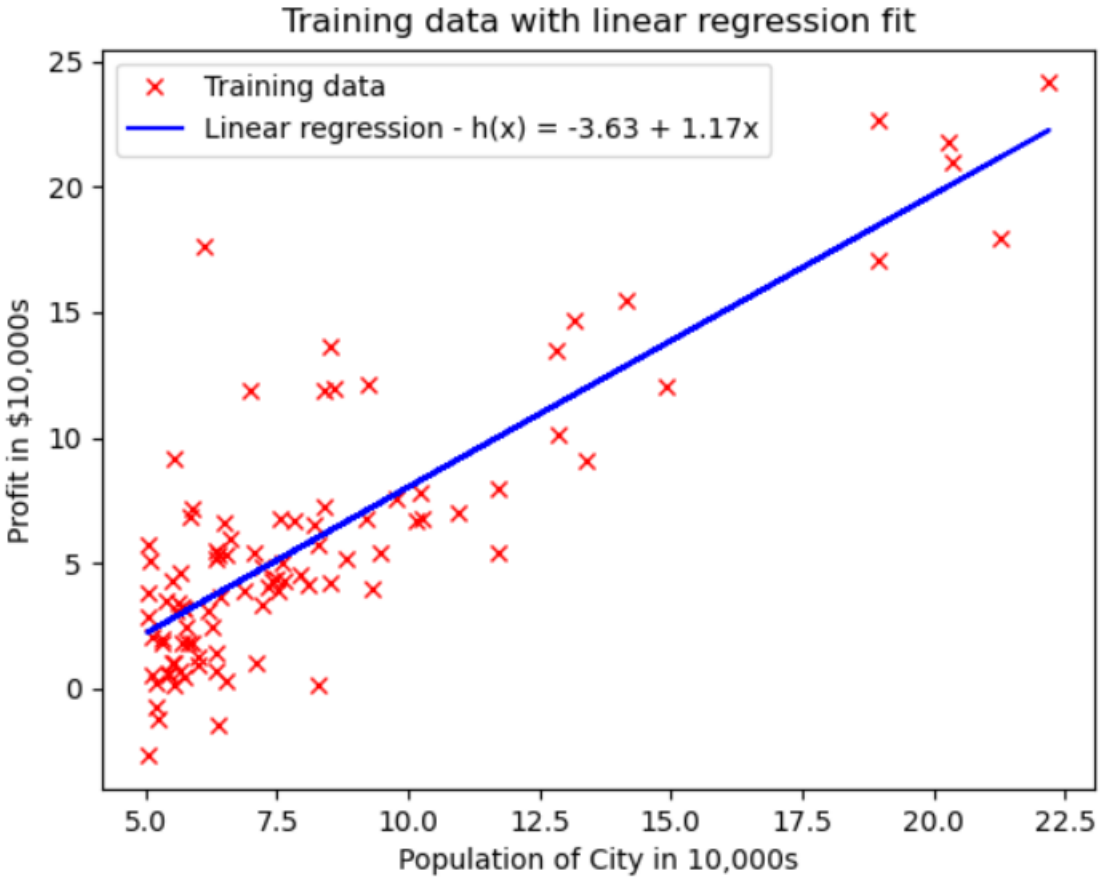
HOMEWORK 01:

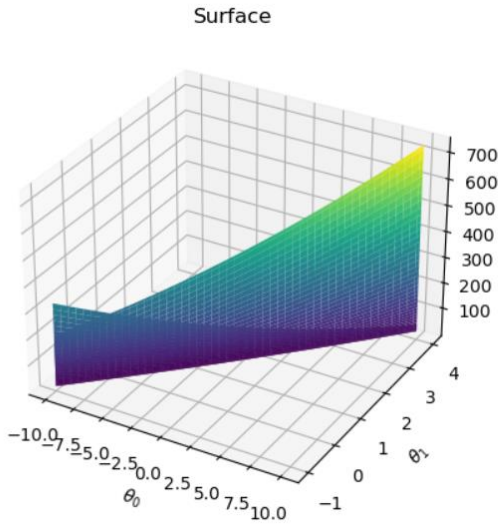
Linear Regression with One Variable

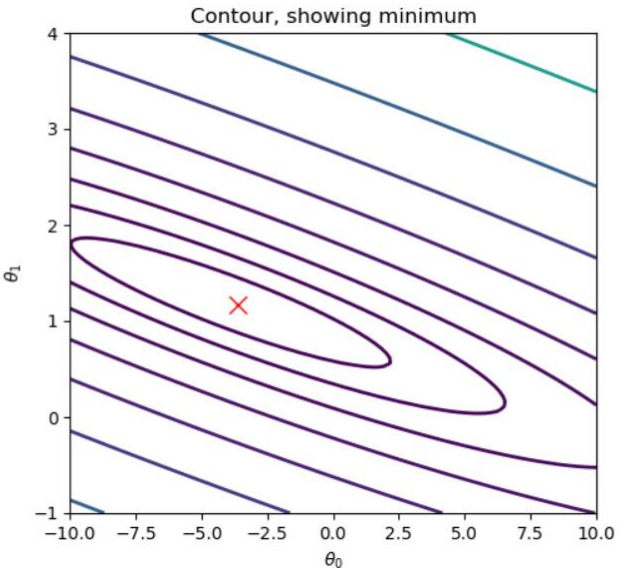
There are some graphs that I got from the problem:




6.5
6.0
5.5
5.0
4.5
Cost J(θ)
0
200
400
600
800
1000
1200
1400
Iterations







Here is the result of hypothesis and the cost function I got:

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===== RESTART: C:\Users\thanh\OneDrive\Desktop\CECS456\linearRegression.py =====
With theta = [0, 0]
Cost computed = 32.07

With theta = [-1, 2]
Cost computed = 54.24

Theta found by gradient descent: -3.630 + 1.166x

Cost function with optimized value of theta: 4.48

For population = 35,000, we predict a profit of 4519.77

For population = 70,000, we predict a profit of 45342.45
```