Assume, alpha=0.001

W1=0 & w2=0
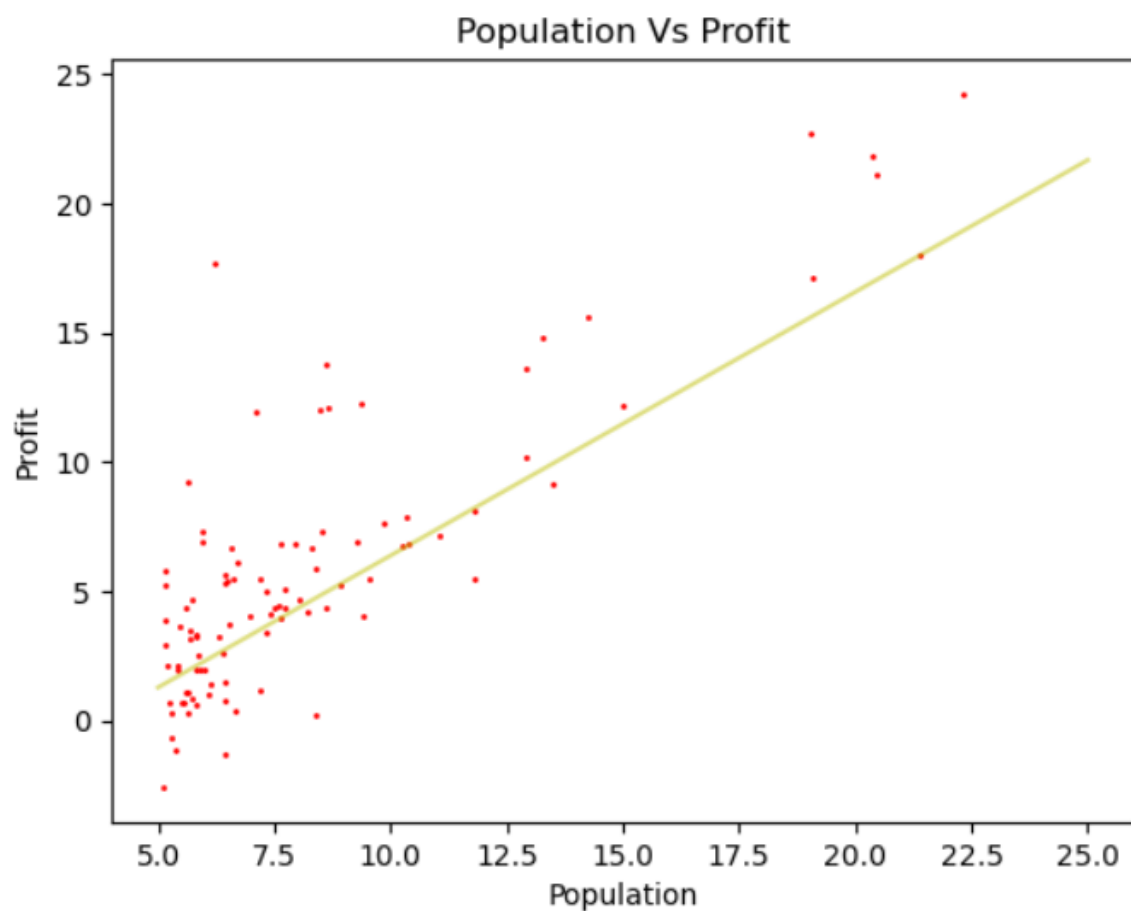
Loop through each example in the training data, and use the current input features to make a prediction of thetas1 & thetas2.

Calculate the error between the predicted output and the actual output, and use this error to update the model parameters.

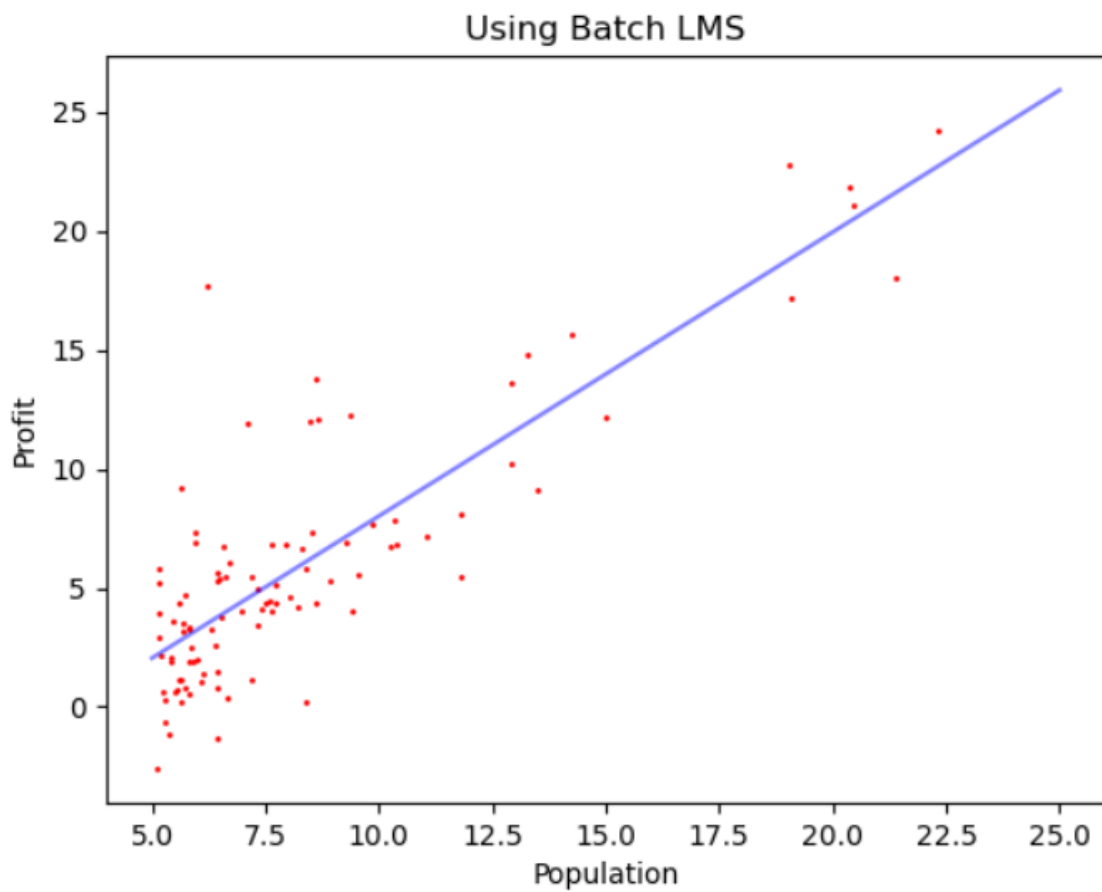error= $y\_i - \hat{y}\_i$

w(k+1) = w(k) + alpha * error* X_i

Stochastic LMS-

Using Batch LMS:
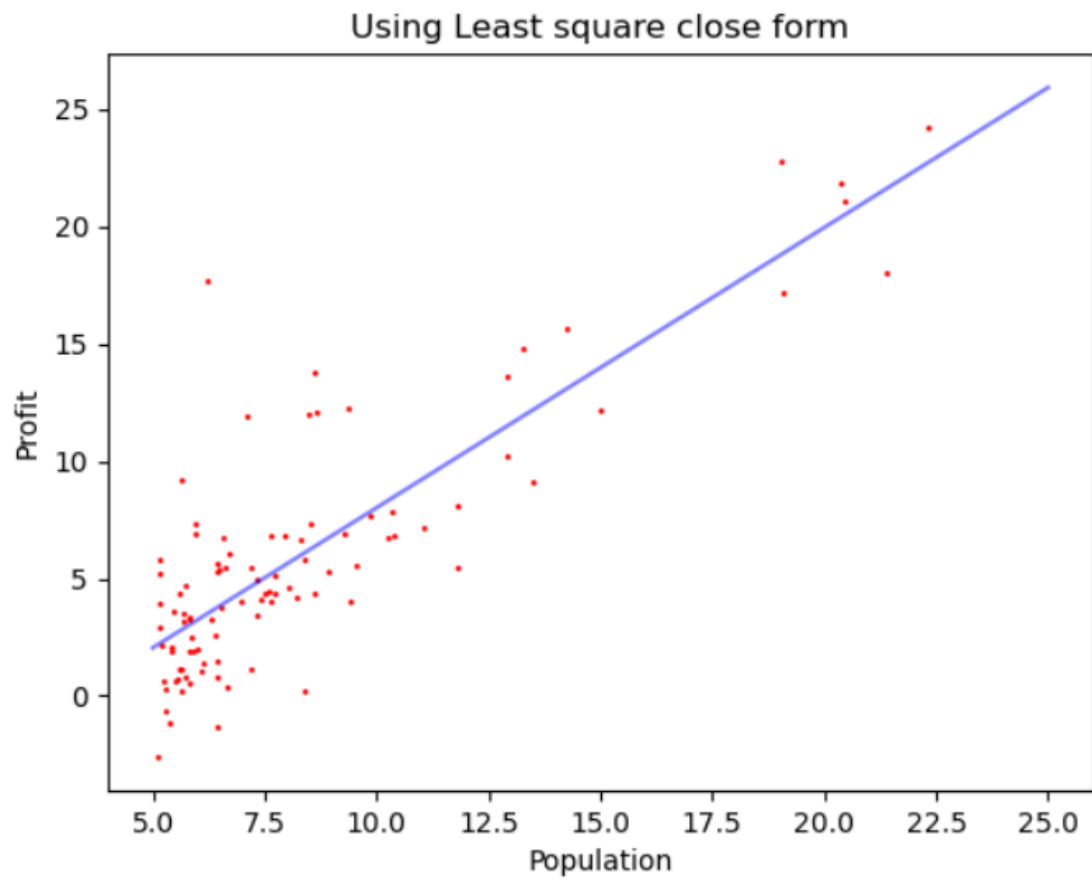
Calculate the dot product of the weight vector and the input features, X, to make a prediction, ŷ.

e = $y - \hat{y}$
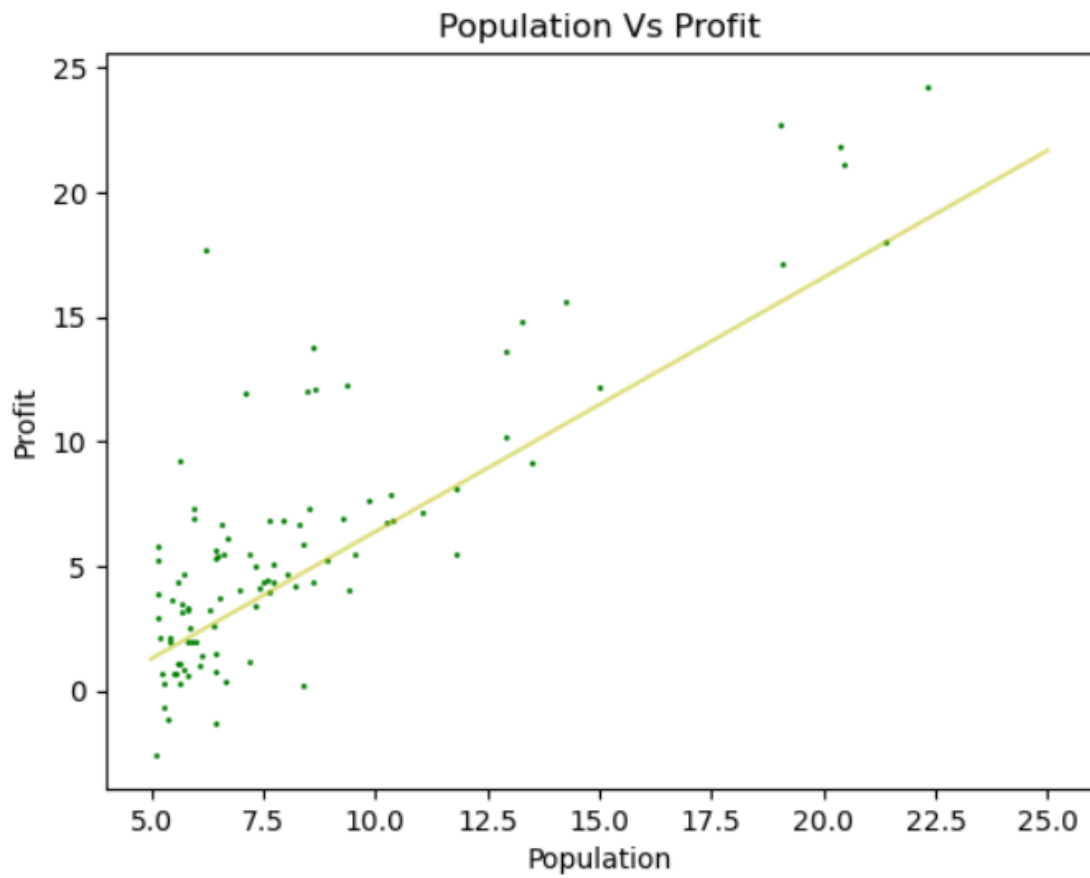
w(k+1) = w(k) + alpha * error* X_i

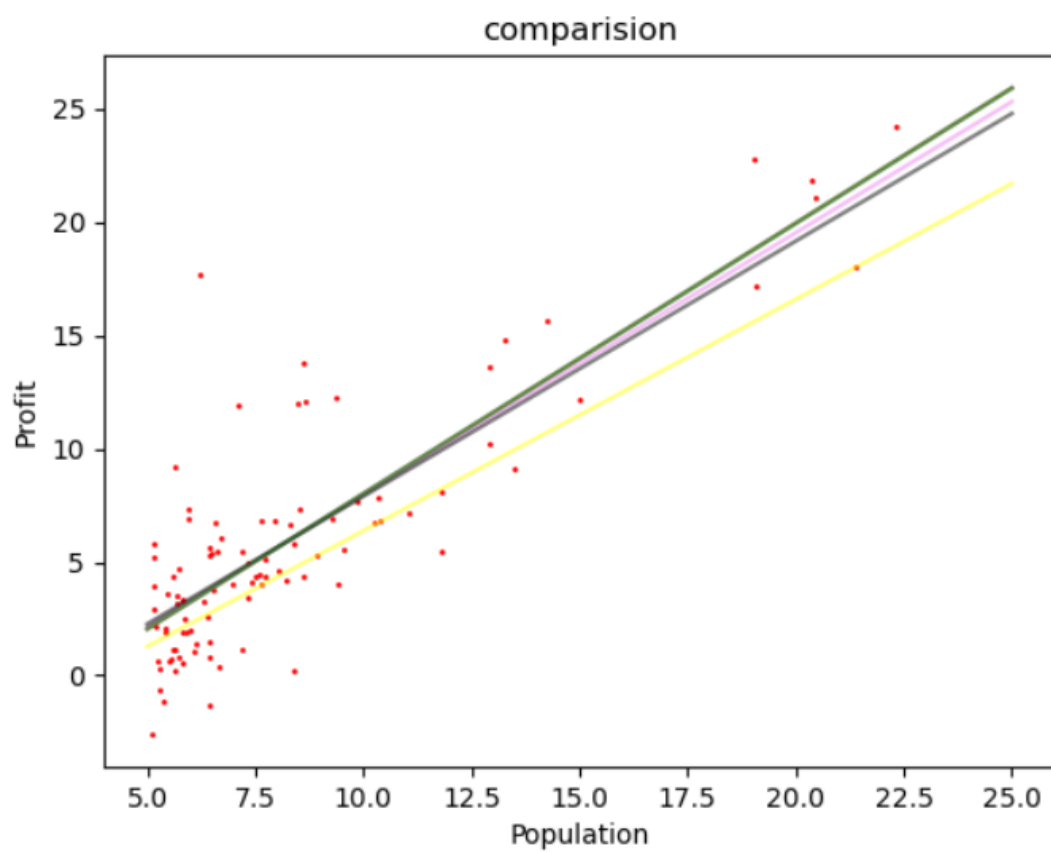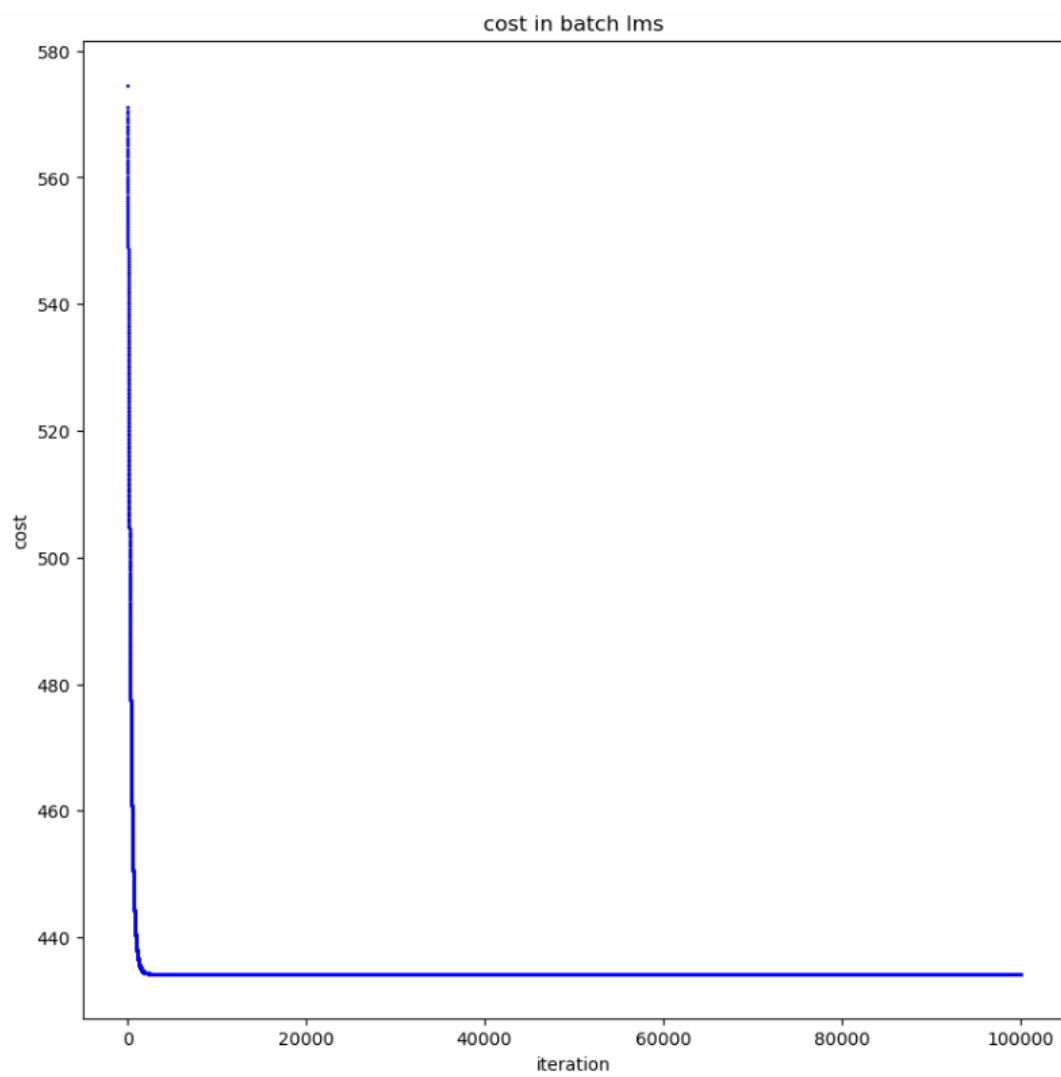Using least square close form solution:

Using Mini Batch:

Comparison Graph:

Cost in Batch LMS:

cost in batch lms

Cost in Stochastic LMS:

cost in stochastic lms