**Linear Regression with Gradient Descent Algorithm for Optimization:**

**Preparing dataset and defining hypothesis:**

1. Read the dataset
2. Apply feature scaling
3. Divide the dataset into two parts, training set and test set
4. Define hypothesis,
5. Define Cost Function,

**Train and optimize (Gradient Descent):**

1. Set m0 and m1 randomly
2. Set an iteration level
3. Set a learning rate
4. For i=0 to iteration level

* Calculate cost:
* For i=0 to number of rows in the dataset:
* Squared error =
* Cost += Squared error
* On each iteration, take the partial derivative of the cost function J(w) w.r.t each parameter (gradient) and update the parameters.

1. Return m0, m1, cost,
2. Plot cost against iteration level

**Test the model for test dataset:**

1. Apply for test dataset’s x values
2. Compare with original y with
3. Adjust iteration level and learning rate for better performance

**Code:** <https://github.com/BuyingANew-Soul/Machine-Learning/blob/master/Machine%20Learning/House%20Price%20Lin%20Reg/housePrice.ipynb>