Homework Assignment

- Using Python and Numpy, write a class named **LinearRegression**, implementing linear regression model
    - Consider MSE loss
    - Write three update methods in the class, i.e., SGD, BGD, and MBGD
    - Add min-max normalization and mean normalization to the class

Homework Assignment

- Test your linear regression model
  - Consider the data set generated from the codes in next page
  - Adopt the linear regregression model
  - Try SGD, BGD, and MBGD and analyze what you observe during training
  - Try using min-max normalzation, mean normalization, as well as without normalization, and then analyze what you observe during training
  - Use matplotlib to plot the data as well the line learned for all above try

Homework Assignment

```python
X_train = np.arange(100).reshape(100,1)
a, b = 1, 10
y_train = a * X_train + b  + np.random.normal(0, 5, size=X_train.shape)
y_train = y_train.reshape(-1)
```