

```

1 import numpy as np
2 from utils import _initialize, optimizer
3
4 np.random.seed(428)
5
6 # ===== EDIT HERE
   =====
7 # 1. Choose DATA : Concrete / Graduate
8 # 2. Adjust Hyperparameters
9
10 # DATA
11 DATA_NAME = 'Concrete'
12
13 # HYPERPARAMETERS
14 batch_size = 823
15 num_epochs = 4000
16 learning_rate = 0.001
17
18 # =====
   =====
19
20 epsilon = 0.01 # not for SGD
21 gamma = 0.9 # not for SGD
22
23 # OPTIMIZER
24 OPTIMIZER = 'SGD'
25
26 assert DATA_NAME in ['Concrete', 'Graduate']
27 assert OPTIMIZER in ['SGD']
28
29 # Load dataset, model and evaluation metric
30 train_data, test_data, linear_regression, metric =
   _initialize(DATA_NAME)
31 train_x, train_y = train_data
32
33 num_data, num_features = train_x.shape
34 print('# of Training data : ', num_data)
35
36 # Make model & optimizer
37 model = linear_regression(num_features)
38 optim = optimizer(OPTIMIZER, gamma=gamma, epsilon=
   epsilon)
39
40 # TRAIN

```

```
41 loss = model.train(train_x, train_y, num_epochs,
    batch_size, learning_rate, optim)
42 print('Training Loss at the last epoch: %.2f' % loss)
43
44 # EVALUATION
45 test_x, test_y = test_data
46 pred = model.forward(test_x)
47
48 MSE = metric(pred, test_y)
49
50 print(OPTIMIZER, ' MSE on Test Data : %.2f' % MSE)
51
```