```
 1 C:\Python35\python.exe M:/ce888/ce888-assignment2/n+
   1_denoising_autoencoder_cifar10.py
 2 Using TensorFlow backend.
 3 Downloading data from http://www.cs.toronto.edu/~kriz/
   cifar-10-python.tar.gz
 4 170409984/170498071 [==============================>.] - ETA
   : 0sx_train shape: (50000, 32, 32, 3)
 5 50000 train samples
 6 10000 test samples
 7 Train on 50000 samples, validate on 10000 samples
 8 Epoch 1/21
 9 2018-04-19 16:03:56.878532: W C:\tf_jenkins\home\workspace
   \rel-win\M\windows\PY\35\tensorflow\core\platform\
   cpu_feature_guard.cc:45] The TensorFlow library wasn't
   compiled to use AVX instructions, but these are available
   on your machine and could speed up CPU computations.
10 2018-04-19 16:03:56.878814: W C:\tf_jenkins\home\workspace
   \rel-win\M\windows\PY\35\tensorflow\core\platform\
   cpu_feature_guard.cc:45] The TensorFlow library wasn't
   compiled to use AVX2 instructions, but these are available
    on your machine and could speed up CPU computations.
11 50000/50000 [==============================] - 300s - loss
   : 0.5645 - val_loss: 0.5578
12 Epoch 2/21
13 50000/50000 [==============================] - 284s - loss
   : 0.5573 - val_loss: 0.5556
14 Epoch 3/21
15 50000/50000 [==============================] - 289s - loss
   : 0.5558 - val_loss: 0.5543
16 Epoch 4/21
17 50000/50000 [==============================] - 287s - loss
   : 0.5550 - val_loss: 0.5541
18 Epoch 5/21
19 50000/50000 [==============================] - 287s - loss
   : 0.5545 - val_loss: 0.5547
20 Epoch 6/21
21 50000/50000 [==============================] - 286s - loss
   : 0.5541 - val_loss: 0.5546
22 Epoch 7/21
23 50000/50000 [==============================] - 285s - loss
   : 0.5539 - val_loss: 0.5538
24 Epoch 8/21
25 50000/50000 [==============================] - 292s - loss
   : 0.5536 - val_loss: 0.5533
26 Epoch 9/21
```

```
27 50000/50000 [==============================] - 296s - loss
   : 0.5535 - val_loss: 0.5531
28 Epoch 10/21
29 50000/50000 [==============================] - 295s - loss
   : 0.5534 - val_loss: 0.5531
30 Epoch 11/21
31 50000/50000 [==============================] - 295s - loss
   : 0.5532 - val_loss: 0.5531
32 Epoch 12/21
33 50000/50000 [==============================] - 287s - loss
   : 0.5531 - val_loss: 0.5534
34 Epoch 13/21
35 50000/50000 [==============================] - 280s - loss
   : 0.5531 - val_loss: 0.5526
36 Epoch 14/21
37 50000/50000 [==============================] - 282s - loss
   : 0.5530 - val_loss: 0.5525
38 Epoch 15/21
39 50000/50000 [==============================] - 285s - loss
   : 0.5529 - val_loss: 0.5523
40 Epoch 16/21
41 50000/50000 [==============================] - 282s - loss
   : 0.5529 - val_loss: 0.5526
42 Epoch 17/21
43 50000/50000 [==============================] - 282s - loss
   : 0.5528 - val_loss: 0.5527
44 Epoch 18/21
45 50000/50000 [==============================] - 281s - loss
   : 0.5527 - val_loss: 0.5526
46 Epoch 19/21
47 50000/50000 [==============================] - 281s - loss
   : 0.5527 - val_loss: 0.5524
48 Epoch 20/21
49 50000/50000 [==============================] - 283s - loss
   : 0.5526 - val_loss: 0.5521
50 Epoch 21/21
51 50000/50000 [==============================] - 288s - loss
   : 0.5526 - val_loss: 0.5521
52 ================================================================
   ====
53 The loss on x_test : 0.552072632408
54 The accuracy on x_test : 0.447927367592
55 ================================================================
   ====
56 The loss on x_train : 0.551168922462
```

```
The accuracy on x_train : 0.448831077538
================================================================
=====
The loss on x1_train : -577.253335175781
The accuracy on x1_train : 578.253335175781
================================================================
=====
The loss on x2_train : -577.242505097656
The accuracy on x2_train : 578.242505097656
================================================================
=====
The loss on x3_train : -577.292744160156
The accuracy on x3_train : 578.292744160156

Process finished with exit code 0

```