

ANN_project - part123.py

```
189 read_test_set()
190
191 # first step
192 first_layer=layer(784,16,1)
193 second_layer=layer(16,16,2)
194 third_layer=layer(16,16,3)
195 fourth_layer=layer(16,8,4)
196
197 # part 1
198 feed_forward(first_layer,second_layer,third_layer)
199
200 # part 2
```

Run: part123

"C:\Users\kiana\Desktop\university\term 6\computational intelligence\ANN_project\venv\Scripts\python.exe" "C:/Users/kiana/Desktop/university/term 6/computational intelligence/ANN_project/part123.py"

Accuracy is : 0.11

Process finished with exit code 0

Part 123

Feed forward

ANN_project - part123.py

```
199 #part 2
200 learning_rate=1
201 number_of_epochs=20
202 batch_size=10
203
204
```

Run: part123

epoch 0
epoch 1
epoch 2
epoch 3
epoch 4
epoch 5
epoch 6
epoch 7
epoch 8
epoch 9
epoch 10
epoch 11
epoch 12
epoch 13
epoch 14
epoch 15
epoch 16
epoch 17
epoch 18
epoch 19

Accuracy is : 0.65

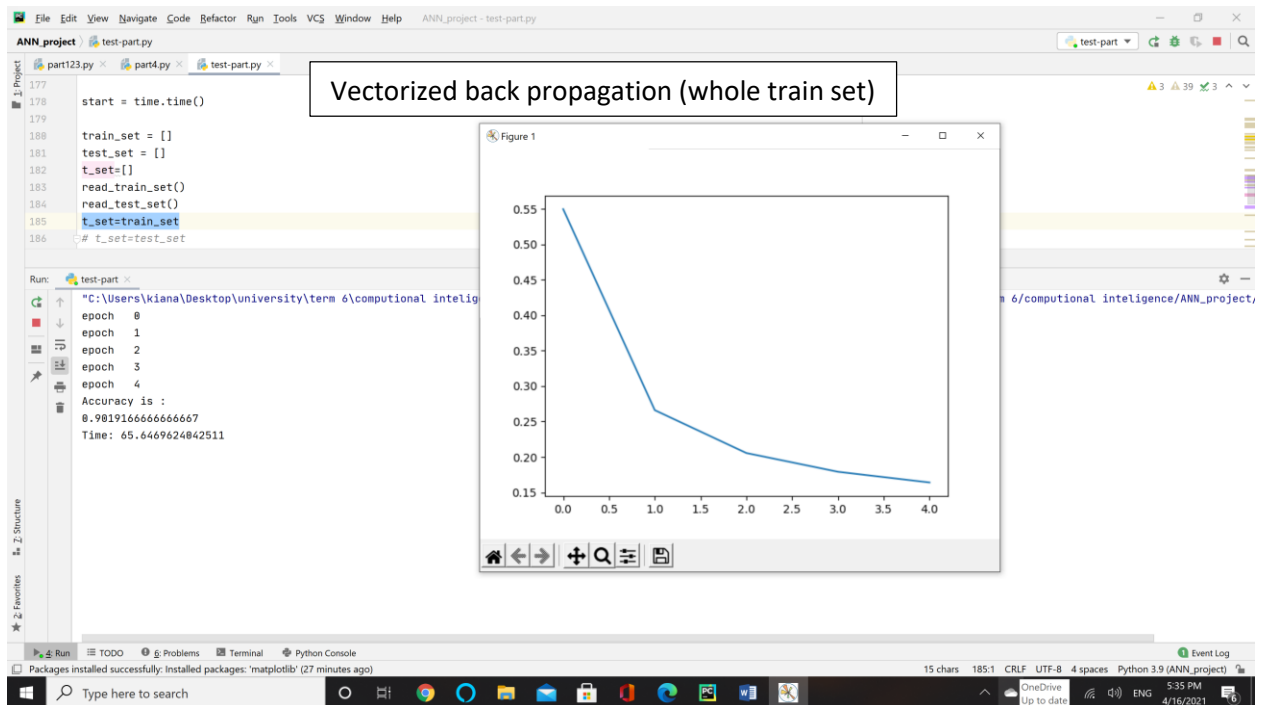
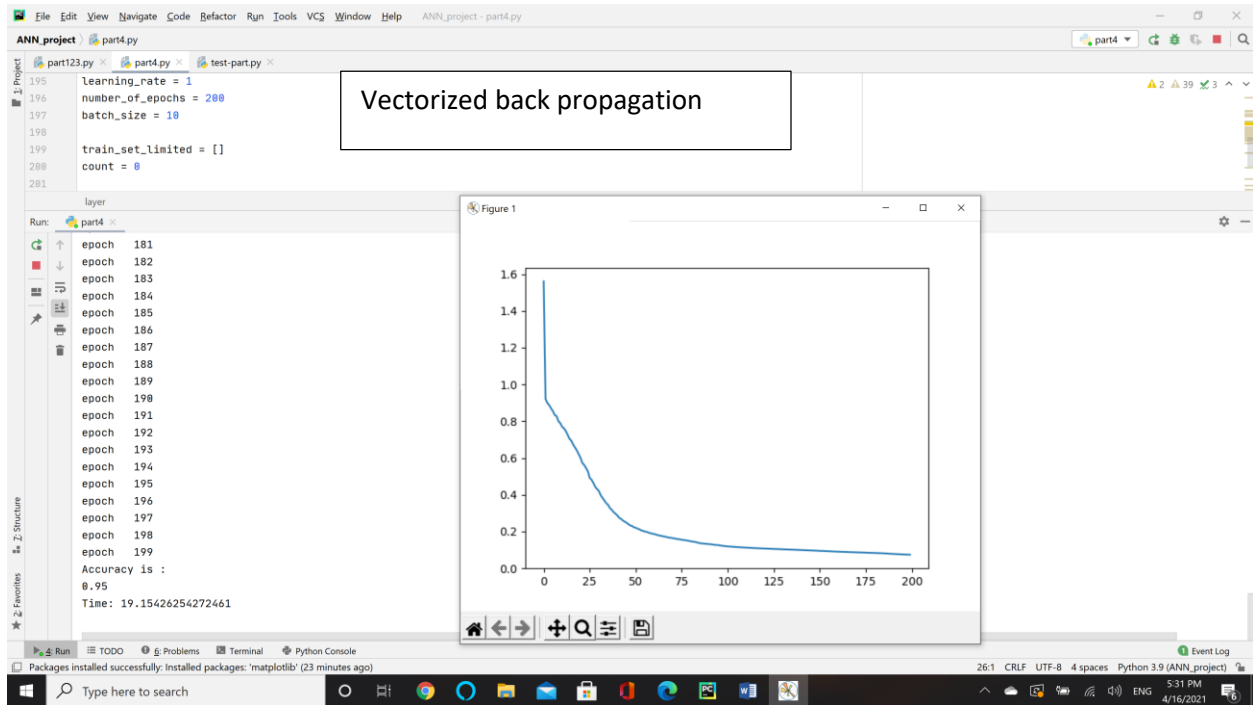
Time: 198.51084804534912

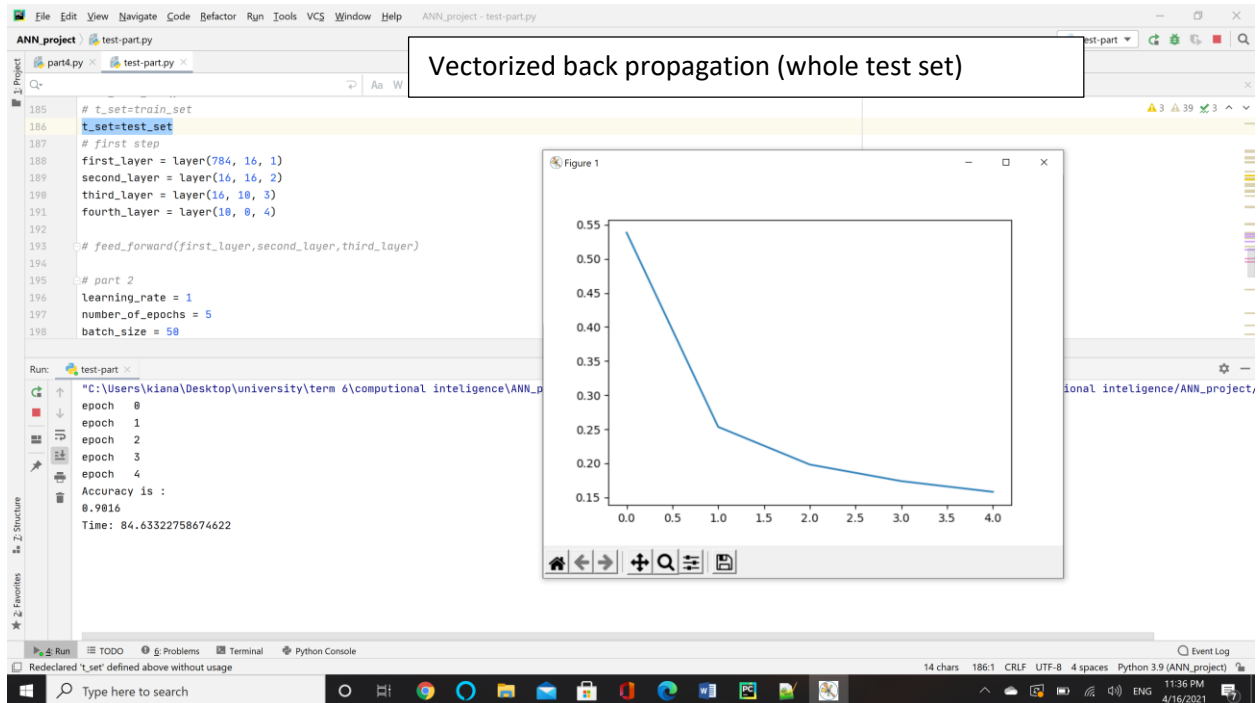
Figure 1

Epoch	Accuracy
0	2.5
1	1.8
2	0.9
3	0.8
4	0.75
5	0.7
6	0.65
7	0.6
8	0.55
9	0.5
10	0.45
11	0.4
12	0.35
13	0.3
14	0.25
15	0.2
16	0.15
17	0.1
18	0.05
19	0.0

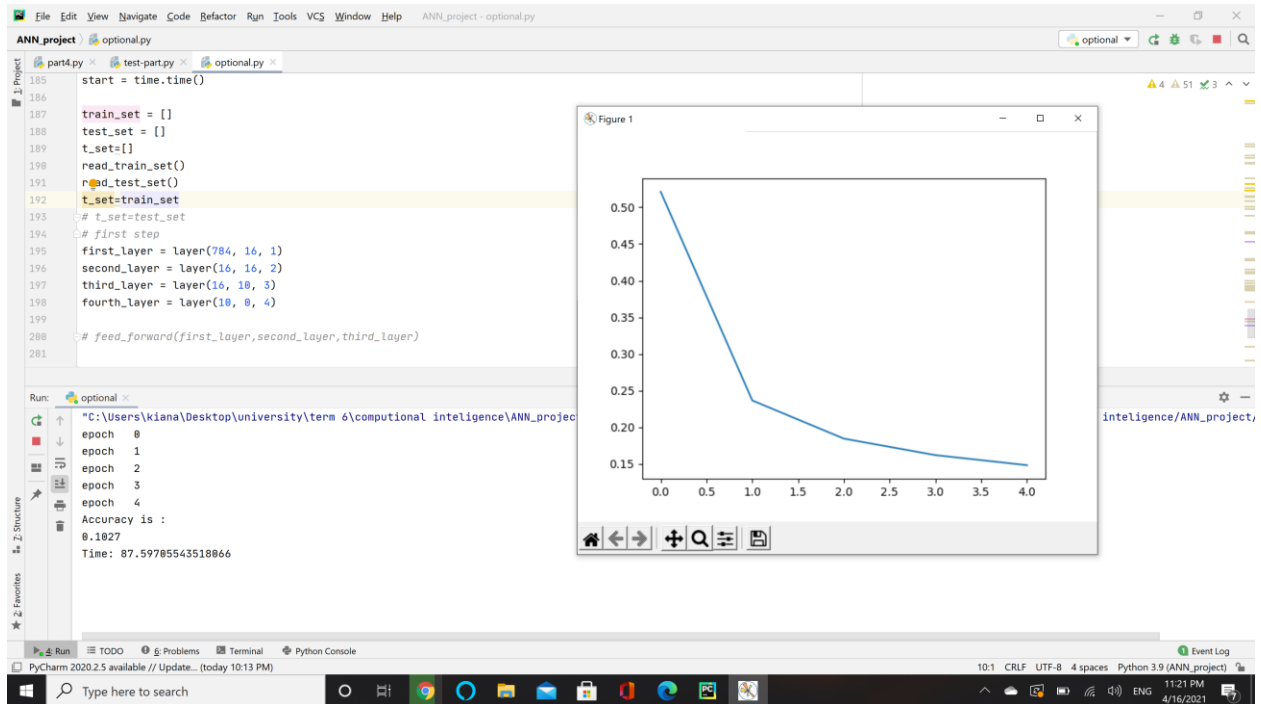
Part 123

Back propagation





Optional -1



علت :

Adversarial Attack