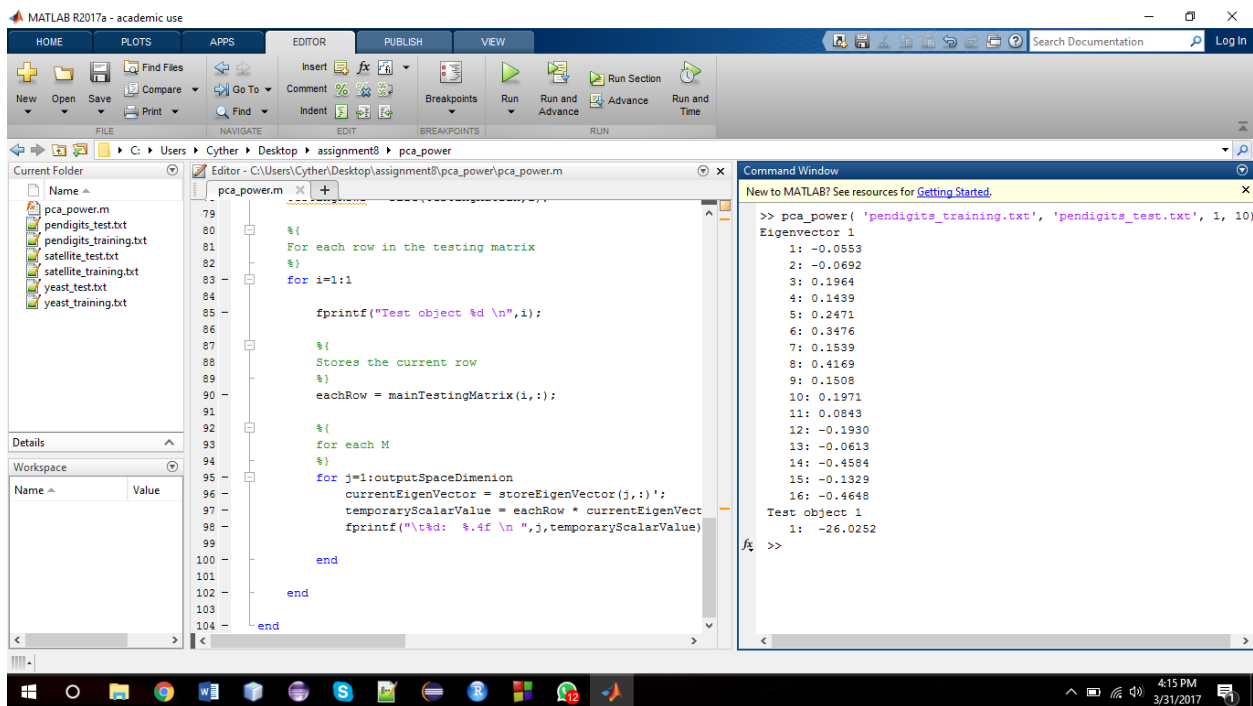


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Course Number: 6363

1: `pca_power('pendigits_training.txt', 'pendigits_test.txt', 1, 10)`



The screenshot shows the MATLAB R2017a interface. The Command Window displays the following output:

```
>> pca_power('pendigits_training.txt', 'pendigits_test.txt', 1, 10)
Eigenvector 1
1: -0.0553
2: -0.0692
3: 0.1964
4: 0.1439
5: 0.2471
6: 0.3476
7: 0.1539
8: 0.4169
9: 0.1508
10: 0.1971
11: 0.0843
12: -0.1930
13: -0.0613
14: -0.4584
15: -0.1329
16: -0.4648
Test object 1
1: -26.0252
fx >>
```

```
>> pca_power('pendigits_training.txt', 'pendigits_test.txt', 1, 10)
```

Eigenvector 1

- 1: -0.0553
- 2: -0.0692
- 3: 0.1964
- 4: 0.1439
- 5: 0.2471
- 6: 0.3476
- 7: 0.1539
- 8: 0.4169
- 9: 0.1508
- 10: 0.1971

11: 0.0843

12: -0.1930

13: -0.0613

14: -0.4584

15: -0.1329

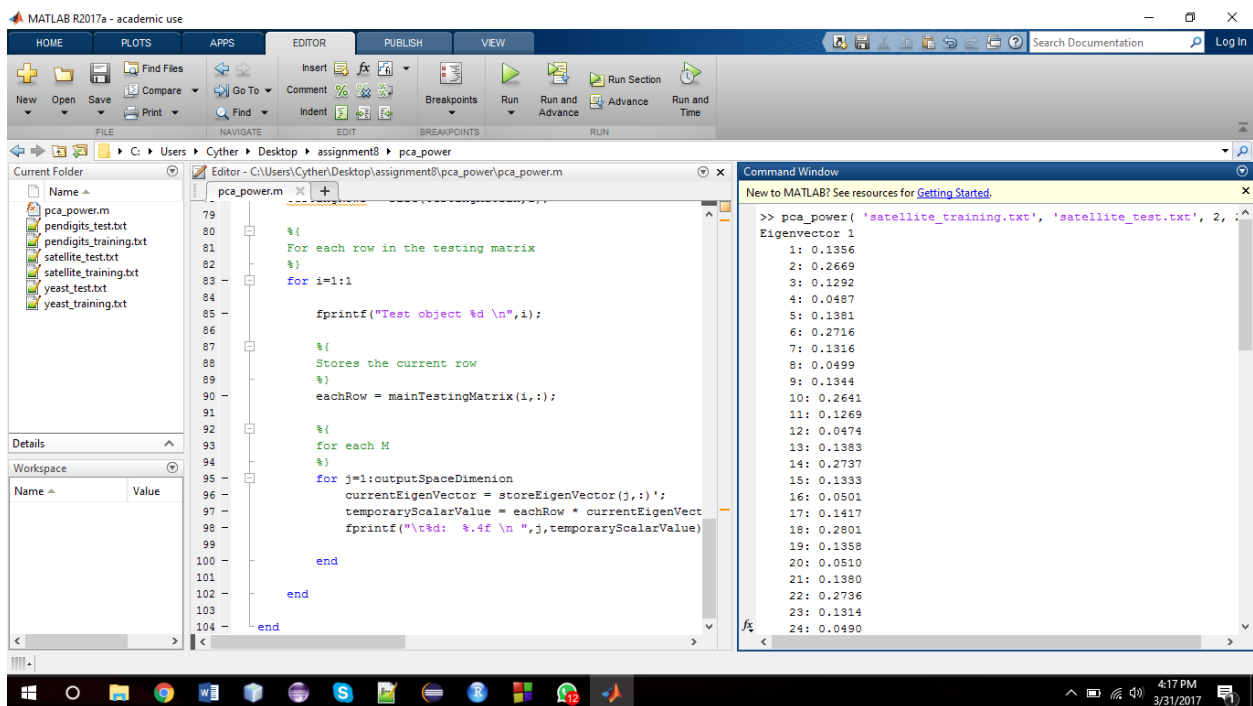
16: -0.4648

Test object 1

1: -26.0252

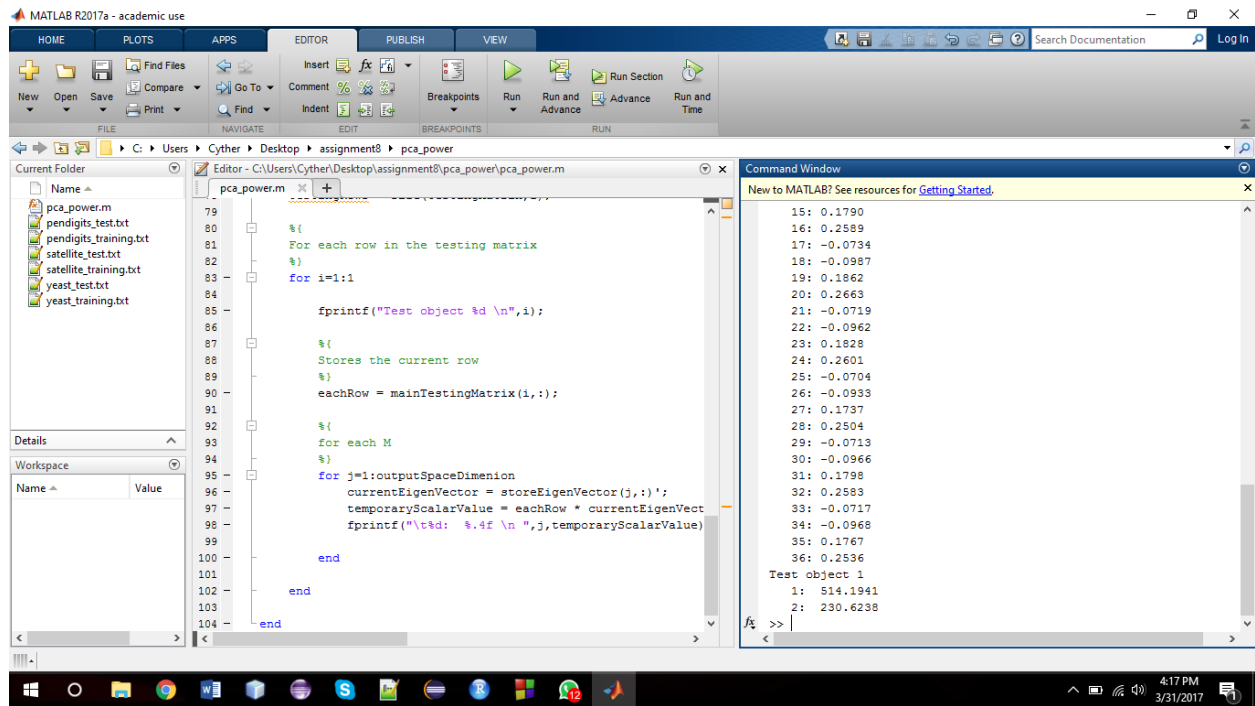
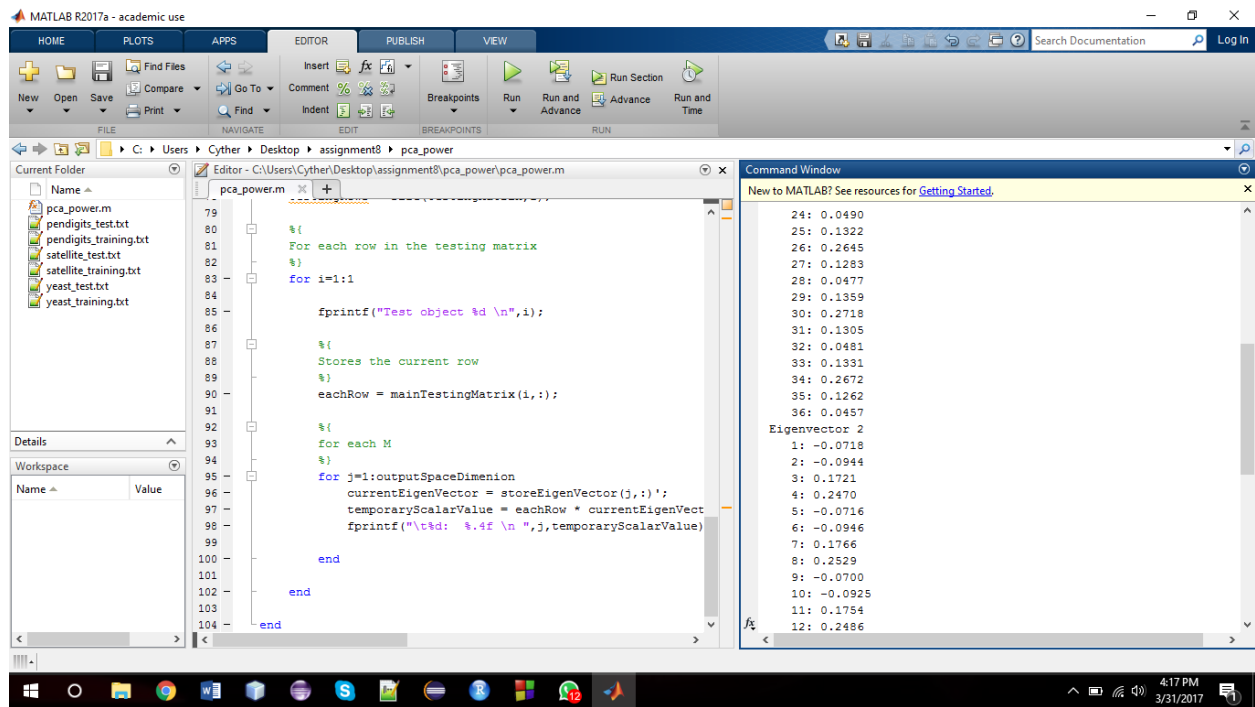
>>

2: pca_power('satellite_training.txt','satellite_test.txt', 2, 20)



The screenshot shows the MATLAB R2017a interface. The Command Window displays the output of the `pca_power` function, which is a 24x1 vector of eigenvalues. The output is as follows:

```
>> pca_power('satellite_training.txt','satellite_test.txt', 2, 20)
Eigenvalue 1
1: 0.1356
2: 0.2669
3: 0.1292
4: 0.0487
5: 0.1381
6: 0.2716
7: 0.1316
8: 0.0499
9: 0.1344
10: 0.2641
11: 0.1269
12: 0.0474
13: 0.1383
14: 0.2737
15: 0.1333
16: 0.0501
17: 0.1417
18: 0.2801
19: 0.1358
20: 0.0510
21: 0.1380
22: 0.2736
23: 0.1314
24: 0.0490
```



```
>> pca_power('satellite_training.txt', 'satellite_test.txt', 2, 20)
```

Eigenvector 1

```
1: 0.1356
```

2: 0.2669
3: 0.1292
4: 0.0487
5: 0.1381
6: 0.2716
7: 0.1316
8: 0.0499
9: 0.1344
10: 0.2641
11: 0.1269
12: 0.0474
13: 0.1383
14: 0.2737
15: 0.1333
16: 0.0501
17: 0.1417
18: 0.2801
19: 0.1358
20: 0.0510
21: 0.1380
22: 0.2736
23: 0.1314
24: 0.0490
25: 0.1322
26: 0.2645
27: 0.1283
28: 0.0477
29: 0.1359
30: 0.2718
31: 0.1305
32: 0.0481
33: 0.1331
34: 0.2672

35: 0.1262

36: 0.0457

Eigenvector 2

1: -0.0718

2: -0.0944

3: 0.1721

4: 0.2470

5: -0.0716

6: -0.0946

7: 0.1766

8: 0.2529

9: -0.0700

10: -0.0925

11: 0.1754

12: 0.2486

13: -0.0722

14: -0.0975

15: 0.1790

16: 0.2589

17: -0.0734

18: -0.0987

19: 0.1862

20: 0.2663

21: -0.0719

22: -0.0962

23: 0.1828

24: 0.2601

25: -0.0704

26: -0.0933

27: 0.1737

28: 0.2504

29: -0.0713

30: -0.0966

31: 0.1798

32: 0.2583

33: -0.0717

34: -0.0968

35: 0.1767

36: 0.2536

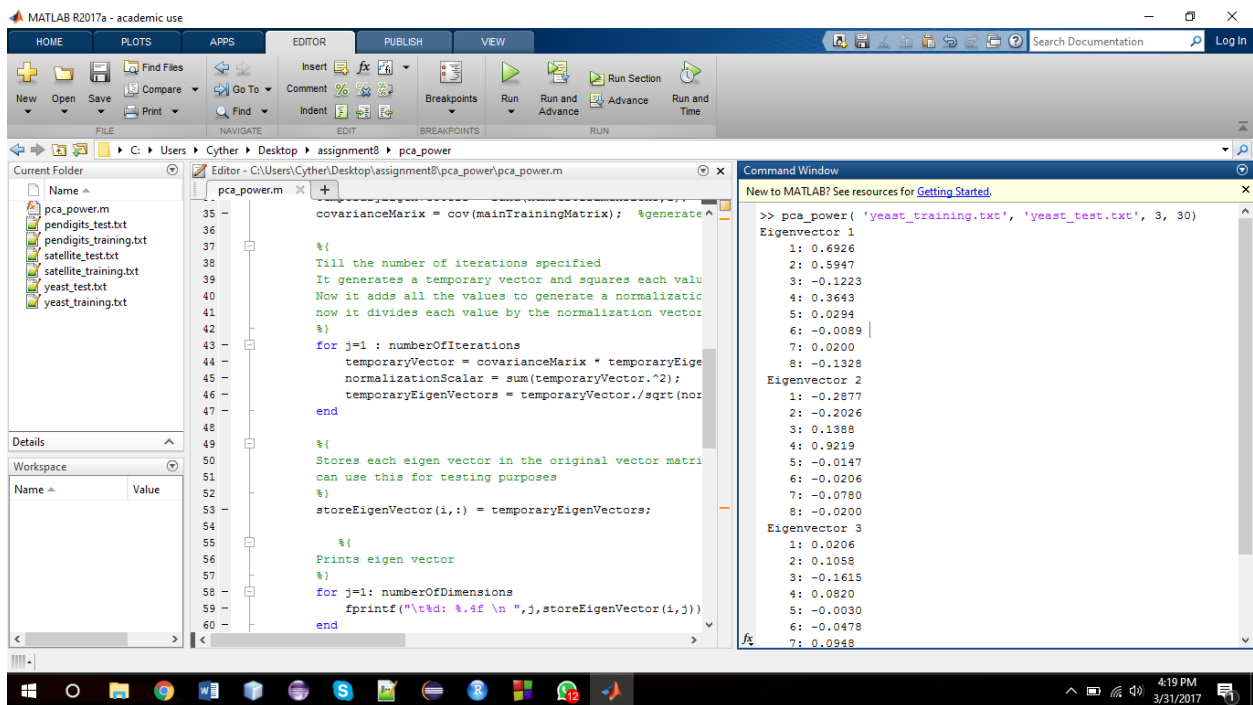
Test object 1

1: 514.1941

2: 230.6238

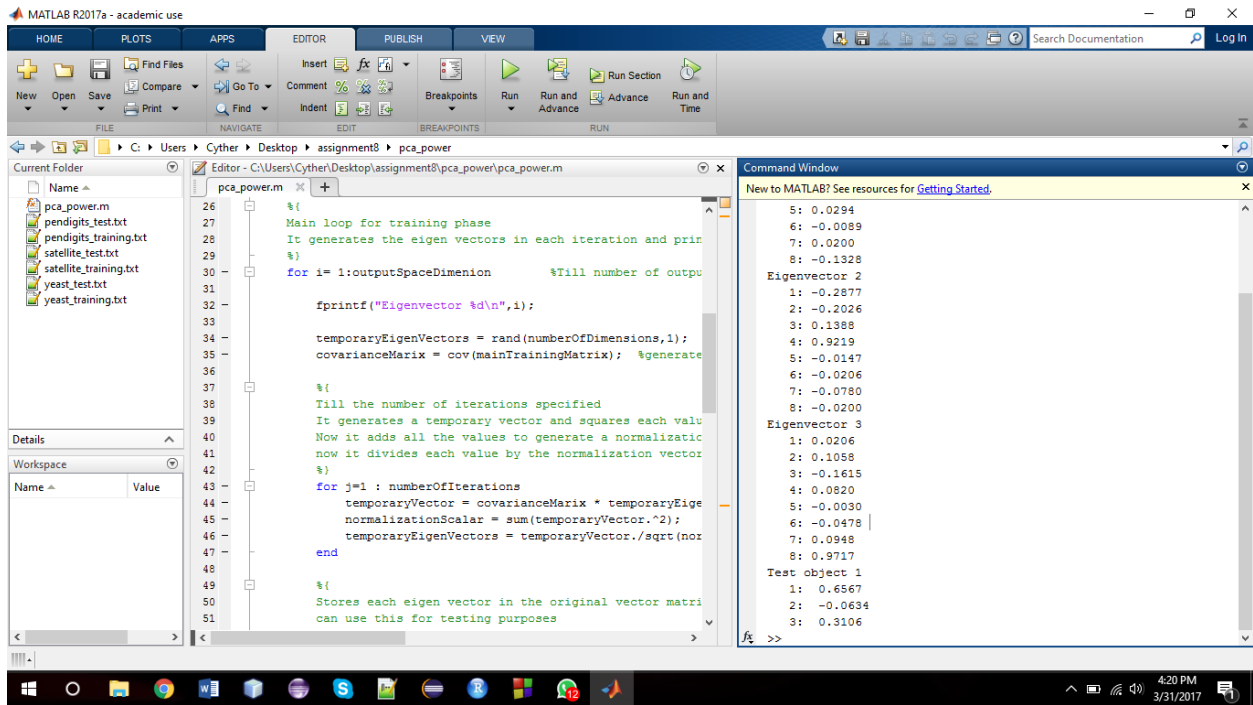
>>

3: `pca_power('yeast_training.txt','yeast_test.txt',3,30)`



The screenshot shows the MATLAB R2017a interface. The Command Window displays the output of the `pca_power` function call. The output shows three eigenvectors, each with 8 components, and their corresponding eigenvalues.

```
>> pca_power('yeast_training.txt','yeast_test.txt',3,30)
Eigenvector 1
1: 0.6926
2: 0.5947
3: -0.1223
4: 0.3643
5: 0.0294
6: -0.0089
7: 0.0200
8: -0.1328
Eigenvector 2
1: -0.2877
2: -0.2026
3: 0.1388
4: 0.9219
5: -0.0147
6: -0.0206
7: -0.0780
8: -0.0200
Eigenvector 3
1: 0.0206
2: 0.1058
3: -0.1615
4: 0.0820
5: -0.0030
6: -0.0478
7: 0.0948
```



```
>> pca_power('yeast_training.txt','yeast_test.txt',3,30)
```

Eigenvector 1

```

1: 0.6926
2: 0.5947
3: -0.1223
4: 0.3643
5: 0.0294
6: -0.0089
7: 0.0200
8: -0.1328

```

Eigenvector 2

```

1: -0.2877
2: -0.2026
3: 0.1388
4: 0.9219
5: -0.0147
6: -0.0206
7: -0.0780

```

8: -0.0200

Eigenvector 3

1: 0.0206

2: 0.1058

3: -0.1615

4: 0.0820

5: -0.0030

6: -0.0478

7: 0.0948

8: 0.9717

Test object 1

1: 0.6567

2: -0.0634

3: 0.3106

>>