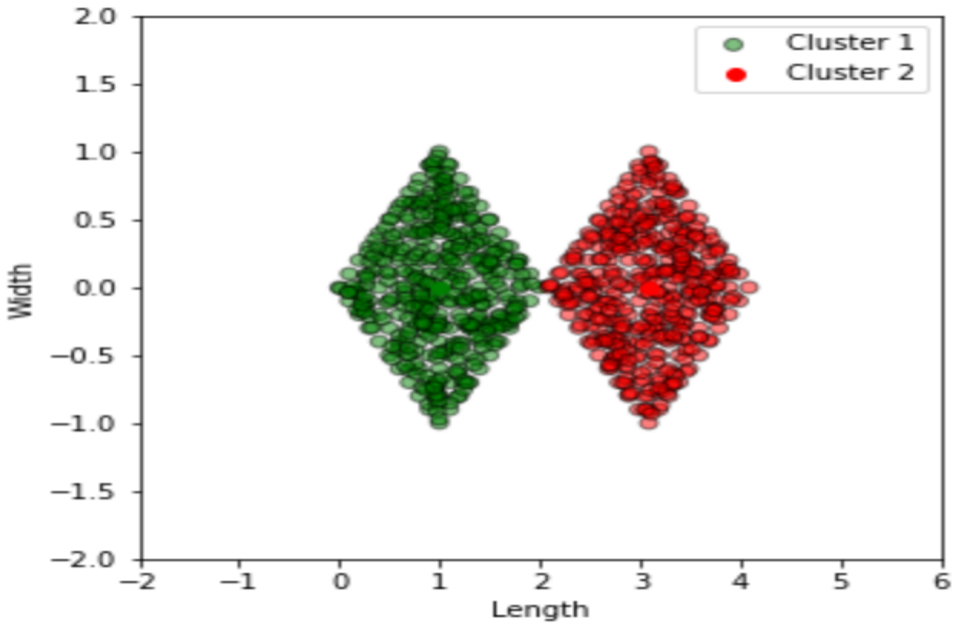
AI_RBE_534_Hw#3

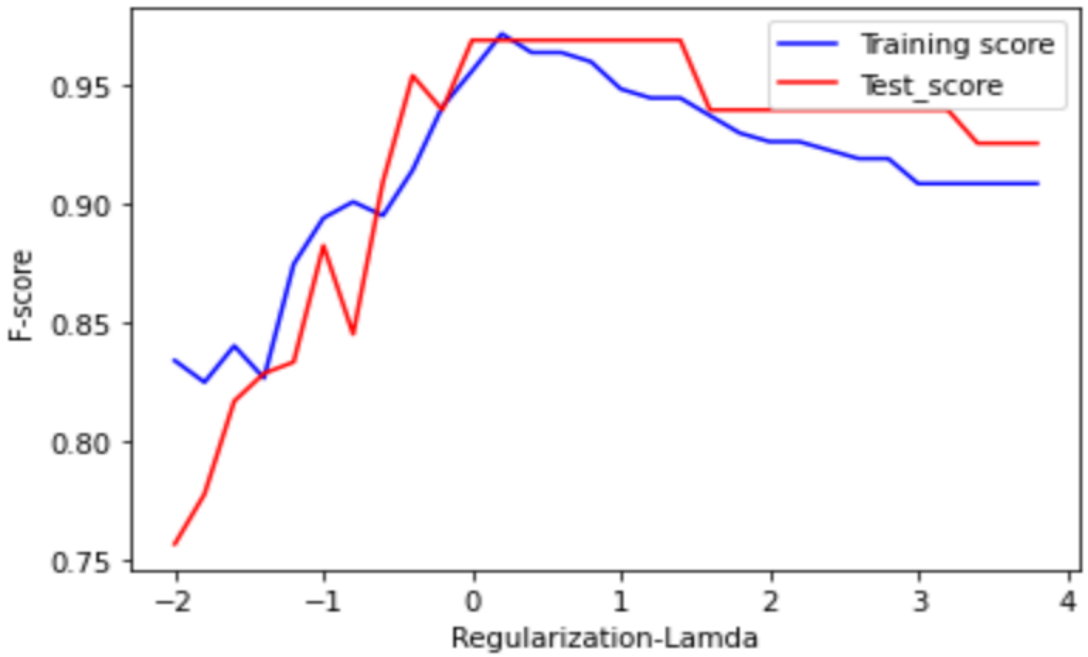
Problem #1



Examining the final groupings in the final partition, based on the initial partition case we had each cluster satisfy the grouping objectives. The k means to run it does the steps of clustering and finding the center which is shown above. The assuming of k value of multiple by trial and error method we can get to the value which seems suitable

Problem #2

Submitted as one notebook
B. The f measure value is 0.96875
C.



Problem #3

A.

B.

```
Fowlkes Mallows score is  0.8321395046705492
[[178   0   0   0   0   0   0   0   0  -1]
 [  0 155  27   0   0   0   0   0   0  -1]
 [  0   0 166   0   0   0   0   1  10  -1]
 [  0   0   0 169   0   0   0   1  13  -1]
 [  0   0   0   0 178   0   0   3   0  -1]
 [  0   0   0   2   0 179   1   0   0  -1]
 [  0   0   0   0   0   0 180   0   1  -1]
 [  0   0   0   0   0   0   0 179   0  -1]
 [  0   3   4   1   0   0   0   1 165  -1]
 [  0  20   0 145   0   2   0  11   2  -1]]
```

C.

```
Fowlkes Mallows score is  0.6870045489739688
[[175   0   0   0   2   0   1   0   0  -1]
 [  0  55  24   2   0   1   1   0  99  -1]
 [  2   1 136   3   0   0   0   3  24  -1]
 [  1   0   0 147   0   2   0  10   7  -1]
 [  0   4   0   0 161   1   0   7   8  -1]
 [  2   0   0   0   1 159   1   0   1  -1]
 [  1   0   0   0   1   1 174   0   3  -1]
 [  0   0   0   0   3   1   0 168   7  -1]
 [  2   6   4  21   0   8   0   1 127  -1]
 [  8  17   0  12   0   7   0   6   2  -1]]
```

Problem #4

a. Accuracy : 0.9625
   fMeasure: 0.9625
b. Accuracy : 1.0
   fMeasure: 1.0
c. Accuracy : 0.9655
   fMeasure: 0.9655