Report on Assignment 3: PCA and EM algorithm

I keep the log likelihood threshold 0.005 and after 27 iteration, it converges.

Then I get the mean, weight and co variance matrix

mean :

[[1.90198486 5.2482217]

 [1.55661765 -4.50601459]

 [-2.00846501 0.19340594]]

weights:

[0.24037555 0.29970931 0.45991514]

covariance :

[[[3.12989928 -1.03907613]

  [-1.03907613 1.41523618]]

 [[1.12342907 -0.59271488]

  [-0.59271488 2.84662773]]

 [[1.3619919   0.67149325]

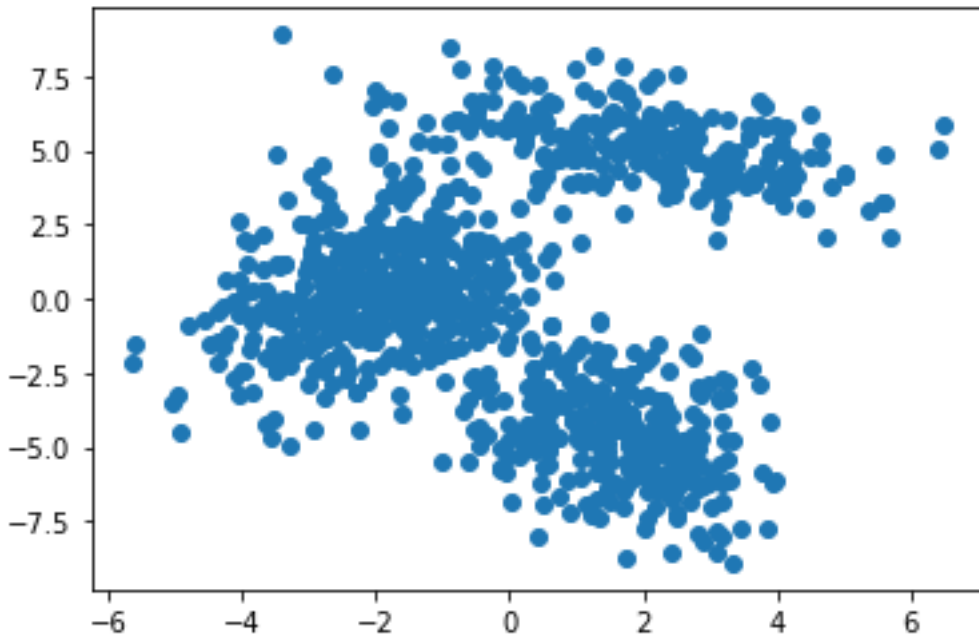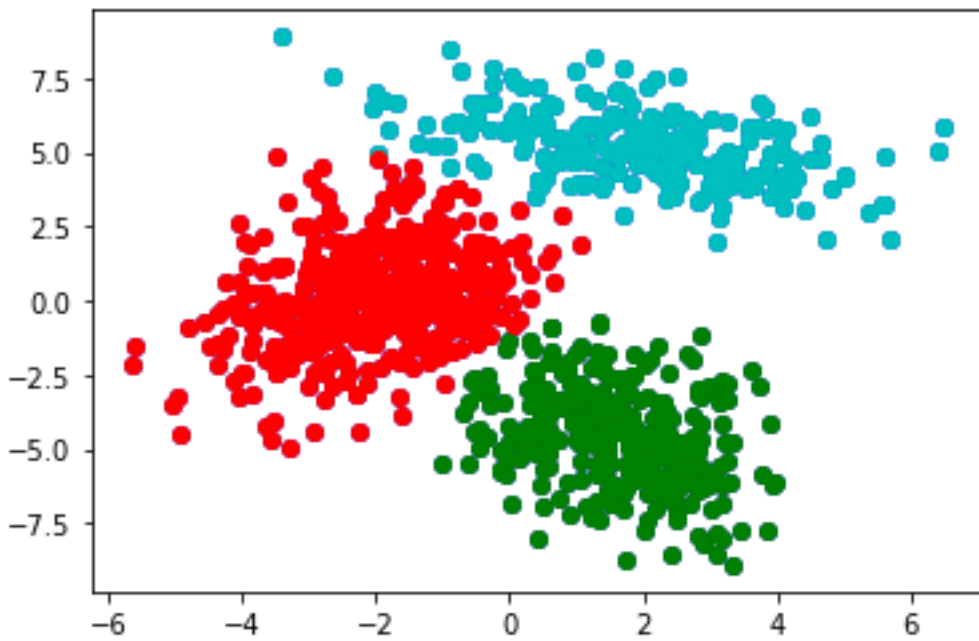 [0.67149325 3.12798887]]]

The PCA plot is given below

Figure 1 : Before clustering

Figure 2: after clustering