**Instructions to execute algorithms :**

**1.** **Gaussian Mixture Model (GMM.ipynb):**

a. Mention the file name with file path to be executed in line numbers line 16 and line 20 of the GMM.ipynb file

b. To use default values for initialization of the parameters, comment the lines from line42 to line 52.

c. To specify the values manually for initialization of parameters, comment the lines from line27 to line 37 and uncomment the lines from line42 to line52.

d. Change or enter the value of initial Pi in line 47, change or enter the value of initial Mu in line 49 and change or enter the value of initial Sigma in line 51.

e. Now execute the code cell.

f. It will prompt to enter the number of clusters. Enter the number of clusters.

**2.** **Density Based Clustering (DBSCAN.ipynb):**

a. Change or mention the Epsilon value in line15 and Minimum number of points in line16 of the DBSCAN.ipynb file.

b. Change or mention the file name with file path in the line19 of the DBSCAN.ipynb file.

c. Execute the code cell to obtain the scatterplot after performing clustering on the dataset.

**3. K Means Clustering(KMEANS.ipynb):**

1. Change the file name with file path in the line6 of the third code cell.
2. To provide specific parameter initializations:
   1. Comment the line31 in the third code cell and uncomment the lines from line34 to line 38.
   2. Now a prompt will be open and mention the number of clusters value()k, the maximum number of iterations and the rows or centroids values that have to be initialized and click enter.

**4. Hierarchical Clustering():**

1. Change the file name with file path in the line11 of the code.
2. Change the number of clusters as required in line 12

**5. Spectral Clustering(spectralclustering.ipynb):**

a. Mention the file name with file path to be executed in the spectralclustering.ipynb file

B. Run the following code blocks and enter the K, sigma and centroid id input values after running the main().