# 1 NAME: KHURAM SHAHZAD

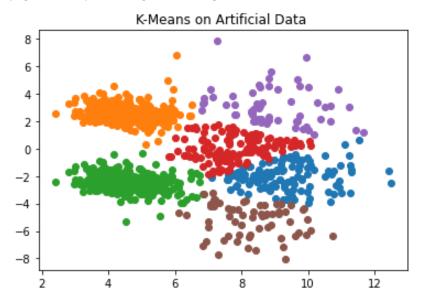
Description File for input parameter.

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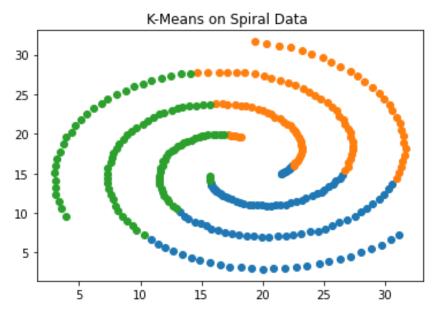
# **3 K-MEANS ALGORITHMS:**

#### 3.1 INPUT PARAMETER FOR ARTIFICIAL DATA



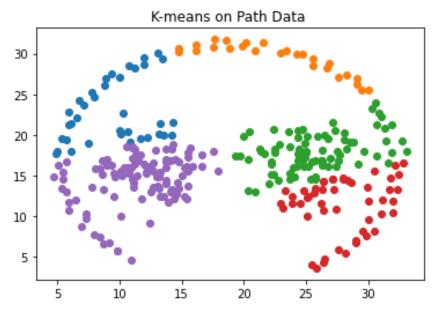
- a. n\_clusters=6 (After huge a number of testing K means give minimum errors on 6 cluster.)
- b. max\_iter=1000 (Maximum number of iterations of the k-means algorithm for a single run).

### 3.2 INPUT PARAMETER FOR SPIRAL DATA



- c. n\_clusters=3 (Its seems in data that there are 3 cluster so we give it three cluster
- d. max\_iter=1000 (Maximum number of iterations of the k-means algorithm for a single run)

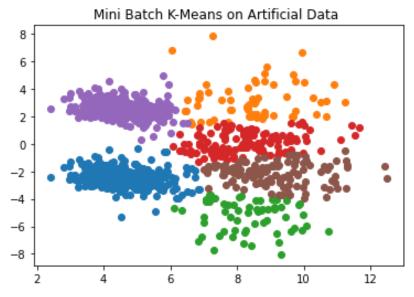
### 3.3 INPUT PARAMETER FOR PATH DATA



- e. **n\_clusters=5** (After huge a number of testing we have decided to take 5 cluster because on 5 cluster K means producing the best evaluation scores).
- f. **max\_iter=1000** (Maximum number of iterations of the k-means algorithm for a single run)

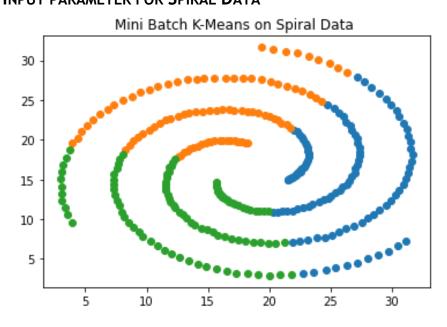
# 4 MINI-BATCH K-MEANS:

#### 4.1 INPUT PARAMETER FOR ARTIFICIAL DATA



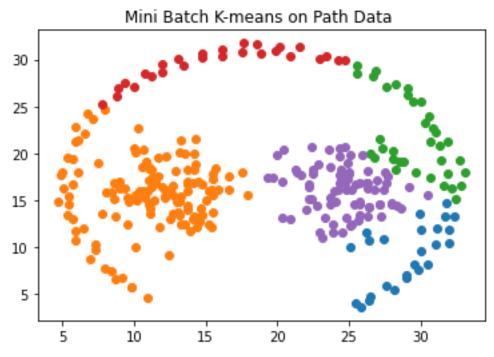
- g. **n\_clusters=6** (After huge a number of testing Mini-Batch K means give minimum errors on 6 cluster.)
- h. **max\_iter=1000** (Maximum number of iterations of the Mini-Batch k-means algorithm for a single run).

#### 4.2 INPUT PARAMETER FOR SPIRAL DATA



- i. **n\_clusters=3** (Its seems in data that there are 3 cluster so we give it three cluster
- j. **max\_iter=1000** (Maximum number of iterations of the Mini-Batch k-means algorithm for a single run)

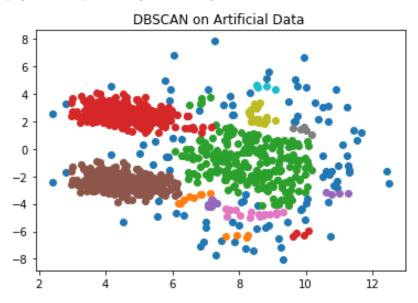
### 4.3 INPUT PARAMETER FOR PATH DATA



- k. **n\_clusters=5** (After huge a number of testing we have decided to take 5 cluster because on 5 cluster Mini-Batch K means produce minimum cost.
- l. max\_iter=1000 (Maximum number of iterations of the Mini-Batch k-means algorithm for a single run)

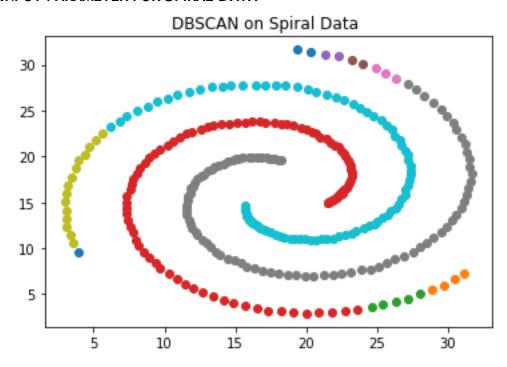
# 5 DBSCAN:

#### 5.1 INPUT PARAMETER FOR ARTIFICIAL DATA



- m. eps=0.4 (Here eps means threshold / radius or window size.)
- n. **min\_samples=4** (sample means how much minimum sample can be in our eps).

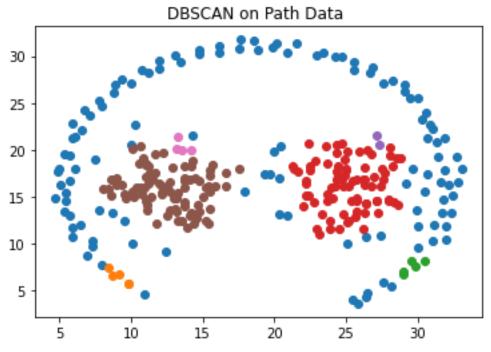
### 5.2 INPUT PARAMETER FOR SPIRAL DATA



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- a. **eps=0.9999999** (Here eps mean threshold / radius or window size.)
- b. **min\_samples=1.5** (sample means how much minimum sample can be in our eps).

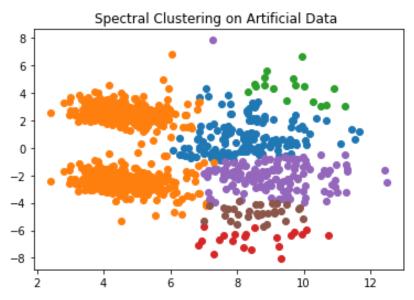
### 5.3 INPUT PARAMETER FOR PATH DATA



- c. **eps= 1.333** (Here eps means threshold / radius or window size.)
- d. **min\_samples=4.1** (sample means how much minimum sample can be in our eps).

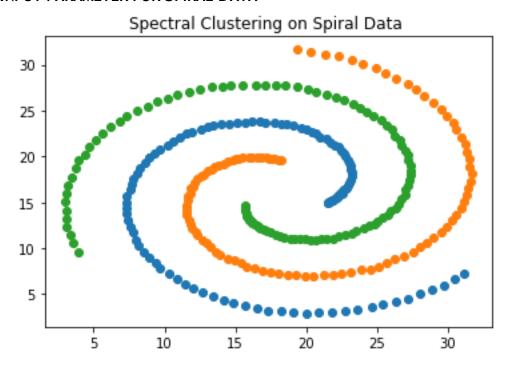
# **6 SPECTRAL CLUSTERING:**

#### 6.1 INPUT PARAMETER FOR ARTIFICIAL DATA



a. **n\_clusters=6** (After huge a number of testing spectral clustering give minimum cost on 6 cluster in Evaluation Metrics.)

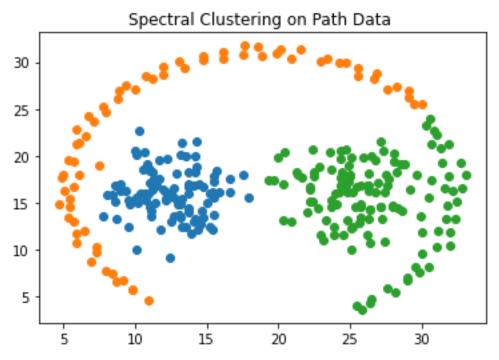
### **6.2** INPUT PARAMETER FOR SPIRAL DATA



Prepared by: Khuram Shahzad (p21-8742)

e. **n\_clusters=3** (Its seems in data that there are 3 cluster so we give it three cluster)

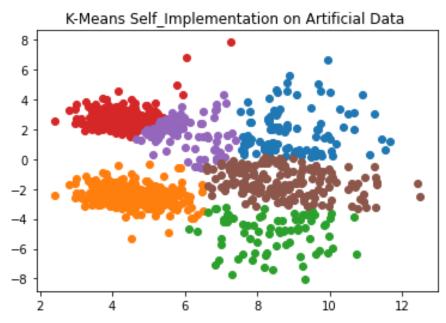
## 6.3 INPUT PARAMETER FOR PATH DATA



a. **n\_clusters=3** (After huge a number of testing spectral clustering give minimum cost on 3 cluster in Evaluation Metrics.)

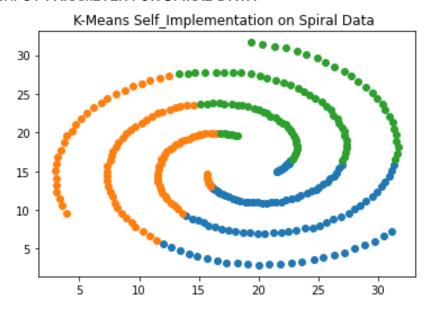
# 7 K-MEANS SELF IMPLEMENTATION:

#### 7.1 INPUT PARAMETER FOR ARTIFICIAL DATA



b. **n\_clusters=6** (After huge a number of testing K-Means Self Implementation give minimum cost on 6 cluster in Evaluation Metrics.)

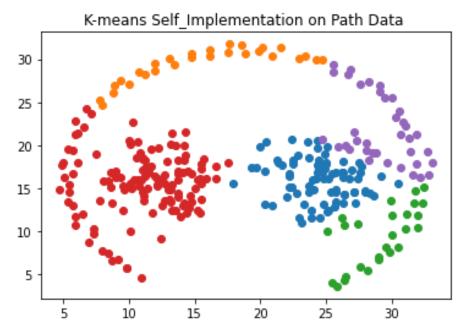
## 7.2 INPUT PARAMETER FOR SPIRAL DATA



Prepared by: Khuram Shahzad (p21-8742)

f. **n\_clusters=3** (Its seems in data that there are 3 cluster so we give it three cluster)

## 7.3 INPUT PARAMETER FOR PATH DATA



b. **n\_clusters=5** (After huge a number of testing K-Means Self Implementation give minimum cost on 3 cluster in Evaluation Metrics.)