Clustering Data With DBSCAN On Python

Please cluster the following data with DBSCAN Algorithm

[[3, 2, 1], [5, 5, 6], [4, 5, 5],[3, 3, 2], [7, 6, 6], [5, 5,4], [1, 0 ,1],[7, 8, 7]]

In [112…

```
from matplotlib import pyplot as plt
from sklearn.cluster import DBSCAN
import pandas as pd

# Use Pandas lib for Create Dataframe
MyData = pd.DataFrame([[3, 2, 1],
                       [7, 6, 6],
                       [3, 3, 2],
                       [4, 5, 5],
                       [5, 5, 4],
                       [5, 5, 6],
                       [1, 0 ,1],
                       [7, 8, 7]],columns=['F1', 'F2', 'F3'],index={'X1','
print('Show Our Data')
MyData
```

```
Show Our Data
```

Out[112…

	F1	F2	F3
X1	3	2	1
X5	7	6	6
X4	3	3	2
X3	4	5	5
X6	5	5	4
X2	5	5	6
X7	1	0	1
X8	7	8	7

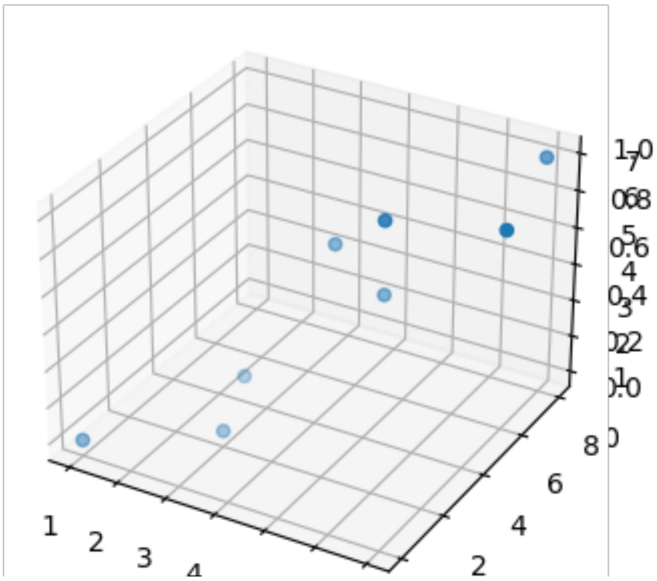
Plotting Data

In [113…

```
fig = plt.figure(figsize=(5, 4), dpi=100)
ax = plt.axes(projection='3d')
ax = plt.axes(projection='3d')
ax.scatter3D(MyData['F1'], MyData['F2'], MyData['F3'])
```

Out[113…

```
<mpl_toolkits.mplot3d.art3d.Path3DCollection at 0x7f4886d874c0>
```



eps = The maximum distance between two samples for one to be considered as in the neighborhood of the other.

min_samples = The number of samples (or total weight) in a neighborhood for a point to be considered as a core point

eps = 3 && min_samples = 3

In [114…

```
clustering = DBSCAN(eps=3, min_samples=3).fit(MyData)
MyData['clusts'] = clustering.labels_
print('Show Clustered Data')
MyData
```

```
Show Clustered Data
```

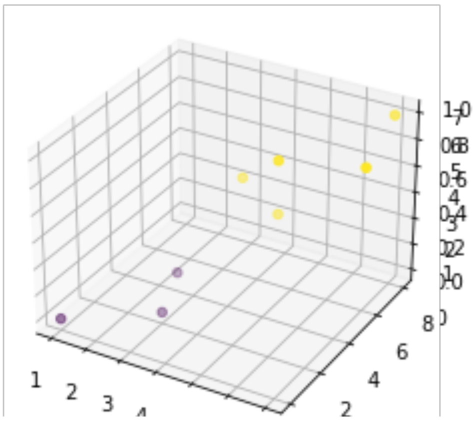
Out[114…

	F1	F2	F3	clusts
X1	3	2	1	0
X5	7	6	6	1
X4	3	3	2	0
X3	4	5	5	1
X6	5	5	4	1
X2	5	5	6	1
X7	1	0	1	0
X8	7	8	7	1

In [115…

```
# Use Matplotlib For plotting Clustered data
fig = plt.figure()
ax = plt.axes(projection='3d')
ax = plt.axes(projection='3d')
ax.scatter3D(MyData['F1'], MyData['F2'], MyData['F3'], c=MyData['clusts'])
print ('Plotting Clustered Data')
```

```
Plotting Clustered Data
```



In [116…

```
print('Show Sorted by Clustered Data Label')
MyData.sort_values(by=['clusts'])
```

```
Show Sorted by Clustered Data Label
```

Out[116…

	F1	F2	F3	clusts
X1	3	2	1	0
X4	3	3	2	0
X7	1	0	1	0
X5	7	6	6	1
X3	4	5	5	1
X6	5	5	4	1
X2	5	5	6	1
X8	7	8	7	1

Result is = > C1=X1,X4,X7 & C2=X5,X3,X6,X2,X8