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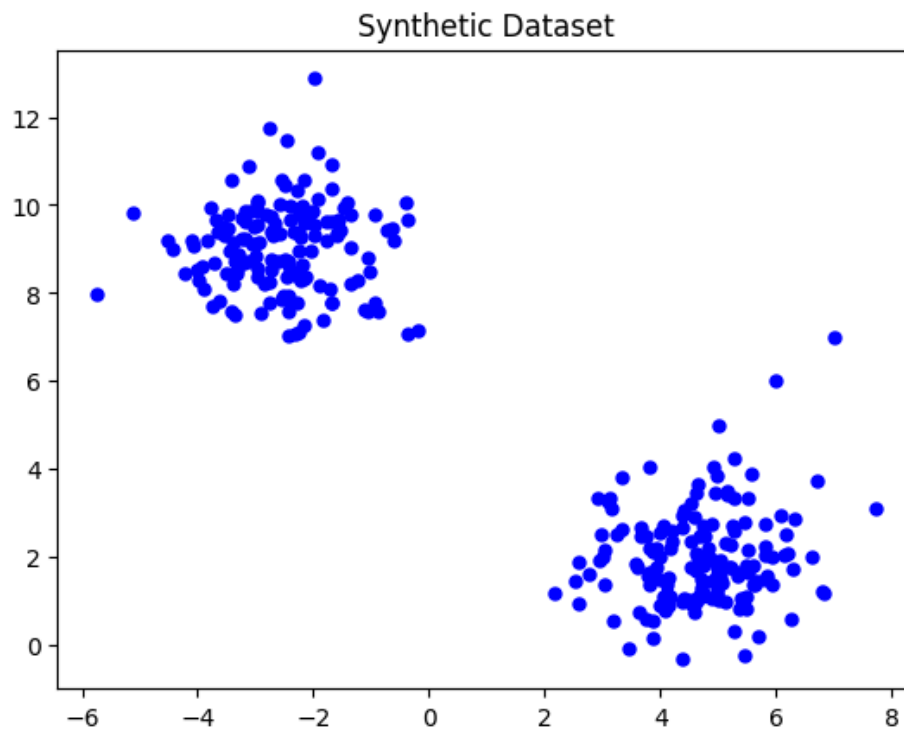
1 import numpy as np
2 import matplotlib.pyplot as plt
3 from sklearn.cluster import DBSCAN
4 from sklearn.datasets import make_blobs

1 # Create a synthetic dataset with normal and anomalous data points
2 n_samples = 300
3 X, y = make_blobs(n_samples=n_samples, centers=2, random_state=42, cluster_std=1.0)
4 anomalies = np.array([[5, 5], [6, 6], [7, 7]])

1 # Combine the normal data and anomalies
2 X = np.vstack([X, anomalies])

1 # Visualize the dataset
2 plt.scatter(X[:, 0], X[:, 1], c='b', marker='o', s=25)
3 plt.title("Synthetic Dataset")
4 plt.show()

```



```

1 # Apply DBSCAN for anomaly detection with increased epsilon
2 dbscan = DBSCAN(eps=1, min_samples=41) # Increase eps
3 labels = dbscan.fit_predict(X)
4
5 # Anomalies are considered as points with label -1
6 anomalies = X[labels == -1]

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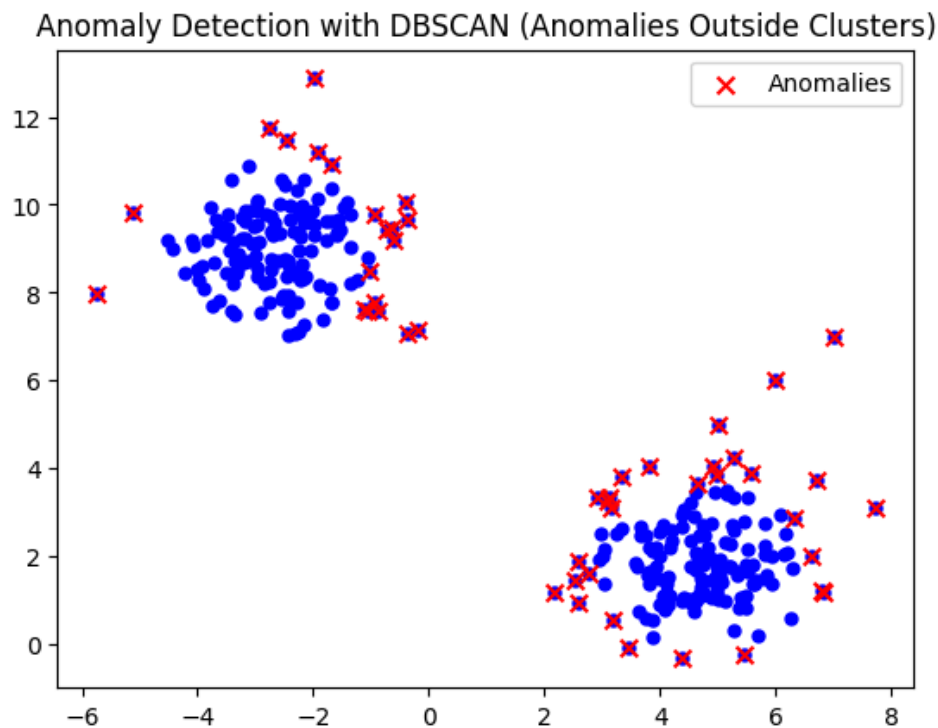
```

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1 # Anomalies are considered as points with label -1
2 anomalies = X[labels == -1]

1 # Visualize the anomalies
2 plt.scatter(X[:, 0], X[:, 1], c='b', marker='o', s=25)
3 plt.scatter(anomalies[:, 0], anomalies[:, 1], c='r', marker='x', s=50, label='Anomalies')
4 plt.title("Anomaly Detection with DBSCAN (Anomalies Outside Clusters)")
5 plt.legend()
6 plt.show()

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```

1 # Print the identified anomalies
2 print("Identified Anomalies:")
3 print(anomalies)

```

```

Identified Anomalies:
[[ 4.92965369  4.04857048]
 [ 3.10576467  3.25084651]
 [ 4.98163481  3.84934052]
 [-0.64342311  9.48811905]
 [-0.36525353  9.64820515]
 [-1.10640331  7.61243507]
 [ 6.79306129  1.20582212]
 [-1.92234053 11.20474175]
 [ 6.60460397  2.00843324]
 [ 2.51598311  1.44741466]
 [-0.62301172  9.18886394]
 [ 3.16129259  3.11692373]
 [ 4.65829722  3.649607  ]
 [-0.92318081  7.77647063]
 [ 4.36482714 -0.32875148]
 [ 3.31964563  3.80462845]
 [ 5.2726607   4.24386254]
 [-0.19453906  7.14702094]
 [-1.03130358  8.49601591]

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[ 2.92674431  3.32704206]
[ 3.82165815  4.06555696]
[ 5.56605638  3.88258632]
[-5.75046496  7.98989849]
[ 6.82968177  1.1648714 ]
[-0.92998481  9.78172086]
[-1.68713746 10.91107911]
[-5.12894273  9.83618863]
[-0.38704143 10.04675139]
[ 3.19179449  0.56570591]
[ 2.16823434  1.17627443]
[ 6.70062676  3.72851053]
[-1.99414994 12.86701762]
[-0.87678632  7.58414475]
[ 7.71875964  3.0927446 ]
[-0.74374338  9.41926784]
[ 2.57243674  1.88404964]
[ 3.12468777  3.34004395]
[-2.77385446 11.73445529]
[-2.44896741 11.47752824]
[ 3.45662032 -0.06606249]
[ 5.46928442 -0.23796563]
[-0.37616425  7.06219833]
[-1.06792433  7.57842398]
[ 2.76908692  1.6216562 ]
[ 2.6017543  0.96508337]
[ 6.32702047  2.85480944]
[ 5.          5.          ]
[ 6.          6.          ]
[ 7.          7.          ]]
```