In [1]:
```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn.datasets import make_moons
from sklearn.cluster import DBSCAN
```

In [7]:
```
x,y=make_moons(n_samples=500,noise=0.05)
data={"data1":x[:,0],"data2":x[:,1]}
df=pd.DataFrame(data)
y
```

Out[7]:
```
array([1, 0, 1, 0, 1, 1, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 1, 0, 0,
       1, 1, 1, 1, 1, 1, 0, 1, 1, 1, 1, 1, 0, 1, 0, 1, 1, 0, 1, 0, 1, 0, 1,
       0, 0, 0, 1, 1, 1, 0, 1, 0, 1, 1, 1, 0, 1, 1, 0, 0, 1, 0, 1, 0, 1,
       1, 1, 0, 0, 0, 0, 1, 0, 0, 1, 1, 1, 1, 0, 1, 0, 1, 1, 0, 0, 1, 0,
       1, 0, 0, 0, 0, 1, 1, 0, 1, 0, 0, 0, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0,
       1, 0, 0, 0, 1, 0, 0, 1, 0, 1, 1, 0, 0, 1, 0, 1, 0, 1, 0, 0, 1, 1,
       1, 0, 0, 1, 0, 1, 0, 0, 0, 1, 1, 0, 0, 1, 0, 0, 1, 0, 1, 0, 1, 1,
       0, 0, 1, 1, 1, 0, 1, 0, 0, 1, 0, 1, 0, 0, 1, 0, 1, 1, 1, 1, 0, 0,
       0, 1, 0, 1, 1, 1, 0, 0, 1, 1, 0, 1, 1, 0, 1, 0, 1, 0, 1, 0, 1, 0,
       0, 0, 1, 1, 1, 1, 0, 1, 1, 0, 0, 1, 1, 1, 0, 0, 0, 0, 0, 0, 1, 0,
       1, 1, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1, 1, 1, 0, 1, 0,
       1, 1, 0, 0, 1, 0, 0, 1, 0, 1, 0, 0, 1, 1, 1, 1, 1, 0, 1, 0, 1, 1,
       0, 1, 0, 1, 0, 1, 0, 1, 1, 0, 0, 0, 0, 0, 1, 1, 1, 0, 0, 0, 1, 1,
       0, 0, 1, 1, 0, 1, 0, 1, 1, 1, 0, 1, 0, 1, 1, 1, 1, 1, 0, 1, 1, 0,
       1, 1, 0, 1, 0, 0, 0, 0, 1, 0, 1, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1,
       0, 1, 1, 1, 0, 0, 0, 1, 1, 0, 0, 1, 0, 0, 0, 0, 0, 1, 1, 1, 0, 1,
       1, 0, 1, 1, 1, 0, 1, 1, 1, 0, 1, 1, 0, 0, 0, 0, 1, 1, 1, 1, 0, 0,
       0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 0, 1, 1, 0, 0, 1, 1, 1, 0, 1, 1, 1,
       0, 0, 1, 1, 0, 1, 1, 1, 0, 1, 1, 0, 0, 0, 1, 1, 1, 1, 0, 0, 0, 1,
       0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 1, 0, 0,
       0, 1, 1, 1, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 1, 0, 0, 1, 1, 0, 1, 1,
       1, 1, 0, 1, 0, 1, 0, 1, 1, 0, 0, 0, 0, 1, 1, 1, 1, 1, 0, 1, 1, 0,
       0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 1, 1, 1, 1], dtype=int64)
```

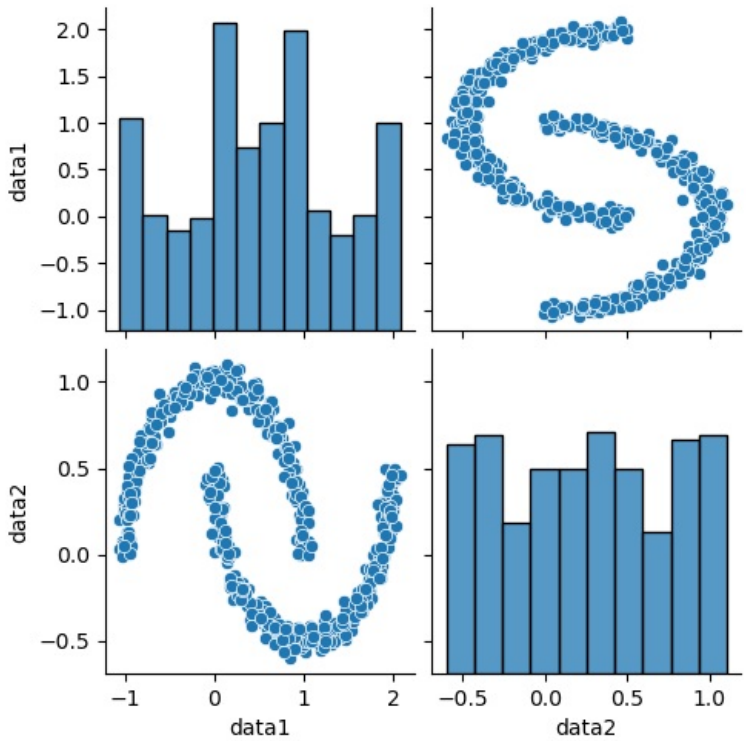
In [8]:
```
df.head()
```

Out[8]:

	data1	data2
0	1.472212	-0.335389
1	0.872951	0.460040
2	0.520616	-0.268128
3	0.622086	0.693232
4	0.087015	0.435620

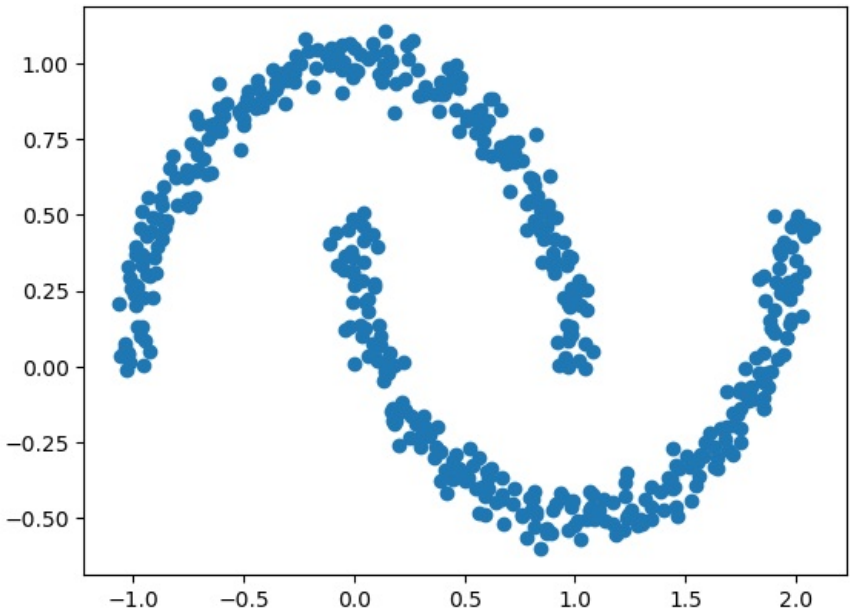
In [9]:
```
sns.pairplot(df)
plt.show()
```

```
C:\ProgramData\anaconda3\Lib\site-packages\seaborn\axisgrid.py:118: UserWarning: The figure layout has changed
to tight
  self._figure.tight_layout(*args, **kwargs)
```



In [10]:
```
plt.scatter(df["data1"],df["data2"])
```

```
plt.show()
```

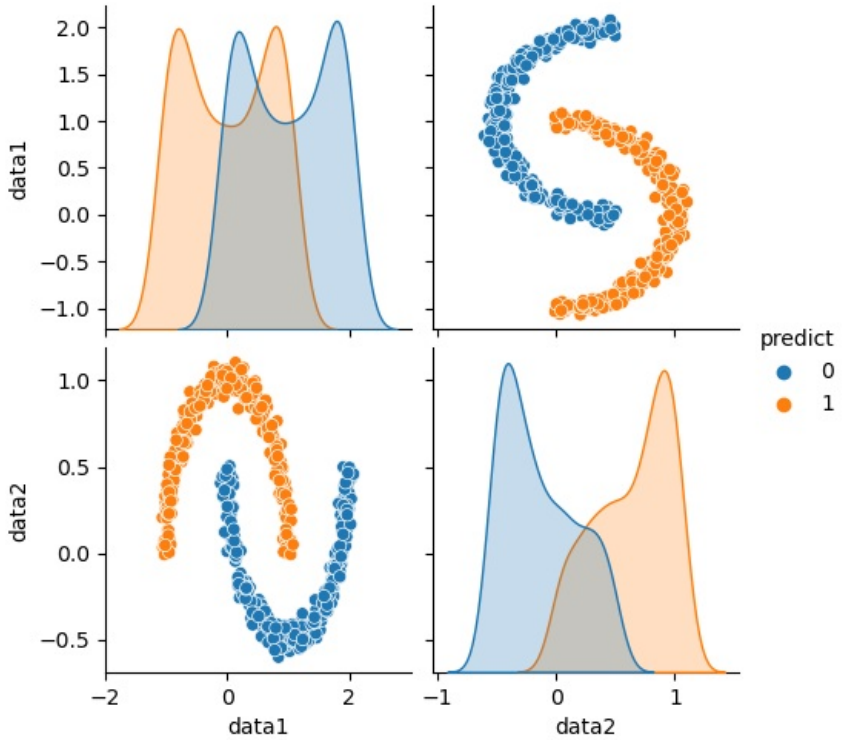


In [27]:
```
db=DBSCAN(eps=0.3,min_samples=6)
df["predict"]=db.fit_predict(df)
df["predict"]
```

Out[27]:
```
0      0
1      1
2      0
3      1
4      0
      ..
495    1
496    0
497    0
498    0
499    0
Name: predict, Length: 500, dtype: int64
```

In [30]:
```
sns.pairplot(data=df,hue="predict")
plt.show()
```

```
C:\ProgramData\anaconda3\Lib\site-packages\seaborn\axisgrid.py:118: UserWarning: The figure layout has changed to tight
  self._figure.tight_layout(*args, **kwargs)
```



In [ ]:

In [ ]: