In [22]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
from sklearn.cluster import DBSCAN
from sklearn import metrics
from sklearn.datasets import make_blobs
from sklearn.preprocessing import StandardScaler
from sklearn import datasets
```

In [23]:
```
X =  pd.read_csv('C:/Users/AjithKumar.Pola/Downloads/clustering_dataset.csv')
```

In [24]:
```
X, y_true = make_blobs(n_samples=300, centers=4,cluster_std=0.50, random_state=0)
db = DBSCAN(eps=0.3, min_samples=10).fit(X)
core_samples_mask = np.zeros_like(db.labels_, dtype=bool)
core_samples_mask[db.core_sample_indices_] = True
labels = db.labels_
```

In [25]:
```
n_clusters_ = len(set(labels)) - (1 if -1 in labels else 0)

print(labels)
```

```
[-1  0 -1  0 -1 -1 -1  2 -1 -1  1 -1  2 -1 -1  2  2  3  1 -1 -1  3  2  1
  1 -1  3  2 -1 -1 -1  0 -1 -1  0 -1  0 -1  1  3 -1  1 -1 -1  1  1  0  1
  0 -1  1  3 -1  3 -1  1 -1 -1  0  3 -1  2 -1  1  1  1 -1  3 -1  1  2 -1
  0  1 -1  0  1  2  3  0 -1  2 -1  3  0 -1  3  2 -1  0  2  3 -1  1  1 -1
 -1  3 -1 -1 -1 -1 -1  3  2  3 -1  2 -1 -1 -1  1  3 -1  3 -1  0 -1 -1 -1
 -1  3  1  3 -1  3  3  1 -1  1 -1  1  1 -1  0 -1 -1  0 -1 -1 -1  1 -1 -1
 -1  1  0 -1  0  0  0  2 -1  2 -1  1  0  1  3  2 -1  2  2 -1  2 -1 -1 -1
 -1 -1  2  0  3 -1 -1  0 -1  3  2  1  3 -1  1  1  2  2 -1  2 -1  0 -1  1
  2  2  1  1 -1 -1  1  0 -1  1 -1  1 -1 -1  1 -1  2 -1  2  1 -1 -1  0  1
  1  3 -1  2  0  3  3 -1 -1 -1 -1 -1  0 -1  2 -1  2 -1  1  2  3  1 -1  1
 -1  2 -1  0  0  0  0  1  1 -1 -1  1  3  2  1 -1 -1 -1  3  0  2  2 -1  3
 -1  1 -1 -1 -1  3  3 -1  1 -1 -1 -1 -1 -1  0  0 -1  3 -1  3  3 -1  0 -1
 -1  2 -1  3  0 -1  0 -1 -1  2 -1  1]
```

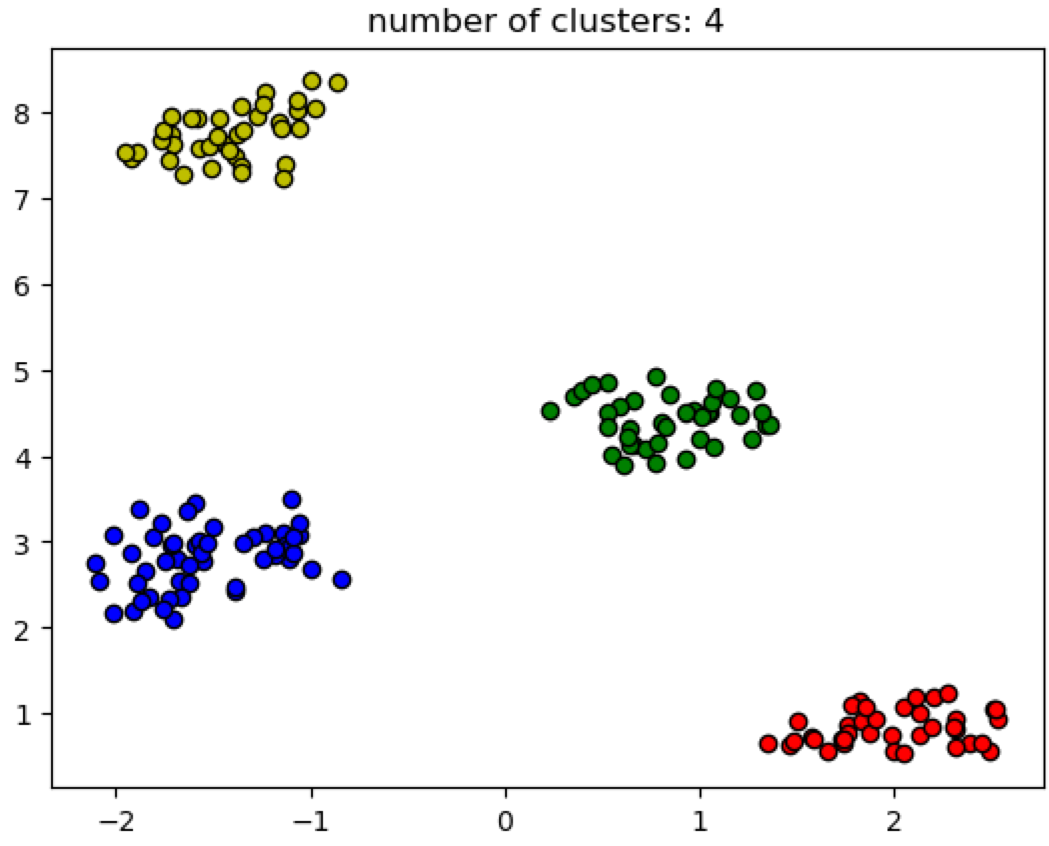
In [26]:
```
unique_labels = set(labels)
colors = ['y', 'b', 'g', 'r']
print(colors)
for k, col in zip(unique_labels, colors):
    if k == -1:
        # Black used for noise.
        col = 'k'

    class_member_mask = (labels == k)
    xy = X[class_member_mask & core_samples_mask]
    plt.plot(xy[:, 0], xy[:, 1], 'o', markerfacecolor=col,
             markeredgecolor='k',
             markersize=6)

    xy = X[class_member_mask & ~core_samples_mask]
    plt.plot(xy[:, 0], xy[:, 1], 'o', markerfacecolor=col,
             markeredgecolor='k',
             markersize=6)
plt.title('number of clusters: %d' % n_clusters_)
plt.show()

#evaluation metrics
sc = metrics.silhouette_score(X, labels)
print("Silhouette Coefficient:%0.2f"%sc)
```

```
['y', 'b', 'g', 'r']
```



```
Silhouette Coefficient:0.13
```