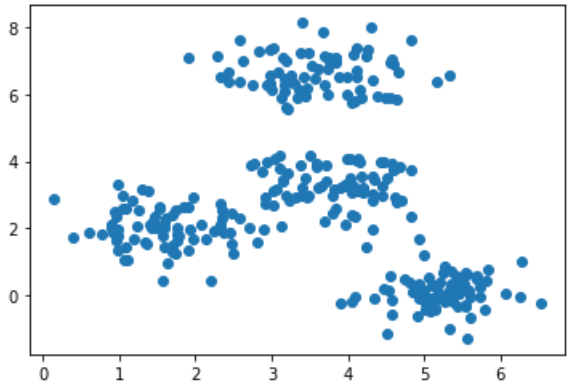
In [1]:

```
import numpy as np
import pandas as pd
from matplotlib import pyplot as plt
from sklearn.datasets.samples_generator import make_blobs
from sklearn.cluster import KMeans
```

In [2]:

```
X, Y = make_blobs(n_samples=300, centers=4, cluster_std=0.6, center_box=(0, 10))
print ("Ploting Data :\n",plt.scatter(X[:,0], X[:,1]))
```

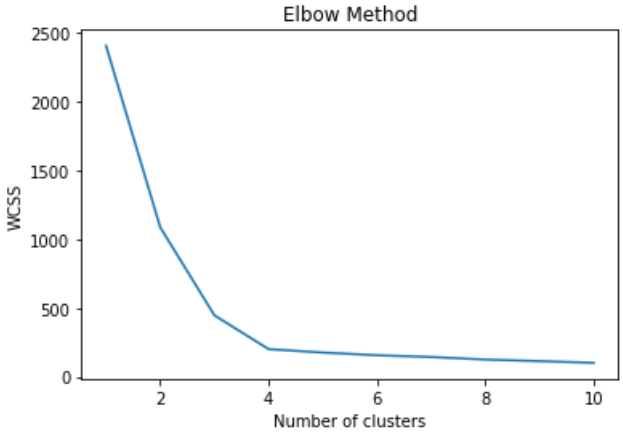
```
Ploting Data :
 <matplotlib.collections.PathCollection object at 0x000001AFABAA8308>
```



In [6]:

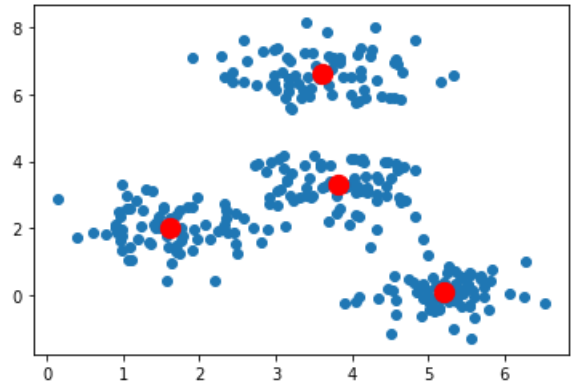
```
wcss = []
for i in range(1, 11):
    kmeans = KMeans(n_clusters=i, init='k-means++', max_iter=300, n_init=10, random_state=0)
    kmeans.fit(X)
    wcss.append(kmeans.inertia_)

print ("Hasil Pencarian Nilai K Terbaik :\n")
plt.plot(range(1, 11), wcss)
plt.title('Elbow Method')
plt.xlabel('Number of clusters')
plt.ylabel('WCSS')
plt.show()
```

```
Hasil Pencarian Nilai K Terbaik :
```



In [7]:

```
kmeans = KMeans(n_clusters=4, init='k-means++', max_iter=300, n_init=10, random_state=0)
pred_y = kmeans.fit_predict(X)
plt.scatter(X[:,0], X[:,1])
plt.scatter(kmeans.cluster_centers_[:, 0], kmeans.cluster_centers_[:, 1], s=150, c='red')
plt.show()
```



In [ ]:

```
```