PARTITION AROUND MEDOIDS

(KMediods)

AIM: Implementation of PAM (Partition Around Medoids) algorithm

PROGRAM:

```
import pandas as pd
import numpy as np
from sklearn_extra.cluster import KMedoids
from sklearn import preprocessing
import matplotlib.pyplot as plt
```

```
df=pd.read_csv("C:\\Users\\hp\\Downloads\\iris.csv")
df.head()
```

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
0	1	5.1	3.5	1.4	0.2	Iris-setosa
1	2	4.9	3.0	1.4	0.2	Iris-setosa
2	3	4.7	3.2	1.3	0.2	Iris-setosa
3	4	4.6	3.1	1.5	0.2	Iris-setosa
4	5	5.0	3.6	1.4	0.2	Iris-setosa

```
x=df
y=df['Species']
```

```
le=preprocessing.LabelEncoder()
x['Species']=le.fit_transform(x['Species'])
y=le.transform(y)
```

```
cols=x.columns
```

```
from sklearn.preprocessing import MinMaxScaler
ms=MinMaxScaler()
x=ms.fit_transform(x)
```

```
km=KMedoids(n_clusters=4,random_state=0)
km.fit(x)
```

```
KMedoids
KMedoids(n_clusters=4, random_state=0)
```

```
1 km.inertia_
```

```
33.72823230032503
```

```
1 labels=km.labels_
2 correct_labels=sum(y==labels)
3 print("Result:%d out of %d samples were correctly labeled,"%(correct_labels,y.size))
```

```
Result:50 out of 150 samples were correctly labeled,
```

```
1 print('Accuracy score:{0:0.2f}'.format(correct_labels/float(y.size)))
```

```
Accuracy score:0.33
```

```
1
```