In [11]:
```
import pandas as pd
import numpy as np
from sklearn.cluster import KMeans
from sklearn.preprocessing import StandardScaler
```

In [13]:
```
df = pd.read_csv("/content/drive/MyDrive/cluster-kmeans/StudentsPerformance.cs
X = df[['math score', 'reading score', 'writing score']]
```

In [14]:
```
scaler = StandardScaler()
X_scaled = scaler.fit_transform(X)
```

In [15]:
```
kmeans = KMeans(n_clusters=3, random_state=42)
kmeans.fit(X_scaled)
```

Out[15]:
```
KMeans(n_clusters=3, random_state=42)
```

In [22]:
```
print("\nEnter Student Marks:")
math = float(input("Math score: "))
reading = float(input("Reading score: "))
writing = float(input("Writing score: "))

user_data = np.array([[math, reading, writing]])
```

```
Enter Student Marks:
Math score: 15
Reading score: 14
Writing score: 15
```

In [23]:
```
user_data_scaled = scaler.transform(user_data)
```

```
/usr/local/lib/python3.12/dist-packages/sklearn/utils/validation.py:2739: UserW
arning: X does not have valid feature names, but StandardScaler was fitted with
feature names
  warnings.warn(
```

In [24]:
```
cluster = kmeans.predict(user_data_scaled)[0]
```

In [25]:
```
cluster_centers = kmeans.cluster_centers_
```

In [26]:
```
cluster_scores = cluster_centers.mean(axis=1)

sorted_clusters = np.argsort(cluster_scores)

labels = {}
labels[sorted_clusters[0]] = "Slow Learner"
labels[sorted_clusters[1]] = "Average Learner"
labels[sorted_clusters[2]] = "Fast Learner"
```

In [27]:
```
print("\n🔍 Student Performance Result:")
```

```
print("Performance Group:", labels[cluster])
```

```
🔍 Student Performance Result:
Performance Group: Slow Learner
```