```
from sklearn.cluster import KMeans
import numpy as np
customer_data = [
   [5000, 50],
   [5200, 48],
   [6000, 60],
   [5800, 58],
   [3000, 25],
    [3200, 28],
    [10000, 90],
    [10500, 95],
    [11000, 100],
    [2900, 20]
kmeans = KMeans(n_clusters=k, random_state=42)
kmeans.fit(customer_data)
print("\nCluster centers (segments):")
for idx, center in enumerate(kmeans.cluster centers ):
    print(f"Segment {idx}: Spending = {center[0]:.2f}, Purchases = {center[1]:.2f}")
print("\nEnter data for a new customer:")
spending = float(input("Annual Spending ($): "))
purchases = int(input("Number of Purchases per Year: "))
new_customer = np.array([[spending, purchases]])
cluster = kmeans.predict(new_customer)[0]
print(f"\nThe new customer belongs to Segment {cluster}.")
```

OUTPUT

Cluster centers (segments):

Segment 0: Spending = 5500.00, Purchases = 54.00 Segment 1: Spending = 10500.00, Purchases = 95.00 Segment 2: Spending = 3033.33, Purchases = 24.33

Enter data for a new customer:

Annual Spending (\$): 1500

Number of Purchases per Year: 5

The new customer belongs to Segment 2.