EXERCISE 2

The dataset below represents casino customer behavior with two features per customer. Use hierarchical clustering create clusters and interpret them. You will calculate distances, identify the merging sequence, and draw a dendrogram. **Show complete solutions**

Casino Customers

Customer	Avg Bet per Visit (USD)	Visits per Month
A	10	1
B	20	2
C	55	6
D	70	8
E	60	10
F	35	4

Tasks

1. Compute all pairwise Euclidean distances between customers.
2. Create a matrix that will contain all the distances.
3. Using single linkage, determine the merging order step by step.
4. Record the distance at which each merge occurs.
5. Draw the corresponding dendrogram.
6. Interpret the clusters. What customer behaviors does each cluster represent?