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. **(15 pts)**
2. Create a full distance matrix. **(15 pts)**
3. Using single linkage, determine the merging order step by step. **(15 pts)**
4. Record the distance at which each merge occurs. **(15 pts)**
5. Draw the corresponding dendrogram. **(15 pts)**
6. Interpret the clusters: what customer behaviors does each cluster represent? **(25 pts)**