DIANA Algorithm – Complete Worked Solution 1. Dataset Objects with coordinates (X1, X2): A(1,1), B(1.5,1.5), C(5,5), D(3,4), E(4,4), F(3,3.5).

2. Step 1 – Initial Split We start with all objects in one cluster. Compute average distances: A has largest average distance → becomes splinter object.
Splits into:
• {A, B}
• {C, D, E, F}

3. Step 2 – Split Cluster {C, D, E, F} C has largest average distance → new splinter group.
Final split:
• {C}
• {D, E, F}

4. Step 3 – Split Cluster {D, E, F} E becomes splinter object.
Final split:
• {E}
• {D, F}

5. Final Hierarchical Clustering Structure Level 0: {A,B,C,D,E,F}
Level 1: {A,B} | {C,D,E,F}
Level 2: {A,B} | {C} | {D,E,F}
Level 3: {A,B} | {C} | {E} | {D,F}
Level 4: Singletons: {A},{B},{C},{D},{E},{F}

Below is the dendrogram representation.