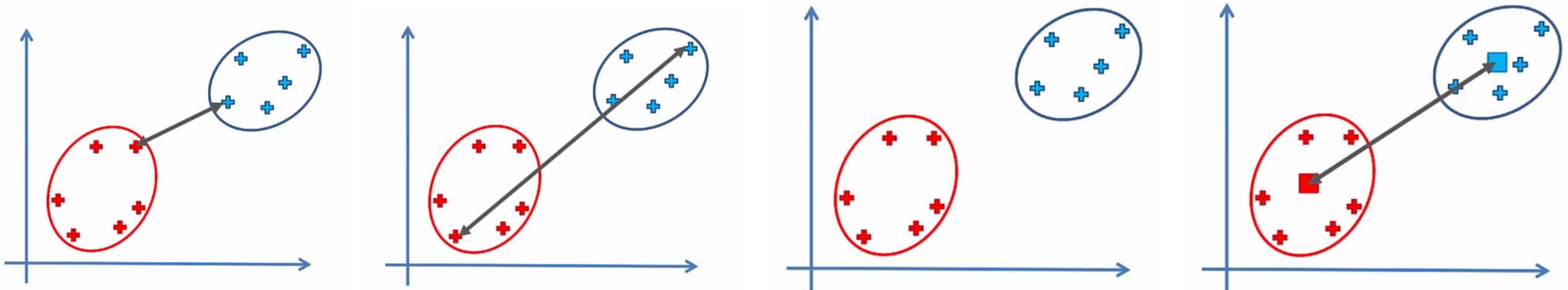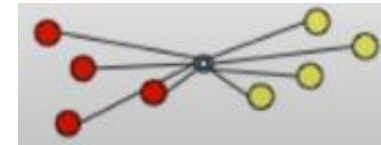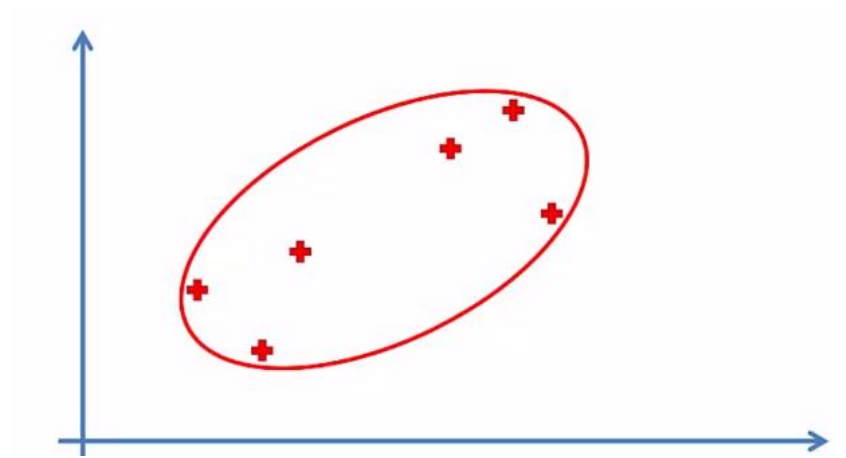# Hierarchical Clustering

Algorithm

1. Make each data point a single-point cluster

2. Take the two **closest clusters** and make them one cluster

3. Repeat STEP 2 until there is only one cluster
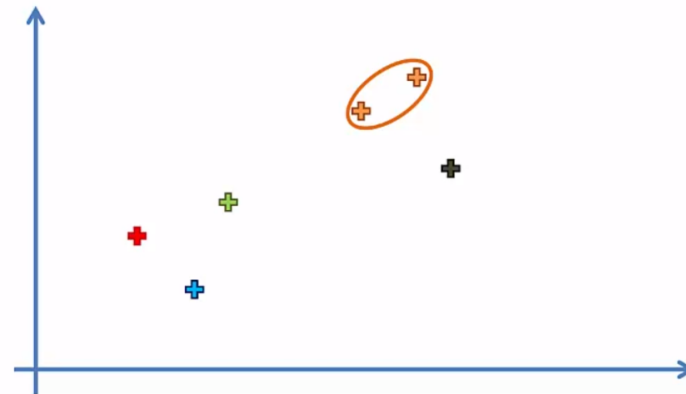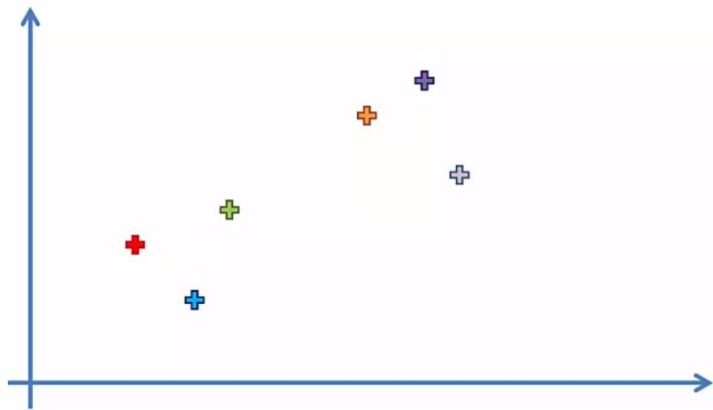
Defining closest clusters

- Option 1: Closest Points (single)
- Option 2: Furthest Points (complete or maximum linkage)

- Option 3: Average Distance (average)
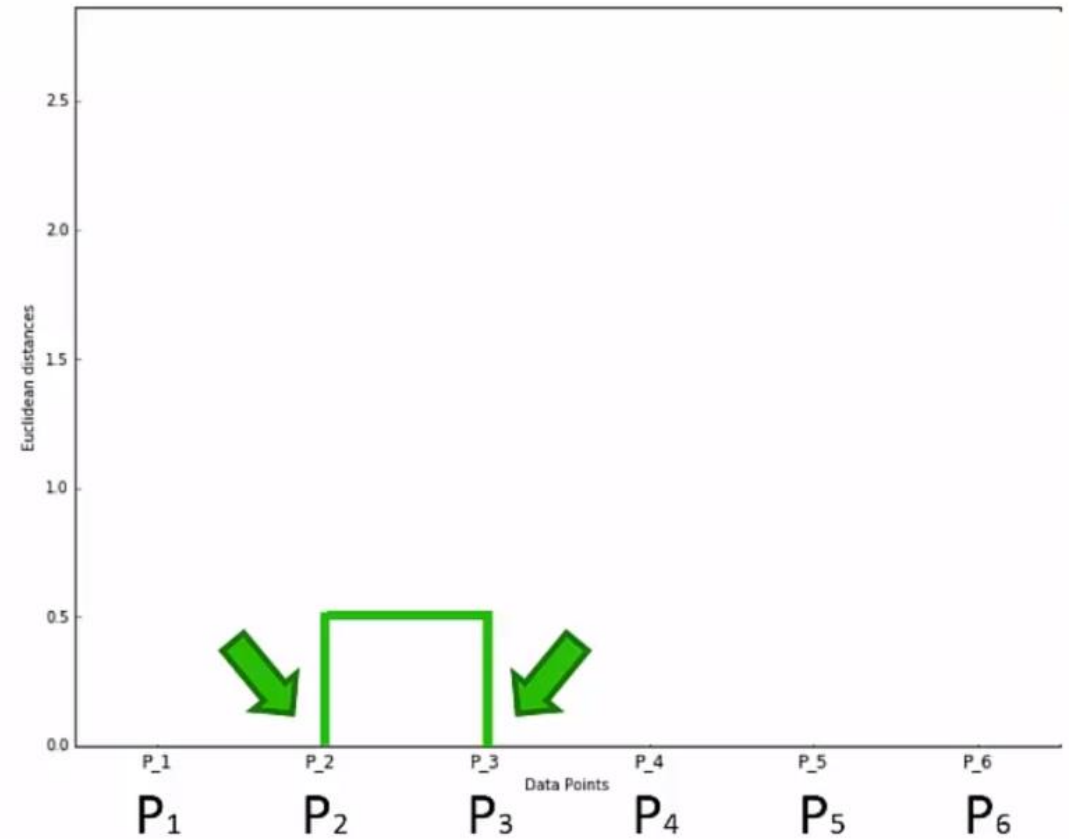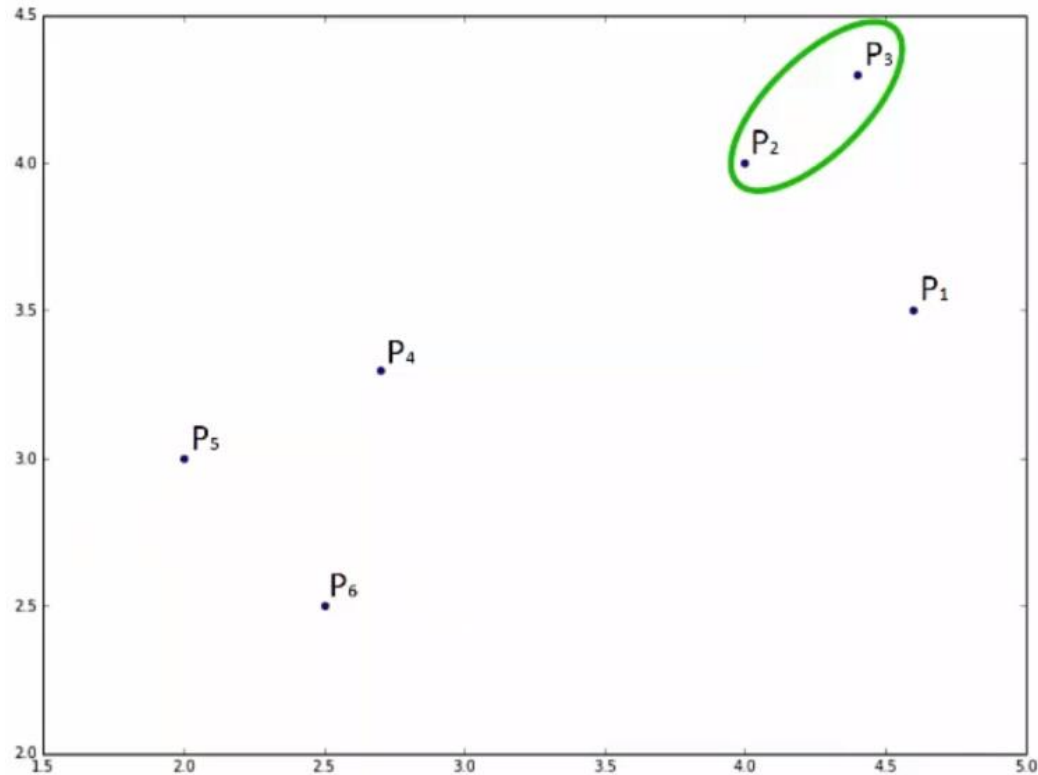- Option 4: Distance Between Centroids
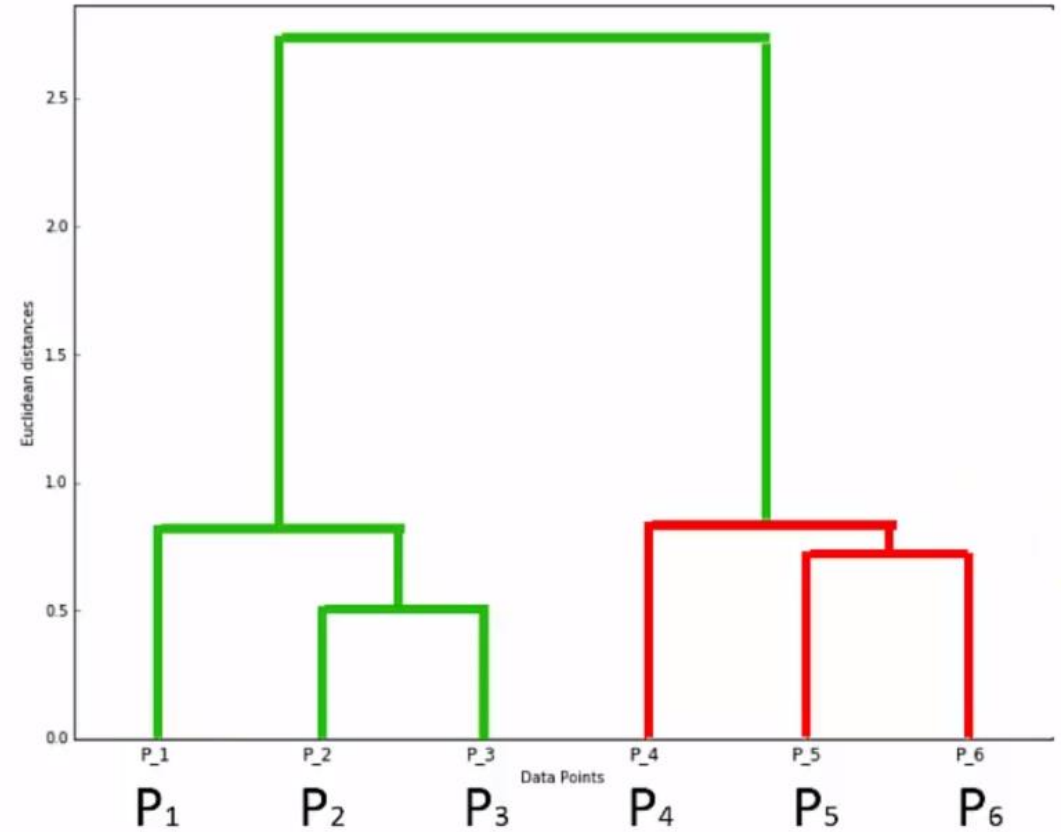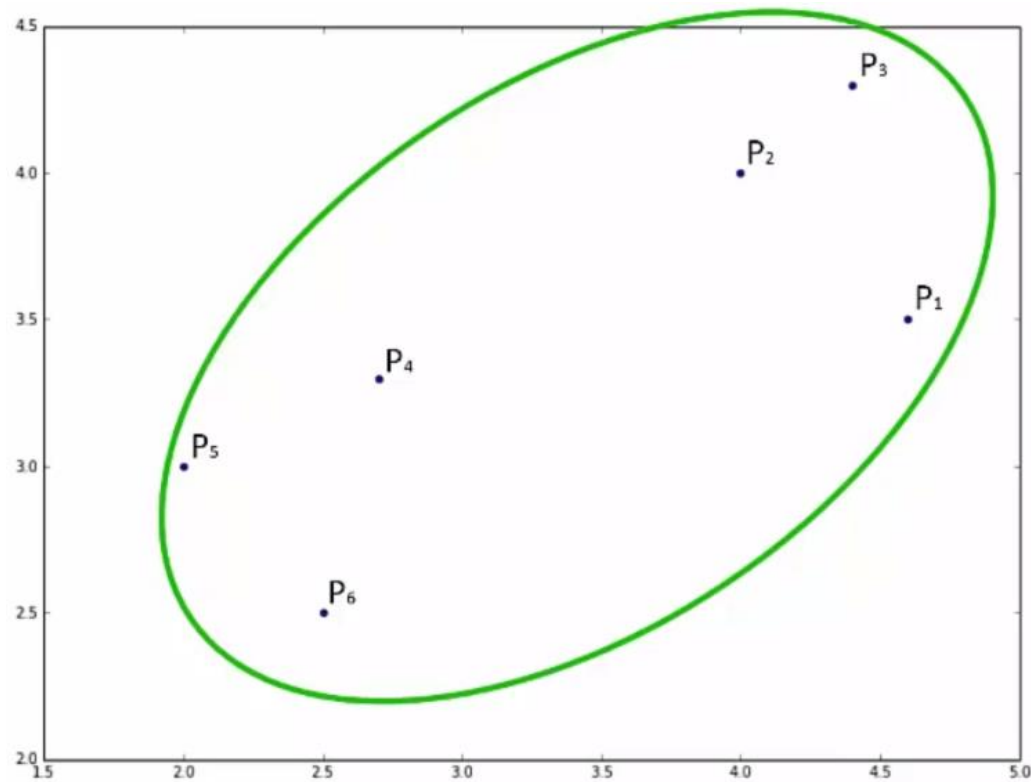- Option 5: Ward

Algorithm

Building the dendrogram

Building the dendrogram

Interpreting the dendrogram