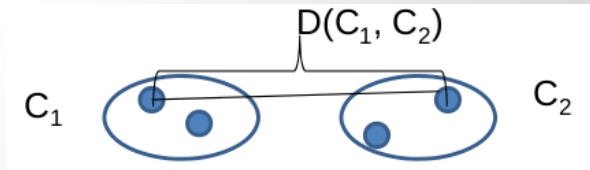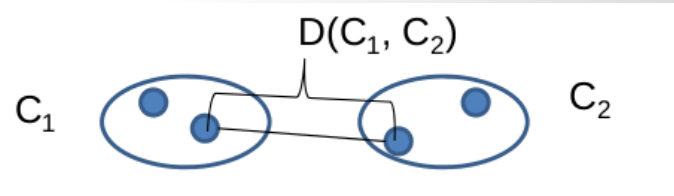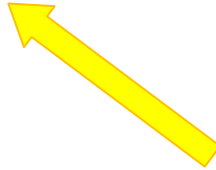# Hierarchical Agglomerative Clustering

Introduction

- Input: List of data items with distance function
- Result: Hierarchy of possible clusterings
- agglomerative vs. divisive
- distance functions e.g.
  - o   single link
  - o   complete link
  - o   average link
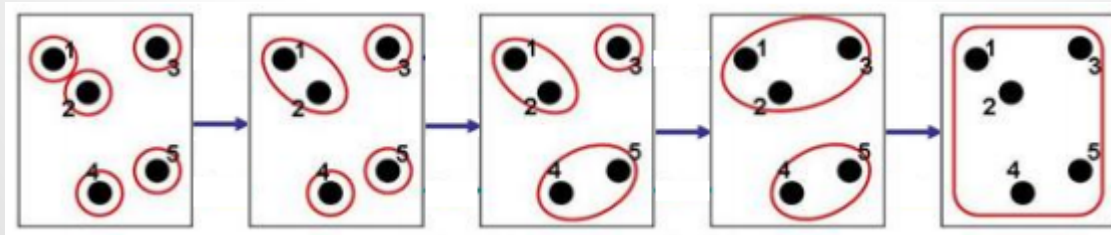- often visualized with dendogram

Pseudocode (agglomerative)

```
list = allElementsAsSingleClusters()

while count(list) > 1

    [cluster1, cluster2] = findNextClusters(list, distfunc)

    list.remove(cluster1, cluster2)

    newCluster = cluster(cluster1, cluster2)

    list.add(newCluster)
```

Using single, complete or average link

Single Linkage Example