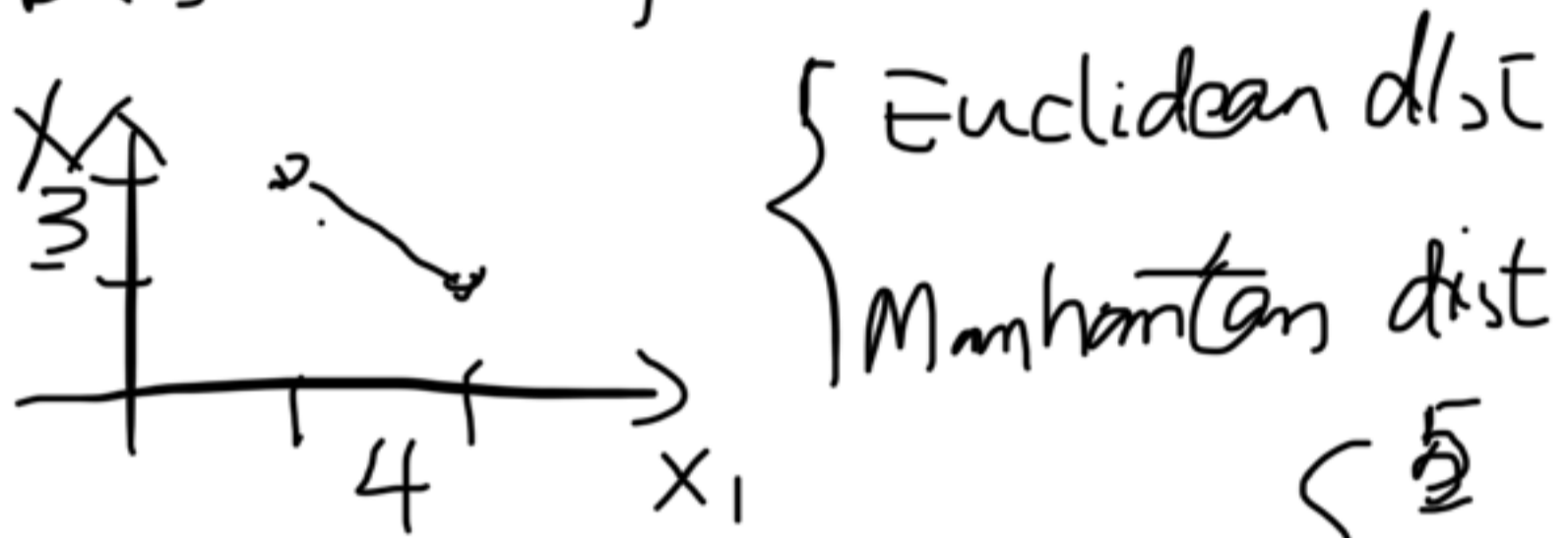


6/15 Mon

# Recap

① Clustering NP hard

② Distance function



$$\begin{cases} 5 \\ 3+4 \\ =7 \end{cases}$$

③ k-means

$k$  : # clusters

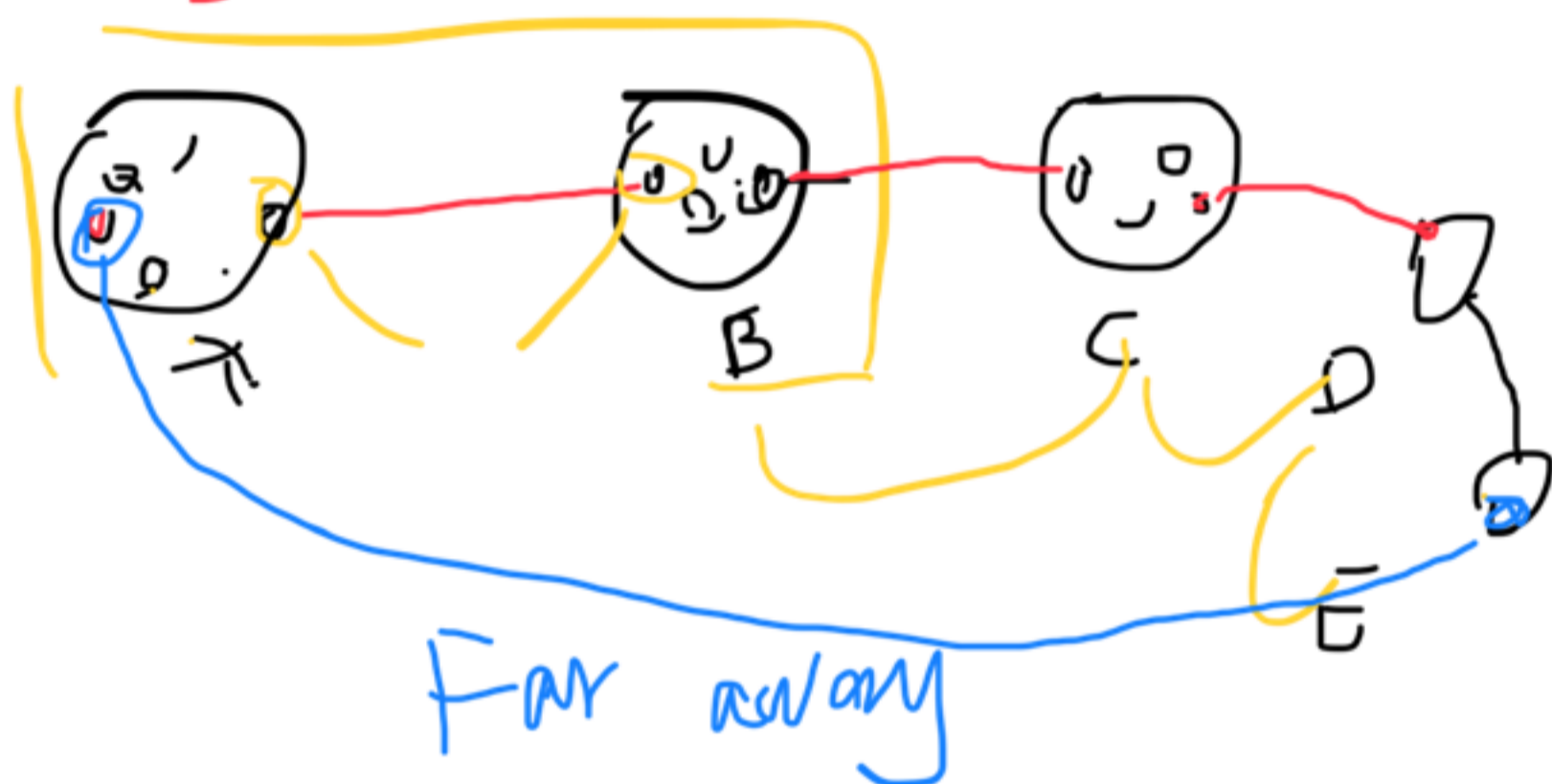
- Ⓐ cluster assignment
- Ⓑ center adjustment



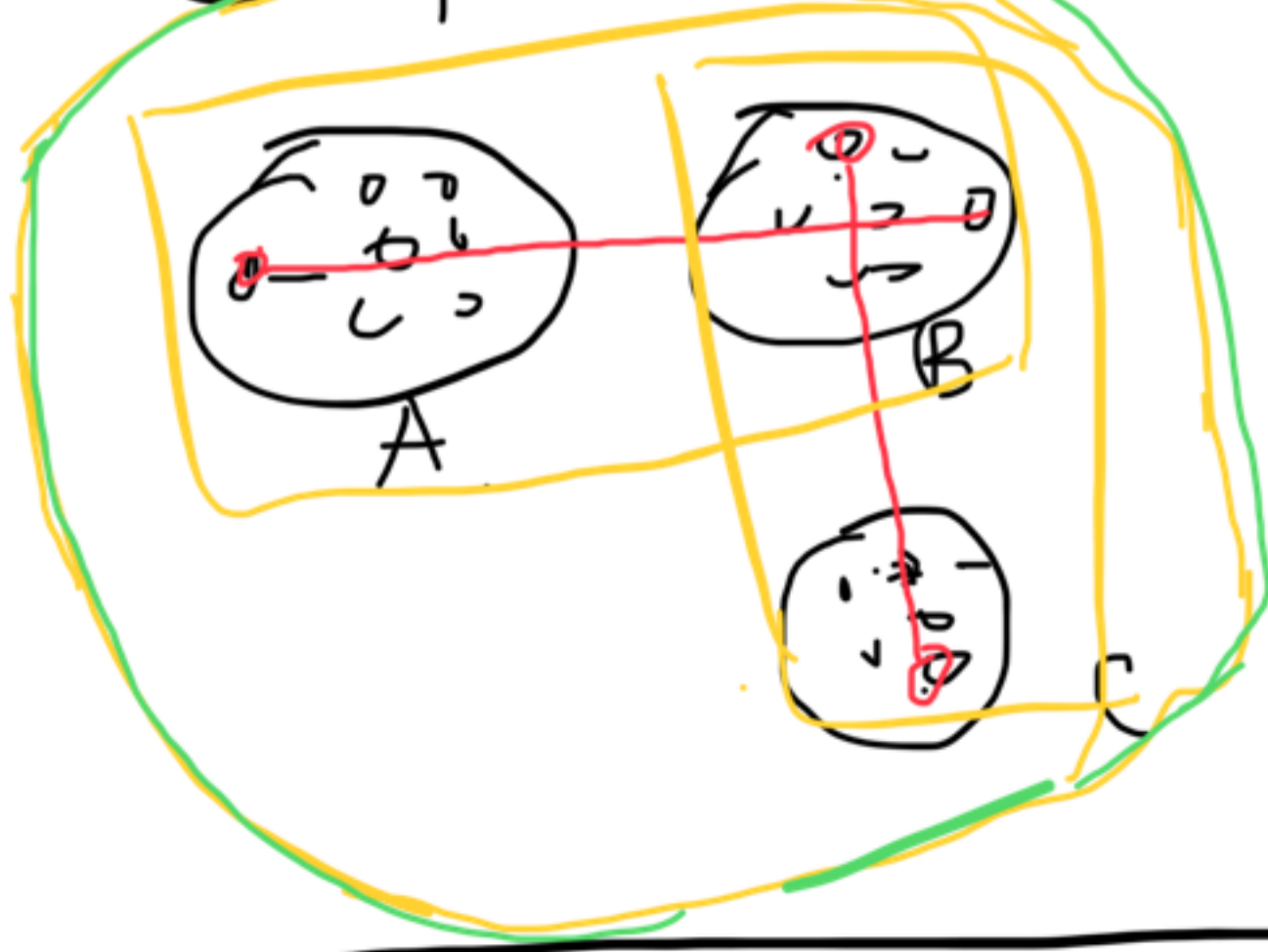
$\Rightarrow$   $\frac{1}{\infty} \rightarrow 0$

④ K means converges to a local optimum.

Single Link : chain

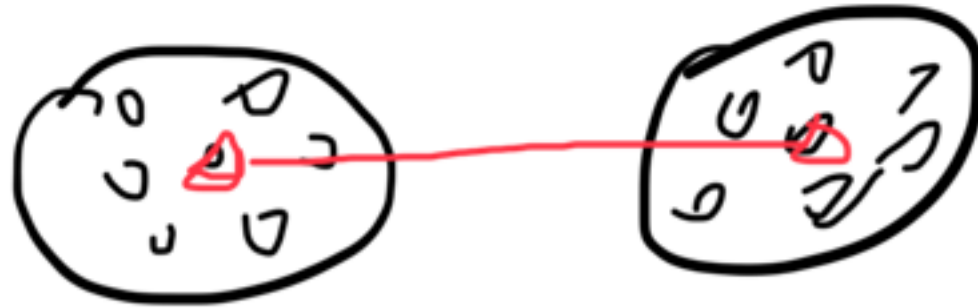


Complete link

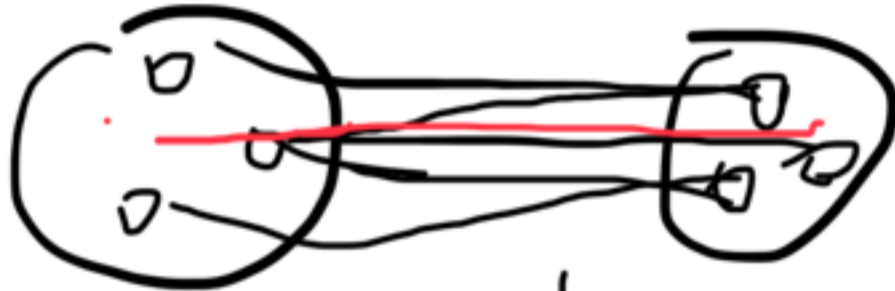


DC -

centroid



Average



$$\frac{1}{n} \sum \text{dist}$$