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CSCE 587

HW2

*~ Part One ~*

**Step 2:**

> plot(Data587)

**Step 3:**

> withinSumSqrs = numeric(20)

> for (k in 1:20) withinSumSqrs[k] = sum(kmeans(Data587,centers=k)$withinss)

> plot(1:20, withinSumSqrs, type="b", xlab="# Clusters", ylab="Within sum of square")

**Step 4:**

3 clusters was chosen due to “elbow” of graph occurring at that value for k.

> kmeans=kmeans(Data587,3,20)

> plot(Data587, col=kmeans$cluster)

*~ Part Two ~*

**Step 1:**

> d <- dist(Data587, method = "euclidean")

> fit <- hclust(d, method="ward.D")

> plot(fit)

**Step 2:**

Judging by the heights of the branches, an appropriate amount of clusters (m) seems to be 4.

> rect.hclust(fit, k=4, border="red")