

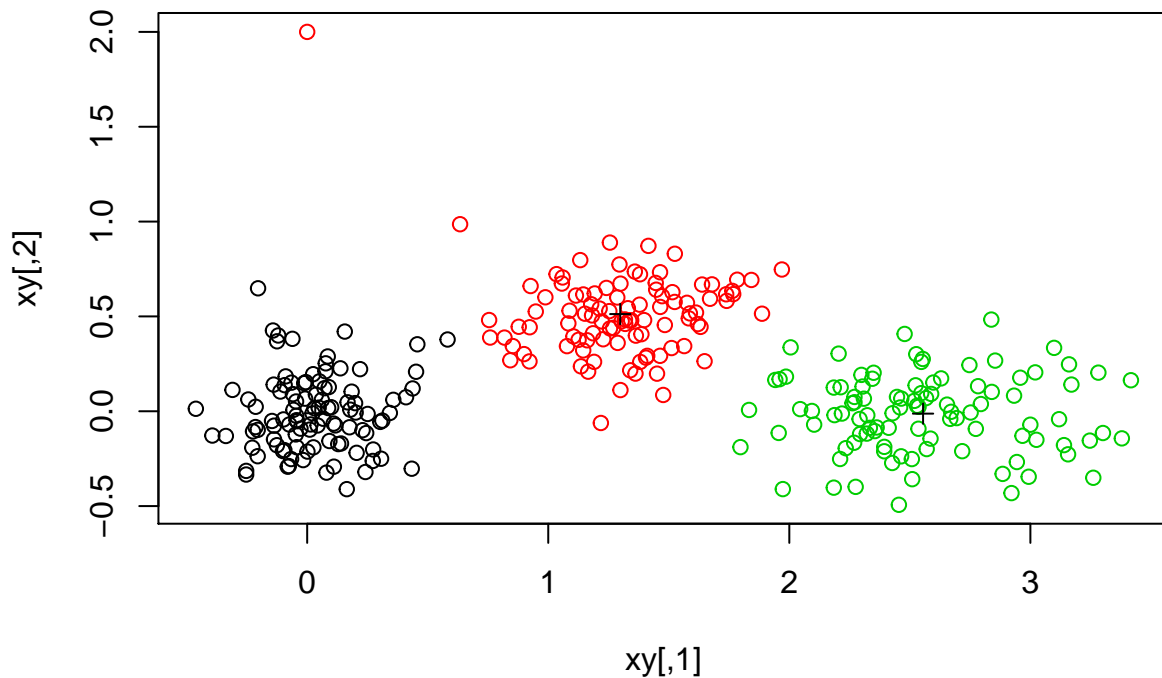
# Week4

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Thursday, February 19, 2015

## Lab3b\_kmeans1\_2015.R

```
#fragment
set.seed(123)
sim.xy <- function(n, mean, sd) cbind(rnorm(n, mean[1], sd[1]),rnorm(n, mean[2],sd[2]))
# generate three clouds of points, well separated in the 2D plane
xy <- rbind(sim.xy(100, c(0,0), c(.2,.2)),sim.xy(100, c(2.5,0), c(.4,.2)),sim.xy(100, c(1.25,.5), c(.3,
xy[1,] <- c(0,2) # convert 1st obs. to an outlying value
#
km3 <- kmeans(xy, 3) # ask for three clusters
plot(xy, col=km3$cluster)
cex=2.0
points(km3$centers, pch=3)
```

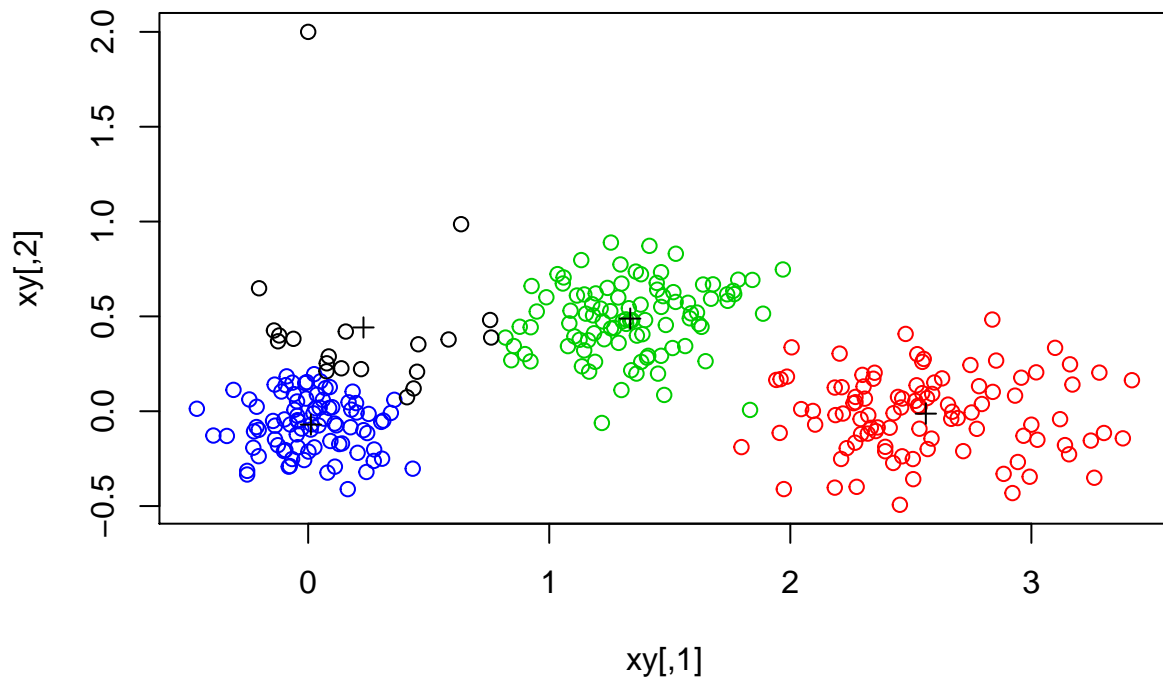


```
#
km4 <- kmeans(xy, 4) # ask for four clusters
cex=1.0
```

```

plot(xy, col=km4$cluster)
cex=2.0
points(km4$centers, pch=3)

```



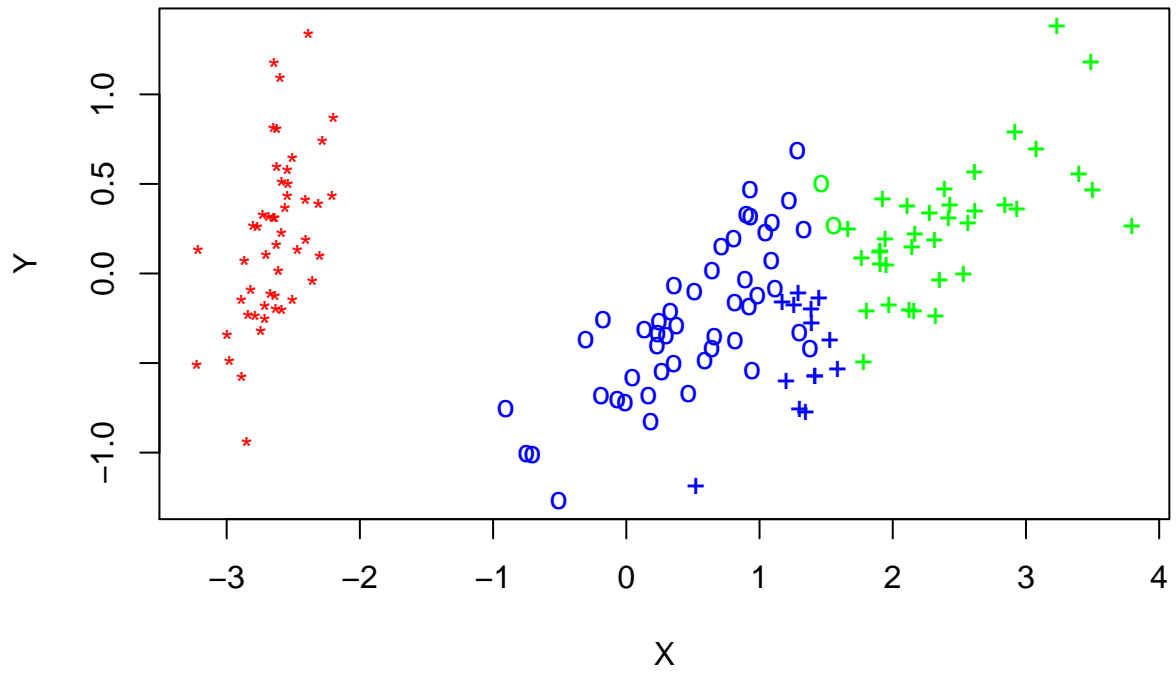
## Lab3b\_kmeans2\_2015.R

```

data("iris")
iris.dist <- dist(iris[, -5])
iris.mds <- cmdscale(iris.dist)
# iris$Species is the 5th column
c.chars <- c("x", "o", "+")[as.integer(iris$Species)]
# iris$Species is the 5th column
# KMEANSRESULT is the variable you used in your kmeans lab assignment for the return variable.
KMEANSRESULT <- kmeans(iris[, -5], 3, iter.max = 1000)
a.cols <- rainbow(3)[KMEANSRESULT$cluster]

plot(iris.mds, col = a.cols, pch = c.chars, xlab = "X", ylab = "Y")

```



```
#plot of chunk unnamed-chunk-5
```

```
corr <- KMEANSRESULT$cluster == 4 - as.integer(iris$Species)  
correct <- c("o", "x")[2 - corr]
```

```
plot(iris.mds, col = a.cols, pch = correct, xlab = "X", ylab = "Y")
```

