Dimensionality Reduction and Visualization
Exercise set 11 Solutions

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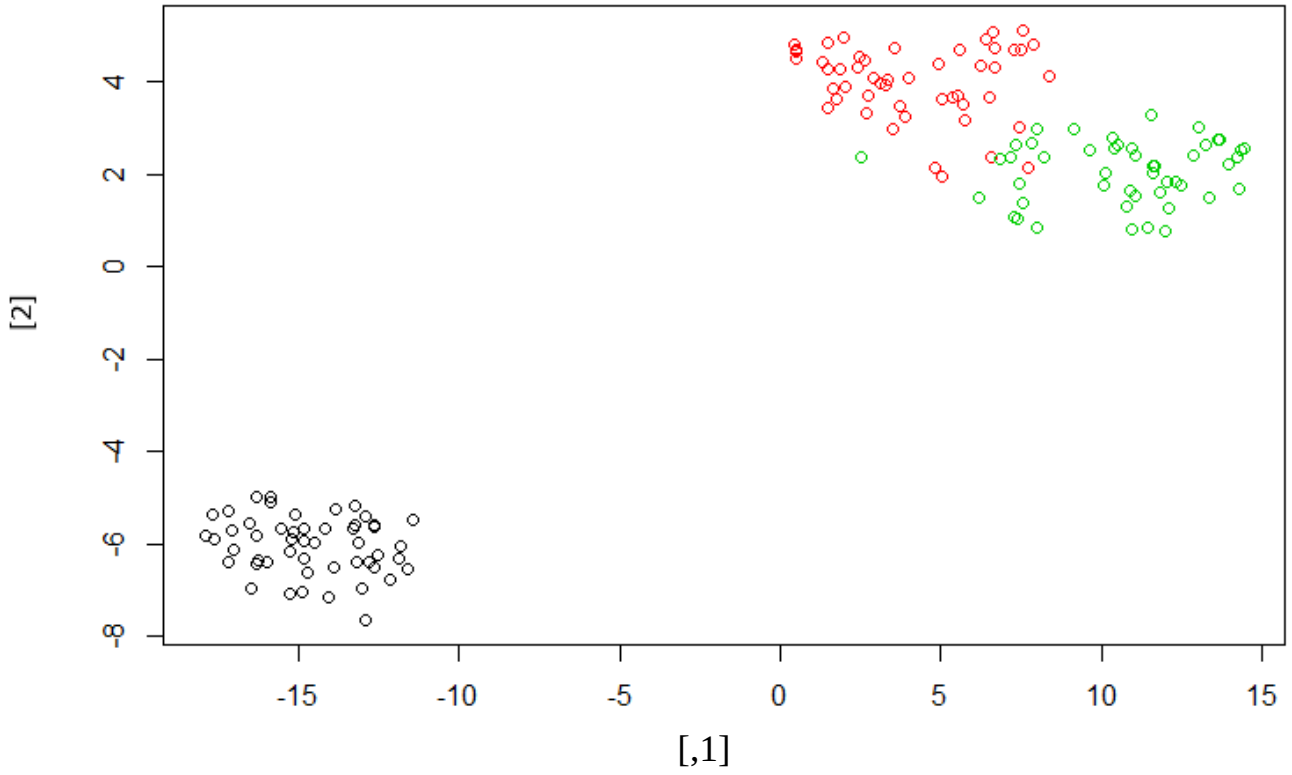
Part G: Neighbor Embedding

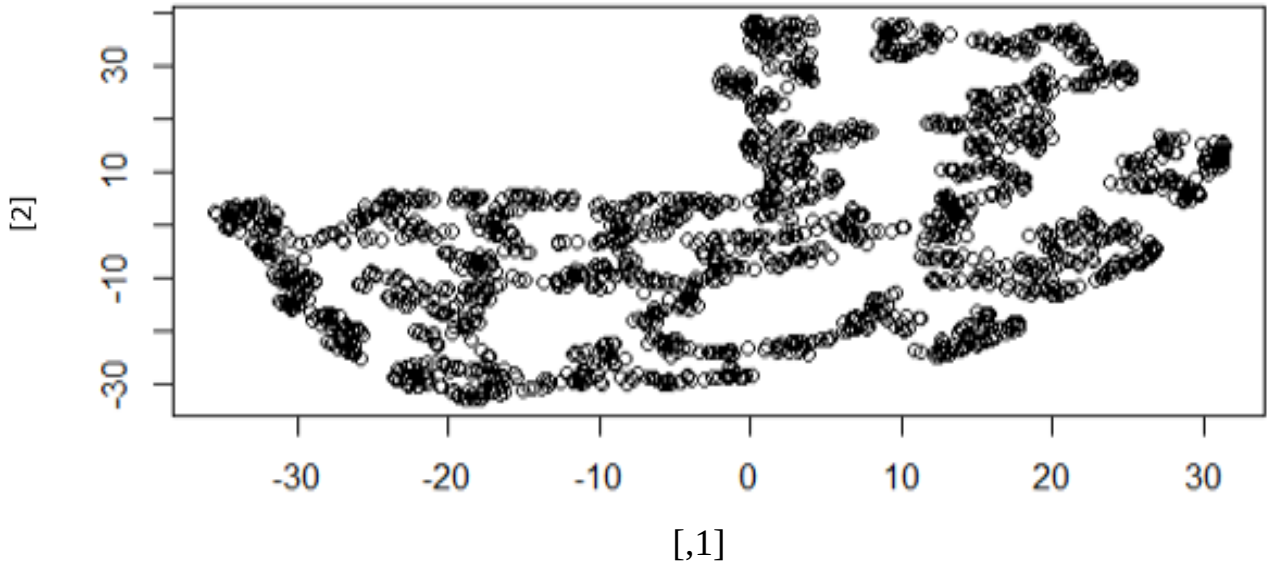
Problem G1: Stochastic Neighbor Embedding and t-distributed Stochastic Neighbor Embedding

The output for “iris” dataset is shown below:

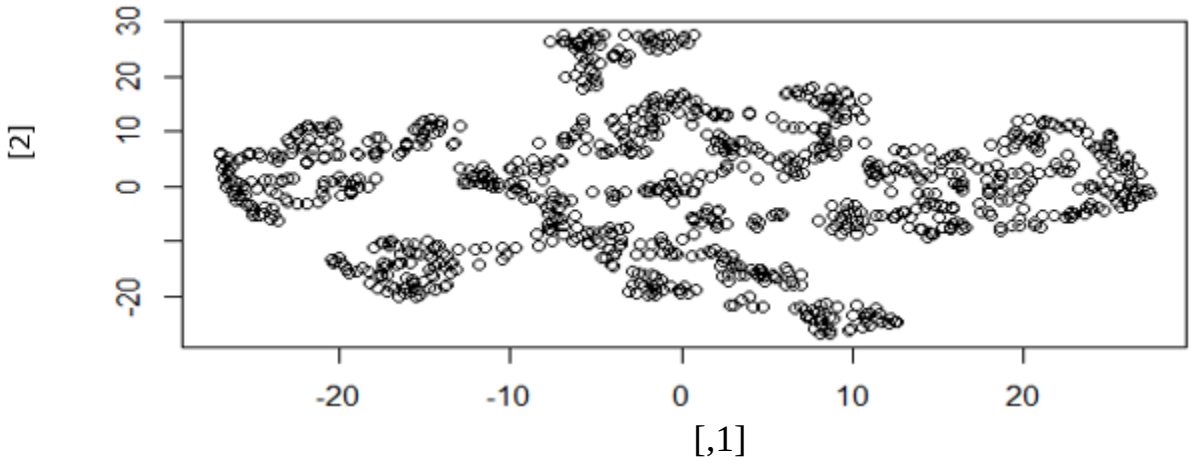



```
head(swiss_unique)
                          y
[1,] -0.9925339 23.156791 -10.859162
[2,]  5.1205493  2.782585  -2.714777
[3,]  9.5726879  8.819880  -7.114902
[4,] -8.7575503  4.845060   2.602120
[5,]  4.6661283 22.004261   5.406976
[6,]  2.2773518  6.677323  -4.639909
```

The output for “Swissroll” dataset is shown below:



The output for “Openbox” dataset is shown below:



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In [ ]:

```
data1 <- read.delim(file.choose(), header = TRUE, sep="", skip=2, as.is=TRUE)
library(tsne)
library(Rtsne)
iris_unique <- unique(iris) # Remove duplicates
set.seed(100) # Sets seed for reproducibility
tsne_out <- Rtsne(as.matrix(iris_unique[,1:4])) # Run TSNE
plot(tsne_out$Y,col=iris$Species) # Plot the result
#dim(iris)

swiss_unique <- unique(swiss_data) # Remove duplicates
set.seed(111) # Sets seed for reproducibility
head(swiss_unique)
tsne_out_swiss <- Rtsne(as.matrix(swiss_data)) # Run TSNE
plot(tsne_out_swiss$Y, col="red") # Plot the result

a<- read.delim(file.choose(), header = TRUE, sep="", skip=2, as.is=TRUE)
open_unique <- unique(a) # Remove duplicates
set.seed(11) # Sets seed for reproducibility
#head(swiss_unique)
tsne_out_open <- Rtsne(as.matrix(open_unique)) # Run TSNE
plot(tsne_out_open$Y, col="blue") # Plot the result
```