seriation1.r

Tony

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vecs<-read.csv("C:\\Users\\Tony\\Dropbox\\Rowan\\DM2\\Lecture12\\vecs2a.txt",header=FALSE,stringsAsFactors=TRUE)  
  
dim(vecs)

## [1] 1292 1001

vecs2 <-t(vecs)  
vecs2[1:5,1:5]

## [,1] [,2] [,3] [,4] [,5]   
## V1 "Mihir\_0" "John\_1" "Eric\_2" "Eric\_3" "Eric\_4"  
## V2 " 0" " 0" " 0" " 0" " 0"   
## V3 " 0" " 0" " 5" " 30" " 25"   
## V4 " 0" " 0" " 0" " 1" " 0"   
## V5 " 0" " 0" " 0" " 1" " 2"

vecs3<-as.data.frame(vecs2[2:1001,])  
vecs3[1:5,1:5]

## V1 V2 V3 V4 V5  
## V2 0 0 0 0 0  
## V3 0 0 5 30 25  
## V4 0 0 0 1 0  
## V5 0 0 0 1 2  
## V6 0 0 0 0 0

colnames(vecs3)<-vecs2[1,]  
library(ggplot2)

## Warning: package 'ggplot2' was built under R version 3.3.3

vecs3[1:5,1:5]

## Mihir\_0 John\_1 Eric\_2 Eric\_3 Eric\_4  
## V2 0 0 0 0 0  
## V3 0 0 5 30 25  
## V4 0 0 0 1 0  
## V5 0 0 0 1 2  
## V6 0 0 0 0 0

dim(vecs3)

## [1] 1000 1292

mymatrix <- matrix(nrow=1000,ncol=1292)  
  
mymatrix[1:5,1:5]

## [,1] [,2] [,3] [,4] [,5]  
## [1,] NA NA NA NA NA  
## [2,] NA NA NA NA NA  
## [3,] NA NA NA NA NA  
## [4,] NA NA NA NA NA  
## [5,] NA NA NA NA NA

for (i in 1:1000){  
 for (j in 1:1292){  
 mymatrix[i,j]<-as.integer(as.character(vecs3[i,j]))  
 }  
}  
mymatrix[1:5,1:5]

## [,1] [,2] [,3] [,4] [,5]  
## [1,] 0 0 0 0 0  
## [2,] 0 0 5 30 25  
## [3,] 0 0 0 1 0  
## [4,] 0 0 0 1 2  
## [5,] 0 0 0 0 0

rownames(mymatrix)<-rownames(vecs3)  
colnames(mymatrix)<-colnames(vecs3)  
dim(mymatrix)

## [1] 1000 1292

##myheatmap <- heatmap(mymatrix[1:50,1:50], Rowv=NA, Colv=NA, col = cm.colors(256), scale="column", margins=c(5,10))  
  
  
library(seriation)

## Warning: package 'seriation' was built under R version 3.3.3

mat2<-seriate(mymatrix, method = "PCA\_angle", control = NULL, margin = 2)  
mat2

## object of class 'ser\_permutation', 'list'  
## contains permutation vectors for 1-mode data  
##   
## vector length seriation method  
## 1 1292 PCA\_angle

colnames(mymatrix)[1:100]

## [1] "Mihir\_0" "John\_1" "Eric\_2" "Eric\_3" "Eric\_4"   
## [6] "Eric\_5" "Stephen\_6" "Tim\_7" "Tim\_8" "Chris\_9"   
## [11] "Yousuf\_10" "Stephen\_11" "John\_12" "Tony\_13" "Parvati\_14"  
## [16] "Eric\_15" "Stephen\_16" "Yousuf\_17" "John\_18" "Matt\_19"   
## [21] "Matt\_20" "Chris\_21" "Tony\_22" "John\_23" "Chris\_24"   
## [26] "Chris\_25" "Parvati\_26" "Matt\_27" "Matt\_28" "Tim\_29"   
## [31] "Chris\_30" "Tony\_31" "Matt\_32" "Eric\_33" "Mihir\_34"   
## [36] "Stephen\_35" "Tim\_36" "Stephen\_37" "Stephen\_38" "Yousuf\_39"   
## [41] "John\_40" "Chris\_41" "Chris\_42" "Yousuf\_43" "John\_44"   
## [46] "Yousuf\_45" "Parvati\_46" "Mihir\_47" "Eric\_48" "Tim\_49"   
## [51] "Tony\_50" "Tim\_51" "Chris\_52" "Eric\_53" "Tony\_54"   
## [56] "Yousuf\_55" "Chris\_56" "John\_57" "Eric\_58" "Tim\_59"   
## [61] "Yousuf\_60" "Mihir\_61" "Stephen\_62" "Mihir\_63" "Mihir\_64"   
## [66] "Tony\_65" "Stephen\_66" "Parvati\_67" "Chris\_68" "Eric\_69"   
## [71] "Tim\_70" "Eric\_71" "Tim\_72" "Tony\_73" "Eric\_74"   
## [76] "Stephen\_75" "Tony\_76" "John\_77" "Chris\_78" "Eric\_79"   
## [81] "Yousuf\_80" "Chris\_81" "Yousuf\_82" "Yousuf\_83" "John\_84"   
## [86] "Parvati\_85" "Stephen\_86" "Yousuf\_87" "John\_88" "Chris\_89"   
## [91] "Chris\_90" "Stephen\_91" "Yousuf\_92" "Chris\_93" "Tim\_94"   
## [96] "Eric\_95" "Chris\_96" "John\_97" "Eric\_98" "Parvati\_99"

colnames(mymatrix[,get\_order(mat2)])[1:100]

## [1] "Chris\_746" "Mihir\_419" "Chris\_657" "Stephen\_236" "Chris\_166"   
## [6] "Chris\_641" "Chris\_255" "Eric\_1084" "Chris\_1125" "Chris\_426"   
## [11] "Chris\_1234" "Mihir\_1025" "Chris\_1192" "Chris\_1031" "Chris\_1127"   
## [16] "Chris\_925" "Chris\_689" "Chris\_510" "Chris\_912" "Chris\_739"   
## [21] "Chris\_1153" "Eric\_922" "Chris\_561" "Chris\_634" "Chris\_1247"   
## [26] "Chris\_136" "Chris\_586" "Mihir\_466" "Mihir\_717" "Chris\_455"   
## [31] "Chris\_89" "Chris\_30" "Chris\_877" "Chris\_936" "Chris\_96"   
## [36] "Chris\_598" "Chris\_684" "Chris\_819" "Chris\_1273" "Chris\_707"   
## [41] "Chris\_970" "Chris\_876" "Chris\_998" "Chris\_123" "Chris\_1277"   
## [46] "Chris\_307" "Chris\_457" "Chris\_780" "Chris\_242" "Chris\_918"   
## [51] "Chris\_449" "Chris\_548" "Tim\_321" "Tim\_417" "Chris\_1065"   
## [56] "Chris\_319" "Chris\_701" "Chris\_835" "Chris\_513" "Chris\_378"   
## [61] "Chris\_789" "Chris\_544" "Chris\_622" "Chris\_442" "Chris\_796"   
## [66] "Chris\_756" "Chris\_484" "Chris\_102" "Chris\_553" "Chris\_1140"   
## [71] "Chris\_775" "Chris\_1108" "Chris\_310" "Chris\_390" "Chris\_81"   
## [76] "Chris\_1077" "Chris\_194" "Chris\_306" "Chris\_990" "Chris\_574"   
## [81] "Chris\_525" "Chris\_585" "Chris\_608" "Chris\_108" "Chris\_267"   
## [86] "Chris\_1050" "Chris\_1223" "Chris\_56" "Chris\_951" "Chris\_1071"   
## [91] "Chris\_1099" "Chris\_358" "Chris\_171" "Chris\_272" "Yousuf\_362"   
## [96] "Chris\_512" "Chris\_1142" "Chris\_1129" "Chris\_824" "Chris\_221"

library(plyr)

## Warning: package 'plyr' was built under R version 3.3.3

count(substr(colnames(mymatrix)[1:100],1,4))

## x freq  
## 1 Chri 16  
## 2 Eric 15  
## 3 John 11  
## 4 Matt 5  
## 5 Mihi 6  
## 6 Parv 6  
## 7 Step 11  
## 8 Tim\_ 10  
## 9 Tony 8  
## 10 Yous 12

count(substr(colnames(mymatrix[,get\_order(mat2)])[1:100],1,4))

## x freq  
## 1 Chri 90  
## 2 Eric 2  
## 3 Mihi 4  
## 4 Step 1  
## 5 Tim\_ 2  
## 6 Yous 1

count(substr(colnames(mymatrix)[100:200],1,4))

## x freq  
## 1 Chri 19  
## 2 Eric 12  
## 3 John 13  
## 4 Matt 4  
## 5 Mihi 11  
## 6 Parv 1  
## 7 Step 5  
## 8 Tim\_ 14  
## 9 Tony 14  
## 10 Yous 8

count(substr(colnames(mymatrix[,get\_order(mat2)])[100:200],1,4))

## x freq  
## 1 Chri 83  
## 2 Eric 6  
## 3 Matt 1  
## 4 Step 2  
## 5 Tim\_ 6  
## 6 Tony 2  
## 7 Yous 1

count(substr(colnames(mymatrix)[300:400],1,4))

## x freq  
## 1 Chri 20  
## 2 Eric 11  
## 3 John 12  
## 4 Matt 8  
## 5 Mihi 10  
## 6 Parv 4  
## 7 Step 10  
## 8 Tim\_ 9  
## 9 Tony 11  
## 10 Yous 6

count(substr(colnames(mymatrix[,get\_order(mat2)])[300:400],1,4))

## x freq  
## 1 Chri 11  
## 2 Eric 50  
## 3 John 2  
## 4 Mihi 3  
## 5 Step 4  
## 6 Tim\_ 12  
## 7 Tony 16  
## 8 Yous 3

count(substr(colnames(mymatrix)[400:500],1,4))

## x freq  
## 1 Chri 13  
## 2 Eric 14  
## 3 John 6  
## 4 Matt 7  
## 5 Mihi 13  
## 6 Parv 6  
## 7 Step 8  
## 8 Tim\_ 10  
## 9 Tony 17  
## 10 Yous 7

count(substr(colnames(mymatrix[,get\_order(mat2)])[400:500],1,4))

## x freq  
## 1 Chri 7  
## 2 Eric 36  
## 3 John 3  
## 4 Matt 3  
## 5 Mihi 4  
## 6 Parv 2  
## 7 Step 7  
## 8 Tim\_ 10  
## 9 Tony 25  
## 10 Yous 4

list\_seriation\_methods("matrix")

## [1] "BEA" "BEA\_TSP" "Identity" "PCA" "PCA\_angle" "Random"