## Assignment 14.2

## paste function to create the vector

lable <- paste("Label", 1:30, sep = " ")

lable

FN <- paste("FN", 1:30, sep = " ")

FN

## Compoun interest

ci.func <- function(p,r,n) return(p\*(1+r)^n)

ci.func(10000,0.115,1:10)

## matrix

N <- 100

p <- 4

X <- matrix(1:(N\*p),N,p)

head(X)

## 6 by 10 matrix

set.seed(100)

GMAT <- matrix(sample(10,size=60,replace=T),nr=6)

GMAT

# greater than 4

GreaterThan4 = NULL

morethan4 = 0

for (i in 1:(nrow(GMAT))) {

for (j in 1:(ncol(GMAT))) {

if (GMAT[i, j] > 4) {

morethan4 = morethan4 + 1

}

}

GreaterThan4[i] = morethan4

morethan4 = 0

}

GreaterThan4

# two occurences of Seven

HasTwoSevens = NULL

numberOfSevens = 0

for (i in 1:(nrow(GMAT))) {

for (j in 1:(ncol(GMAT))) {

if (GMAT[i, j] == 7) {

numberOfSevens = numberOfSevens + 1

}

}

HasTwoSevens[i] = (numberOfSevens == 2)

numberOfSevens = 0

}

HasTwoSevens

# pair of columns whose total is >= 50

PartCVector = NULL

columnSum = rep(c(0), ncol(GMAT))

for (j in 1:((ncol(GMAT)) - 1)) {

for (i in 1:(nrow(GMAT))) {

columnSum[j] = columnSum[j] + GMAT[i, j]

columnSum[j + 1] = columnSum[j + 1] + GMAT[i, j + 1]

}

if (columnSum[j] + columnSum[j + 1] >= 50) {

PartCVector <- append(PartCVector, j:(j + 1))

}

columnSum[j] = 0

columnSum[j + 1] = 0

}

for (j in 1:ncol(GMAT)) {

for (i in 1:(nrow(GMAT))) {

columnSum[j] = columnSum[j] + GMAT[i, j]

}

if (columnSum[j] \* 2 >= 50) {

PartCVector <- append(PartCVector, j)

PartCVector <- append(PartCVector, j)

}

columnSum[j] = 0

}

for (j in 2:((ncol(GMAT)))) {

for (i in 1:(nrow(GMAT))) {

columnSum[j] = columnSum[j] + GMAT[i, j]

columnSum[j - 1] = columnSum[j - 1] + GMAT[i, j - 1]

}

if (columnSum[j] + columnSum[j - 1] >= 50) {

PartCVector <- append(PartCVector, j:(j - 1))

}

columnSum[j] = 0

columnSum[j + 1] = 0

}

PartCMatrix = matrix(PartCVector, ncol = 2, byrow = TRUE)

print(PartCMatrix)