```
# 2020/12/11(五), 109 學年第一學期 資料科學應用 R 期中考
#
# 學號: A107260028 姓名: 張雅筑
#
# 本檔案為各題之程式碼檔，無執行結果


# 2020/12/11

# ex1
a <- matrix(0, nrow = 25 ,ncol = 5)

   for(i in 8:12){
      for(j in 13:17){
         Tuition <- j*400+i*600
         U <- i*(0.5)*j*(0.5)
         Fit <- ifelse(Tuition <= 12000,"*"," ")
         A <- cat(j,i,Tuition,U,Fit,"\n")
         for (k in 1:25){
            a[k,] <- A
         }
      }
}

rownames(a) <- c(1:25)
colnames(a) <- c("Eng.hr", "Comp.hr", "Tuition", "U", "Fit")
a


# ex2(a)
library(readxl)
readxl_example()
xlsx_file <- "Score-109.xlsx"
excel_sheets(xlsx_file)
mydata <- read_excel(xlsx_file,sheet="score",na="NA",skip=1)
mydata2 <- as.data.frame(mydata)
S <- head(mydata2, 5)
s <- tail(mydata2, 5)
```

```
S
s

# ex2(b)
mydata2[is.na(mydata2)] <- 0
sc <- which(mydata2[,2] < 60 & mydata2[,3] < 60)
mydata2[sc,]

# ex2(c)
x1 <- sum(mydata2[,2])/75
y1 <- sum(mydata2[,3])/75
r11 <- 0
r22 <- 0
r33 <- 0
for(i in 1:75){
   r1 <- (mydata2[i,2] - x1)*(mydata2[i,3] - y1)
   r2 <- (mydata2[i,2] - x1)**2
   r3 <- (mydata2[i,3] - y1)**2

}
my.cor <-
r11 <- r11 + r1
r22 <- r22 + (r2)*0.5
r33 <- r33 + (r3)*0.5

# ex2(d)
cor(mydata2[,2:3])

# ex3(a)
my.dnorm <- function(x; u, a){
   x <- readline(" x 値: ")
   u <- readline(" 平均數 μ: ")
   σ <- readline(" 標準差 σ: ")
   p <- pi
   y1 <- 1/(2 * p * σ)*0.5
   y2 <- sqrt(-1*x-u)/2*a
   y3 <- exp(y2)
   y4 <- y1 *y3
```

```
}
my.dnorm(2.5; 3, 2)
```