2020/12/11(五), 109 學年第一學期 資料科學應用 R 期中考

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(請依照規定)貼上執行程式碼及執行結果。
詳見: R 程式作業繳交方式
http://www.hmwu.idv.tw/web/teaching/doc/R-how-homework.pdf

```
> # 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
+             }
+         }
+ }
13 8 10000 26 *
Error in a[k, ] <- A :  被替換的項目不是替換值長度的倍數
>
> rownames(a) <- c(1:25)
> colnames(a) <- c("Eng.hr", "Comp.hr", "Tuition", "U", "Fit")
> a
    Eng.hr Comp.hr Tuition U Fit
1        0       0       0 0    0
2        0       0       0 0    0
3        0       0       0 0    0
4        0       0       0 0    0
5        0       0       0 0    0
6        0       0       0 0    0
7        0       0       0 0    0
```

```
8          0          0          0 0     0
9          0          0          0 0     0
10         0          0          0 0     0
11         0          0          0 0     0
12         0          0          0 0     0
13         0          0          0 0     0
14         0          0          0 0     0
15         0          0          0 0     0
16         0          0          0 0     0
17         0          0          0 0     0
18         0          0          0 0     0
19         0          0          0 0     0
20         0          0          0 0     0
21         0          0          0 0     0
22         0          0          0 0     0
23         0          0          0 0     0
24         0          0          0 0     0
25         0          0          0 0     0
>
>
> # ex2(a)
> library(readxl)
> readxl_example()
 [1] "clippy.xls"       "clippy.xlsx"      "datasets.xls"    "datasets.xlsx" "deaths.xls"
"deaths.xlsx"
 [7] "geometry.xls"    "geometry.xlsx" "type-me.xls"      "type-me.xlsx"
> xlsx_file <- "Score-109.xlsx"
> excel_sheets(xlsx_file)
[1] "score"
> 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
      ID Calculus English
1 No.1          72          62
2 No.2          88          97
3 No.3          76          66
```

```
4 No.4        89       51
5 No.5        46       15
> s
          ID Calculus English
71 No.71      69       96
72 No.72      51      100
73 No.73      37       50
74 No.74      33       92
75 No.75       4       37
>
> # ex2(b)
> mydata2[is.na(mydata2)] <- 0
> sc <- which(mydata2[,2] < 60 & mydata2[,3] < 60)
> mydata2[sc,]
          ID Calculus English
5     No.5        46       15
7     No.7        32       51
8     No.8        51        0
11 No.11         3        0
15 No.15        39        6
18 No.18        40        0
21 No.21        45       51
26 No.26        39       29
30 No.30        48       52
33 No.33        18        0
35 No.35        37       21
39 No.39         0       38
45 No.45        26       32
46 No.46        32       56
47 No.47         6       52
48 No.48         4        9
53 No.53        31       18
54 No.54        21       28
56 No.56        50        3
66 No.66        22       52
68 No.68        15       21
73 No.73        37       50
75 No.75         4       37
```

```
>
> # 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])
                    Calculus          English
Calculus    1.00000000 -0.02334661
English    -0.02334661    1.00000000
>
> # ex3(a)
> my.dnorm <- function(x; u, a){
錯誤: 未預期的 ';' in "my.dnorm <- function(x;"
>      x <- readline(" x 值: ")
 x 值:      u <- readline("  平均數 μ: ")
>      σ  <- readline("  標準差 σ : ")
 標準差 σ :      p <- pi
>      y1 <- 1/(2 * p * σ)*0.5
錯誤: 找不到物件 'p'
>      y2 <- sqrt(-1*x-u)/2*a
Error in -1 * x : 二元運算子中有非數值引數
>      y3 <- exp(y2)
錯誤: 找不到物件 'y2'
>      y4 <- y1 *y3
```

```
錯誤: 找不到物件 'y3'
> }
錯誤: 未預期的 '}' in "}"
> my.dnorm(2.5; 3, 2)
錯誤: 未預期的 ';' in "my.dnorm(2.5;"
>
```