2020/11/20(五), 109 學年第一學期 資料科學應用 R 小考(1)

學號: A107260010　　姓名: 陳舒汶

(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

#2020/11/20 小考(加分)

```
library(readxl)
# ex1(a)

my.data <- read.csv("Calculus-score-A.csv", header = TRUE, skip = 2)
xlsx_file <- "Calculus-score-B.xls"
excel_sheets(xlsx_file)
my.data1 <- read_excel(xlsx_file, sheet = "工作表 1", na = "NA", skip = 2)
my.data[c(1:5, 36:40), ]
as.data.frame(head(my.data1, 5))
as.data.frame(tail(my.data1, 5))

# ex1(b)

my.data2 <- as.data.frame(my.data1)
names(my.data)[1:12] <- c("座號", "學號", "姓名", "性別", "quiz.1.", "quiz.2.",
"quiz.3.", "quiz.4.", "TA", "MidtermExam", "FinalExam", "Attendance") #change
variable name
names(my.data2)[1:12] <- c("座號", "學號", "姓名", "性別", "quiz.1.", "quiz.2.",
"quiz.3.", "quiz.4.", "TA", "MidtermExam", "FinalExam", "Attendance") #change
variable name
my.dataA <- transform(my.data,class = "A")
my.dataB <- transform(my.data2,class = "B")
names(my.data2) == names(my.data)
score <- rbind(my.dataA, my.dataB)
score[38:43,]

# ex1(c)
```

```
score[is.na(score)] <- 0
Q <- score[5]*0.07 + score[6]*0.07 + score[7]*0.08 + score[8]*0.08 + score[9]*0.15 +
score[10]*0.25 + score[11]*0.30 + score[12]
x <- c(Q[1:95,])
y <- ifelse(x >= 100, 100, x)
y1 <- as.data.frame(y)
names(y1)[1] <- c("學期成績")
y1

# ex1(d)

w <- ifelse(60 > y &    y >= 50, x, (sep="0"))
w1 <- as.data.frame(w)
L <- which(w1 > 0)
score[L,]

# ex1(e)

A <- which(score[,13] == "A")
B <- which(score[,13] == "B")
sum(y1[A,]) / length(A)
sum(y1[B,]) / length(B)
A1 <- which(score[,4] == "女")
B1 <- which(score[,4] == "男")
sum(y1[A1,]) / length(A1)
sum(y1[B1,]) / length(B1)

# ex1(f)

A2 <- ifelse(60 > y &    score[,13] == "A", x, (sep="0"))
A3 <- as.data.frame(A2)
A4 <- which(A3 > 0)
length(A4) / length(A)
B2 <- ifelse(60 > y & score[,13] == "B" & score[,4] == "男", x, (sep="0"))
B3 <- as.data.frame(B2)
B4 <- which(B3 > 0)
length(B4) / length(B)
```

```
# ex1(g)

score1 <- transform(score,score = y1)
names(score1)[14] <- c("score")
SG <- score1[A1,]
SB <- score1[B1,]
SG1 <- order(SG$score, decreasing = TRUE)
SB1 <- order(SB$score, decreasing = TRUE)
SG2 <- SG[SG1,]
SB2 <- SB[SB1,]
head(SG2, 5)
head(SB2, 5)

# ex2(a)

set.seed <- c(123456)
Letters.code <- c(sample(LETTERS[1:5], 20, replace=T))
i <- c(1:length(Letters.code))
Numbers.code <- ifelse(Letters.code[i] == "A" , "1",
                                ifelse(Letters.code[i] == "B" , "3",
                                        ifelse(Letters.code[i] == "C" , "2",
                                                ifelse(Letters.code[i] == "D" , "3",
                                                        ifelse(Letters.code[i] == "E" ,
"1", NA)))))

# ex2(b)

survey <- data.frame(Letters.code = Letters.code, Numbers.code = Numbers.code)
survey
```