2020/12/18(五)，109 學年第一學期 資料科學應用 R 作業(6)

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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

```
> # ex2.30(a)
> my.data <- read.table("answer.txt",header = TRUE)
> head(my.data, 5)
   Student V1 V2 V3 V4 V5 V6 V7 V8 V9 V10
1       s1  C  D  D  A  D  A  B  C  C   B
2       s2  B  D  B  D  D  A  C  D  B   B
3       s3  B  A  A  B  D  A  C  B  C   B
4       s4  B  D  B  A  B  C  C  D  C   B
5       s5  B  D  D  D  A  C  C  D  A   B
> # ex2.30(b)
> ans <- c("B", "D", "B", "D", "D", "A", "C", "D", "C", "B")
> s <- c("A", "D", "B", "D", "B", "A", "B", "D", "C", "B")
> correct.item <- which(s == ans)
> n.correct <- length(correct.item) * 10
> correct.item
[1]  2  3  4  6  8  9 10
> n.correct
[1] 70
> # ex2.30(c)
> options(max.print=999999)
> my.data1 <- t(my.data)
> answer <- data.frame(matrix(0,1,192))
> ans1 <- t(ans)
> ans2 <- t(ans1)
> for (i in 1:10){
+   for(j in 1:192){
+     correct.item1 <- which(my.data1[2:(i+1), j] == ans2[1:i,])
+     SS <- length(correct.item1) * 10
+     answer[,j] <- SS
+   }
```

```
+ }
> answer <- t(answer)
> my.data2 <- cbind(my.data , answer)
> score.table <- my.data2[,12]
> table(score.table)
score.table
  0  10  20  30  40  50  60  70  80  90 100
  3  10   9  11  19  23  28  40  30  12   7
> # ex2.30(d)
> P <- order(my.data2$answer, decreasing = TRUE)
> topID <- which(my.data2$answer >= 75)
> lowID <- which(my.data2$answer <= 25)
> n.topID <- length(topID)
> n.lowID <- length(lowID)
> rownames(answer)[topID]
 [1] "X2"   "X12"  "X16"  "X19"  "X20"  "X21"  "X24"  "X25"  "X27"
[10] "X31"  "X41"  "X43"  "X44"  "X47"  "X50"  "X52"  "X54"  "X55"
[19] "X66"  "X69"  "X73"  "X79"  "X80"  "X81"  "X86"  "X95"  "X96"
[28] "X108" "X110" "X112" "X123" "X125" "X128" "X129" "X131" "X135"
[37] "X136" "X139" "X143" "X146" "X152" "X157" "X159" "X165" "X171"
[46] "X187" "X189" "X190" "X192"
> rownames(answer)[lowID]
 [1] "X17"  "X32"  "X65"  "X71"  "X74"  "X82"  "X87"  "X90"  "X97"
[10] "X105" "X107" "X120" "X132" "X142" "X160" "X161" "X163" "X168"
[19] "X169" "X174" "X177" "X178"
> n.topID
[1] 49
> n.lowID
[1] 22
```