

> #2020/12/25(五), 109 學年第一學期 資料科學應用 R 作業(7)

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> # 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")

> w <- c("A", "D", "B", "D", "B", "A", "B", "D", "C", "B")

> correct.item <- which(w == 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)
> s <- 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
>

```