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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```
> #2.30(a)
> data <- read.table("data/answer.txt",    header=TRUE, sep="\t")
> head(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
>
>
> #2.30(b)
> correct.answer <- as.factor(c("B", "D", "B", "D", "D", "A", "C", "D", "C", "B"))
> student.answer <- as.factor(c("A", "D", "B", "D", "B", "A", "B", "D", "C", "B"))
> correct.item <- which(correct.answer == student.answer)
> correct.item
[1]  2  3  4  6  8  9 10
> n.correct <- as.integer(length(correct.item) * 10)
> n.correct
[1] 70
>
> #2.30(c)
>
>
>
>
> #2.30(d)
>
>
>
```

```
> 
> #2.30(e)
> 
> 
> 
> #2.30(f)
> 
> 
> 
> #2.51(a)
> text <- ("AAABBBCCCC")
> a <- gregexpr("A", text)
> length(a[[1]])
[1] 3
> b <- gregexpr("B", text)
> length(b[[1]])
[1] 3
> c <- gregexpr("C", text)
> length(c[[1]])
[1] 4
> paste0(length(a[[1]]), "A", length(b[[1]]), "B", length(c[[1]]), "C")
[1] "3A3B4C"
> 
> #2.51(b)
> test <- "3A3B4C"
> cat(test, substr(rep("AAABBBCCCC", 11), 1:11, 1:11))
3A3B4C A A A B B B C C C C >
> #2.52
> compress <- function(x){
+     for(i in LETTERS){
+         gregexpr(x, i)
+         z <- paste0(length(gregexpr(x, i)), gregexpr(x, i))
+     }
+     cat(z, "")
+ }
> compress("ABAABBAABCCCAC")
1-1 > y <- "abcdgh"
> length(gregexpr("c", y))
```

```
[1] 1
>
>
>
> #5.2(a)
> probability <- function(x){
+
+     set.seed(123456)
+     z <- factorial(10) / factorial(x)

+     cat("一袋中有 6 顆白球 4 顆紅球，隨機從中抽取 3 球的機率:", z, "\n")

+ }
> probability(3)
```

一袋中有 6 顆白球 4 顆紅球，隨機從中抽取 3 球的機率: 604800

```
>
> #5.2(b)
>
>
>
>
> #5.2(c)
>
```