2020/10/23(五), 109 學年第一學期 資料科學應用 R 作業(1)

學號:A106260020　　姓名:楊鎵綺

```
# ex1.7(a)
> rep(LETTERS[1:5], 5:1)
 [1] "A" "A" "A" "A" "A" "B" "B" "B" "B" "C" "C" "C" "D"
[14] "D" "E"

# ex1.7(b)
> x <- c(letters[1:26])
> y <- x[seq(2, 26, 2)]
> z <- x[seq(1, 26, 2)]
> (ans <- c(y,z))
 [1] "b" "d" "f" "h" "j" "l" "n" "p" "r" "t" "v" "x" "z"
[14] "a" "c" "e" "g" "i" "k" "m" "o" "q" "s" "u" "w" "y"

# ex1.7(c)

# ex1.7(d)
> month <- c(month.abb)
> mix <- c(month[seq(1, length(month), 2)], month[seq(2, length(month), 2)])
> mix
 [1] "Jan" "Mar" "May" "Jul" "Sep" "Nov" "Feb" "Apr"
 [9] "Jun" "Aug" "Oct" "Dec"

# ex1.23(a)
> math.score <- c(43, 94, 20, 8, 46, 72, 93, 8, 28, 33, 79, 60, 93, 52, 8)
> math.score
 [1] 43 94 20  8 46 72 93  8 28 33 79 60 93 52  8

# ex1.23(b)
> length(math.score)
[1] 15

# ex1.23(c)
> even <- math.score[seq(from = 2, to = length(math.score), by = 2)]
> even; mean(even)
[1] 94  8 72  8 33 60 52
[1] 46.71429
```

```
# ex1.23(d)
> id <- 1:length(math.score)
> id[math.score >= 60]; length(id[math.score >= 60])
[1]  2  6  7 11 12 13
[1] 6

# ex1.37(a)
> (age <- c(54, 64, 75, 21, 66, 49, 25, 72, 50, 72))
 [1] 54 64 75 21 66 49 25 72 50 72
> (gender <- c("女", "男", "男", "女", "女", "男", "男", "女", "男", "女"))
 [1] "女" "男" "男" "女" "女" "男" "男" "女" "男" "女"
> (index <- c(86, 30, NA, 43, 35, 42, 31, 7, 29, 80))
 [1] 86 30 NA 43 35 42 31  7 29 80
> sat.f <- c(3, 4, 1, 4, 2, 1, 2, 3, 2, 4)
> satting <- factor(sat.f)
> levels(satting) <- c("非常不滿意", "普通", "滿意", "非常滿意")
> sat <- ordered(satting, levels = (levels(satting)))
> sat
 [1] 滿意     非常滿意   非常不滿意 非常滿意
 [5] 普通     非常不滿意 普通       滿意
 [9] 普通     非常滿意
Levels: 非常不滿意 < 普通 < 滿意 < 非常滿意

# ex1.37(b)
> length(sat[sat >= "滿意"])
[1] 5

# ex1.37(c)
> (ind <- is.na(index))
 [1] FALSE FALSE  TRUE FALSE FALSE FALSE FALSE FALSE
 [9] FALSE FALSE
> index[is.na(index)] <- 0
> gender.f <- factor(gender)
> (index.mean <- tapply(index, gender.f, mean))
  男   女
26.4 50.2
```