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> #2020/10/23(五), 109 學年第一學期 資料科學應用 R 作業(1)
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>
> #ex1.7(a)
> rep(LETTERS[1:5], seq(from=5, to=1))
 [1] "A" "A" "A" "A" "A" "B" "B" "B" "B" "C" "C" "C" "D" "D" "E"
>
> #ex1.7 (b)
> c(letters[1:26][seq(from=2, to=26, by=2)] ,letters[1:25][seq(from=1, to=25, by=2)])
 [1] "b" "d" "f" "h" "j" "l" "n" "p" "r" "t" "v" "x" "z" "a" "c" "e" "g" "i" "k"
[20] "m" "o" "q" "s" "u" "w" "y"
>
>   #ex1.7 (c)
> require
function (package, lib.loc = NULL, quietly = FALSE, warn.conflicts,
      character.only = FALSE, mask.ok, exclude, include.only, attach.required =
missing(include.only))
{
      if (!character.only)
            package <- as.character(substitute(package))
      loaded <- paste0("package:", package) %in% search()
      if (!loaded) {
            if (!quietly)
                  packageStartupMessage(gettextf("Loading required package: %s",
                        package), domain = NA)
            value <- tryCatch(library(package, lib.loc = lib.loc,
                  character.only = TRUE, logical.return = TRUE, warn.conflicts =
warn.conflicts,
                  quietly = quietly, mask.ok = mask.ok, exclude = exclude,
                  include.only = include.only, attach.required = attach.required),
                  error = function(e) e)
            if (inherits(value, "error")) {
                  if (!quietly) {
                        msg <- conditionMessage(value)
                        cat("Failed with error:    ", sQuote(msg), "\n",
                           file = stderr(), sep = "")
                        .Internal(printDeferredWarnings())
                  }
```

```
                return(invisible(FALSE))
            }
            if (!value)
                return(invisible(FALSE))
        }
        else value <- TRUE
        invisible(value)
}
<bytecode: 0x7fb1ca8ad198>
<environment: namespace:base>
> require(MASS)
> x<-1:100
> y<-rep(c(1,-1),50)
> fractions(y/x)
   [1]          1     -1/2       1/3     -1/4       1/5     -1/6       1/7     -1/8       1/9    -
1/10     1/11
  [12]    -1/12     1/13    -1/14     1/15    -1/16     1/17    -1/18     1/19    -1/20
1/21    -1/22
  [23]     1/23    -1/24     1/25    -1/26     1/27    -1/28     1/29    -1/30     1/31    -
1/32     1/33
  [34]    -1/34     1/35    -1/36     1/37    -1/38     1/39    -1/40     1/41    -1/42
1/43    -1/44
  [45]     1/45    -1/46     1/47    -1/48     1/49    -1/50     1/51    -1/52     1/53    -
1/54     1/55
  [56]    -1/56     1/57    -1/58     1/59    -1/60     1/61    -1/62     1/63    -1/64
1/65    -1/66
  [67]     1/67    -1/68     1/69    -1/70     1/71    -1/72     1/73    -1/74     1/75    -
1/76     1/77
  [78]    -1/78     1/79    -1/80     1/81    -1/82     1/83    -1/84     1/85    -1/86
1/87    -1/88
  [89]     1/89    -1/90     1/91    -1/92     1/93    -1/94     1/95    -1/96     1/97    -
1/98     1/99
[100] -1/100
>    #ex1.7 (d)
> c(month.abb[1:11][seq(1,11,2)] ,month.abb[1:12][seq(2,12,2)])
  [1] "Jan" "Mar" "May" "Jul" "Sep" "Nov" "Feb" "Apr" "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)
>
>    #ex1.23(b)
> length(math.score)
[1] 15
>
>    #ex1.23(c)
> mean (math.score[seq(1,15,2)])
[1] 51.25
>
>    #ex1.23(d)
> id<-1:length(math.score)
> happy<-id[math.score>=60]
> length(happy)
[1] 6
>
>    #ex1.37(a)
> age<-c(54,64,75,21,66,49,25,72,50,72)
> gender<-c( "女","男","男","女","女","男","男","女","男","女")
> index<-c(86,30,NA,43,35,42,31,7,29,80)
> sat<-c("滿意","非常滿意","非常不滿意","非常滿意","普通","非常不滿意","普通
","滿意","普通","非常滿意")
> sat.ordered<- factor(sat , levels=c("非常不滿意","普通","滿意","非常滿意
"),ordered=T)
> sat.ordered
 [1] 滿意       非常滿意   非常不滿意 非常滿意   普通       非常不滿
意 普通
 [8] 滿意       普通       非常滿意
Levels: 非常不滿意 < 普通 < 滿意 < 非常滿意
>
>    #ex1.37(b)
> sad<-(1:length(sat.ordered))[sat.ordered>="滿意"]
> length(sad)
[1] 5
>
>    #ex1.37(c)
> angry <- index[age > 40 & gender == "男"]
> mean(angry,na.rm=T)
```

```
[1] 33.66667
> #加分作業(1)
> easy<- 1:5
> rep(easy,1:5)
 [1] 1 2 2 3 3 3 4 4 4 4 5 5 5 5 5
> #加分作業(2)
> busy<- 5:1
> rep(busy,1:5)
 [1] 5 4 4 3 3 3 2 2 2 2 1 1 1 1 1
> #加分作業(3)
> rep(1:3,3)
[1] 1 2 3 1 2 3 1 2 3
>
```