통소실2

```
x<- c(1:5)
x<- c((1:5),c(6:10))
x
```

```
##  [1]  1  2  3  4  5  6  7  8  9 10
```

```
x[-c(1,3,5,7,9)]
```

```
## [1]  2  4  6  8 10
```

```
x[c(2,4,6,8,10)]
```

```
## [1]  2  4  6  8 10
```

```
x <- matrix(1:24,nr=4,nc=6)
x
```

```
##      [,1] [,2] [,3] [,4] [,5] [,6]
## [1,]    1    5    9   13   17   21
## [2,]    2    6   10   14   18   22
## [3,]    3    7   11   15   19   23
## [4,]    4    8   12   16   20   24
```

```
x[,c(1,3,5)]
```

```
##      [,1] [,2] [,3]
## [1,]    1    9   17
## [2,]    2   10   18
## [3,]    3   11   19
## [4,]    4   12   20
```

```
x1 <- c(TRUE,FALSE,TRUE,FALSE)
x2 <- c(FALSE,FALSE,TRUE,TRUE)
!x1
```

```
## [1] FALSE  TRUE FALSE  TRUE
```

```
x1 | x2
```

```
## [1]  TRUE FALSE  TRUE  TRUE
```

```
x1 & x2
```

```
## [1] FALSE FALSE  TRUE FALSE
```

```
x1 || x2
```

```
## [1] TRUE
```

```
x1 && x2
```

```
## [1] FALSE
```

```
gnd <- c(1,2,1,2,NA)
blood <- c('A','O','O','AB','O',NA)
q1 <- c(3,2,2,3,2)
income <- c('Mid','Hi',NA,'Hi','Mid','Hi')
```

```
gnd=factor(gnd,label=c('F','M'))
gnd
```

```
## [1] F    M    F    M    <NA>
## Levels: F M
```

```
as.numeric(gnd)
```

```
## [1]  1  2  1  2 NA
```

```
bld <- factor(blood)
bld <- factor(bld,levels=c('A','AB','B','O'))
bld
```

```
## [1] A    O    O    AB   O    <NA>
## Levels: A AB B O
```

```
as.numeric(bld)
```

```
## [1]  1  4  4  2  4 NA
```

```
income <- factor(income)
income <- factor(income,levels=c('Lo','Mid','Hi'))
income
```

```
## [1] Mid  Hi   <NA> Hi   Mid  Hi
## Levels: Lo Mid Hi
```

```
as.numeric(income)
```

```
## [1]  2  3 NA  3  2  3
```

```
id=c(1,2,3)
nm=c('K','L','P')
gnd <- factor(c(2,1,1))
ht=c(162,168,178)
wt=c(71,58,73)
bld <- factor(c('B','O','AB'),levels=c('A','AB','B','O'))
df <- data.frame(id,nm,gnd,ht,wt,bld)
df
```

```
##   id nm gnd  ht wt bld
## 1  1  K   2 162 71   B
## 2  2  L   1 168 58   O
## 3  3  P   1 178 73  AB
```

```
p1 <- c('평화','국민','시대','동북아','사회','북한','경제','대화','발전')
p2 <- c('국민','사회','정부','경제','선진','문화','발전','기업','산업')
p3 <- c('국민','시대','행복','경제', '문화', '사회', '희망','국가', '신뢰','정부','창조')
intersect(p1,p2)
```

```
## [1] "국민" "사회" "경제" "발전"
```

```
a<- intersect(p1,p2)
setdiff(p1,p2)
```

```
## [1] "평화"   "시대"   "동북아" "북한"   "대화"
```

```
setdiff(p2,p1)
```

```
## [1] "정부" "선진" "문화" "기업" "산업"
```

```
intersect(a,p3)
```

```
## [1] "국민" "사회" "경제"
```

```
X <- cbind(c(1,1,1,1),c(3,6,9,12))
X
```

```
##      [,1] [,2]
## [1,]    1    3
## [2,]    1    6
## [3,]    1    9
## [4,]    1   12
```

```
y <- c(3,4,5.5,6.5)
a= t(y)
Y=t(a)
```

```
A= t(X) %*% X
A
```

```
##      [,1] [,2]
## [1,]    4   30
## [2,]   30  270
```

```
b <- t(X) %*% y
b
```

```
##       [,1]
## [1,]  19.0
## [2,] 160.5
```

```
solve(t(X) %*% X)
```

```
##            [,1]        [,2]
## [1,]  1.5000000 -0.16666667
## [2,] -0.1666667  0.02222222
```

```
solve(t(X) %*% X) %*% t(X) %*% y
```

```
##      [,1]
## [1,] 1.75
## [2,] 0.40
```

```
x <- c(3,6,9,12)
y <- c(3,4,5.5,6.5)
lm(y~x)
```

```
##
## Call:
## lm(formula = y ~ x)
##
## Coefficients:
## (Intercept)            x
##        1.75         0.40
```

```
data("airquality")
mean(airquality$Ozone,na.rm  =TRUE)
```

```
## [1] 42.12931
```

```
patients1 <- data.frame(name= c('철수','춘향','길동'),age = c(22,20,25), gender = factor(c('M', 'F','M')), blood.type = factor(c('A','0','B')))
patients1
```

```
##   name age gender blood.type
## 1 철수  22      M          A
## 2 춘향  20      F          0
## 3 길동  25      M          B
```

```
str(patients1)
```

```
## 'data.frame':    3 obs. of  4 variables:
##  $ name      : chr  "철수" "춘향" "길동"
##  $ age       : num  22 20 25
##  $ gender    : Factor w/ 2 levels "F","M": 2 1 2
##  $ blood.type: Factor w/ 3 levels "A","B","0": 1 3 2
```

```
#name 글자
```

```
patients <- data.frame(name= c('철수','춘향','길동'),age = c(22,20,25), gender = factor(c('M', 'F','M')), blood.type = factor(c('A','0','B')))
no.patients <- data.frame(day=c(1:6),no=c(50,60,55,52,65,58))
listPatients <- list(patients,no.patients,room=30)
listPatients
```

```
## [[1]]
##   name age gender blood.type
## 1 철수  22      M          A
## 2 춘향  20      F          0
## 3 길동  25      M          B
##
## [[2]]
##   day no
## 1   1 50
## 2   2 60
## 3   3 55
## 4   4 52
## 5   5 65
## 6   6 58
##
## $room
## [1] 30
```

```
listPatients$room <- NULL
listPatients
```

```
## [[1]]
##   name age gender blood.type
## 1 철수  22      M          A
## 2 춘향  20      F          O
## 3 길동  25      M          B
##
## [[2]]
##   day no
## 1   1 50
## 2   2 60
## 3   3 55
## 4   4 52
## 5   5 65
## 6   6 58
```