MAT1011 (Applied Statistics) Lab-2 15-03-2022

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> # KHAN MOHD OWAIS RAZA (20BCD7138)
> # MAT1011 Lab-2 (15-03-2022)
>
> # Enter a matrix of order 2X3
> A = matrix(c(2,4,3,1,5,7), nrow=2, ncol=3, byrow=TRUE)
> A
     [,1] [,2] [,3]
[1,]    2    4    3
[2,]    1    5    7
> A[2,3]    # Display 2nd and 3rd column element
[1] 7
> A[2,]     # Display 2nd row elements
[1] 1 5 7
>

> A[,c(1,3)]  # Display 1st & 2nd columns only
     [,1] [,2]
[1,]    2    3
[2,]    1    7
> t(A)  # Transpose of A
     [,1] [,2]
[1,]    2    1
[2,]    4    5
[3,]    3    7
>
> C = matrix(c(6,2), nrow=1, ncol=2)
> C
     [,1] [,2]
[1,]    6    2
>
> B = matrix(c(2,4,3,1,5,7), nrow=3, ncol=2, byrow=FALSE)
> B
     [,1] [,2]
[1,]    2    1
[2,]    4    5
[3,]    3    7
>
> C = matrix(c(7,4,2), nrow=3, ncol=1)
> C
     [,1]
[1,]    7
[2,]    4
[3,]    2
>
> cbind(B,C)   # column bind
     [,1] [,2] [,3]
[1,]    2    1    7
[2,]    4    5    4
[3,]    3    7    2
>
> D = matrix(c(6,20), nrow=1, ncol=2)
> D
     [,1] [,2]
[1,]    6   20
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>
> # Creating data frame :
> a=c(1,2,3)
> b=("a","b","c")
Error: unexpected ',' in "b=("a","
> b=c("a","b","c")
> d=c(TRUE, FALSE, TRUE)
> df=data.frame(a,b,d)
> df=data.frame(a,b,d)
> df
  a b     d
1 1 a  TRUE
2 2 b FALSE
3 3 c  TRUE
>
> # Example: To create data
> empid=c(1,2,3,4,5,6,7,8,9,10,11,12,13,14,15)
> age=c(30,37,45,32,50,60,35,32,34,43,32,30,43,50,60)
> sex=c(0,1,0,1,1,1,0,0,1,0,0,1,1,0,0)
> status=c(1,1,2,2,1,1,1,2,2,1,2,1,2,1,2)
> empinfo=data.frame(empid, age, sex, status)
> empinfo
   empid age sex status
1      1  30   0      1
2      2  37   1      1
3      3  45   0      2
4      4  32   1      2
5      5  50   1      1
6      6  60   1      1
7      7  35   0      1
8      8  32   0      2
9      9  34   1      2
10    10  43   0      1
11    11  32   0      2
12    12  30   1      1
13    13  43   1      2
14    14  50   0      1
15    15  60   0      2
> empinfo[7,2]
[1] 35
> empinfo[3,]
  empid age sex status
3     3  45   0      2
> empinfo[3:8,1]
[1] 3 4 5 6 7 8
> empinfo$age[empinfo$sex>0]
[1] 37 32 50 60 34 30 43
> empinfo$sex=factor(empinfo$sex, labels=c("MALE","FEMALE"))
> empinfo$status=factor(empinfo$status,labels=c("STAFF", "FACULTY"))
> empinfo
   empid age    sex  status
1      1  30   MALE   STAFF
2      2  37 FEMALE   STAFF
3      3  45   MALE FACULTY
4      4  32 FEMALE FACULTY
5      5  50 FEMALE   STAFF
6      6  60 FEMALE   STAFF
7      7  35   MALE   STAFF
8      8  32   MALE FACULTY
9      9  34 FEMALE FACULTY
10    10  43   MALE   STAFF
11    11  32   MALE FACULTY
12    12  30 FEMALE   STAFF
13    13  43 FEMALE FACULTY
14    14  50   MALE   STAFF
15    15  60   MALE FACULTY
```

```
> # show male data only
> sexm = subset(empinfo, empinfo$sex=="MALE")
> sexm
   empid age  sex  status
1      1  30 MALE   STAFF
3      3  45 MALE FACULTY
7      7  35 MALE   STAFF
8      8  32 MALE FACULTY
10    10  43 MALE   STAFF
11    11  32 MALE FACULTY
14    14  50 MALE   STAFF
15    15  60 MALE FACULTY
>
> # shows female data only
> sexf = subset(empinfo, empinfo$sex=="FEMALE")
> sexf
   empid age    sex  status
2      2  37 FEMALE   STAFF
4      4  32 FEMALE FACULTY
5      5  50 FEMALE   STAFF
6      6  60 FEMALE   STAFF
9      9  34 FEMALE FACULTY
12    12  30 FEMALE   STAFF
13    13  43 FEMALE FACULTY
> # summary
> summary(empinfo)
     empid           age            sex        status
 Min.   : 1.0   Min.   :30.00   MALE  :8   STAFF  :8
 1st Qu.: 4.5   1st Qu.:32.00   FEMALE:7   FACULTY:7
 Median : 8.0   Median :37.00
 Mean   : 8.0   Mean   :40.87
 3rd Qu.:11.5   3rd Qu.:47.50
 Max.   :15.0   Max.   :60.00
> summary(sexf)
     empid           age            sex        status
 Min.   : 2.000   Min.   :30.00   MALE  :0   STAFF  :4
 1st Qu.: 4.500   1st Qu.:33.00   FEMALE:7   FACULTY:3
 Median : 6.000   Median :37.00
 Mean   : 7.286   Mean   :40.86
 3rd Qu.:10.500   3rd Qu.:46.50
 Max.   :13.000   Max.   :60.00
> summary(sexm)
     empid           age            sex        status
 Min.   : 1.000   Min.   :30.00   MALE  :8   STAFF  :4
 1st Qu.: 6.000   1st Qu.:32.00   FEMALE:0   FACULTY:4
 Median : 9.000   Median :39.00
 Mean   : 8.625   Mean   :40.88
 3rd Qu.:11.750   3rd Qu.:46.25
 Max.   :15.000   Max.   :60.00
```