Handling Data in R Programming

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Aim- To Handle data in RStudio

Code-

```
x<-1:10
print(x)
y<-11:20
table1<- data.frame(x,y)
table1
table2<-edit(table1)
table2[1:3,]
2^3
8%%3
x=3
log2(x)
log10(x)
exp(x)
cos(x)
sin(x)
tan(x)
acos(x)
asin(x)
atan(x)
abs(x)
sqrt(x)
chocolate_price<-2
chocolate_price=2
chocolate_price
print(chocolate_price)
5*chocolate_price
chocolate_price<-5
chocolate_price
height<-10
width<-5
area<-height*width
print(area)
ls()
rm(height,width)
ls()
friend_ages<-c(27,25,29,26)
friend_ages
```

```
my_friends<-c("Simran","Martin","Akbar","AkSingh")
my_friends
fun1<-function(x){return(x^2+7)}
fun1(3)
a<-seq(1,10,by=2)
b<-seq(1,10,lenght=5)
c<-1:10
x=c(8,5,4,7)
max(x)
min(x)
range(x)
length(x)
sum(x)
prod(x)
mean(x)
sd(x)
var(x)
sort(x)
sort(x,decreasing = T)
salaries<-c(2000,1800,2500,3000)
sum(salaries)
mean(salaries)
range(salaries)
col1<-c(5,6,7,8,9)
col2<-c(2,6,7,8,9)
col3<-c(7,3,4,8,7)
my_data<-cbind(col1,col2,col3)
mydata
dim(my_data)
my_data[2,]
my_data[2:4,]
a<-matrix(c(2,4,7,8),2,2,byrow = T)
solve(a)
a%*%a
t(a)
c<-eigen(a)
my_data[, 3]
my_data[2, 3]
my_data*2
rowSums(my_data)
colSums(my_data)
summary(salaries)
my_friends<-c("Simran","Martin","Akbar","AkSingh")
friend_ages<-c(27,25,29,26)
are_married<-c(TRUE,FALSE,TRUE,TRUE)
friends_data<-data.frame(name=my_friends,age,height)
friends_data
x<-1:10
```

```
x
y<-11:20
print(y)
table1<-data.frame(x,y)
table1
table2<-edit(table1)
table2
table2[1:3,]
table2[,1:3]
table2$x
summary(table2)
mydata=read.csv(file.choose())
data()
mtcars
ourdata=read.csv(file.choose())
ourdata
```

Output-

```
table2[1:3,]
  x  y
1 1 11
2 2 12
3 3 13
> 2^3
[1] 8
> 8%%3
[1] 2
> x=3
> log2(x)
[1] 1.584963
> log10(x)
[1] 0.4771213
> exp(x)
[1] 20.08554
> cos(x)
[1] -0.9899925
> sin(x)
[1] 0.14112
> tan(x)
[1] -0.1425465
> acos(x)
[1] NaN
Warning message:
In acos(x) : NaNs produced
> asin(x)
[1] NaN
Warning message:
In asin(x) : NaNs produced
```

```
> atan(x)
[1] 1.249046
> abs(x)
[1] 3
> sqrt(x)
[1] 1.732051
> chocolate_price<-2
> chocolate_price=2
> chocolate_price
[1] 2
> print(chocolate_price)
[1] 2
> 5*chocolate_price
[1] 10
> chocolate_price<-5
> chocolate_price
[1] 5
> height<-10
> width<-5
> area<-height*width
> print(area)
[1] 50
> ls()
 [1] "a"              "are_married"    "area"
 [4] "b"              "c"              "chocolate_price"
 [7] "col1"           "col2"           "col3"
[10] "friend_ages"    "fun1"           "height"
[13] "my_data"        "my_friends"     "salaries"
[16] "table1"         "table2"         "temp"
[19] "width"          "x"              "y"
> rm(height,width)
> ls()
 [1] "a"              "are_married"    "area"
 [4] "b"              "c"              "chocolate_price"
 [7] "col1"           "col2"           "col3"
[10] "friend_ages"    "fun1"           "my_data"
[13] "my_friends"     "salaries"       "table1"
[16] "table2"         "temp"           "x"
[19] "y"
> friend_ages<-c(27,25,29,26)
> friend_ages
[1] 27 25 29 26
> my_friends<-c("Simran","Martin","Akbar","AkSingh")
> my_friends
[1] "Simran"  "Martin"  "Akbar"   "AkSingh"
> fun1<-function(x){return(x^2+7)}
> fun1(3)
[1] 16
```

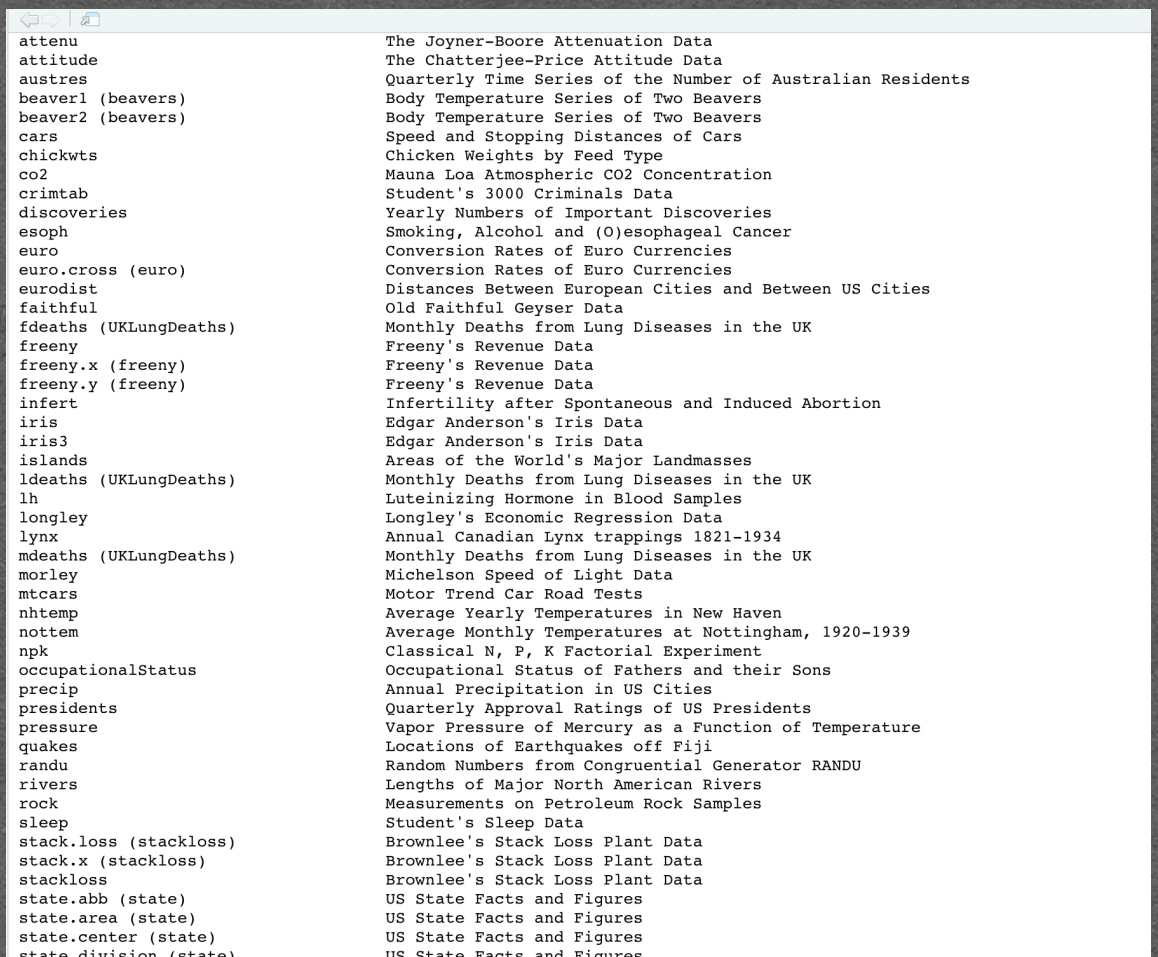
```
> a<-seq(1,10,by=2)
> b<-seq(1,10,lenght=5)
Warning message:
In seq.default(1, 10, lenght = 5) :
 extra argument ‘lenght’ will be disregarded
> c<-1:10
> x=c(8,5,4,7)
> max(x)
[1] 8
> min(x)
[1] 4
> range(x)
[1] 4 8
> length(x)
[1] 4
> sum(x)
[1] 24
> prod(x)
[1] 1120
> mean(x)
[1] 6
> sd(x)
[1] 1.825742
> var(x)
[1] 3.333333
> sort(x)
[1] 4 5 7 8
> sort(x,decreasing = T)
[1] 8 7 5 4
> salaries<-c(2000,1800,2500,3000)
> sum(salaries)
[1] 9300
> mean(salaries)
[1] 2325
> range(salaries)
[1] 1800 3000
> col1<-c(5,6,7,8,9)
> col2<-c(2,6,7,8,9)
> col3<-c(7,3,4,8,7)
> my_data<-cbind(col1,col2,col3)
> mydata
Error: object 'mydata' not found
> dim(my_data)
[1] 5 3
> my_data[2,]
col1 col2 col3
   6    6    3
> my_data[2:4,]
```

```
     col1 col2 col3
[1,]    6    6    3
[2,]    7    7    4
[3,]    8    8    8
> a<-matrix(c(2,4,7,8),2,2,byrow = T)
> solve(a)
           [,1]       [,2]
[1,] -0.6666667  0.3333333
[2,]  0.5833333 -0.1666667
> a%*%a
     [,1] [,2]
[1,]   32   40
[2,]   70   92
> t(a)
     [,1] [,2]
[1,]    2    7
[2,]    4    8
> c<-eigen(a)
> my_data[, 3]
[1] 7 3 4 8 7
> my_data[2, 3]
col3
   3
> my_data*2
     col1 col2 col3
[1,]   10    4   14
[2,]   12   12    6
[3,]   14   14    8
[4,]   16   16   16
[5,]   18   18   14
> rowSums(my_data)
[1] 14 15 18 24 25
> colSums(my_data)
col1 col2 col3
  35   32   29
> summary(salaries)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
   1800    1950    2250    2325    2625    3000
> my_friends<-c("Simran","Martin","Akbar","AkSingh")
> friend_ages<-c(27,25,29,26)
> are_married<-c(TRUE,FALSE,TRUE,TRUE)
> friends_data<-data.frame(name=my_friends,age,height)
Error in data.frame(name = my_friends, age, height) :
  object 'age' not found
> friends_data
Error: object 'friends_data' not found
> x<-1:10
> x
```

```
 [1]  1  2  3  4  5  6  7  8  9 10
> y<-11:20
> print(y)
 [1] 11 12 13 14 15 16 17 18 19 20
> table1<-data.frame(x,y)
> table1
    x  y
1   1 11
2   2 12
3   3 13
4   4 14
5   5 15
6   6 16
7   7 17
8   8 18
9   9 19
10 10 20
> table2<-edit(table1)
> table2
    x  y
1   1 11
2   2 12
3   3 13
4   4 14
5   5 15
6   6 16
7   7 17
8   8 18
9   9 19
10 10 20
> table2[1:3,]
  x  y
1 1 11
2 2 12
3 3 13
> table2[,1:3]
Error in `[.data.frame`(table2, , 1:3) : undefined columns
selected
> table2$x
 [1]  1  2  3  4  5  6  7  8  9 10
> summary(table2)
       x                y
 Min.   : 1.00   Min.   :11.00
 1st Qu.: 3.25   1st Qu.:13.25
 Median : 5.50   Median :15.50
 Mean   : 5.50   Mean   :15.50
 3rd Qu.: 7.75   3rd Qu.:17.75
 Max.   :10.00   Max.   :20.00
```

```
> mydata=read.csv(file.choose())
Error in file.choose() : file choice cancelled
> data()
> mtcars
                   mpg cyl  disp  hp drat    wt  qsec vs am
gear carb
Mazda RX4         21.0   6 160.0 110 3.90 2.620 16.46  0  1
4    4
Mazda RX4 Wag     21.0   6 160.0 110 3.90 2.875 17.02  0  1
4    4
Datsun 710        22.8   4 108.0  93 3.85 2.320 18.61  1  1
4    1
Hornet 4 Drive    21.4   6 258.0 110 3.08 3.215 19.44  1  0
3    1
Hornet Sportabout 18.7   8 360.0 175 3.15 3.440 17.02  0  0
3    2
Valiant           18.1   6 225.0 105 2.76 3.460 20.22  1  0
3    1
Duster 360        14.3   8 360.0 245 3.21 3.570 15.84  0  0
3    4
Merc 240D         24.4   4 146.7  62 3.69 3.190 20.00  1  0
4    2
Merc 230          22.8   4 140.8  95 3.92 3.150 22.90  1  0
4    2
Merc 280          19.2   6 167.6 123 3.92 3.440 18.30  1  0
4    4
Merc 280C         17.8   6 167.6 123 3.92 3.440 18.90  1  0
4    4
Merc 450SE        16.4   8 275.8 180 3.07 4.070 17.40  0  0
3    3
Merc 450SL        17.3   8 275.8 180 3.07 3.730 17.60  0  0
3    3
Merc 450SLC       15.2   8 275.8 180 3.07 3.780 18.00  0  0
3    3
Cadillac Fleetwood  10.4   8 472.0 205 2.93 5.250 17.98  0  0
3    4
Lincoln Continental 10.4   8 460.0 215 3.00 5.424 17.82  0  0
3    4
Chrysler Imperial   14.7   8 440.0 230 3.23 5.345 17.42  0  0
3    4
Fiat 128          32.4   4  78.7  66 4.08 2.200 19.47  1  1
4    1
Honda Civic       30.4   4  75.7  52 4.93 1.615 18.52  1  1
4    2
Toyota Corolla    33.9   4  71.1  65 4.22 1.835 19.90  1  1
4    1
Toyota Corona     21.5   4 120.1  97 3.70 2.465 20.01  1  0
3    1
```

```
Dodge Challenger    15.5   8 318.0 150 2.76 3.520 16.87  0  0
3    2
AMC Javelin         15.2   8 304.0 150 3.15 3.435 17.30  0  0
3    2
Camaro Z28          13.3   8 350.0 245 3.73 3.840 15.41  0  0
3    4
Pontiac Firebird    19.2   8 400.0 175 3.08 3.845 17.05  0  0
3    2
Fiat X1-9           27.3   4  79.0  66 4.08 1.935 18.90  1  1
4    1
Porsche 914-2       26.0   4 120.3  91 4.43 2.140 16.70  0  1
5    2
Lotus Europa        30.4   4  95.1 113 3.77 1.513 16.90  1  1
5    2
Ford Pantera L      15.8   8 351.0 264 4.22 3.170 14.50  0  1
5    4
Ferrari Dino        19.7   6 145.0 175 3.62 2.770 15.50  0  1
5    6
Maserati Bora       15.0   8 301.0 335 3.54 3.570 14.60  0  1
5    8
Volvo 142E          21.4   4 121.0 109 4.11 2.780 18.60  1  1
4    2
> ourdata=read.csv(file.choose())
Error in file.choose() : file choice cancelled
> ourdata
Error: object 'ourdata' not found
```



attenu	The Joyner-Boore Attenuation Data
attitude	The Chatterjee-Price Attitude Data
austres	Quarterly Time Series of the Number of Australian Residents
beaver1 (beavers)	Body Temperature Series of Two Beavers
beaver2 (beavers)	Body Temperature Series of Two Beavers
cars	Speed and Stopping Distances of Cars
chickwts	Chicken Weights by Feed Type
co2	Mauna Loa Atmospheric CO2 Concentration
crimtab	Student's 3000 Criminals Data
discoveries	Yearly Numbers of Important Discoveries
esoph	Smoking, Alcohol and (O)esophageal Cancer
euro	Conversion Rates of Euro Currencies
euro.cross (euro)	Conversion Rates of Euro Currencies
eurodist	Distances Between European Cities and Between US Cities
faithful	Old Faithful Geyser Data
fdeaths (UKLungDeaths)	Monthly Deaths from Lung Diseases in the UK
freeny	Freeny's Revenue Data
freeny.x (freeny)	Freeny's Revenue Data
freeny.y (freeny)	Freeny's Revenue Data
infert	Infertility after Spontaneous and Induced Abortion
iris	Edgar Anderson's Iris Data
iris3	Edgar Anderson's Iris Data
islands	Areas of the World's Major Landmasses
ldeaths (UKLungDeaths)	Monthly Deaths from Lung Diseases in the UK
lh	Luteinizing Hormone in Blood Samples
longley	Longley's Economic Regression Data
lynx	Annual Canadian Lynx trappings 1821-1934
mdeaths (UKLungDeaths)	Monthly Deaths from Lung Diseases in the UK
morley	Michelson Speed of Light Data
mtcars	Motor Trend Car Road Tests
nhtemp	Average Yearly Temperatures in New Haven
nottem	Average Monthly Temperatures at Nottingham, 1920-1939
npk	Classical N, P, K Factorial Experiment
occupationalStatus	Occupational Status of Fathers and their Sons
precip	Annual Precipitation in US Cities
presidents	Quarterly Approval Ratings of US Presidents
pressure	Vapor Pressure of Mercury as a Function of Temperature
quakes	Locations of Earthquakes off Fiji
randu	Random Numbers from Congruential Generator RANDU
rivers	Lengths of Major North American Rivers
rock	Measurements on Petroleum Rock Samples
sleep	Student's Sleep Data
stack.loss (stackloss)	Brownlee's Stack Loss Plant Data
stack.x (stackloss)	Brownlee's Stack Loss Plant Data
stackloss	Brownlee's Stack Loss Plant Data
state.abb (state)	US State Facts and Figures
state.area (state)	US State Facts and Figures
state.center (state)	US State Facts and Figures
state.division (state)	US State Facts and Figures

```
Data sets in package 'datasets':

AirPassengers                   Monthly Airline Passenger Numbers 1949-1960
BJsales                         Sales Data with Leading Indicator
BJsales.lead (BJsales)          Sales Data with Leading Indicator
BOD                             Biochemical Oxygen Demand
CO2                             Carbon Dioxide Uptake in Grass Plants
ChickWeight                     Weight versus age of chicks on different diets
DNase                           Elisa assay of DNase
EuStockMarkets                  Daily Closing Prices of Major European Stock Indices, 1991-1998
Formaldehyde                    Determination of Formaldehyde
HairEyeColor                    Hair and Eye Color of Statistics Students
Harman23.cor                    Harman Example 2.3
Harman74.cor                    Harman Example 7.4
Indometh                        Pharmacokinetics of Indomethacin
InsectSprays                    Effectiveness of Insect Sprays
JohnsonJohnson                  Quarterly Earnings per Johnson & Johnson Share
LakeHuron                       Level of Lake Huron 1875-1972
LifeCycleSavings                Intercountry Life-Cycle Savings Data
Loblolly                        Growth of Loblolly pine trees
Nile                            Flow of the River Nile
Orange                          Growth of Orange Trees
OrchardSprays                   Potency of Orchard Sprays
PlantGrowth                     Results from an Experiment on Plant Growth
Puromycin                       Reaction Velocity of an Enzymatic Reaction
Seatbelts                       Road Casualties in Great Britain 1969-84
Theoph                          Pharmacokinetics of Theophylline
Titanic                         Survival of passengers on the Titanic
ToothGrowth                     The Effect of Vitamin C on Tooth Growth in Guinea Pigs
UCBAdmissions                   Student Admissions at UC Berkeley
UKDriverDeaths                  Road Casualties in Great Britain 1969-84
UKgas                           UK Quarterly Gas Consumption
USAccDeaths                     Accidental Deaths in the US 1973-1978
USArrests                       Violent Crime Rates by US State
USJudgeRatings                  Lawyers' Ratings of State Judges in the US Superior Court
USPersonalExpenditure           Personal Expenditure Data
UScitiesD                       Distances Between European Cities and Between US Cities
VADeaths                        Death Rates in Virginia (1940)
WWWusage                        Internet Usage per Minute
WorldPhones                     The World's Telephones
ability.cov                     Ability and Intelligence Tests
airmiles                        Passenger Miles on Commercial US Airlines, 1937-1960
airquality                      New York Air Quality Measurements
anscombe                        Anscombe's Quartet of 'Identical' Simple Linear Regressions
attenu                          The Joyner-Boore Attenuation Data
attitude                        The Chatterjee-Price Attitude Data
austres                         Quarterly Time Series of the Number of Australian Residents
beaver1 (beavers)               Body Temperature Series of Two Beavers
beaver2 (beavers)               Body Temperature Series of Two Beavers
cars                            Speed and Stopping Distances of Cars
chickwts                        Chicken Weights by Feed Type
co2                             Mauna Loa Atmospheric CO2 Concentration
crimtab                         Student's 3000 Criminals Data
discoveries                     Yearly Numbers of Important Discoveries
esoph                           Smoking, Alcohol and (O)esophageal Cancer
euro                            Conversion Rates of Euro Currencies
euro.cross (euro)               Conversion Rates of Euro Currencies
eurodist                        Distances Between European Cities and Between US Cities
faithful                        Old Faithful Geyser Data
fdeaths (UKLungDeaths)          Monthly Deaths from Lung Diseases in the UK
freeny                          Freeny's Revenue Data
freeny.x (freeny)               Freeny's Revenue Data
freeny.y (freeny)               Freeny's Revenue Data
infert                          Infertility after Spontaneous and Induced Abortion
iris                            Edgar Anderson's Iris Data
iris3                           Edgar Anderson's Iris Data
```

R Data Editor

Copy Paste Quit

	x	y	var3	var4	var5	var6	var7
1	1	11	20				
2	2	12	21				
3	3	13	3				
4	4	14	25				
5	5	15	36				
6	6	16	76				
7	7	17	85				
8	8	18	98				
9	9	19	78				
10	10	20	87				
11	11	21	100				