Code

Simulacion Ejercicios con R

Nestor

31/3/2023

1.2 sintaxis

1.2.1 Calculo

Ejemplo 1

Hide

```
(exp(2)+5)
```

```
## [1] 12.38906
```

Ejempo 2

Hide

```
((7-5)*4+3)
```

```
## [1] 11
```

Ejempo 3

Hide

```
(x<-rnorm(50,2,3))
```

```
##  [1] -0.08456538  2.92969926  3.18338656  2.88358399  4.64382346 -4.08010419
##  [7]  0.76687179  1.20418362  5.59881321  4.07458676 -1.05916150  3.18753655
## [13]  5.17152565  0.49132912 -1.43720571  3.56580028  2.39215306  4.52106766
## [19]  1.14413424  4.00284304  7.17663002  5.31325483  7.30145172  0.06718513
## [25]  0.83115085  3.92401500  7.53839756  3.08459456  2.49280314  4.32238356
## [31]  2.93392465 -0.55029078  3.35825199 -1.15580981  7.35945549  2.34427268
## [37]  2.35217841 -0.45748274  1.47742587  9.86324541 -0.36709651  1.15589741
## [43]  0.97889364 -2.29289651  1.33081536  0.15069229 -0.14275380 -3.37093298
## [49]  3.00473245 -0.84522054
```

1.3 Vectores

1.3.1 Vectores numericos

Ejemplo 1

Hide

```
(v<-c(1,2,3,4,5))
```

```
## [1] 1 2 3 4 5
```

Ejemplo 2

Hide

```
d<-c(1,2,3)
(e <-c(d,0,0,0,2*d))
```

```
## [1] 1 2 3 0 0 0 2 4 6
```

1.3.2 Vectores Logicos

Ejemplo 1

Hide

```
f<-1
logi1<-f>=3
(logi1<-f>=3)
```

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

1.3.3 Valores ausentes ("missing values")

Ejemplo 1

Hide

```
(l<-log(c( NA,exp(0.7071068),1,-1,exp(1),exp(0.7071068),1)))
```

```
## Warning in log(c(NA, exp(0.7071068), 1, -1, exp(1), exp(0.7071068), 1)): Se ha
n
## producido NaNs
```

```
## [1]        NA 0.7071068 0.0000000       NaN 1.0000000 0.7071068 0.0000000
```

1.3.4 Vectores de caracteres

Ejemplo 1

Hide

```
(vca<-as.character(seq(1:10)))
```

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

1.3.5 Factores

Ejemplo 1

Hide

```
attach(chickwts)
class(feed)
```

```
## [1] "factor"
```

Hide

```
(feed)
```

```
##  [1] horsebean horsebean horsebean horsebean horsebean horsebean horsebean
##  [8] horsebean horsebean horsebean linseed   linseed   linseed   linseed
## [15] linseed   linseed   linseed   linseed   linseed   linseed   linseed
## [22] linseed   soybean   soybean   soybean   soybean   soybean   soybean
## [29] soybean   soybean   soybean   soybean   soybean   soybean   soybean
## [36] soybean   sunflower sunflower sunflower sunflower sunflower sunflower
## [43] sunflower sunflower sunflower sunflower sunflower sunflower meatmeal
## [50] meatmeal  meatmeal  meatmeal  meatmeal  meatmeal  meatmeal  meatmeal
## [57] meatmeal  meatmeal  meatmeal  casein    casein    casein    casein
## [64] casein    casein    casein    casein    casein    casein    casein
## [71] casein
## Levels: casein horsebean linseed meatmeal soybean sunflower
```

1.4 Matrices y "arrays"

Ejemplo 1

Hide

```
(w<-c(2, 4, 6, 8, 10, 0, 0, 1, 2, 3, 4, 5))
```

```
##  [1]  2  4  6  8 10  0  0  1  2  3  4  5
```

Ejemplo 2

Hide

```
((arx <-array(x, c(5, 5, 2))))
```

```
## , , 1
##
##             [,1]       [,2]       [,3]     [,4]       [,5]
## [1,] -0.08456538 -4.0801042 -1.0591615 3.565800 7.17663002
## [2,]  2.92969926  0.7668718  3.1875365 2.392153 5.31325483
## [3,]  3.18338656  1.2041836  5.1715257 4.521068 7.30145172
## [4,]  2.88358399  5.5988132  0.4913291 1.144134 0.06718513
## [5,]  4.64382346  4.0745868 -1.4372057 4.002843 0.83115085
##
## , , 2
##
##          [,1]       [,2]       [,3]       [,4]       [,5]
## [1,] 3.924015  2.9339247  2.3442727 -0.3670965  0.1506923
## [2,] 7.538398 -0.5502908  2.3521784  1.1558974 -0.1427538
## [3,] 3.084595  3.3582520 -0.4574827  0.9788936 -3.3709330
## [4,] 2.492803 -1.1558098  1.4774259 -2.2928965  3.0047325
## [5,] 4.322384  7.3594555  9.8632454  1.3308154 -0.8452205
```

1.4.1 Operaciones con matrices

Ejemplo 1

Hide

```
((mati<-arx[,,1]))
```

```
##             [,1]       [,2]       [,3]     [,4]       [,5]
## [1,] -0.08456538 -4.0801042 -1.0591615 3.565800 7.17663002
## [2,]  2.92969926  0.7668718  3.1875365 2.392153 5.31325483
## [3,]  3.18338656  1.2041836  5.1715257 4.521068 7.30145172
## [4,]  2.88358399  5.5988132  0.4913291 1.144134 0.06718513
## [5,]  4.64382346  4.0745868 -1.4372057 4.002843 0.83115085
```

1.4.2 Tablas de contingencia

Ejemplo 1

Hide

```
d3<-c(1,2,5,3,7,9,2,7,1)
mat3<-matrix(d3,c(3,3))
(table(c(mat3,mat3)))
```

```
##
## 1 2 3 5 7 9
## 4 4 2 2 4 2
```

1.5 Bases de datos

1.5.1 Listas

Hide

```
d1<-c(10, 0, 2, 0, 10, 4, 2, 4, 2)
(mat1<-arx[,,1])
```

```
##             [,1]       [,2]       [,3]     [,4]       [,5]
## [1,] -0.08456538 -4.0801042 -1.0591615 3.565800 7.17663002
## [2,]  2.92969926  0.7668718  3.1875365 2.392153 5.31325483
## [3,]  3.18338656  1.2041836  5.1715257 4.521068 7.30145172
## [4,]  2.88358399  5.5988132  0.4913291 1.144134 0.06718513
## [5,]  4.64382346  4.0745868 -1.4372057 4.002843 0.83115085
```

Hide

```
(mat2<-matrix(d1, ncol = 3, nrow = 3))
```

```
##      [,1] [,2] [,3]
## [1,]   10    0    2
## [2,]    0   10    4
## [3,]    2    4    2
```

Hide

```
((Imat2<-list(mat1,mat2)))
```

```
## [[1]]
##             [,1]       [,2]       [,3]     [,4]       [,5]
## [1,] -0.08456538 -4.0801042 -1.0591615 3.565800 7.17663002
## [2,]  2.92969926  0.7668718  3.1875365 2.392153 5.31325483
## [3,]  3.18338656  1.2041836  5.1715257 4.521068 7.30145172
## [4,]  2.88358399  5.5988132  0.4913291 1.144134 0.06718513
## [5,]  4.64382346  4.0745868 -1.4372057 4.002843 0.83115085
##
## [[2]]
##      [,1] [,2] [,3]
## [1,]   10    0    2
## [2,]    0   10    4
## [3,]    2    4    2
```

1.5.2 Data frames

Hide

```
(mat2)
```

```
##      [,1] [,2] [,3]
## [1,]   10    0    2
## [2,]    0   10    4
## [3,]    2    4    2
```

1.6 Distribuciones de probabilidad

Ejemplo 1

Hide

```
(dnorm(1.96,0,1))
```

```
## [1] 0.05844094
```

Ejemplo 2

Hide

```
(pnorm(1.96,0,1))
```

```
## [1] 0.9750021
```

Ejemplo 3

Hide

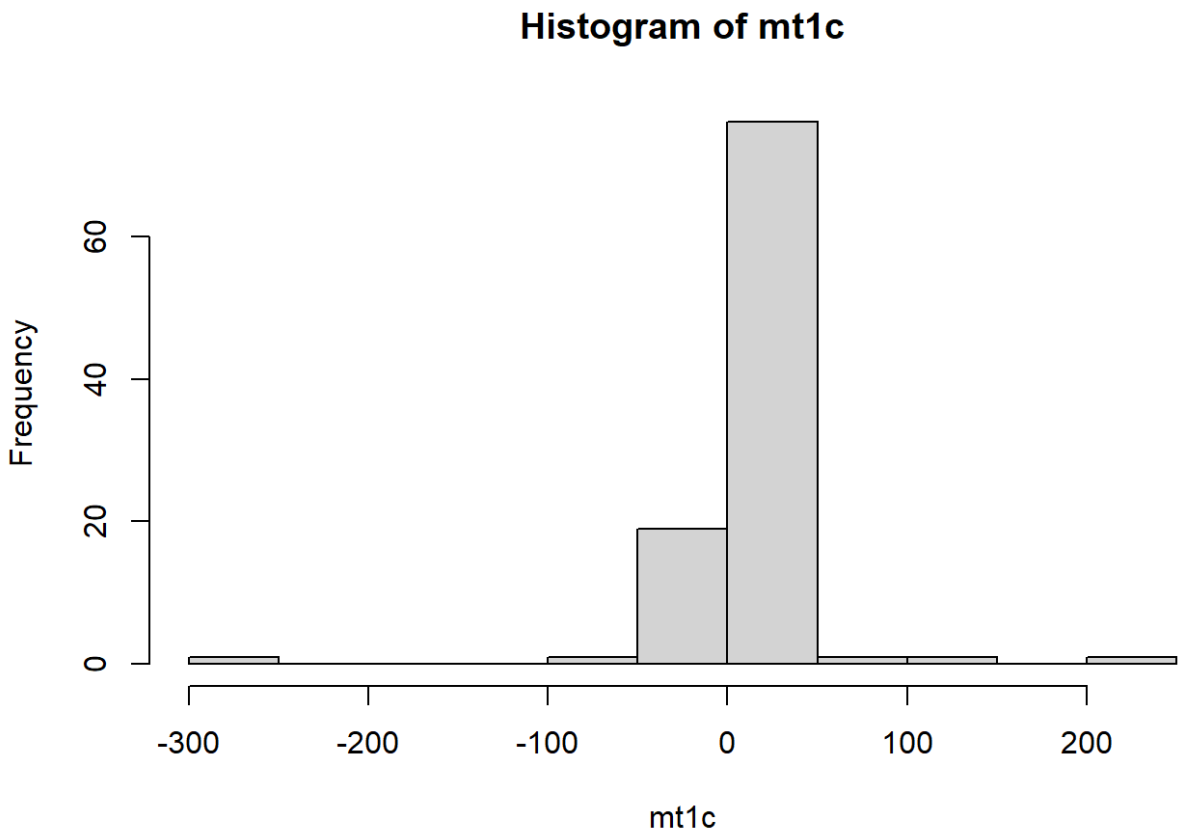
```
(qnorm(0.975,0,1))
```

```
## [1] 1.959964
```

Ejemplo 4

Hide

```
mt1<-rt(100,1)
mt1c<-mt1*2+3
hist(mt1c)
```


Histogram of mt1c
Frequency
0
20
40
60
-300
-200
-100
0
100
200
mt1c