# Tablas de frecuencias

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## Tablas de frecuencias

1.- Importar la matriz iris

```
data("iris")
```

2.- Exploracion de la matiz Dimensiones de la matriz/ tiene 150 observaciones y 5 variables

```
dim(iris)
```

```
## [1] 150   5
```

3.- Nombre de las variables

```
colnames(iris)
```

```
## [1] "Sepal.Length" "Sepal.Width"  "Petal.Length" "Petal.Width"  "Species"
```

4.- Tipos de variables

```
str(iris)
```

```
## 'data.frame':    150 obs. of  5 variables:
##  $ Sepal.Length: num  5.1 4.9 4.7 4.6 5 5.4 4.6 5 4.4 4.9 ...
##  $ Sepal.Width : num  3.5 3 3.2 3.1 3.6 3.9 3.4 3.4 2.9 3.1 ...
##  $ Petal.Length: num  1.4 1.4 1.3 1.5 1.4 1.7 1.4 1.5 1.4 1.5 ...
##  $ Petal.Width : num  0.2 0.2 0.2 0.2 0.2 0.4 0.3 0.2 0.2 0.1 ...
##  $ Species     : Factor w/ 3 levels "setosa","versicolor",..: 1 1 1 1 1 1 1 1 1 1 ...
```

5.- Visualizacion de una variable especifica

```
iris$Species
```

```
##   [1] setosa     setosa     setosa     setosa     setosa     setosa
##   [7] setosa     setosa     setosa     setosa     setosa     setosa
##  [13] setosa     setosa     setosa     setosa     setosa     setosa
##  [19] setosa     setosa     setosa     setosa     setosa     setosa
##  [25] setosa     setosa     setosa     setosa     setosa     setosa
##  [31] setosa     setosa     setosa     setosa     setosa     setosa
##  [37] setosa     setosa     setosa     setosa     setosa     setosa
##  [43] setosa     setosa     setosa     setosa     setosa     setosa
##  [49] setosa     setosa     versicolor versicolor versicolor versicolor
##  [55] versicolor versicolor versicolor versicolor versicolor versicolor
##  [61] versicolor versicolor versicolor versicolor versicolor versicolor
##  [67] versicolor versicolor versicolor versicolor versicolor versicolor
##  [73] versicolor versicolor versicolor versicolor versicolor versicolor
##  [79] versicolor versicolor versicolor versicolor versicolor versicolor
##  [85] versicolor versicolor versicolor versicolor versicolor versicolor
```

```
##  [91] versicolor versicolor versicolor versicolor versicolor versicolor
##  [97] versicolor versicolor versicolor versicolor virginica  virginica
## [103] virginica  virginica  virginica  virginica  virginica  virginica
## [109] virginica  virginica  virginica  virginica  virginica  virginica
## [115] virginica  virginica  virginica  virginica  virginica  virginica
## [121] virginica  virginica  virginica  virginica  virginica  virginica
## [127] virginica  virginica  virginica  virginica  virginica  virginica
## [133] virginica  virginica  virginica  virginica  virginica  virginica
## [139] virginica  virginica  virginica  virginica  virginica  virginica
## [145] virginica  virginica  virginica  virginica  virginica  virginica
## Levels: setosa versicolor virginica
```

6.- En busca de valores perdidos

```
anyNA(iris)
```

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

## Generacion de tablas de frecuencia

1.- Posicionarnos en una variable especifica Petal Lenght indico que el nombre me lo acorte a PL, lo que resulta de esa indicacion quiero que lo ponga en formato tabla, lo que resulte adquiera un formato de data.frame A partir de lo anterior, voy a generar una nueva variable (objeto) llamada tabla_PL.

```
Tabla_PL<-as.data.frame(table(PL=iris$Petal.Length))
```

2.- Frecuencia absoluta

```
Tabla_PL
```

```
##     PL Freq
## 1    1    1
## 2  1.1    1
## 3  1.2    2
## 4  1.3    7
## 5  1.4   13
## 6  1.5   13
## 7  1.6    7
## 8  1.7    4
## 9  1.9    2
## 10   3    1
## 11 3.3    2
## 12 3.5    2
## 13 3.6    1
## 14 3.7    1
## 15 3.8    1
## 16 3.9    3
## 17   4    5
## 18 4.1    3
## 19 4.2    4
## 20 4.3    2
## 21 4.4    4
## 22 4.5    8
## 23 4.6    3
## 24 4.7    5
## 25 4.8    4
## 26 4.9    5
```

```
## 27   5    4
## 28 5.1    8
## 29 5.2    2
## 30 5.3    2
## 31 5.4    2
## 32 5.5    3
## 33 5.6    6
## 34 5.7    3
## 35 5.8    3
## 36 5.9    2
## 37   6    2
## 38 6.1    3
## 39 6.3    1
## 40 6.4    1
## 41 6.6    1
## 42 6.7    2
## 43 6.9    1
```

3.- Se construye la tabla de frecuencias completas redondeando a 3 decimales.

```
transform(Tabla_PL,
          freqAc=cumsum(Freq),
          Rel=round(prop.table(Freq),3),
          RelAc=round(cumsum(prop.table(Freq)),3))
```

```
##     PL Freq freqAc   Rel RelAc
## 1    1    1      1 0.007 0.007
## 2  1.1    1      2 0.007 0.013
## 3  1.2    2      4 0.013 0.027
## 4  1.3    7     11 0.047 0.073
## 5  1.4   13     24 0.087 0.160
## 6  1.5   13     37 0.087 0.247
## 7  1.6    7     44 0.047 0.293
## 8  1.7    4     48 0.027 0.320
## 9  1.9    2     50 0.013 0.333
## 10   3    1     51 0.007 0.340
## 11 3.3    2     53 0.013 0.353
## 12 3.5    2     55 0.013 0.367
## 13 3.6    1     56 0.007 0.373
## 14 3.7    1     57 0.007 0.380
## 15 3.8    1     58 0.007 0.387
## 16 3.9    3     61 0.020 0.407
## 17   4    5     66 0.033 0.440
## 18 4.1    3     69 0.020 0.460
## 19 4.2    4     73 0.027 0.487
## 20 4.3    2     75 0.013 0.500
## 21 4.4    4     79 0.027 0.527
## 22 4.5    8     87 0.053 0.580
## 23 4.6    3     90 0.020 0.600
## 24 4.7    5     95 0.033 0.633
## 25 4.8    4     99 0.027 0.660
## 26 4.9    5    104 0.033 0.693
## 27   5    4    108 0.027 0.720
## 28 5.1    8    116 0.053 0.773
## 29 5.2    2    118 0.013 0.787
```

```
## 30 5.3    2    120 0.013 0.800
## 31 5.4    2    122 0.013 0.813
## 32 5.5    3    125 0.020 0.833
## 33 5.6    6    131 0.040 0.873
## 34 5.7    3    134 0.020 0.893
## 35 5.8    3    137 0.020 0.913
## 36 5.9    2    139 0.013 0.927
## 37   6    2    141 0.013 0.940
## 38 6.1    3    144 0.020 0.960
## 39 6.3    1    145 0.007 0.967
## 40 6.4    1    146 0.007 0.973
## 41 6.6    1    147 0.007 0.980
## 42 6.7    2    149 0.013 0.993
## 43 6.9    1    150 0.007 1.000
```

4.- Agrupacion de variables 8 clases

```
tabla_clases<-as.data.frame(table(Petal.lenght=factor(cut(iris$Petal.Length,breaks = 8))))
```

5.- Visualización de la tabla

```
tabla_clases
```

```
##   Petal.lenght Freq
## 1 (0.994,1.74]   48
## 2  (1.74,2.48]    2
## 3  (2.48,3.21]    1
## 4  (3.21,3.95]   10
## 5  (3.95,4.69]   29
## 6  (4.69,5.43]   32
## 7  (5.43,6.16]   22
## 8  (6.16,6.91]    6
```

6.- Construcción de tablas de frecuencias completa redondeado a 3 decimales.

```
tabla<-transform(tabla_clases,
          freqAc=cumsum(Freq),
          Rel=round(prop.table(Freq),3),
          RelAc=round(cumsum(prop.table(Freq)),3))
```

7.- Visualization de la tabla.

```
tabla
```

```
##   Petal.lenght Freq freqAc   Rel RelAc
## 1 (0.994,1.74]   48     48 0.320 0.320
## 2  (1.74,2.48]    2     50 0.013 0.333
## 3  (2.48,3.21]    1     51 0.007 0.340
## 4  (3.21,3.95]   10     61 0.067 0.407
## 5  (3.95,4.69]   29     90 0.193 0.600
## 6  (4.69,5.43]   32    122 0.213 0.813
## 7  (5.43,6.16]   22    144 0.147 0.960
## 8  (6.16,6.91]    6    150 0.040 1.000
```

7.- Organización visual de la tabla (variable Petal.length)

7.1.- Instalamos la librería knitr

```
install.packages("knitr")
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.1'
## (as 'lib' is unspecified)
```

7.2.- Se abre la librería

```
library(knitr)
```

7.3.- Se visualiza la tabla

```
kable(tabla)
```

| Petal.lenght | Freq | freqAc | Rel | RelAc |
|---|---|---|---|---|
| (0.994,1.74] | 48 | 48 | 0.320 | 0.320 |
| (1.74,2.48] | 2 | 50 | 0.013 | 0.333 |
| (2.48,3.21] | 1 | 51 | 0.007 | 0.340 |
| (3.21,3.95] | 10 | 61 | 0.067 | 0.407 |
| (3.95,4.69] | 29 | 90 | 0.193 | 0.600 |
| (4.69,5.43] | 32 | 122 | 0.213 | 0.813 |
| (5.43,6.16] | 22 | 144 | 0.147 | 0.960 |
| (6.16,6.91] | 6 | 150 | 0.040 | 1.000 |