Tabla de frecuencias

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1.- Importar la matriz iris

```
data(iris)
```

2.- Exploración de la matriz

dimensión de la matriz tiene 150 individuos y 5 variables

```
dim(iris)
```

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

3.- Nombre de las variales

```
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.- visualización de una variable específica

```
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
```

Construcción de la tabla de frecuencias

Para datos no agrupados.

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

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

```r
Petal_Length<-transform(tabla_PL,
          freqAC=cumsum(Freq),
          Rel=round(prop.table(Freq),3),
          RelAC=round(cumsum(prop.table(Freq)),3))
Petal_Length
```

```
##     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
```

Formato tabla

1.- Abrir librería **knitr**

```
library(knitr)
```

2.- Formato de tabla

```
kable(Petal_Length)
```

PL	Freq	freqAC	Rel	RelAC
1	1	1	0.007	0.007
1.1	1	2	0.007	0.013
1.2	2	4	0.013	0.027
1.3	7	11	0.047	0.073
1.4	13	24	0.087	0.160
1.5	13	37	0.087	0.247
1.6	7	44	0.047	0.293
1.7	4	48	0.027	0.320
1.9	2	50	0.013	0.333
3	1	51	0.007	0.340
3.3	2	53	0.013	0.353
3.5	2	55	0.013	0.367
3.6	1	56	0.007	0.373
3.7	1	57	0.007	0.380
3.8	1	58	0.007	0.387
3.9	3	61	0.020	0.407
4	5	66	0.033	0.440
4.1	3	69	0.020	0.460
4.2	4	73	0.027	0.487
4.3	2	75	0.013	0.500
4.4	4	79	0.027	0.527
4.5	8	87	0.053	0.580
4.6	3	90	0.020	0.600
4.7	5	95	0.033	0.633
4.8	4	99	0.027	0.660
4.9	5	104	0.033	0.693
5	4	108	0.027	0.720
5.1	8	116	0.053	0.773
5.2	2	118	0.013	0.787
5.3	2	120	0.013	0.800
5.4	2	122	0.013	0.813
5.5	3	125	0.020	0.833
5.6	6	131	0.040	0.873
5.7	3	134	0.020	0.893
5.8	3	137	0.020	0.913
5.9	2	139	0.013	0.927
6	2	141	0.013	0.940
6.1	3	144	0.020	0.960
6.3	1	145	0.007	0.967
6.4	1	146	0.007	0.973

PL	Freq	freqAC	Rel	RelAC
6.6	1	147	0.007	0.980
6.7	2	149	0.013	0.993
6.9	1	150	0.007	1.000

Para datos agrupados

1.- Construcción de los intervalos de clase (*breaks*).

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

2.- Construcción de tabla de frecuencias completa redondeada a 3 decimales.

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

3.- Formato de 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