# Graficos na linguagem R

Ivanildo Batista

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Graficos na linguagem R (scatterplot, boxplot, histograma, pizza e barplot).

Definindo os dados

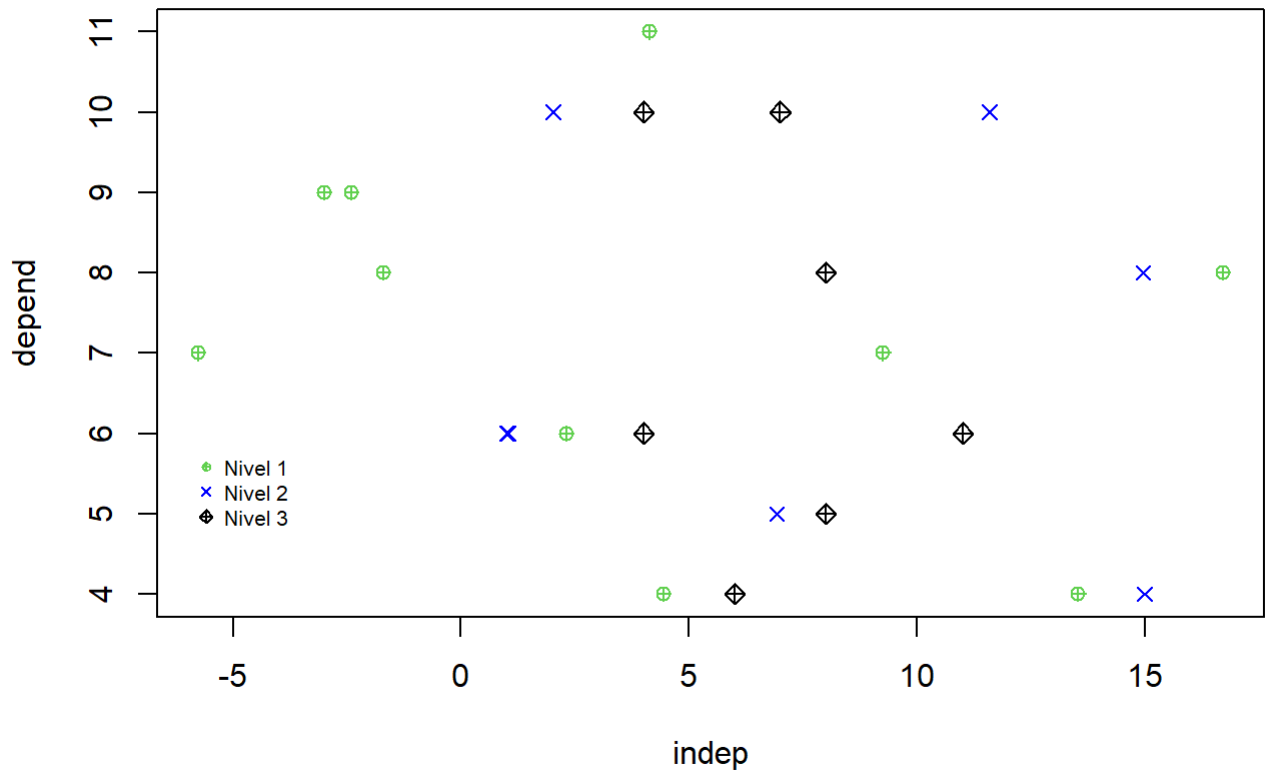
```
set.seed(67)

x = rnorm(10,5,7)
y = rpois(10,7)
z = rnorm(10,6,7)
t = rpois(10,9)
```

**SCATTERPLOT**

Criando o grafico

```
plot(x,y, col=123, pch=10, main ="Multi scatterplot", col.main = 'red',cex.main=1.5,
     xlab='indep', ylab='depend')
points(z,t,col='blue',pch=4)#adicionando outros dados
points(y,t, col=777, pch=9) #adicionando mais dados
legend(-6,5.9,legend = c('Nivel 1','Nivel 2','Nivel 3'), col=c(123,'blue',777),
       pch=c(10,4,9), cex=0.65, bty='n')
```

# Multi scatterplot

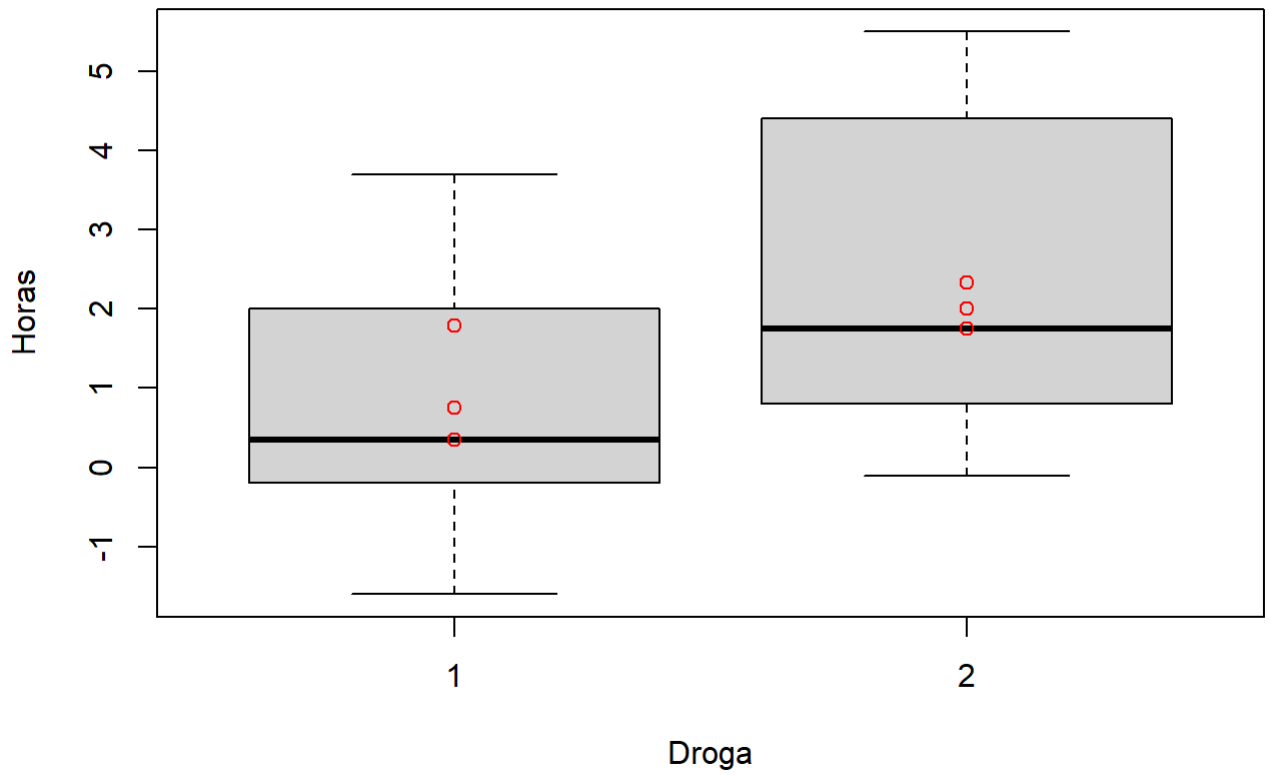



**BOXPLOT**

```
attach(sleep)
```

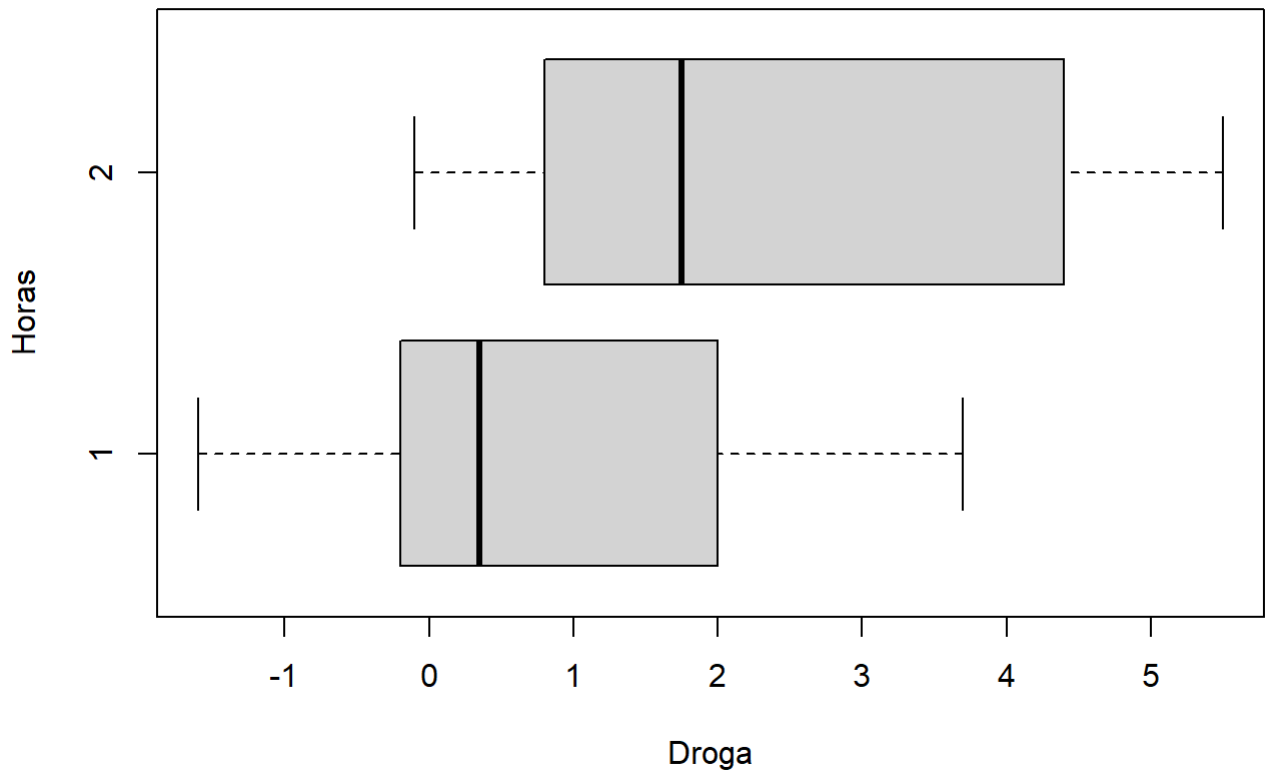
Criando o grafico

```
sleepboxplot = boxplot(data=sleep, extra~group, main = "Duracao do sono",
                       col.main = 'red', ylab="Horas",xlab='Droga')

means = by(extra, group, mean) #adicionando a media ao boxplot
points(means, col='red')

median = by(extra, group, median) #adicionando a mediana ao boxplot
points(median, col='red')

sd = by(extra, group, sd) #adicionando o desvio-padrao ao boxplot
points(sd, col='red')
```



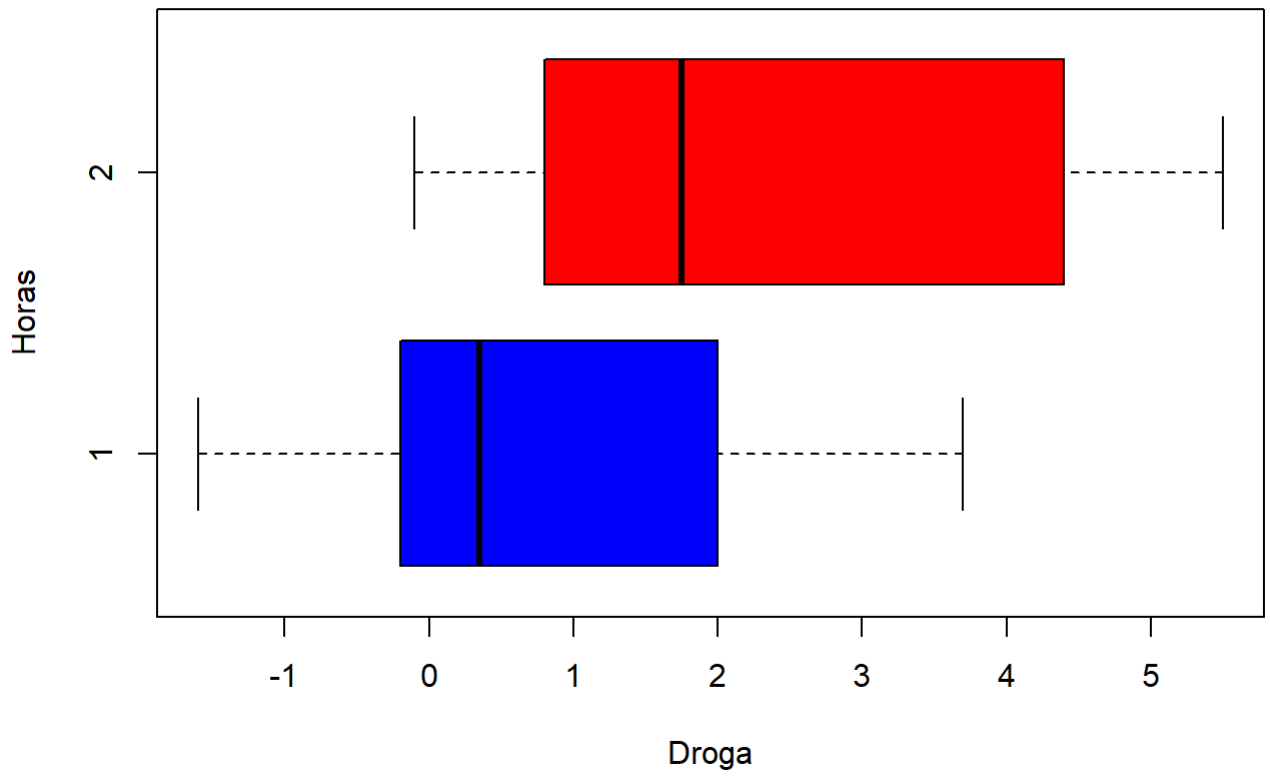

boxplot horizontal

```
sleepboxplot = boxplot(data=sleep, extra~group, main = "Duracao do sono",
                       col.main = 'red', ylab="Horas",xlab='Droga', horizontal = T)
```




boxplot horizontal e com cores diferentes

```
sleepboxplot = boxplot(data=sleep, extra~group, main = "Duracao do sono",
                       col.main = 'red', ylab="Horas",xlab='Droga', horizontal = T,
                       col=c('blue','red'))
```

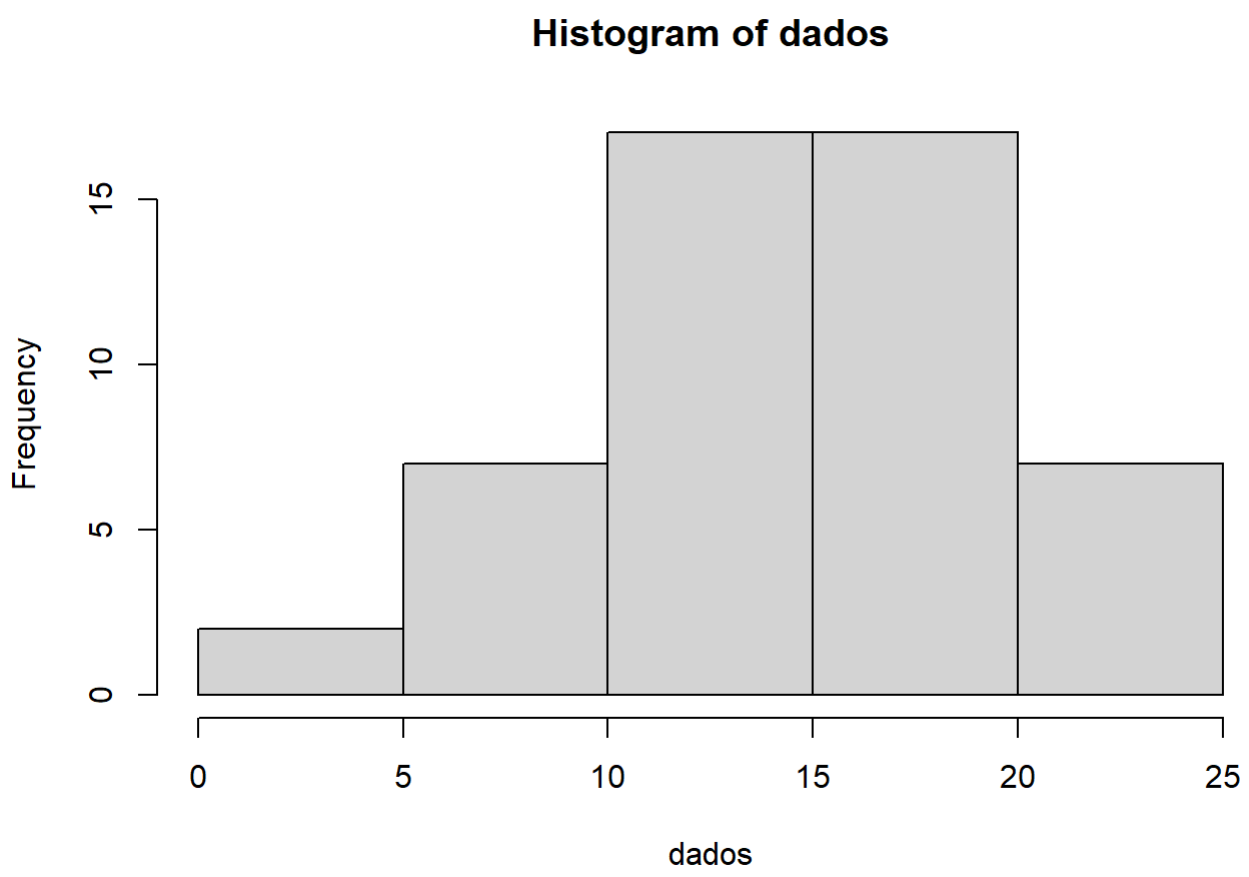



**HISTOGRAMA**

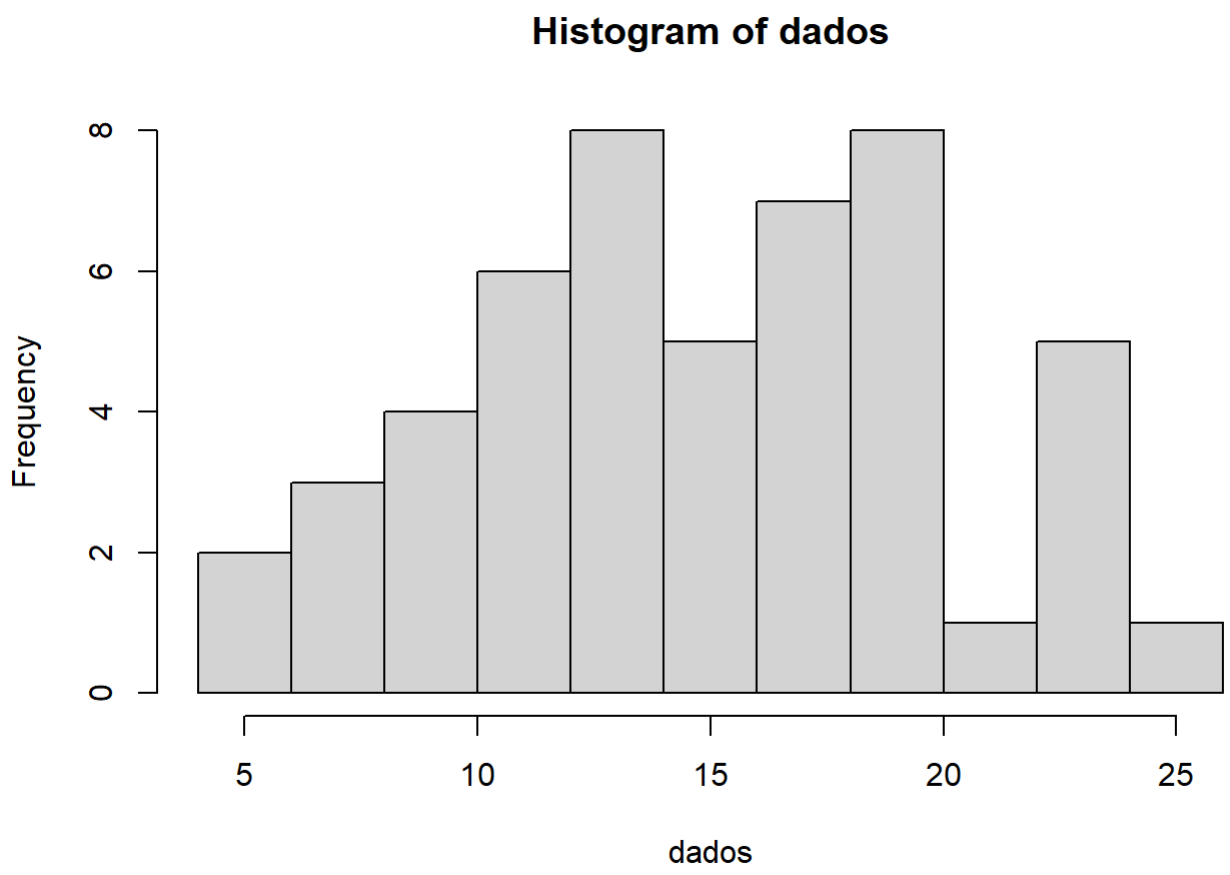
Definindo os dados

```
dados = cars$speed
```

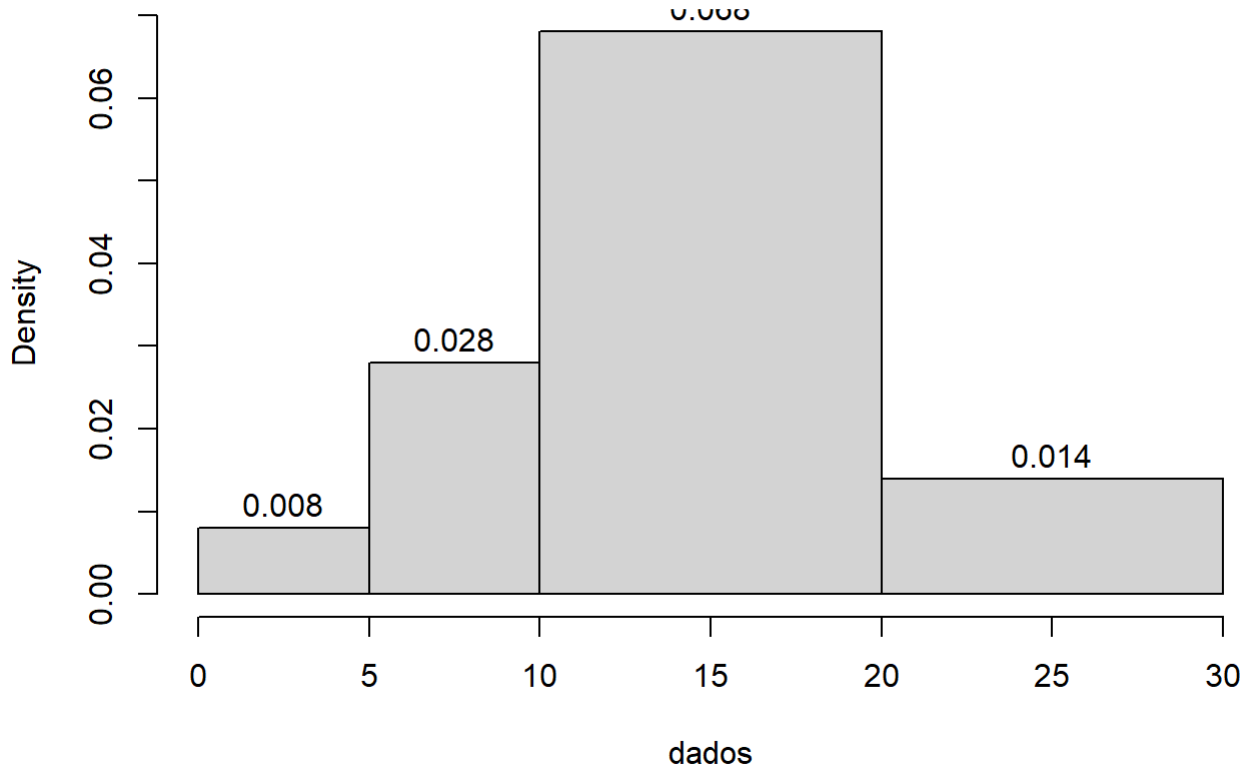
```
hist(dados) #histograma simples
```



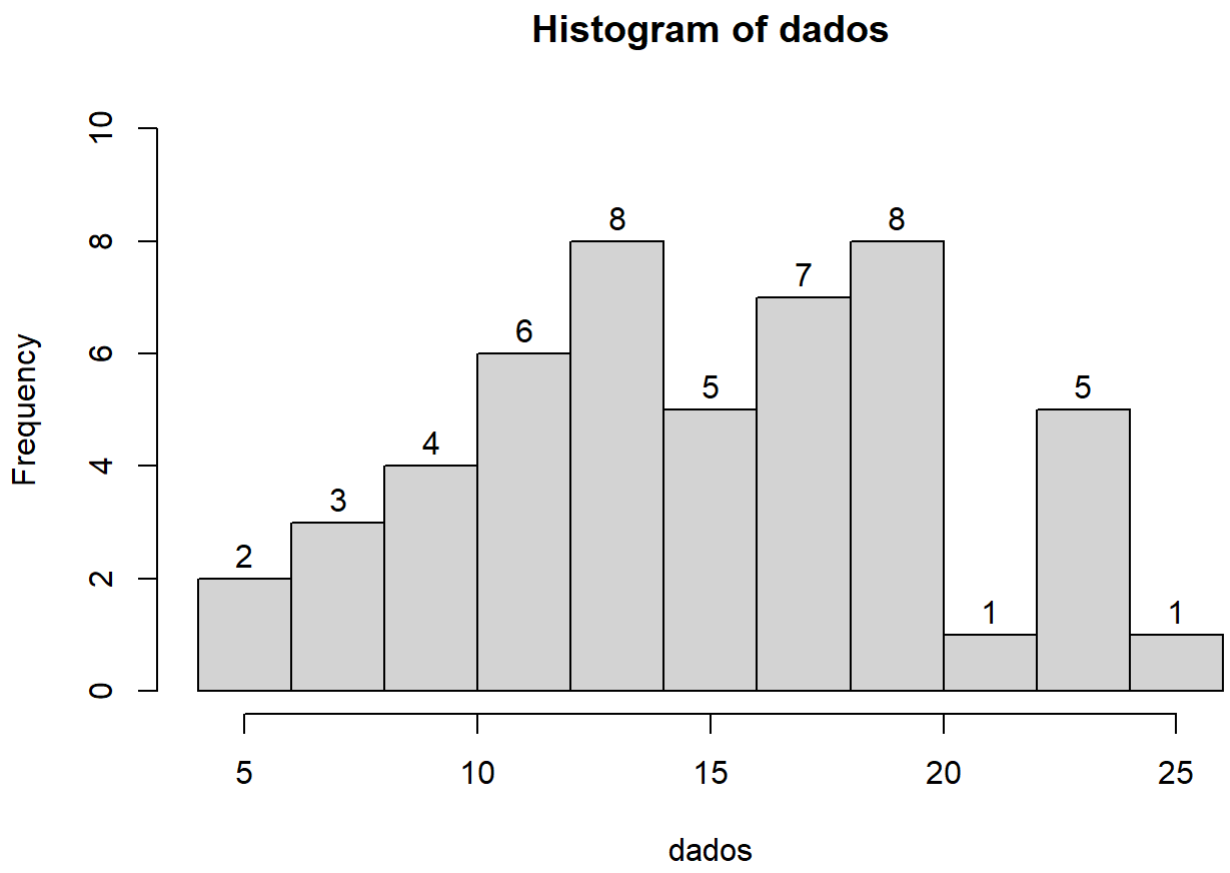

```
hist(dados, breaks = 10) #histograma com 10 barras
```




```
hist(dados, labels = T, breaks = c(0,5,10,20,30)) #histograma com intervalos
```




```
hist(dados, labels = T, breaks = 10, ylim = c(0,10)) #redefinindo as dimensoes do grafico com yl
im
```




Adicionando linhas ao histograma

```
hey = hist(dados, breaks = 10)
xaxis = seq(min(dados), max(dados), length=10)
yaxis = dnorm(xaxis, mean=mean(dados),sd=sd(dados))
yaxis = yaxis*diff(hey$mids)*length(dados)
lines(xaxis, yaxis, col='red')
```

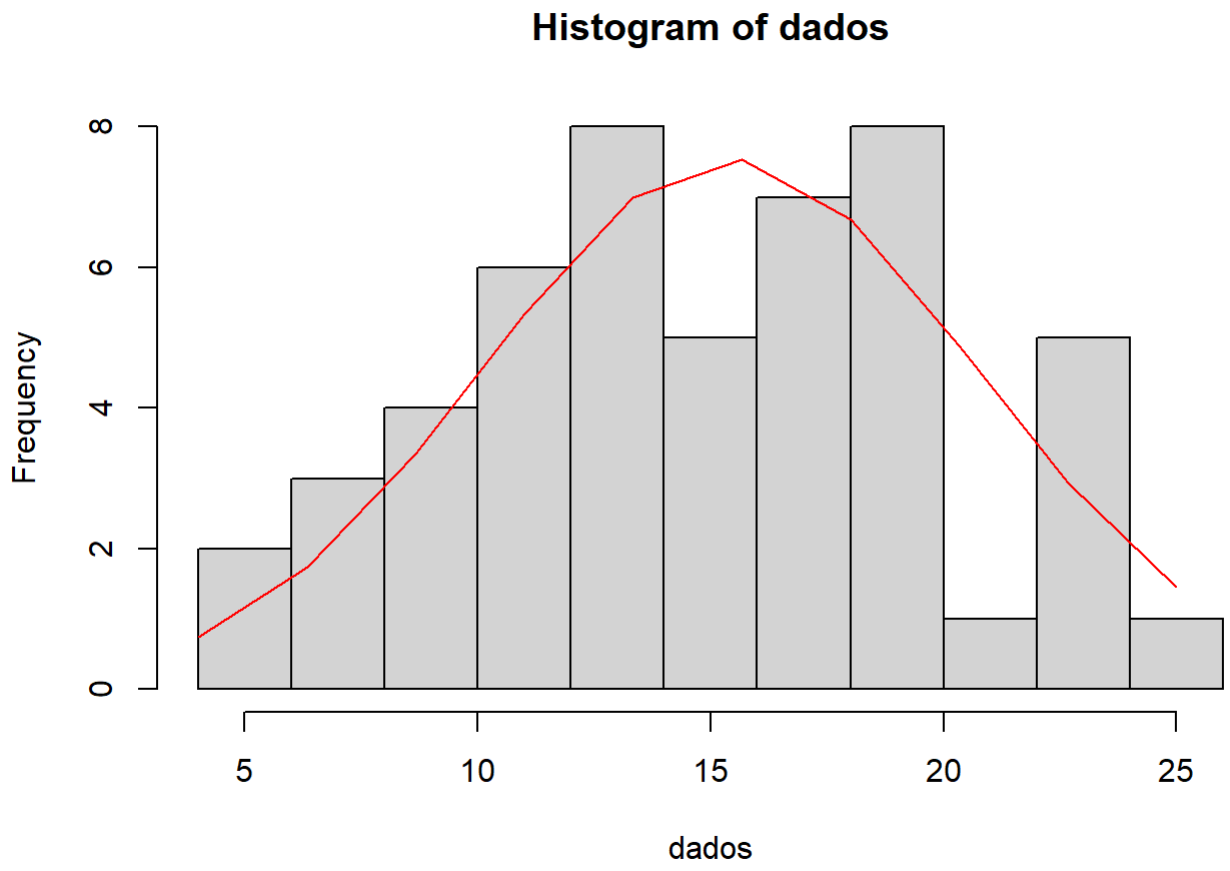


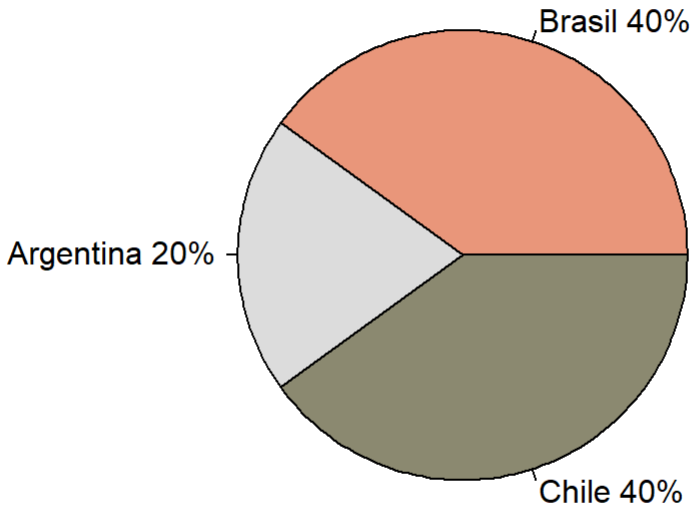

**GRAFICO DE PIZZA**

```
fatias = c(40,20,40)
paises = c('Brasil','Argentina','Chile') #nomeando as labels
paises = paste(paises, fatias)
paises = paste(paises,"%",sep="")
paises
```

```
## [1] "Brasil 40%"    "Argentina 20%" "Chile 40%"
```

Construindo o grafico

```
pie(fatias, labels=paises,
    col=c('darksalmon','gainsboro','lemonchiffon4'),
    main='Distribui玫莽玫铆o de vendas')
```




# Trabalhando com dataframes

```
attach(iris)
```

```
Values = table(Species)
labels = paste(names(Values))
pie(Values, labels=labels,main="Distribuicao de Especies")
```

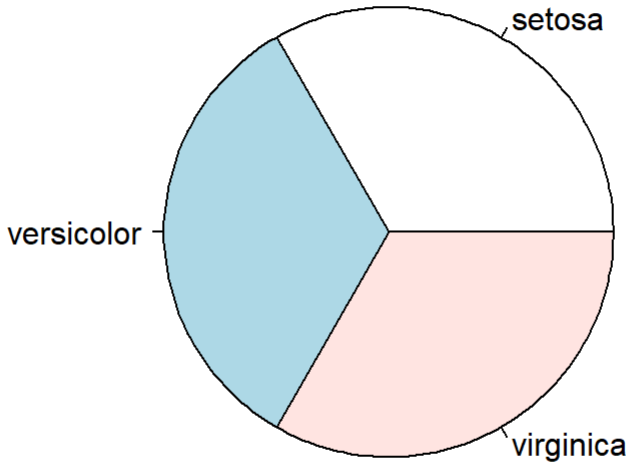
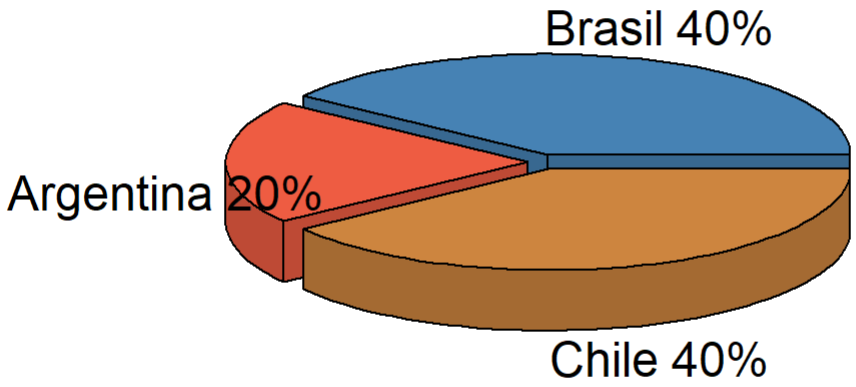



Grafico de pizza 3D

```
library(plotrix)
pie3D(fatias, labels=paises, explode = 0.05, col=c("steelblue","tomato2","tan3"),
      main="Distribuicao de vendas")
```




**BARPLOTS**

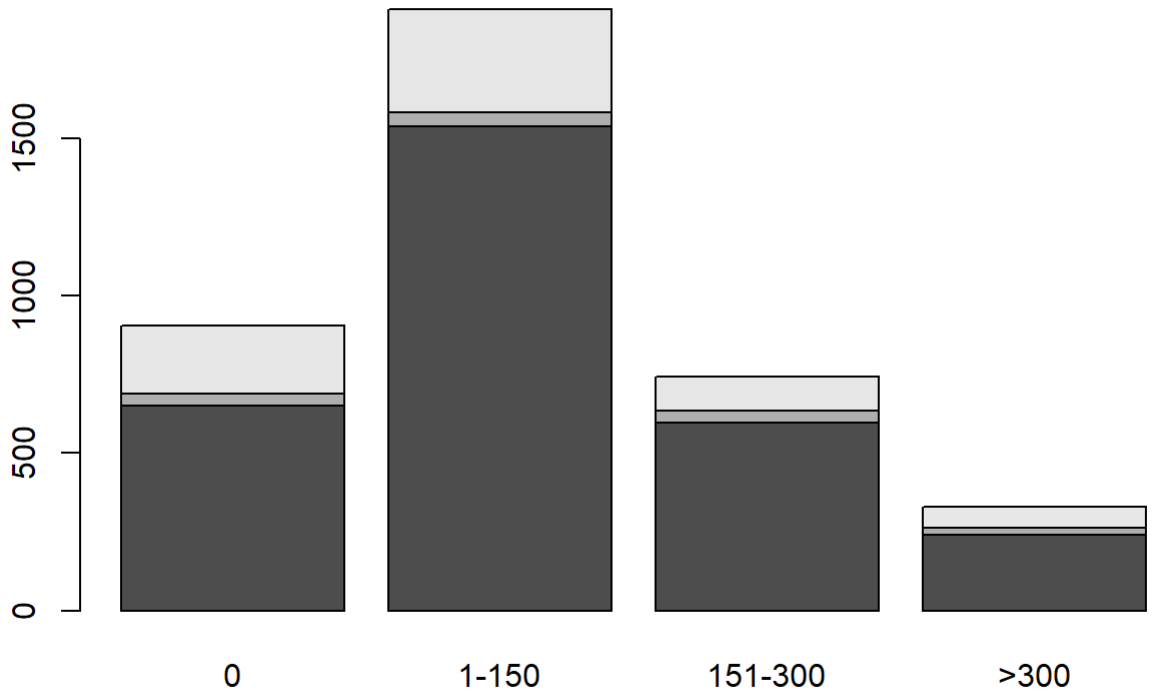
Criando uma matriz

```
casamentos = matrix(c(652,1537,598,242,36,46,38,21,218,327,106,67), nrow = 3,
                    byrow=T)
```

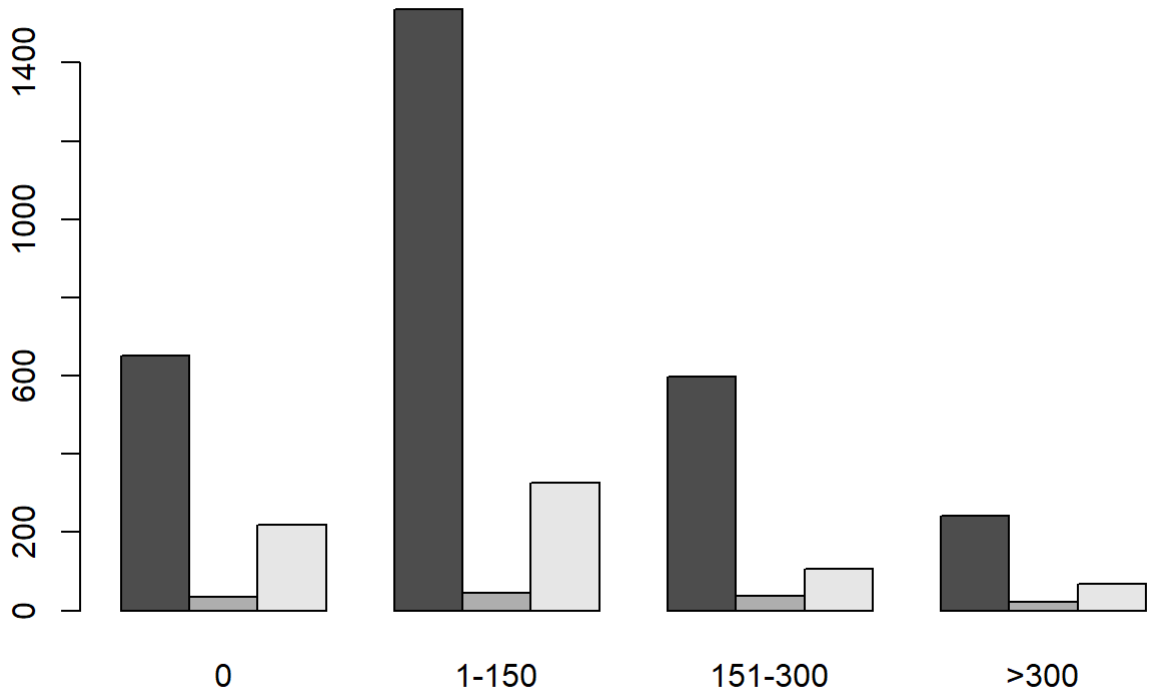
```
colnames(casamentos) = c("0","1-150","151-300",">300") #nomeando as colunas
rownames(casamentos) = c("Casado","Divorciado","Solteiro") #nomeando as linhas
```

Construindo plot

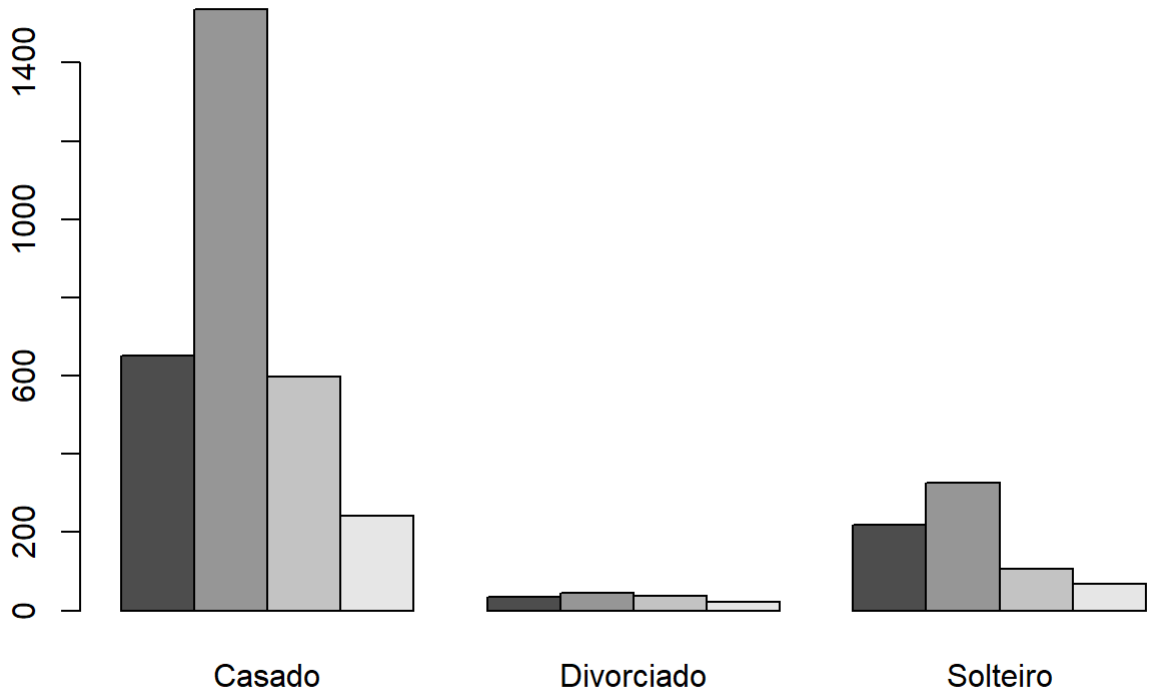
```
barplot(casamentos)
```




```
barplot(casamentos, beside = T)
```




```
barplot(t(casamentos), beside=T)
```


0
200
600
1000
1400
Casado
Divorciado
Solteiro