

Lista 3

Marcelo Saito

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Carregando pacotes

```
library(dplyr)
library(ggplot2)
```

1

```
?rnorm # cria uma distribuição normal com números "aleatórios"

rnorm(100, 0, 1)
```

```
## [1] -0.781151011 0.028383002 -0.142734102 0.442050173 0.477612804
## [6] 0.548073349 -0.636437512 1.575644015 1.795541100 -1.226002977
## [11] 0.840103548 -0.684251061 -0.048339366 0.457054485 -1.064833912
## [16] 0.269957776 1.503077072 -1.471904883 -0.051002560 -0.003257751
## [21] -1.535963753 0.063081676 -0.589714394 -1.163442761 -0.749782300
## [26] -0.889181313 -1.095068829 0.681744514 -0.108073646 0.715529567
## [31] -1.673933106 0.312548896 0.075478974 -1.014915652 0.325024686
## [36] 1.506103509 -0.070797097 -0.104678753 -0.341892462 -1.699699310
## [41] 0.604328006 -0.419110898 -1.753874389 0.242456339 0.869539212
## [46] 2.503600361 -0.342701704 1.292240610 -0.527139799 -0.735744521
## [51] -2.017090812 -0.929728498 -0.227462496 0.352102052 0.478934961
## [56] 0.179961741 2.486462220 1.795234742 -0.374125662 -0.776577529
## [61] -0.026276333 -0.092714846 -1.158939167 -0.299277959 -0.911553466
## [66] 0.310378910 -0.208798606 -1.278805091 0.422974072 -1.281298353
## [71] 0.122166036 -0.553830496 -2.920394956 -0.072073056 -0.400606341
## [76] 1.411721460 0.223450386 1.818706986 1.601829243 1.028534065
## [81] -0.236274268 0.752919708 1.333387179 -0.599493331 1.633273357
## [86] -1.019369197 -1.816872634 0.212591136 0.439950849 -0.538599194
## [91] -0.552980074 -0.193209207 2.045958818 -1.836968859 0.906381237
## [96] -0.796311422 -0.286253937 0.333457968 0.646212201 0.544677861
```

2

```
x <- rnorm(100, mean = 2, sd = 1)

mean(x)
```

```
## [1] 2.091227
```

Pois o computador gerou 100 números aleatórios, o que faz a média ser aproximadamente 2.

4

```
vetor_medias <- numeric()
vetor_medias[1] <- mean(rnorm(100, mean=2, sd=1))
vetor_medias[2] <- mean(rnorm(100, mean=2, sd=1))

print(vetor_medias)
```

```
## [1] 1.961957 2.030818
```

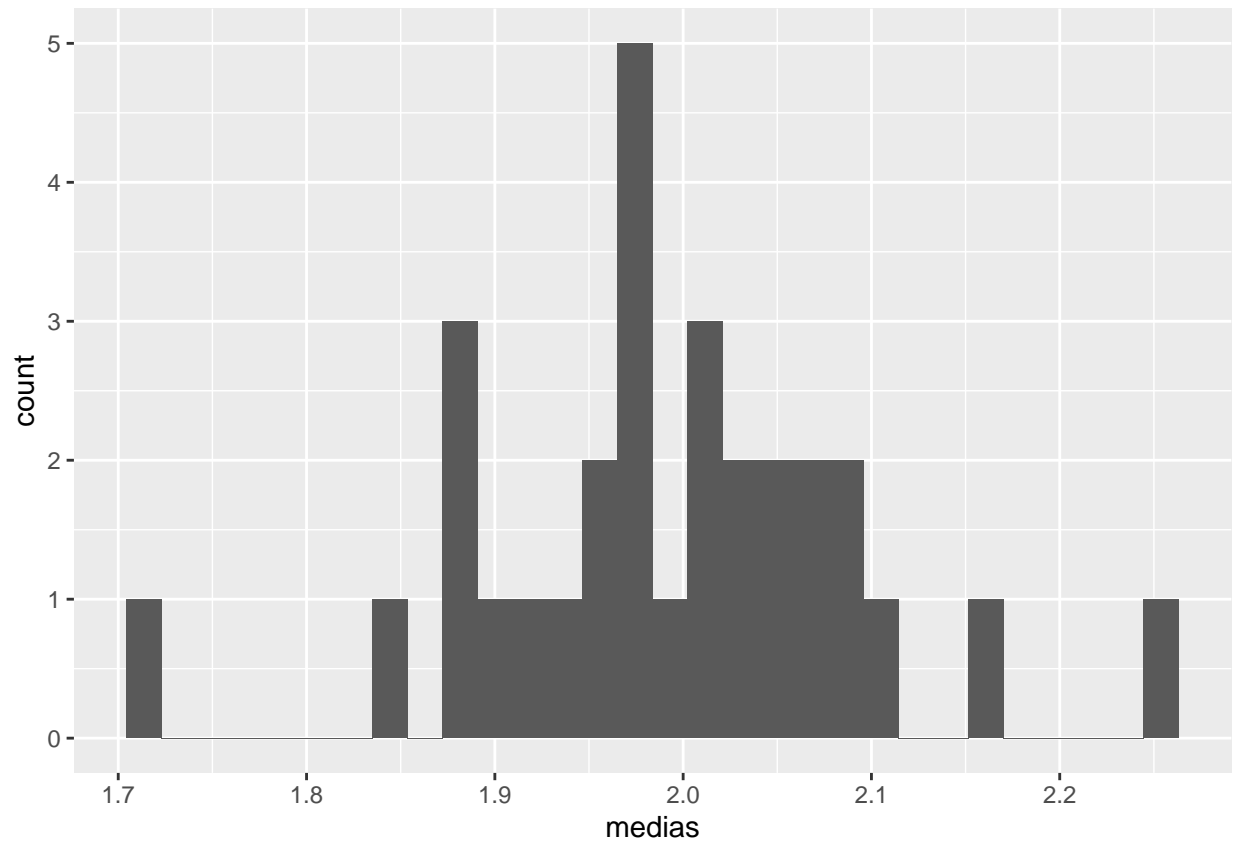
5

```
for( i in 1:30){
  vetor_medias[i] <- mean(rnorm(100, mean=2, sd=1))
}
```

6

```
df <- data.frame(medias = vetor_medias, sim_id = 1:30)

ggplot(df, aes(x = medias)) +
  geom_histogram()
```



```
dfmean <- df %>%
  summarise(media = mean(medias),
            desvio = sd(medias)) %>%
  print()
```

```
##      media    desvio
## 1 1.990306 0.1030298
```

7

```
jogar_moeda <- rbinom(n = 100, size = 1, prob = .5)

jogar_moeda_10 <- function(){
  sample(c("cara", "coroa"), size = 1)
}

for (i in 1:10){
  resultado <- jogar_moeda_10()
  print(resultado)
}
```

```
## [1] "cara"
## [1] "cara"
## [1] "cara"
## [1] "coroa"
## [1] "cara"
```

```
## [1] "coroa"  
## [1] "coroa"  
## [1] "coroa"  
## [1] "coroa"  
## [1] "cara"
```

8