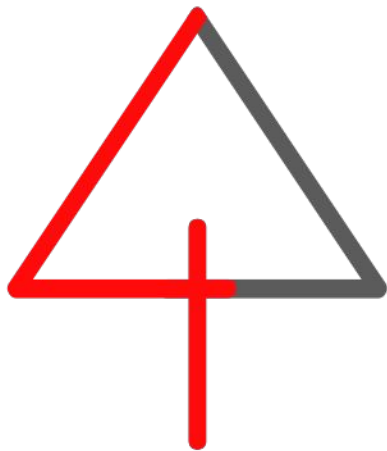


# Workshop R: Manipulação de Dados





P



H

PROGRAMAÇÃO PARA HUMANIDADES



Acompanhe a aula pelo nosso site!



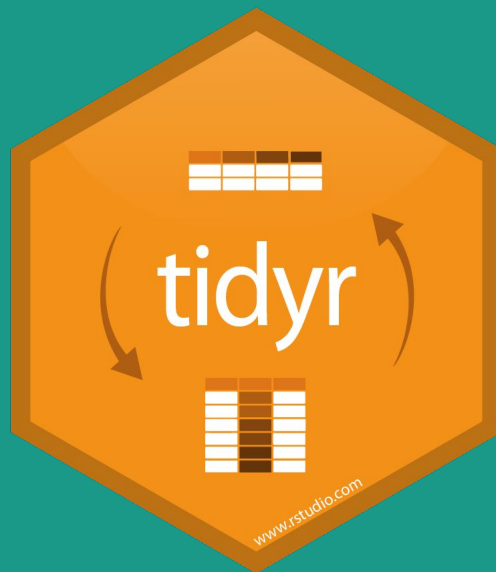
[bit.ly/p4h\\_workshop](https://bit.ly/p4h_workshop)



PROGRAMAÇÃO PARA HUMANIDADES

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# *Tidy data e tidyr*





# Tidy data

Por que precisamos nos importar com isso?

1. Linhas: observações
2. Colunas: variáveis
3. Células: valores



## Exemplo de um banco não *tidy*

| País   | 2016 | 2017 |
|--------|------|------|
| Brasil | 9.2  | 12.2 |
| China  | 7.1  | 9.3  |



## Exemplo de um banco *tidy*

| País   | Ano  | Desemprego |
|--------|------|------------|
| Brasil | 2016 | 9.2        |
| Brasil | 2017 | 12.2       |
| China  | 2016 | 7.1        |
| China  | 2017 | 9.2        |

# Modelo *tidy*

| country     | year | cases  | population |
|-------------|------|--------|------------|
| Afghanistan | 1999 | 745    | 19987071   |
| Afghanistan | 2000 | 666    | 20595360   |
| Brazil      | 1999 | 37737  | 172006362  |
| Brazil      | 2000 | 80488  | 174504898  |
| China       | 1999 | 212258 | 1272915272 |
| China       | 2000 | 216766 | 128042583  |

variables

| country     | year | cases  | population |
|-------------|------|--------|------------|
| Afghanistan | 1999 | 745    | 19987071   |
| Afghanistan | 2000 | 666    | 20595360   |
| Brazil      | 1999 | 37737  | 172006362  |
| Brazil      | 2000 | 80488  | 174504898  |
| China       | 1999 | 212258 | 1272915272 |
| China       | 2000 | 216766 | 128042583  |

observations

| country     | year | cases  | population |
|-------------|------|--------|------------|
| Afghanistan | 1999 | 745    | 19987071   |
| Afghanistan | 2000 | 666    | 20595360   |
| Brazil      | 1999 | 37737  | 172006362  |
| Brazil      | 2000 | 80488  | 174504898  |
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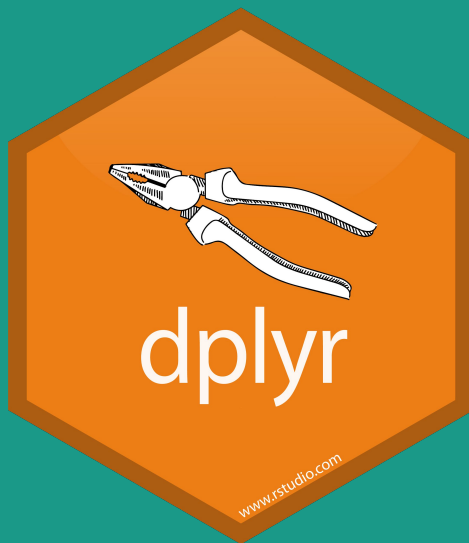
values





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# Os verbos do pacote dplyr



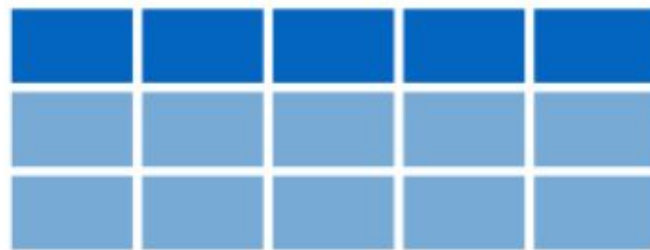


## **dplyr** para manipular bancos de dados

1. `filter()`
2. `mutate()`
3. `rename()`



# filter()





# mutate()



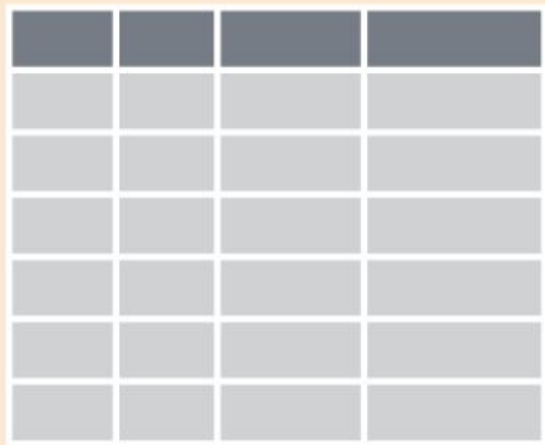


## **dplyr** para resumir bancos de dados

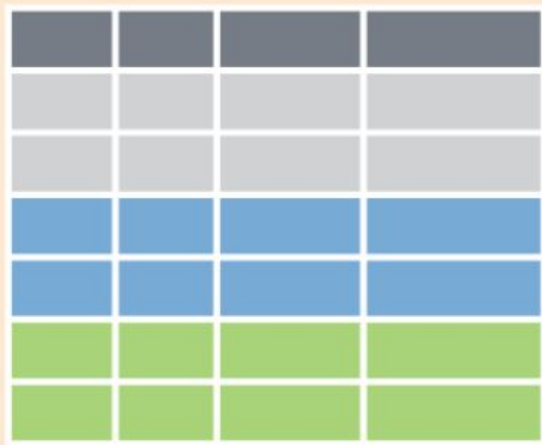


1. `count()`
2. `group_by()` e  
`summarise()`

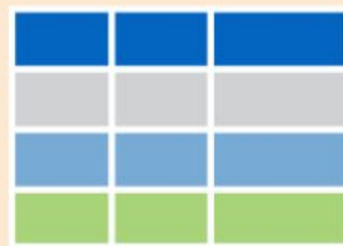
## group\_by() e summarise()



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**Próximo módulo:**  
**visualização de**  
**dados**

1ª turma: **09/10**

2ª turma: **11/10**