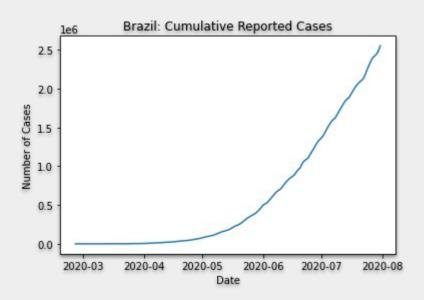
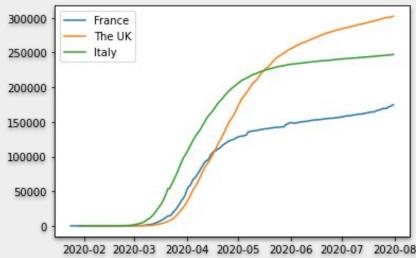


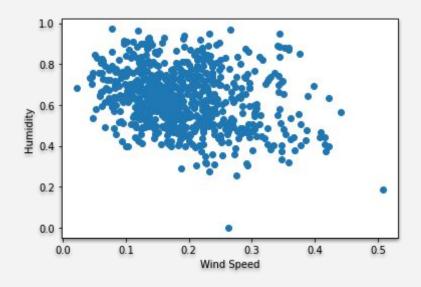
Ivanovitch Silva ivanovitch.silva@ufrn.br

### Gráficos de linha e séries temporais

Estudo de caso covid19

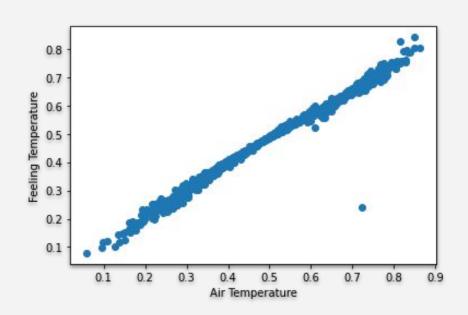


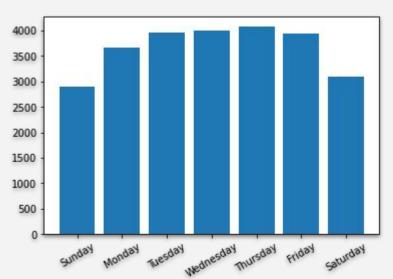




Gráficos de dispersão e correlação

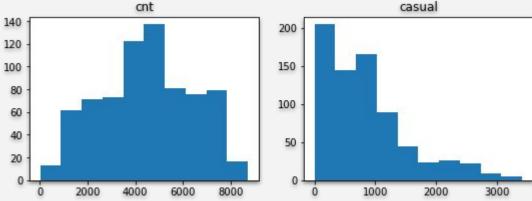
Estudo de caso compartilhamento de bicicletas

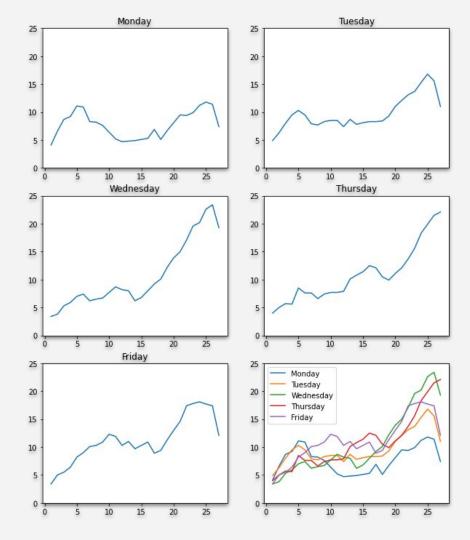




## Gráficos de barra e histograma

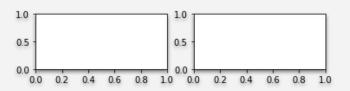
Estudo de caso compartilhamento de bicicletas

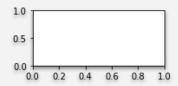




### Visualização com Pandas e Gráficos em Malha

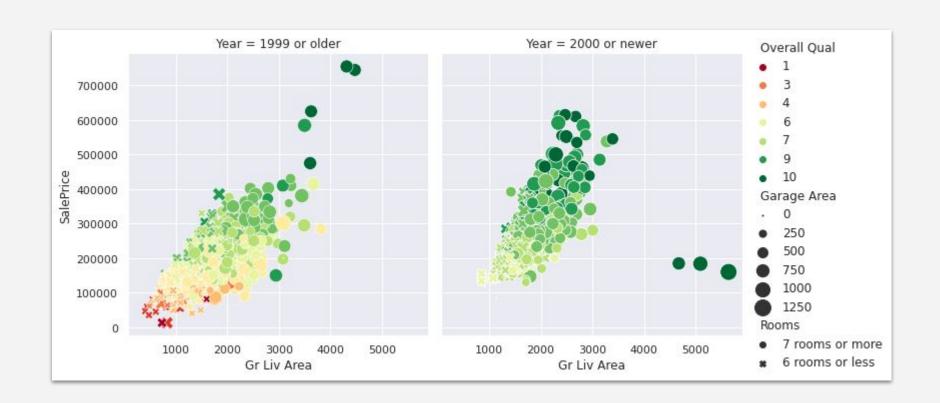
Estudo de caso tráfego em SP

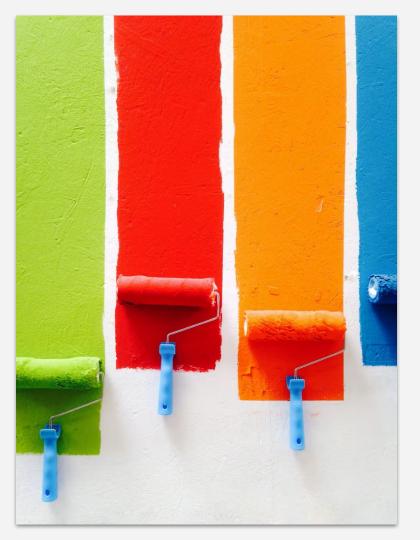




### Gráficos relacionais e de múltiplas variáveis

Estudo de caso setor imobiliário

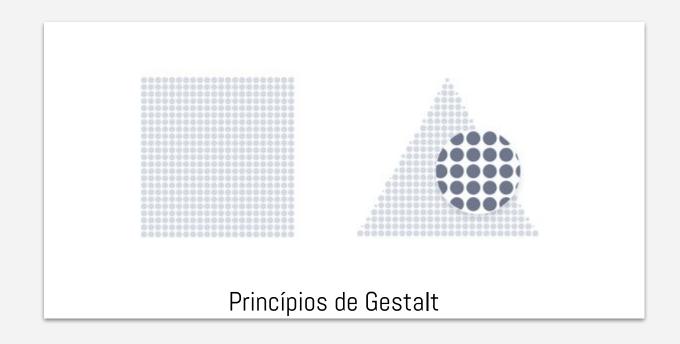




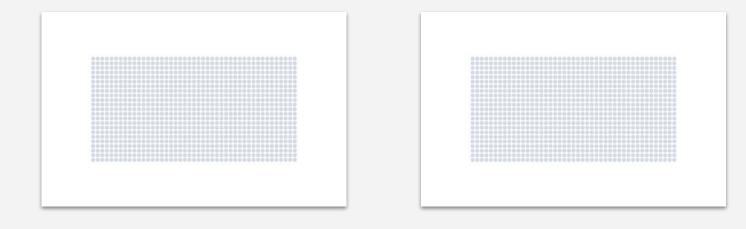
## Princípios de Design

# Remove to improve (the data-ink ratio)

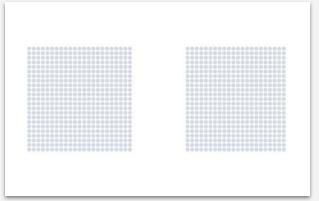
Familariedade Relação Dado vs Tinta



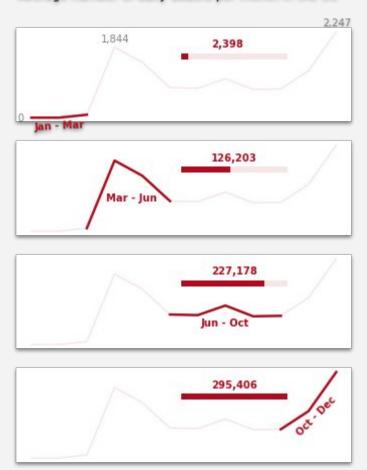
Os humanos em geral percebem padrões em detrimento a objetos individuais.



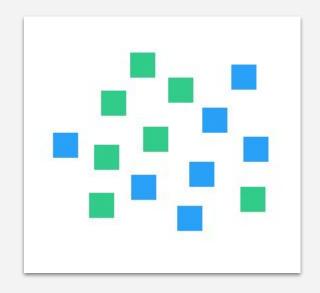
Princípio da Proximidade

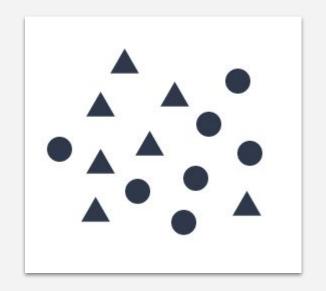


The virus kills 851 people each day Average number of daily deaths per month in the US



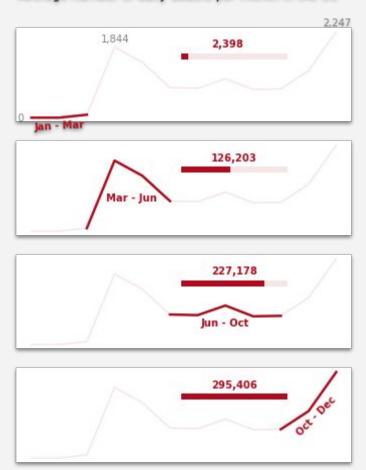
# Onde o princípio da **proximidade** é aplicado aqui?



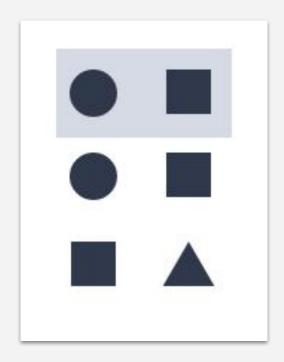


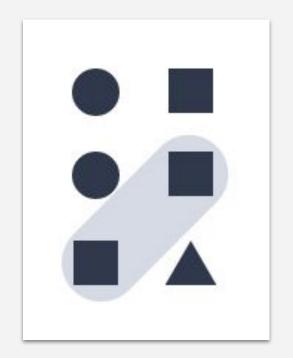
Princípio da Similaridade

The virus kills 851 people each day Average number of daily deaths per month in the US

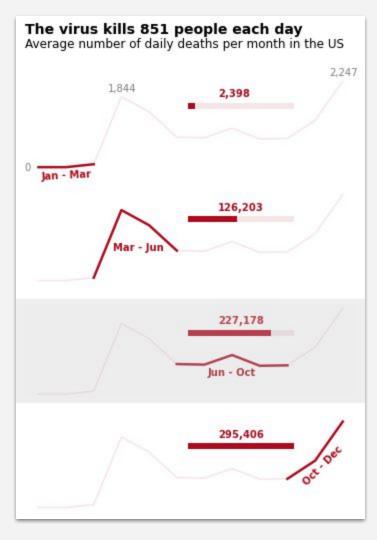


# Onde o princípio da **similaridade** é aplicado aqui?

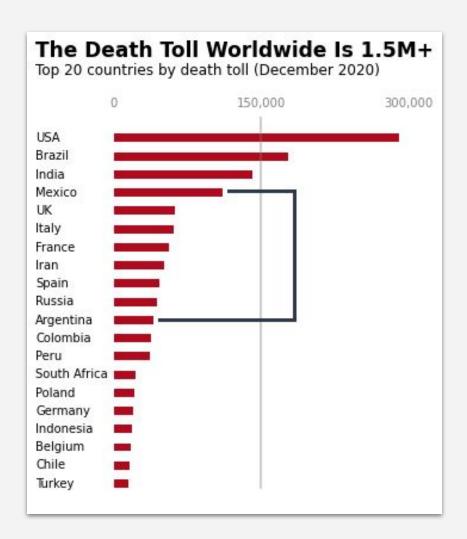




Princípio do Cercamento

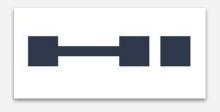


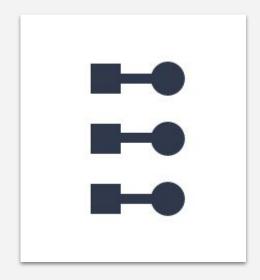
# Onde o princípio do **cercamento** é aplicado aqui?





Princípio da Conexão

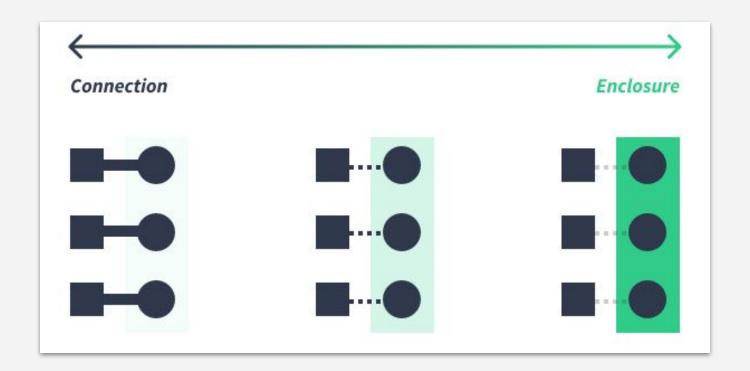




Conexão > (similaridade, proximidade)

### Hierarquia Visual

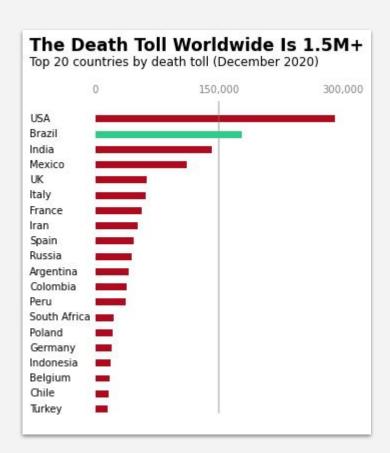
Proximidade Similaridade Cercamento Conexão

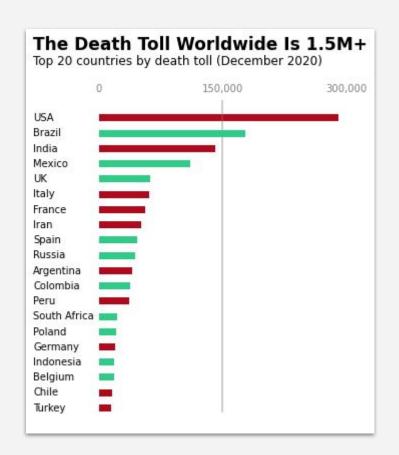


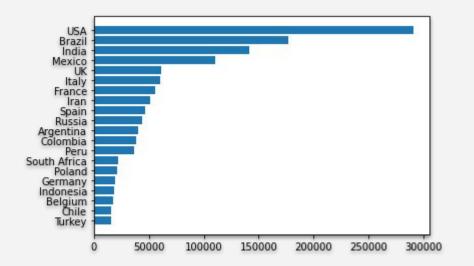
Conexão == Cercamento "Detalhes importam"

Mecanismos Atencionais







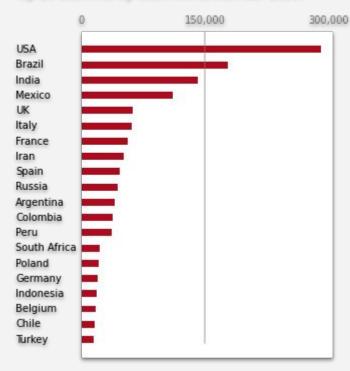


### Princípios de Design

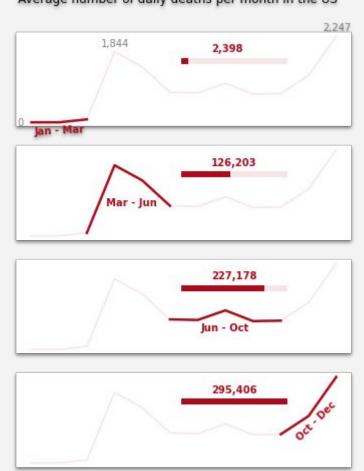
Estudo de caso covid-19

#### The Death Toll Worldwide Is 1.5M+

Top 20 countries by death toll (December 2020)



#### The virus kills 851 people each day Average number of daily deaths per month in the US

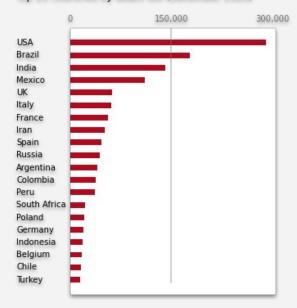


### Contando uma história

Estudo de caso covid-19

#### The Death Toll Worldwide Is 1.5M+

Top 20 countries by death toll (December 2020)



#### Wine Quality Most Strongly Correlated With Alcohol Level

Correlation values between wine quality and wine properties (alcohol, pH, etc.)

