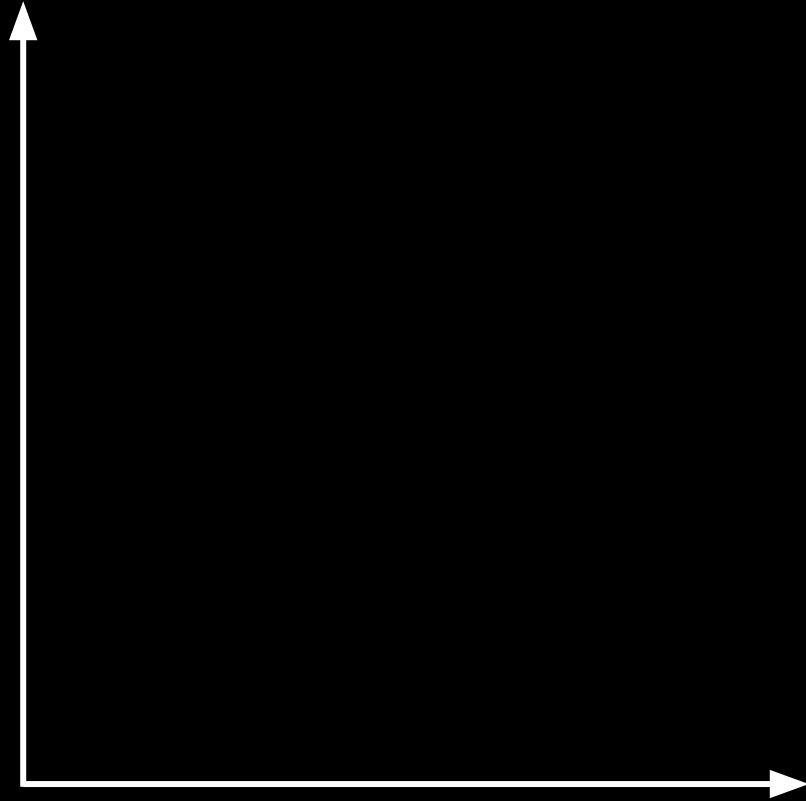
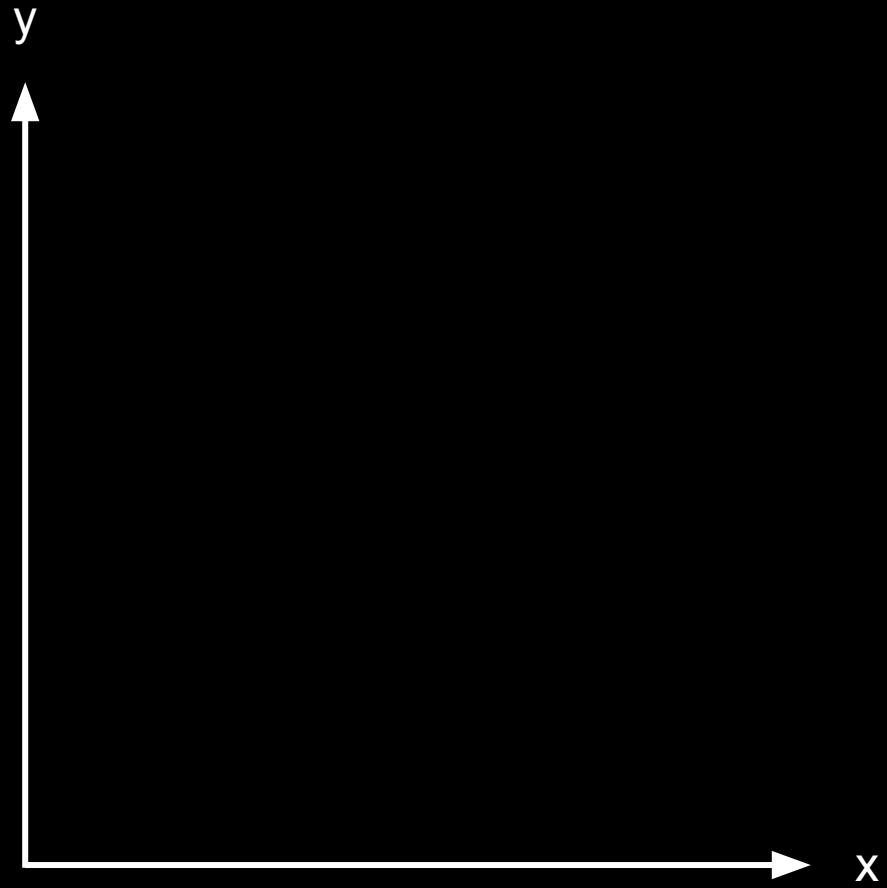


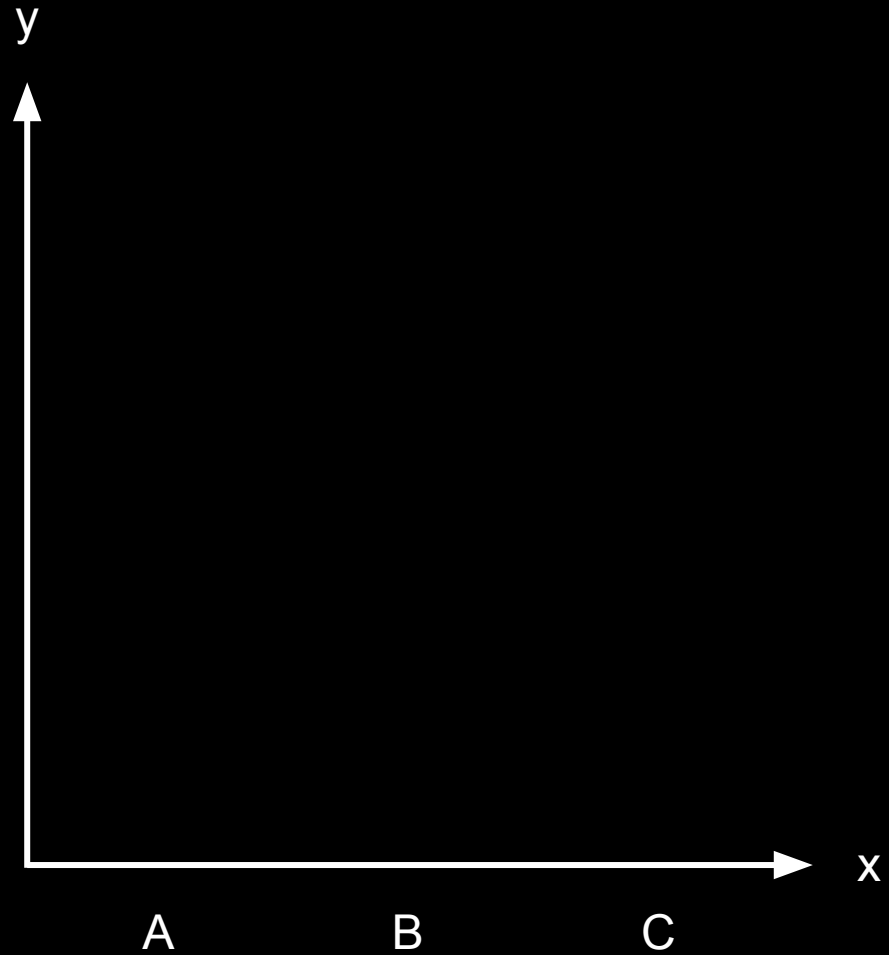
# VISUALIZE DATA

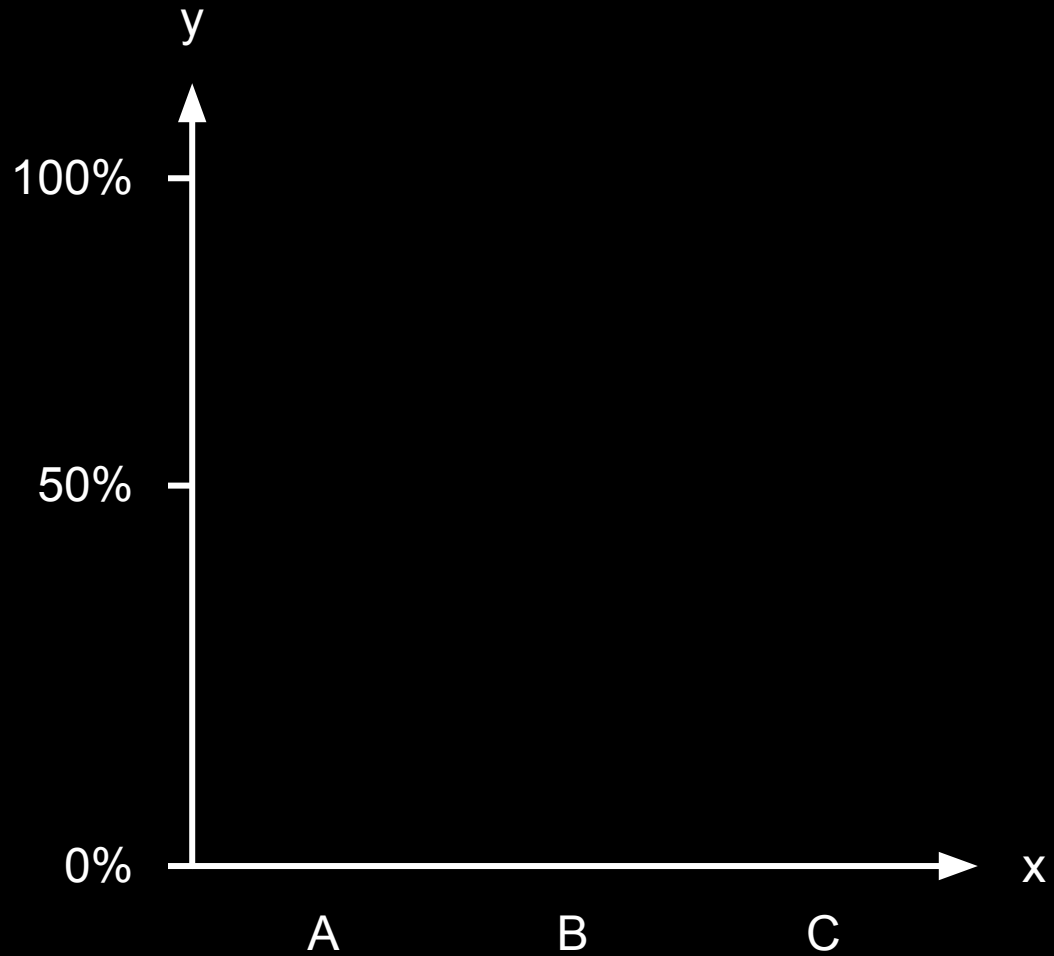
# data

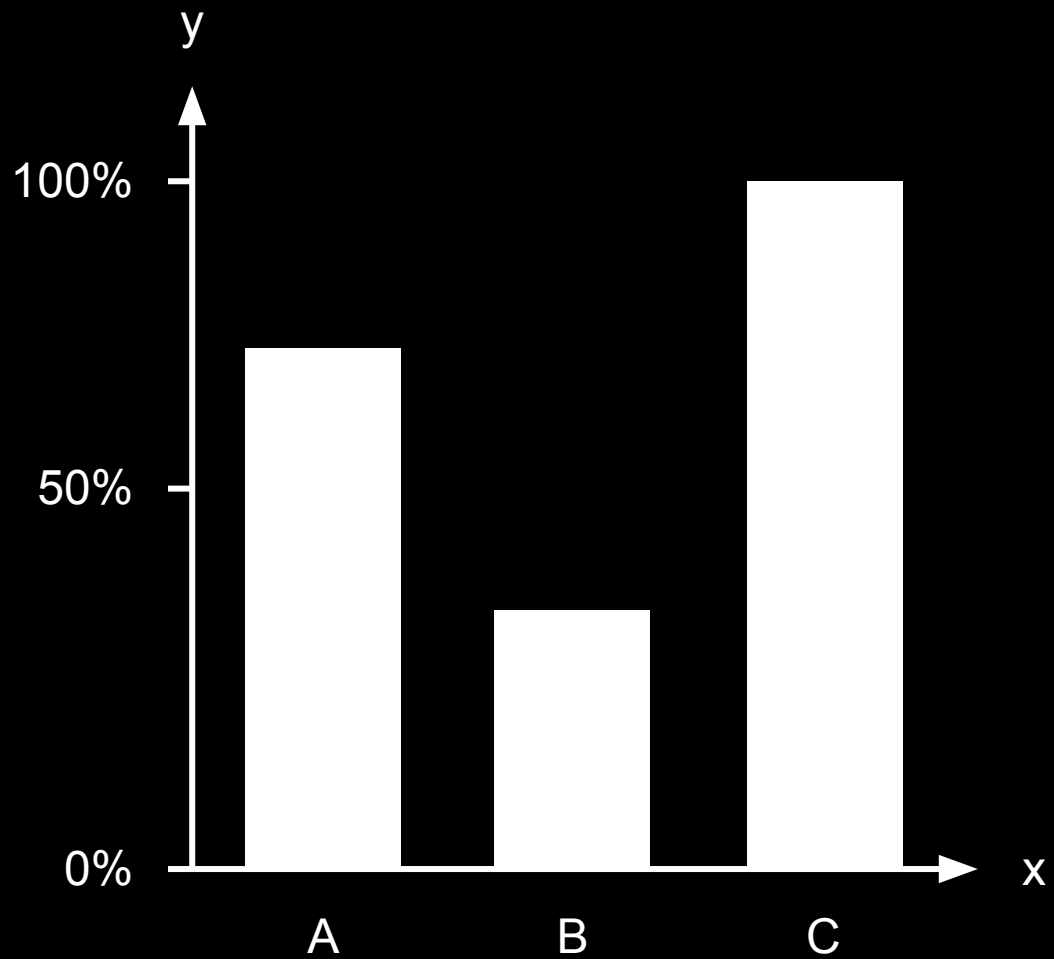
| category | pct |
|----------|-----|
| A        | 75  |
| B        | 33  |
| C        | 100 |



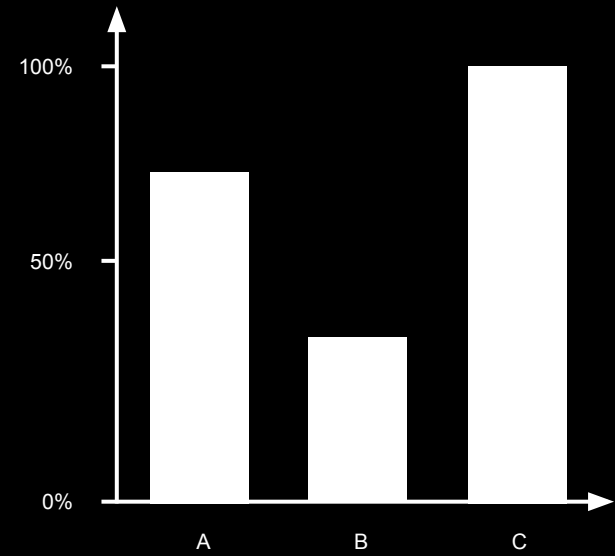








| category | pct |
|----------|-----|
| A        | 75  |
| B        | 33  |
| C        | 100 |





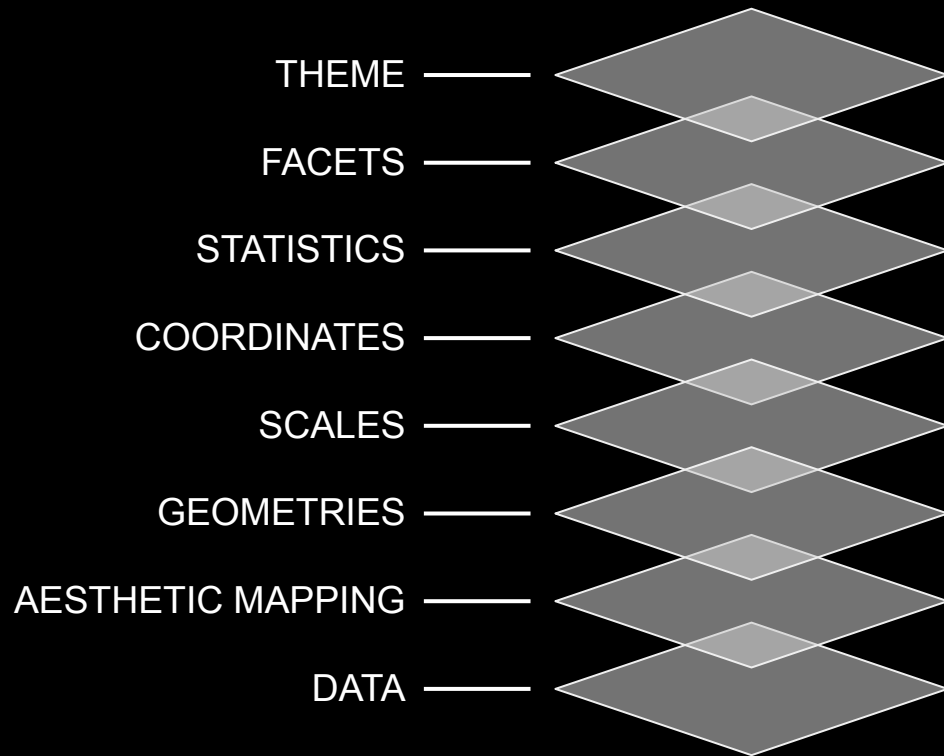
{{ ggplot2 }}

why visualize?

{{ ggplot2 }}

grammar of graphics

any  
data  
visualization



has useful defaults

mandatory



THEME

FACETS

STATISTICS

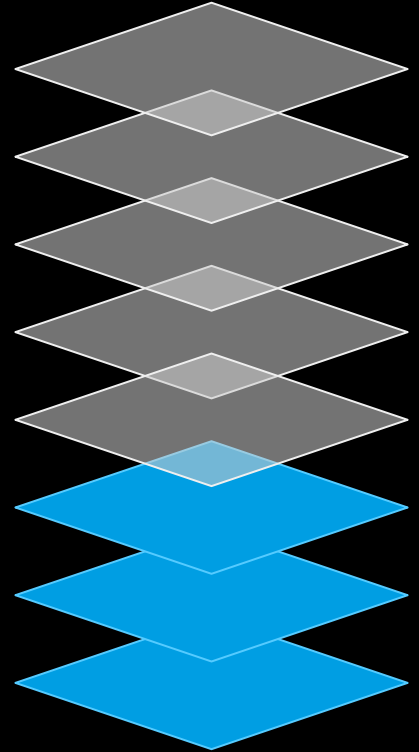
COORDINATES

SCALES

GEOMETRIES

AESTHETIC MAPPING

DATA



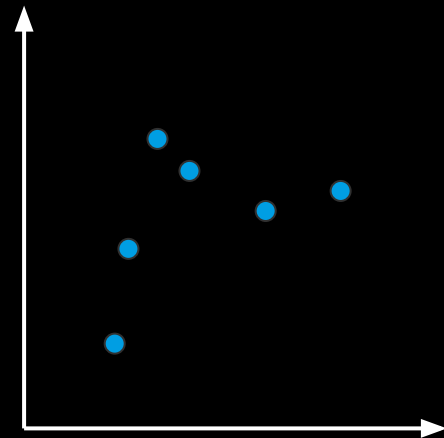
`ggplot()`

```
ggplot() +  
  aes()
```

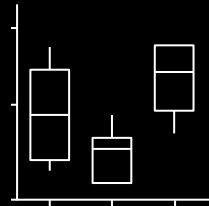
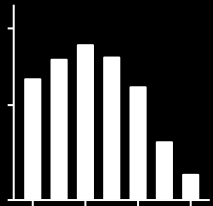
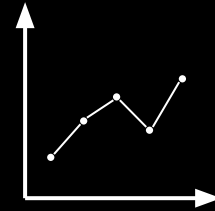
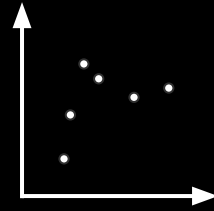
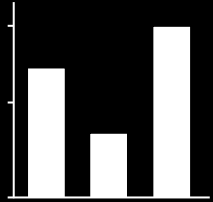
```
ggplot() +  
  aes() +  
  geom_point()
```

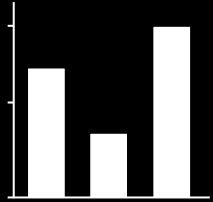


```
ggplot() +  
  aes() +  
  geom_point()
```

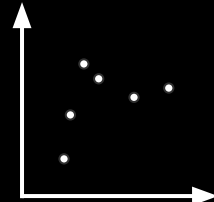


basic plots

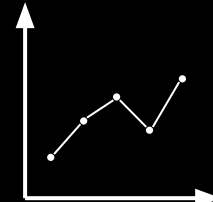




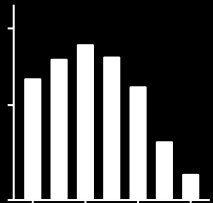
bar chart



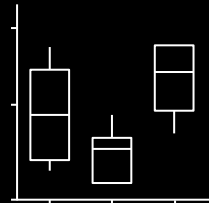
scatter plot



line chart

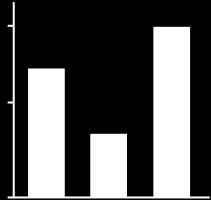


histogram



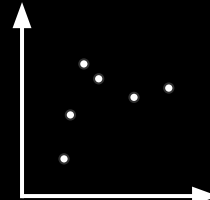
box plot

amounts  
proportions  
distributions (discrete)



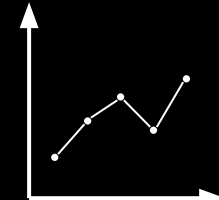
bar chart

associations  
patterns



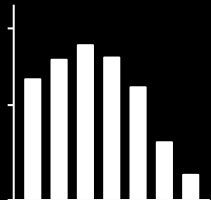
scatter plot

trends  
developments



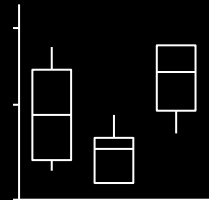
line chart

distributions (continuous)



histogram

compare distributions (continuous)



box plot