

Data visualization is the graphical representation of information and data. By using visual elements like charts, graphs, and maps, data visualization tools make data more accessible, easier to understand, and insightful. Libraries like Matplotlib and Seaborn in Python are widely used for creating effective data visualizations.

Data information

↓ ↓

Posi Secur

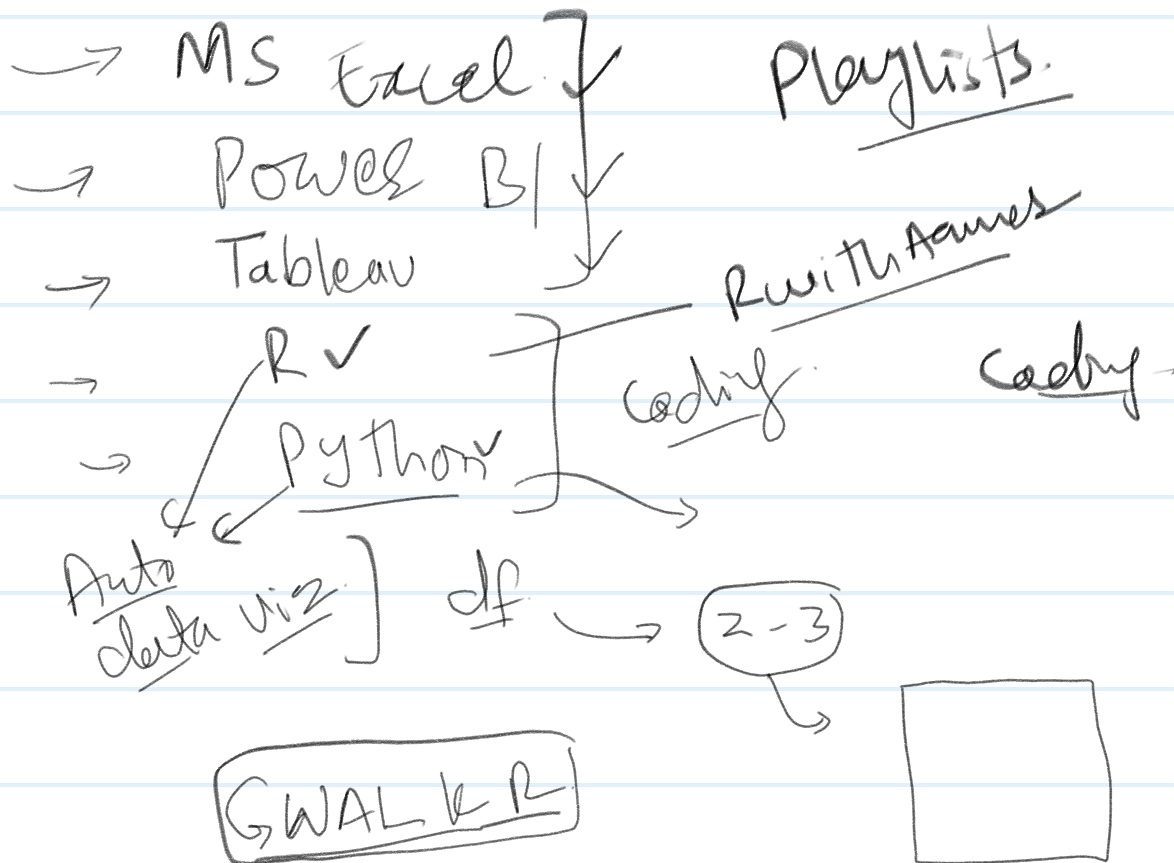
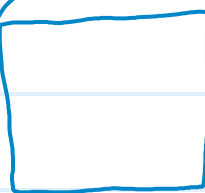


chart → Plot ↔ graph.

Data

→



Plot

→ Main purpose.

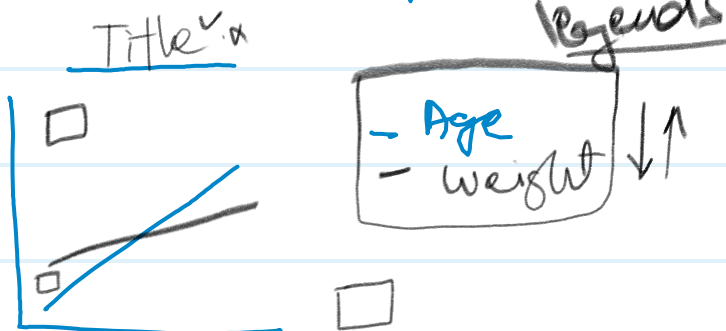
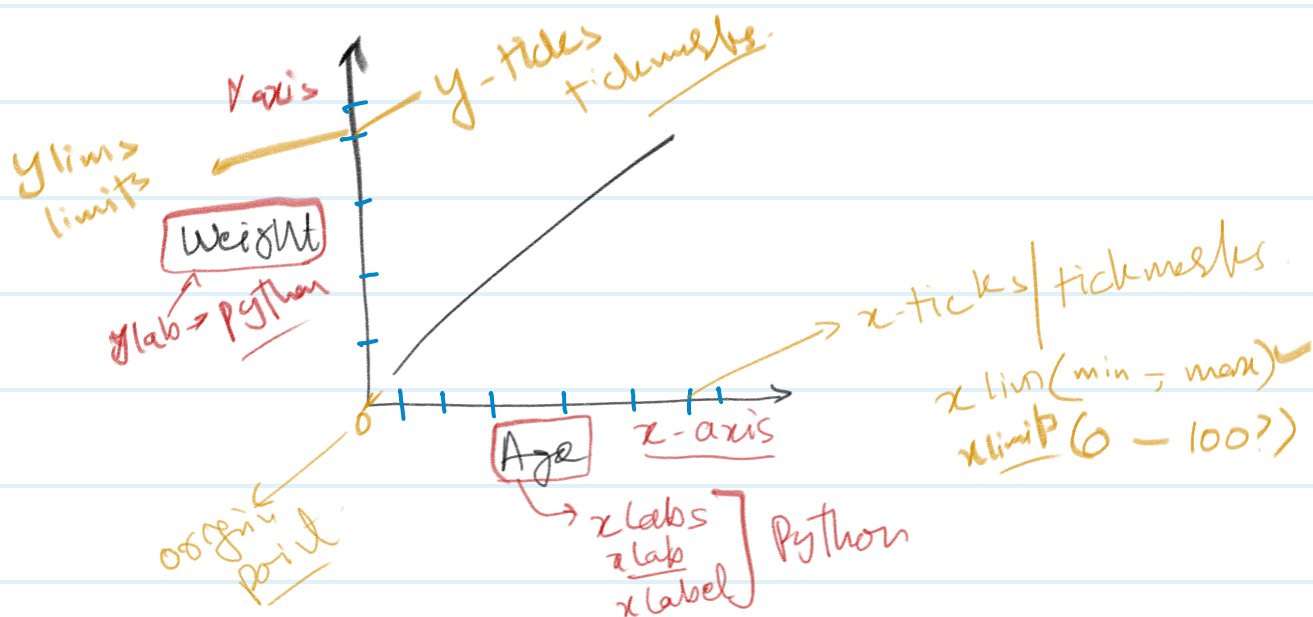
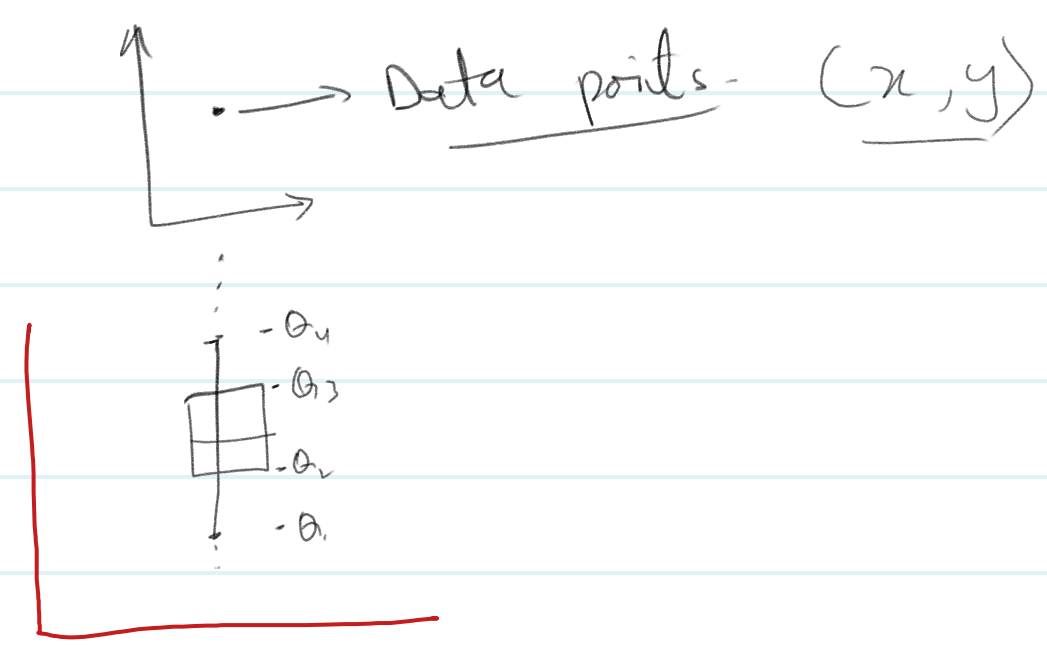
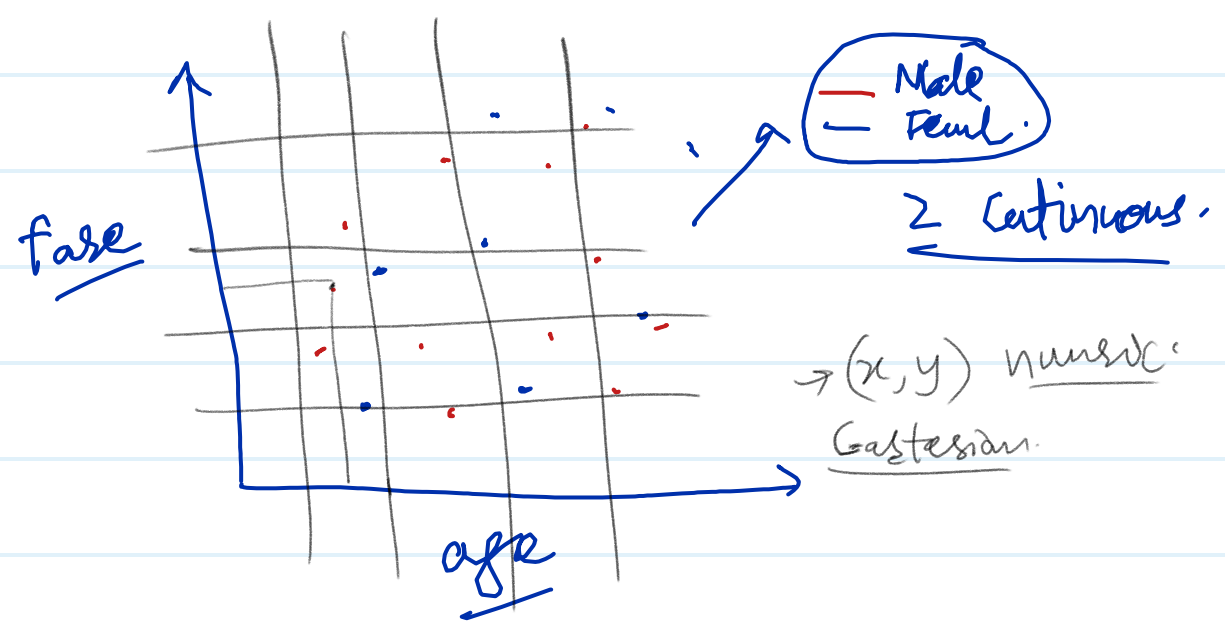
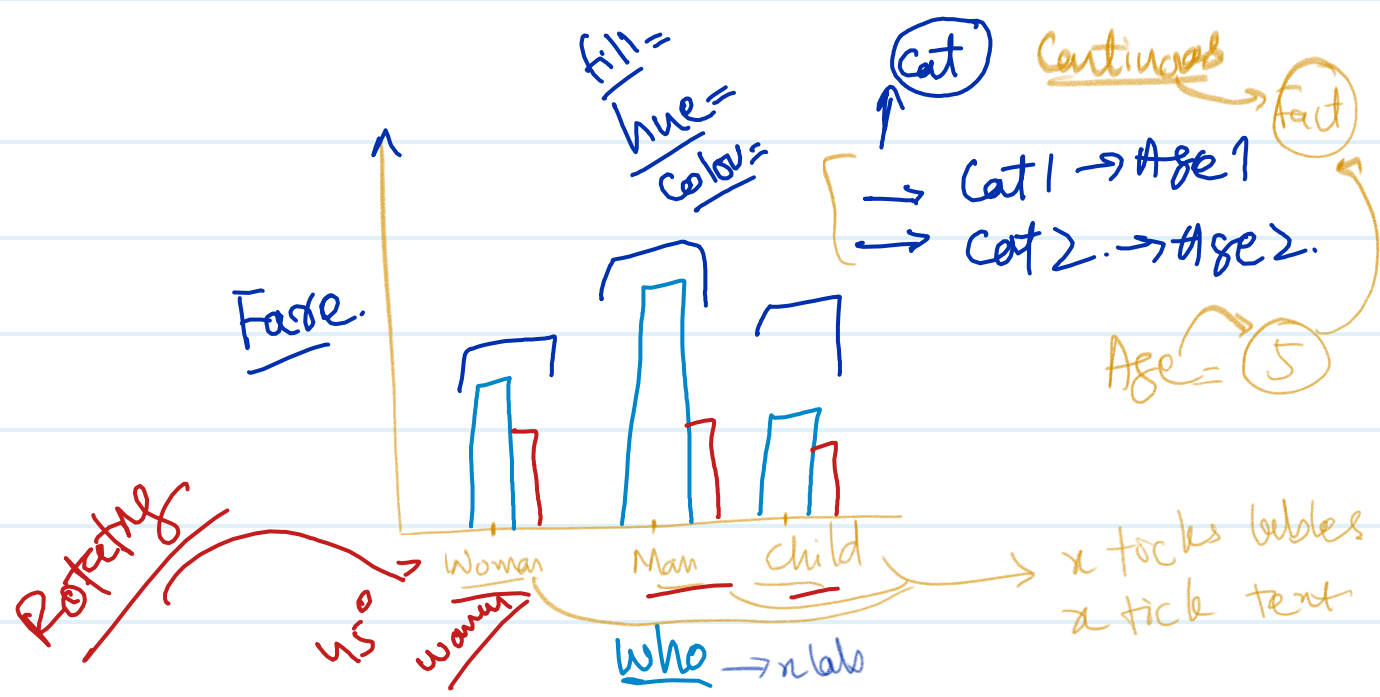


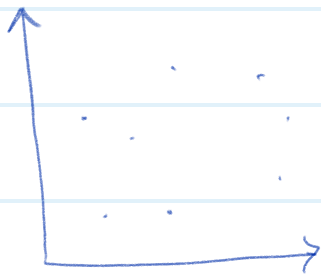
Fig 1: 5-6, 2-3, 34,  
Figure caption  
legend





# Plot types:-

①



→ Scatter plot → Point plot



→ Line plot  
→ Time series

→ 3 salon / Years

Bijli  
Gas

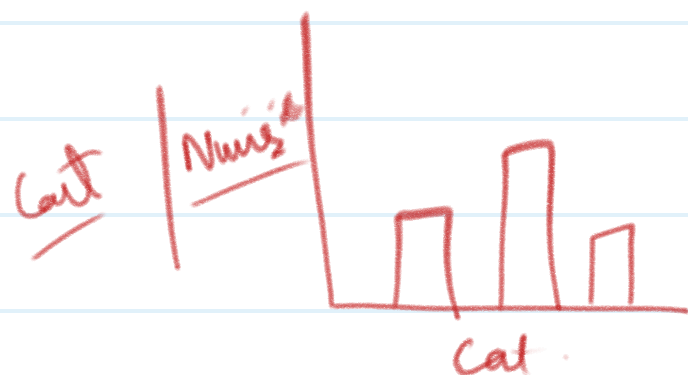
→ City.

→ Family members.

→ AC ?

→ Fridge Yes/No | 2, 3

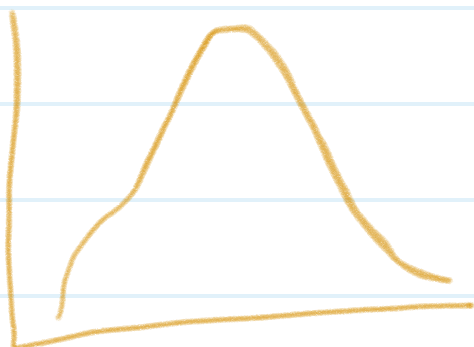
→ UPS Yes/No. + Solar.



☐ Cat. Bar /  
→ Column Chart.



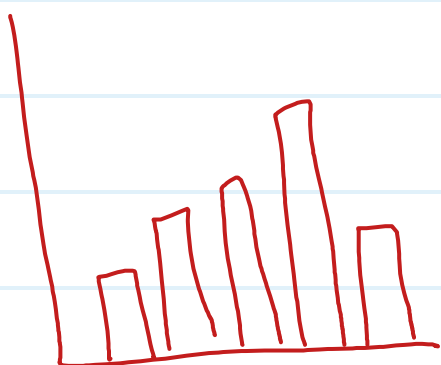
{ Histogram, hist }  
sns. → (kde=True)  
Distribution Plot.



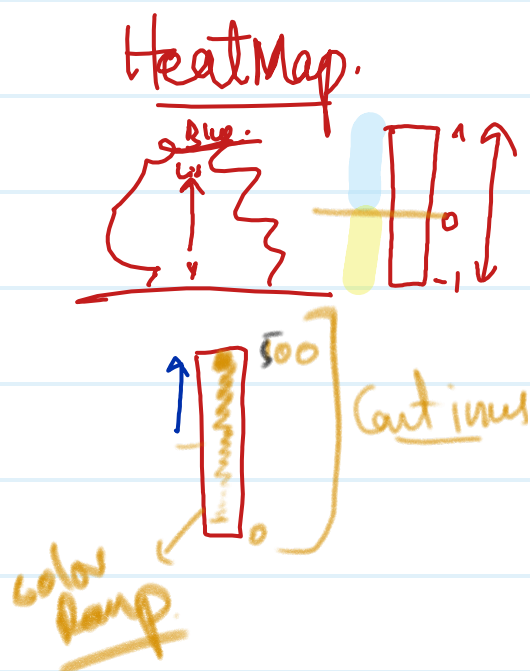
Density Plot.

Continuous  
Numeric data.

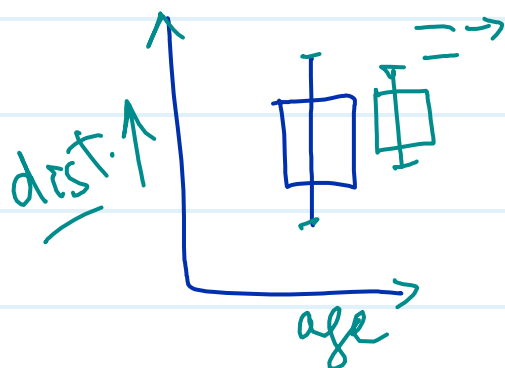
1.5, 1.8 ----->



1, 2, 3



Color → Numeric (vs) Numeric



Boxplot / whisker plot

→ Color blind friendly

Blue - Red - Green

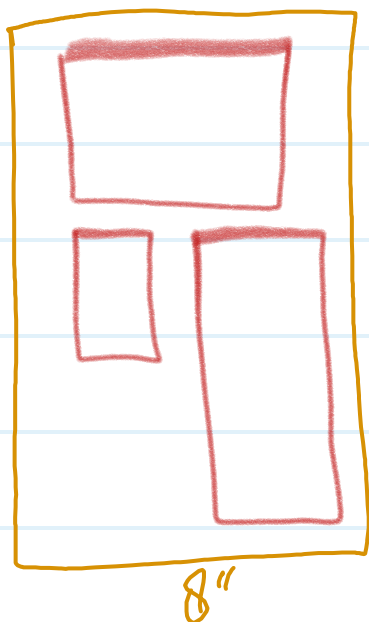
[Primary colors]  
→ Secondary colors.] [Contrast -  
hue -  
saturation.]

Pallets → sns matPlot

Size

Matplotlib

fig-size  
Platify



11"



Plot

Save

.png

.svg

landscape

Give

[understandable  
units.]

or-Script.  $\rightarrow$  01  $\rightarrow$

Size  $\Rightarrow$

width = 7

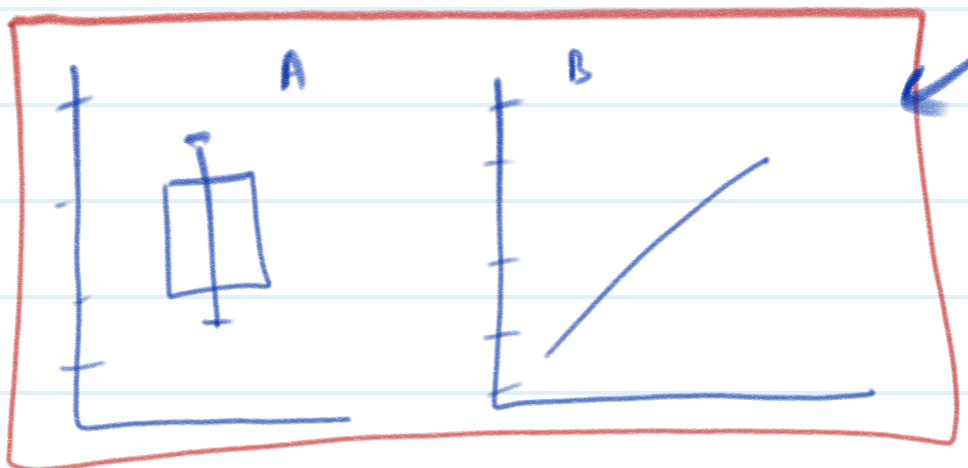
height = 4

Unit = inches / px.

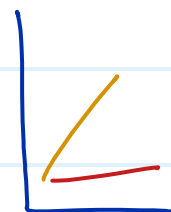
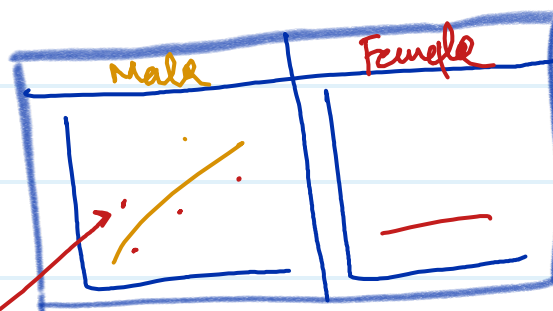
dpi = 300

resolution = 300

Subplots →



facets



Annotation

(x,y)

Tooltip





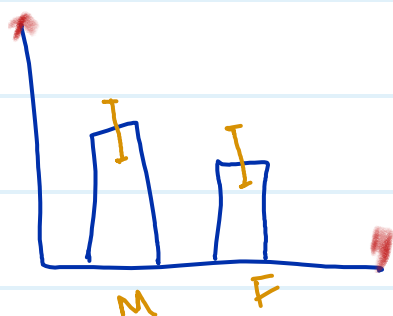
# Statistics.

2  $\rightarrow$  t-test  
2  $\rightarrow$  z-test

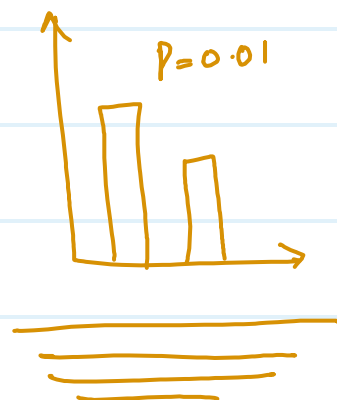
age

Female

Male

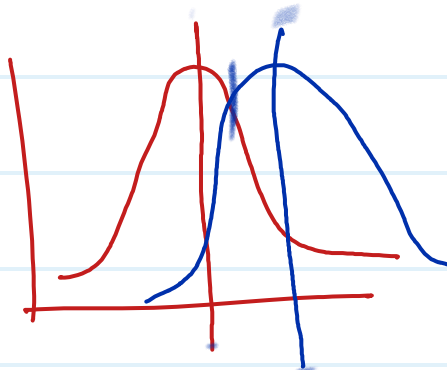


Average  
Variation dispersion



X

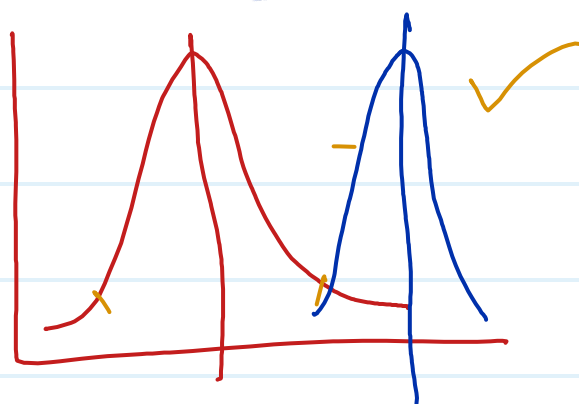
Not significant  
difference.



95% 5%

$$\alpha = \boxed{0.05}$$

P = ?



$P \leq 0.05$  ✓ different  
 $P > 0.05$  ✓  $\alpha$  difference

