21-06-2025

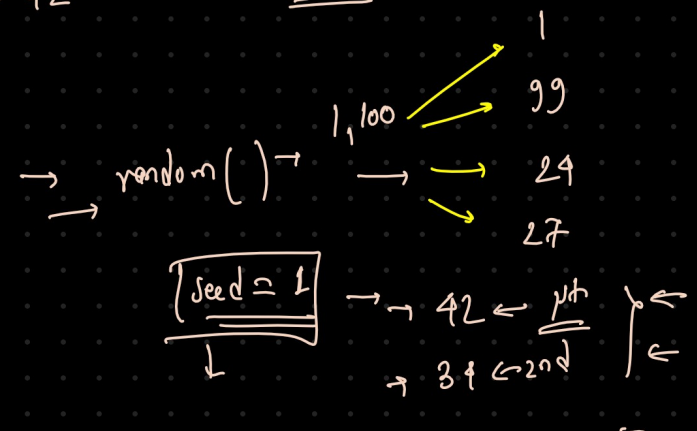
Agenda -

→ Data Visualization

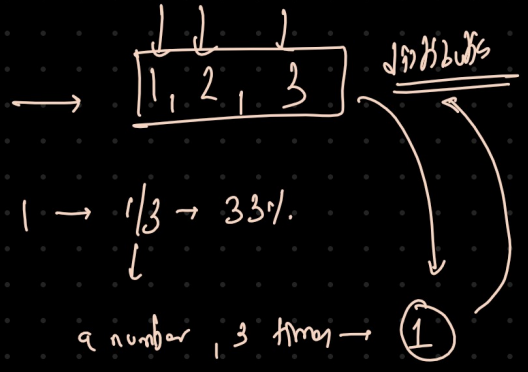
random_state = 1, 42

seed = 42

random



→ seed 2)



1000

dice - random

roll dice

1 → 6

Product

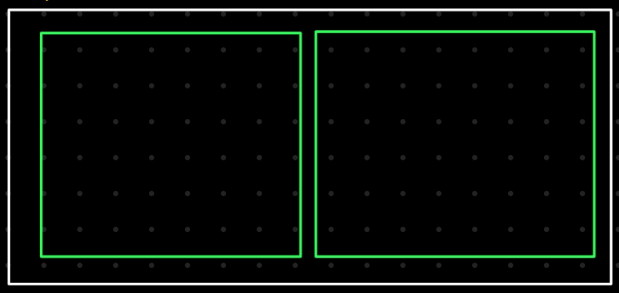
Quality ↑ Revenue ↑ → X

→ 1$, 1M

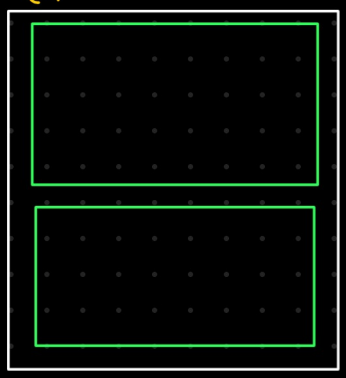
→ 300$

2 -plot →

(1) row = 1 col = 2



(2) row = 2 col = 1



nrows=1, ncols=4
ax[0]...ax[3]

→ plt.figure → creates a canvas

→ sns.histplot() → histogram, current active matplotlib fig

→ plt.

matplotlib

Seaborn

numpy

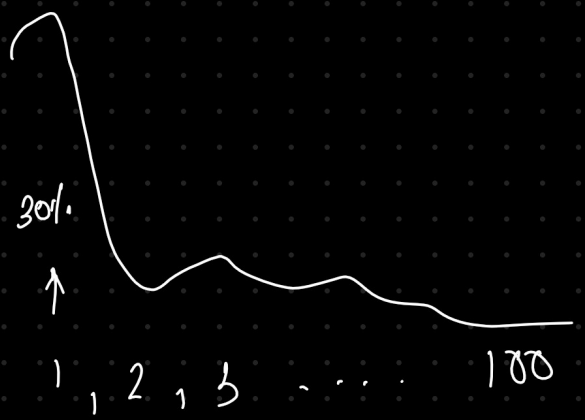
pandas

KDE → Kernel Density Estimation

1 — 100

number	count
1 →	30
2 →	20
3 →	5
4 →	1
6 →	1
7 →	1
8 →	0
99 →	1
100 →	1

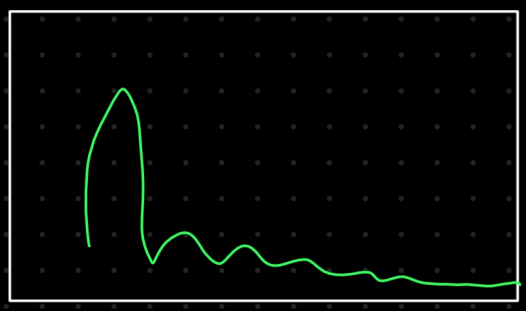
adds upto 100

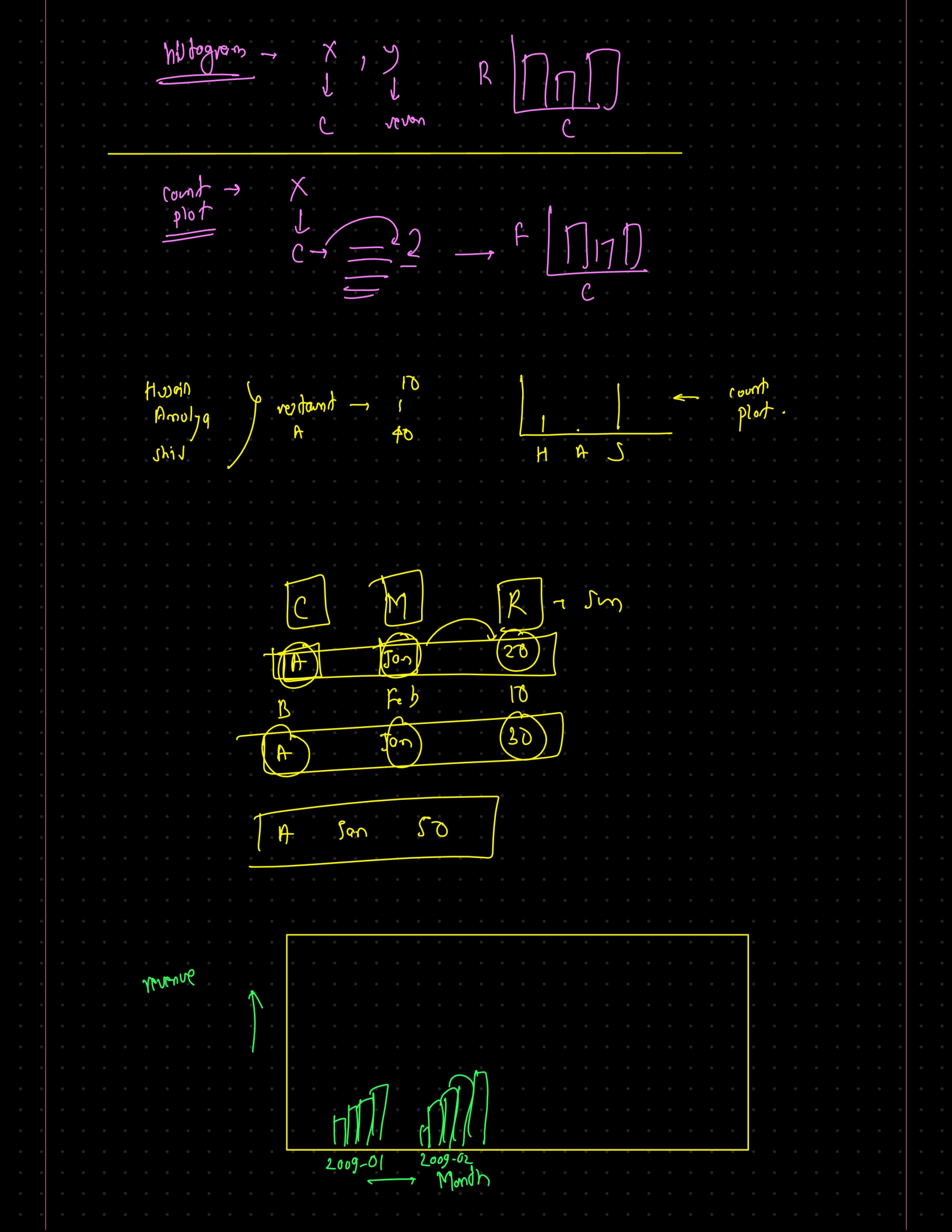


random → start

probability of getting Random(x)

x = 0 → P1
x = 1 → P2
x = 2 → P3
⋮
x = 100 → P101

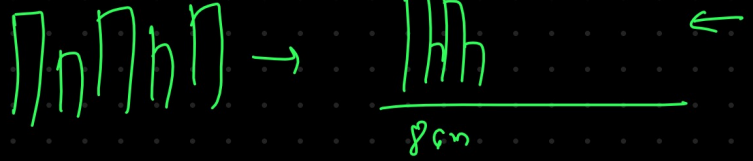


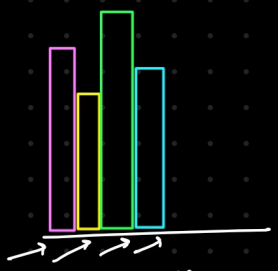

Histogram →
X
Y
C
revenue
R
C
count plot →
X
C
F
C
Human Analogy
restaurant A
10
1
40
count plot.
H A S
C
M
R
Sum
A
Jan
20
B
Feb
10
A
Jan
30
A San 50
revenue
2009-01
2009-02
Month

Fraction apps (health apps)

battery health

stop



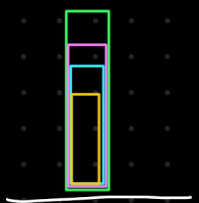


→ grouped bar plot

2009-12

↑

→ stacked bar plot



2009-12 → →

Month	Country	Revenue
2020-01	UK	10000
2020-01	Germany	8000
2020-02	UK	11000
2020-02	France	9000

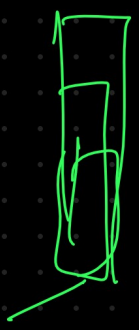
↓ index → ↓ columns → ↓ value

pivot(index = 'month', columns = 'candy', values = 'Revenue')

Month	France	Germany	UK
2020-01	NAN	8000	10000
2020-02	9000	NAN	11000
2020-03	7000	NAN	NAN

→ filling(0)

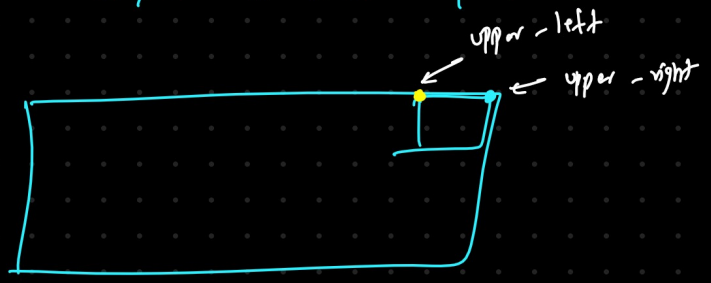
Month	France	Germany	UK
2020-01	0	→ 8000	→ 10000
2020-02	9000	0	11000
2020-03	7000	0	0



relative to axes

$x = 1.05$ → Just a bit right to the plot boundary

$y = 1$ → Right to the top of the axes



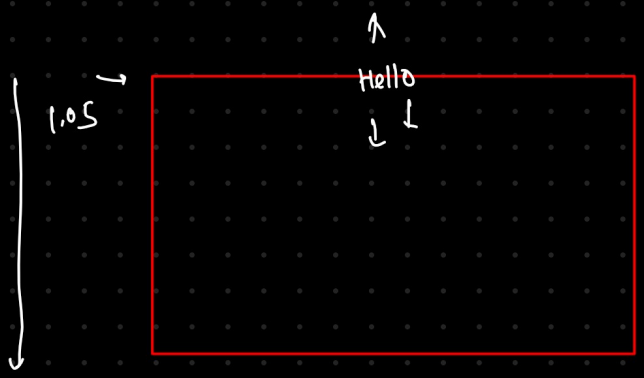
Quantity (1) | Price (2) | Revenue (3)

→

(1)-(2) (2)-(3) ~~(3)-(3)~~

(1)-(3) (2)-(1) (3)-(2)

~~(1)-(1)~~ ~~(2)-(2)~~ (3)-(1)



Height → weight

150 →

180 →

190 →

210 →

250 →

Height → weight → +ve

-ve

Car value → Total_years

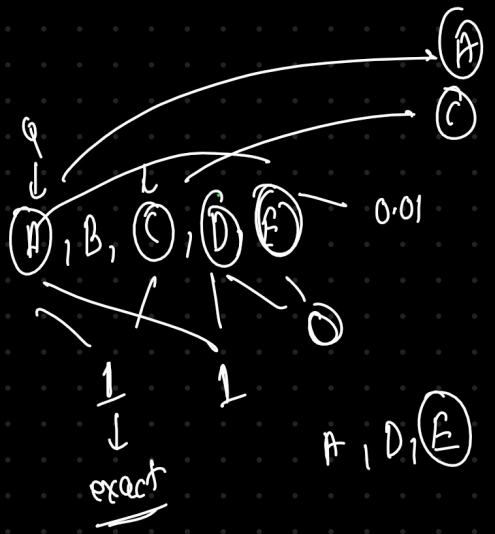
154 → 5

134 → 10

124 → 15

Height	Salary
120	200k
140	400k
180	100k
180	80k
200	10k

Height $\neq\neq$ 0 $\neq\neq$ Salary



↔ MC

↓

derive complex formula