

Graphs for Analysis

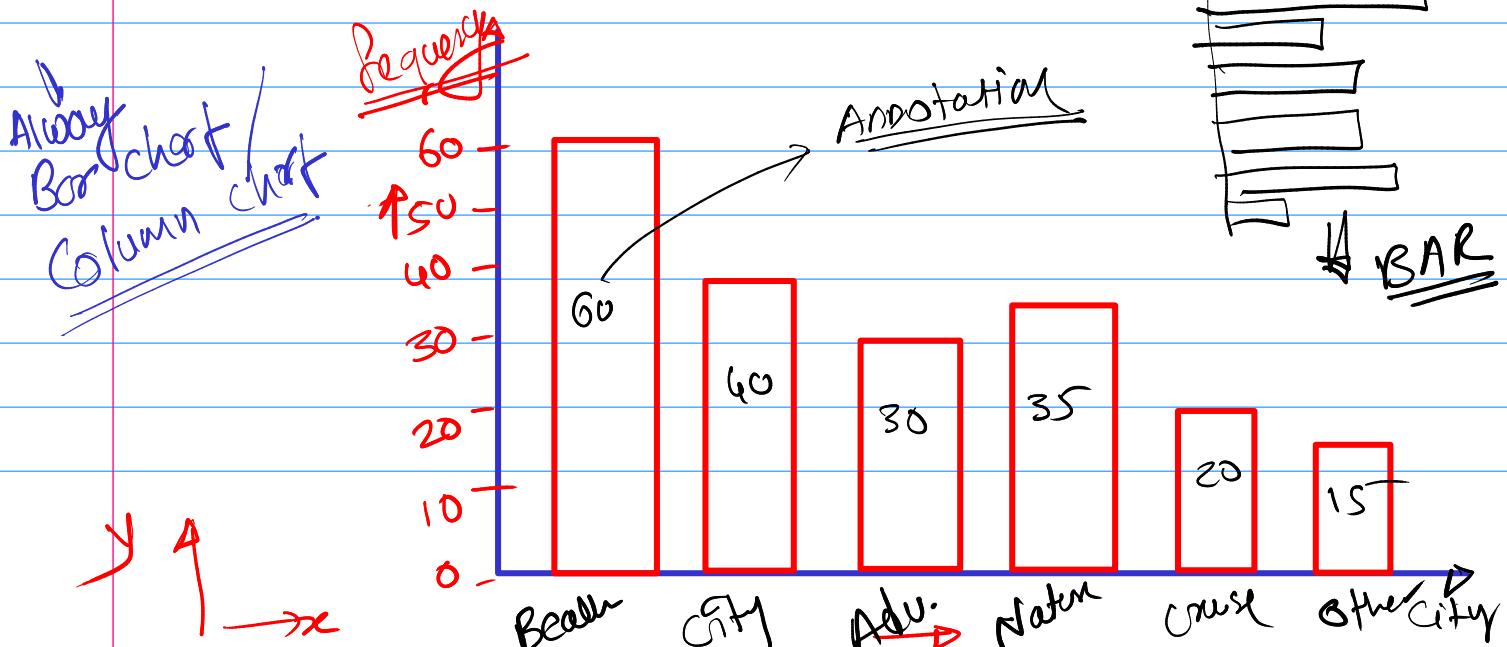
- Univariate (single feature)
- Bivariate (two features)
- Multivariate. (more than two)

Univariate \Rightarrow single feature.

~~Categorical~~ A list of 200 people Vacation Survey.

Type of Vacation.	Frequency = (Count)
Beach	60
City	40
Adventure	30
Nature	35
Cruise	20
Other	15

← Frequency distribution Table.
divide



Relative Frequency (for percentage)

Vacation

freq relative freq.

Beach	60	$\frac{60}{200} \times 100 = 30\%$
city	40	20%
Adv.	30	15%
Nature	35	17.5%
cruise	20	10%
other	15	7.5%

$$\frac{60}{200} \times 100 = 30\%$$

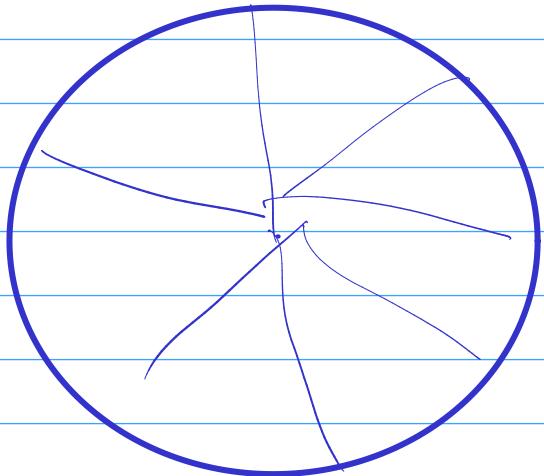
20%

15%

17.5%

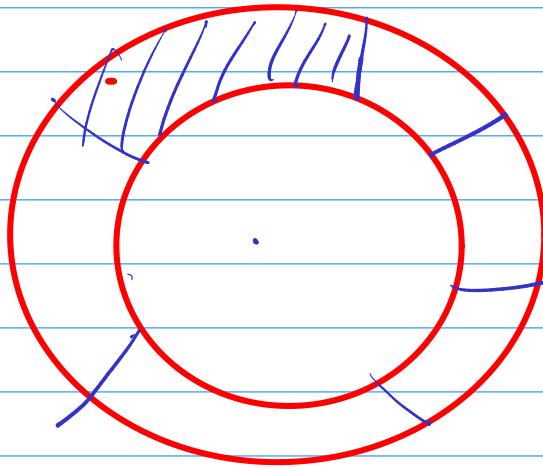
10%

7.5%



Pie chart

Donut chart



Cumulative Frequency (adding the old no.)

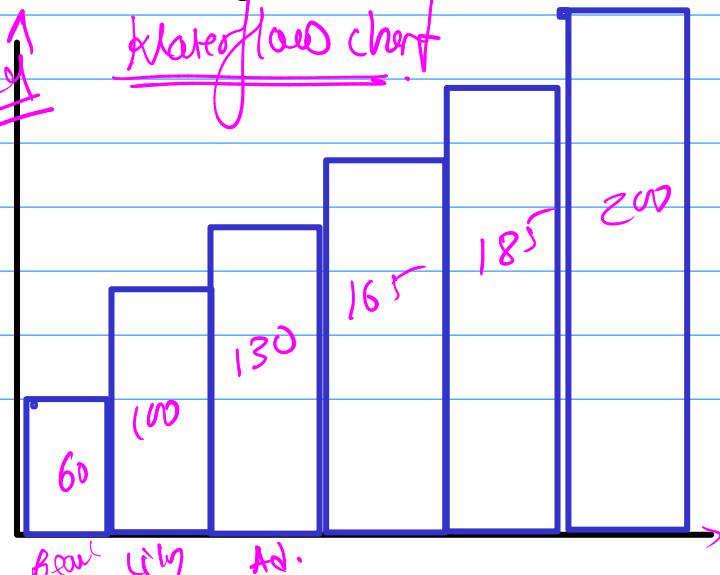
Vacation

freq. cumulative freq

Beach	60	60
city	40	100
Adv.	30	130
Nature	35	165
cruise	20	185
other	15	200

freq

Waterfall chart



Numerical feature

Age → feature Engg.

17
10
9
4.
=
57
80

Numerical

Age-group

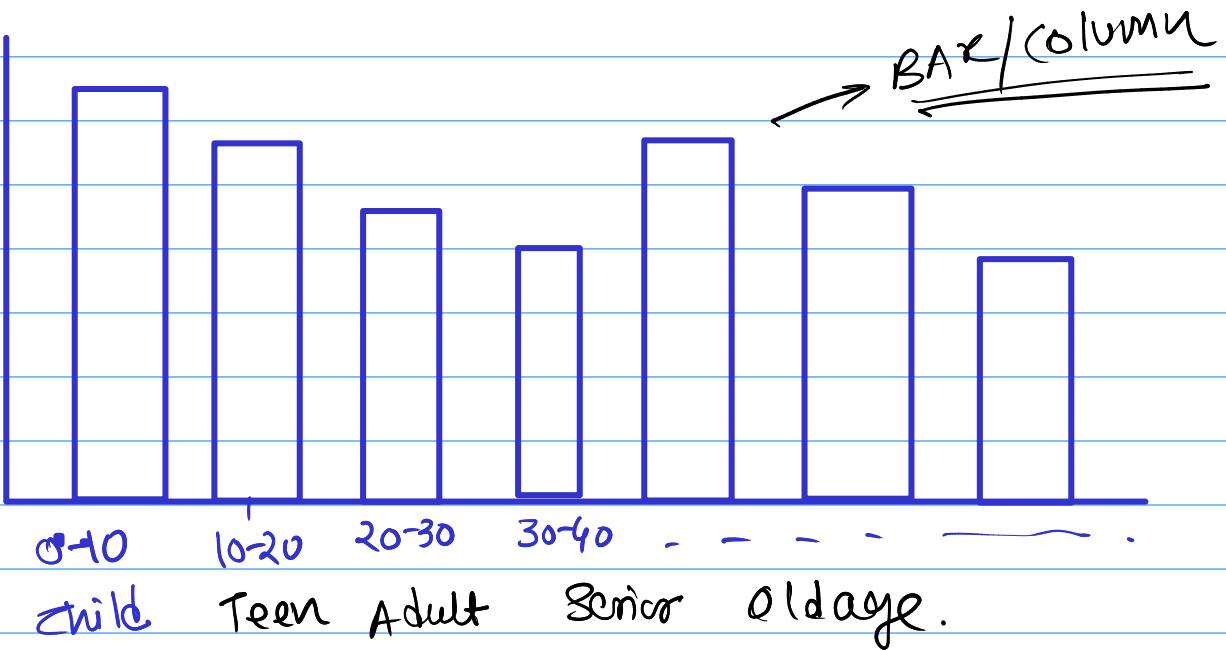
freq

0 - 10
10 - 20
20 - 30
30 - 40
40 - 50
50 - 60
60 - 70
70 - 80

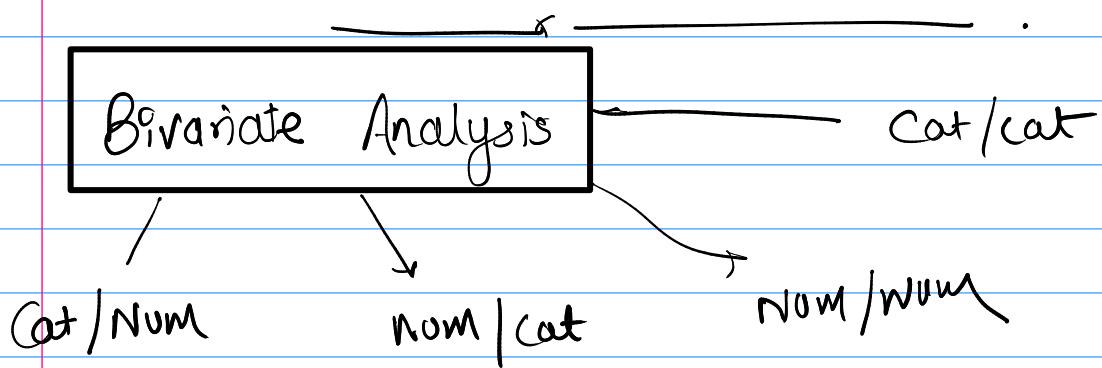
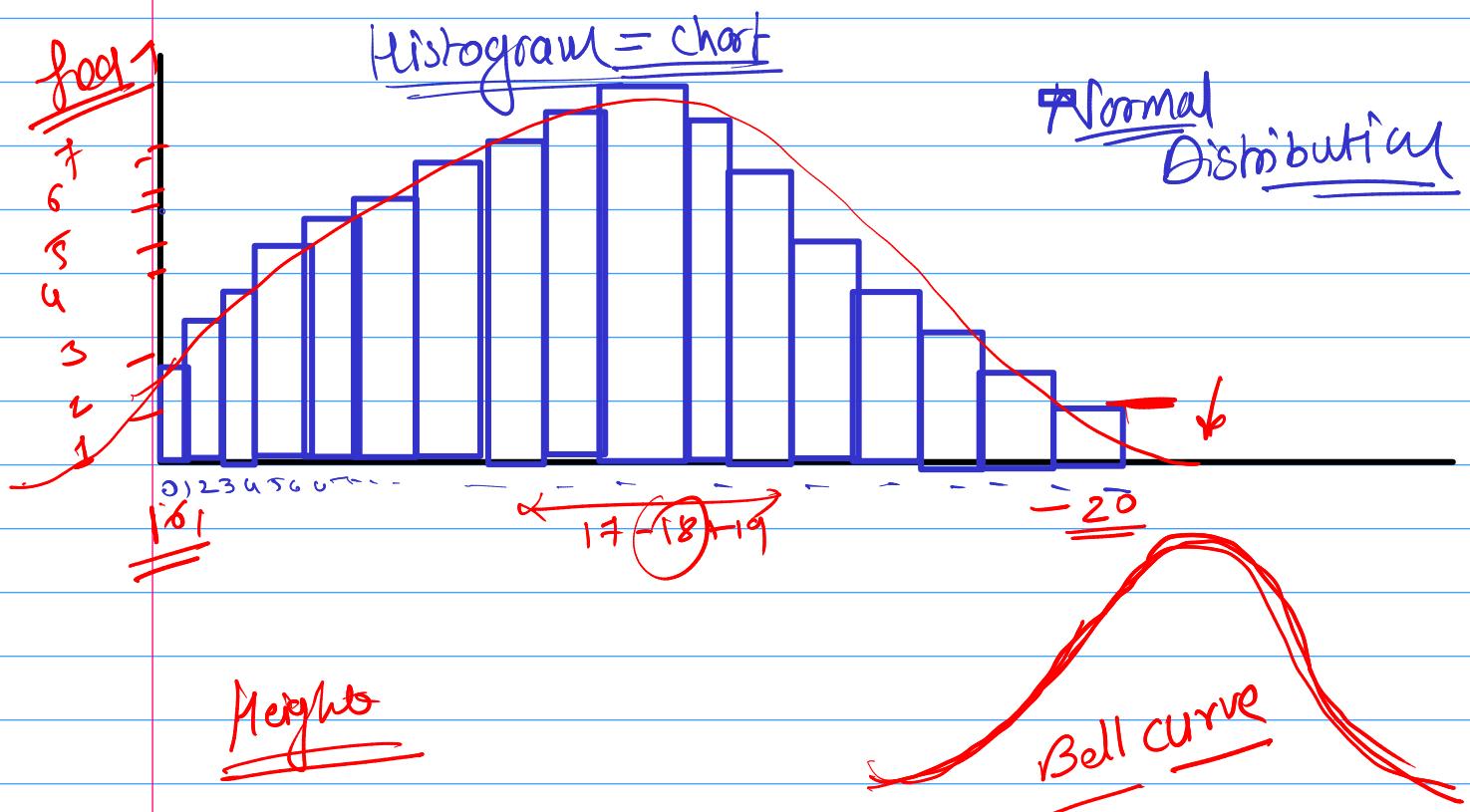
Categorical.

Age-group

Child (0-17)
Teen (18-25)
Adult (25-40)
Senior (40-60)
Old Age (60+)



Distribution of Numerical Feature.



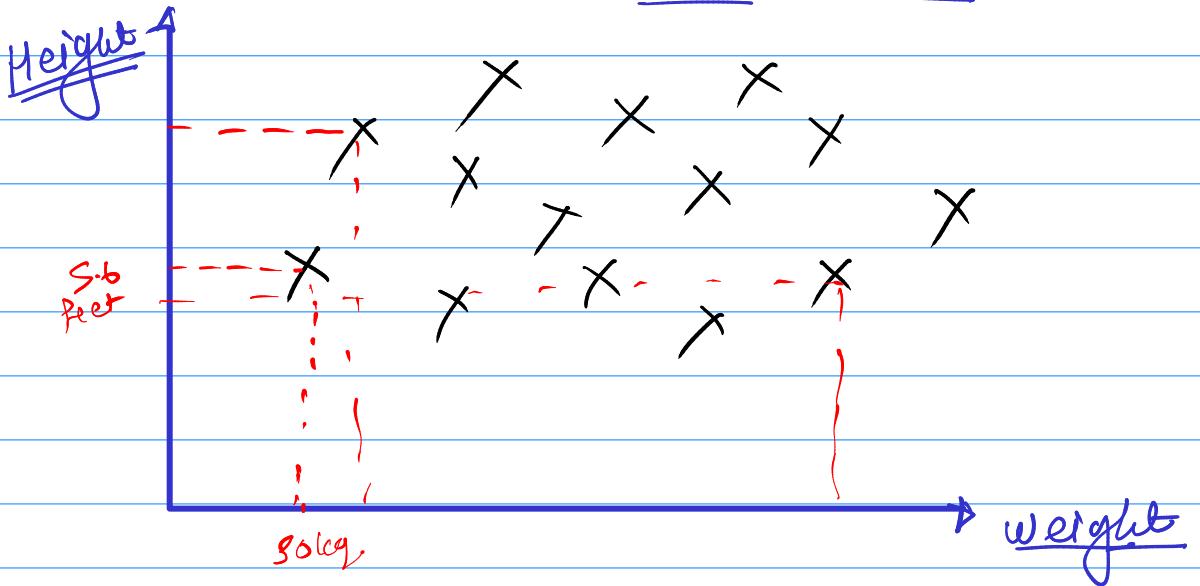
cat & cat

Gender	Class	BD College 300 student.
Male Female	1 st year 2 nd year 3 rd year.	

Contingency Table / Cross Tab = Cat & Cat

	1st year	2nd year	3rd year.
Male	30	85	37
Female	75	90	86

Numerical & Numerical \Rightarrow Scatter plot



Cat & Num or Num & Cat

Cross Tab / Contingency Table

	<u>Age group</u>	Teen	Adult	Senior	Old age
<u>Gender</u>	Male	70	31	90	23
	Female	21	41	87	54

