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Learnbay

Data Visualization :-

→**Visual presentation of large data is easy to understand.**

→**Concise and effective communication.**

Take the example of sales figure per year…

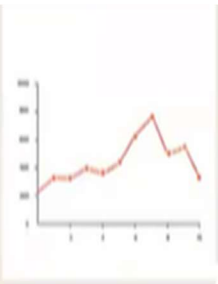
Year	Sales
1990	109
1991	105
1992	110
1993	115
1994	102
1995	118
1996	116
1997	125
1998	140
1999	160
2000	152
2001	156
2002	158
2003	159
2004	159
2005	162

Year	Sales
2006	165
2007	165
2008	162
2009	168
2010	169
2011	170
2012	173
2013	176
2014	179
2015	185
2016	188
2017	190
2018	188
2019	189
2020	190


Sales
200
180
160
140
120
100
80
60
40
20
0
SALES
1985
1990
1995
2000
2005
2010
2015
2020
2025
YEAR

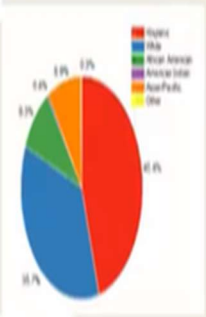
Line Chart.

A line chart is, as one can imagine, a line or multiple lines showing how single, or multiple variables develop over time.



Pie Chart.

A pie chart is a circular graph divided into slices. The larger a slice is the bigger portion of the total quantity it represents.

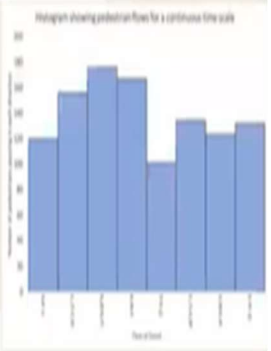


Bar Graph.

A bar chart or bar graph is a chart or graph that presents categorical data with rectangular bars with heights or lengths proportional to the values that they represent. The bars can be plotted vertically or horizontally. Can be of one variable or many variable.

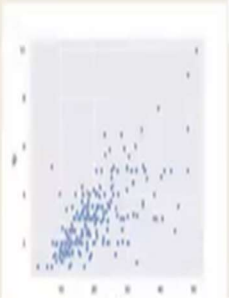
Histogram

A series of bins showing us the frequency of observations of a given variable.

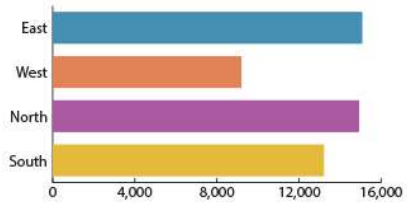


Scatter Plots

A scatter plot is a great indicator that allows us to see whether there is a pattern to be found between two variables. E.g. : Positive or negative relationship.

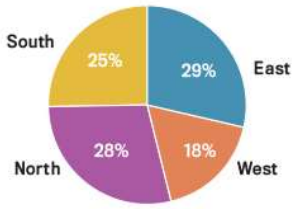


USE A BAR CHART



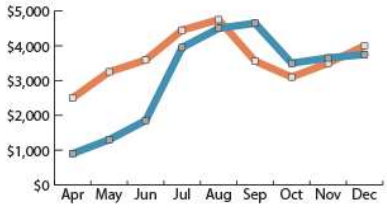
WHEN comparing single or aggregate values (not percentages) between groups or demonstrating comparisons across items (for example, regions, products, or services). Example: sales revenue by region or department

USE A PIE CHART



WHEN presenting the contribution of multiple groups to a total or the relation of a slice to the whole of the pie. Example: percentage of total sales revenue by region

USE A TIME SERIES GRAPH



WHEN comparing a key performance indicator's performance against its target value over time; line charts are often best for comparing series. Example: direct materials actual cost vs. budget for each quarter

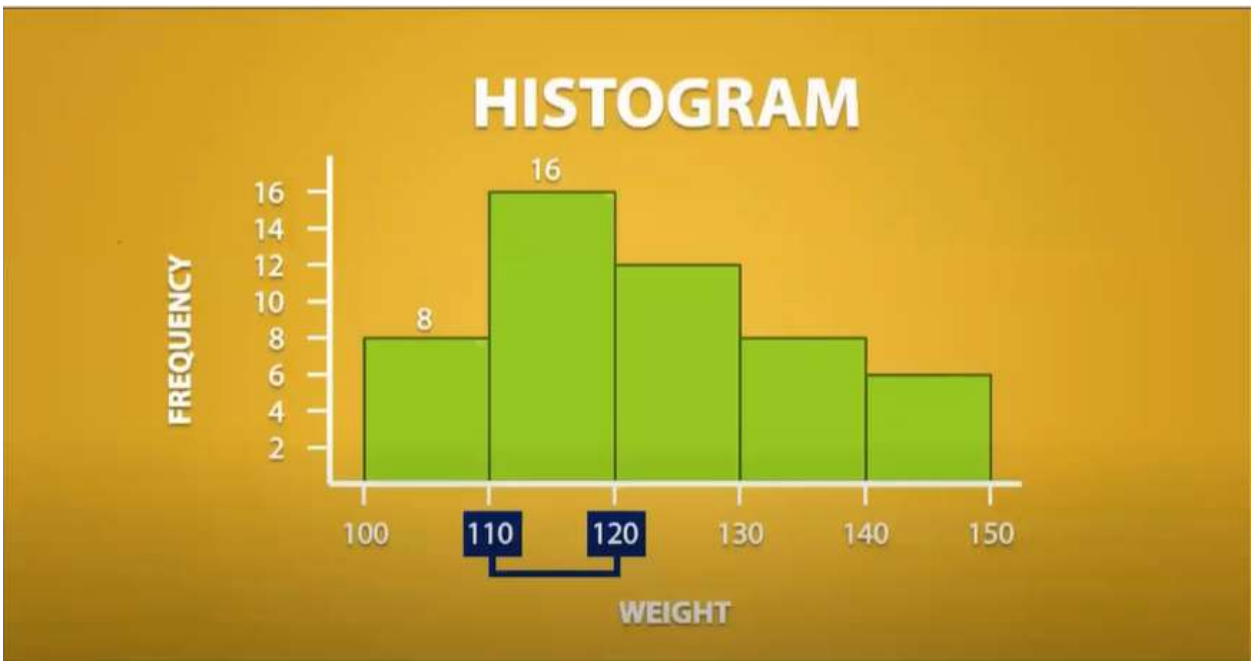
Some tips :-

- **Line chart:- corona progress, share market..**
- **Difference in Bar and histogram: -**

- **(1)Histogram for one category bar for various.**

- **(2)Bar and column are for categorical dataset , can use for discrete, ordinal also and**

→Scatterplot: - Co-relation between two variables . X increases y increases … its + ve relation. X increases y decreases … its –ve relation.

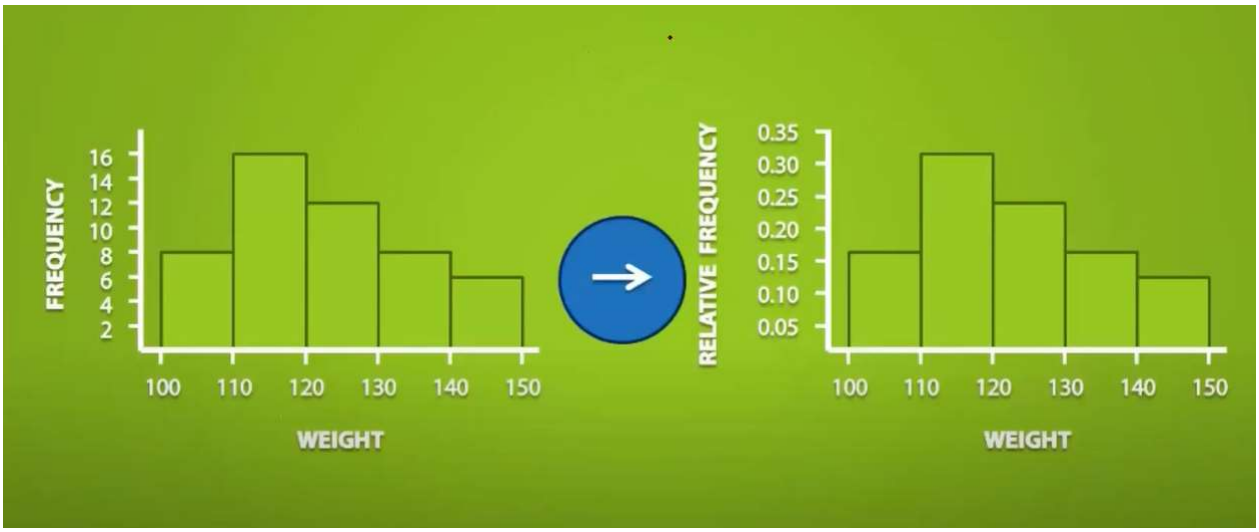


FREQUENCY DISTRIBUTION

WEIGHT		FREQUENCY
100 – 110	←	8
110 – 120	←	16
120 – 130	←	12
130 – 140	←	8
140 – 150	←	6

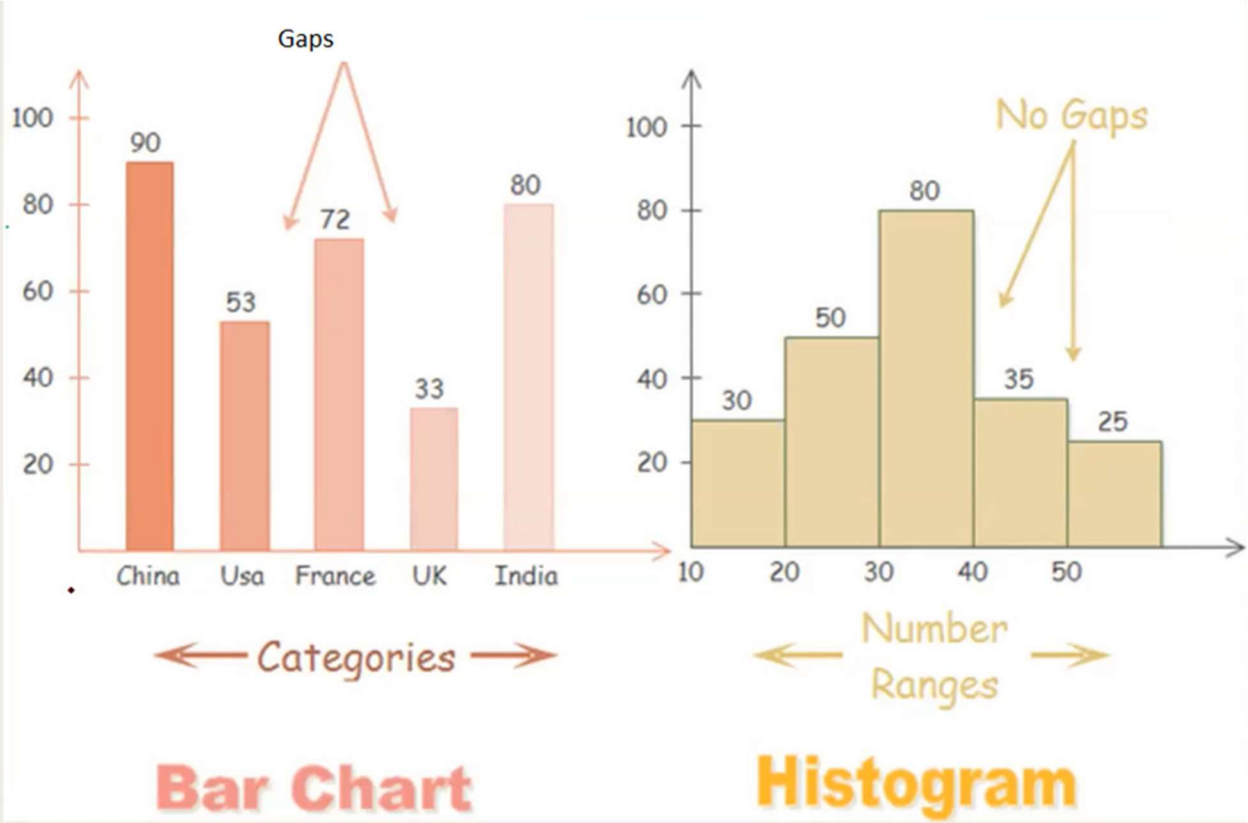
RELATIVE FREQUENCY

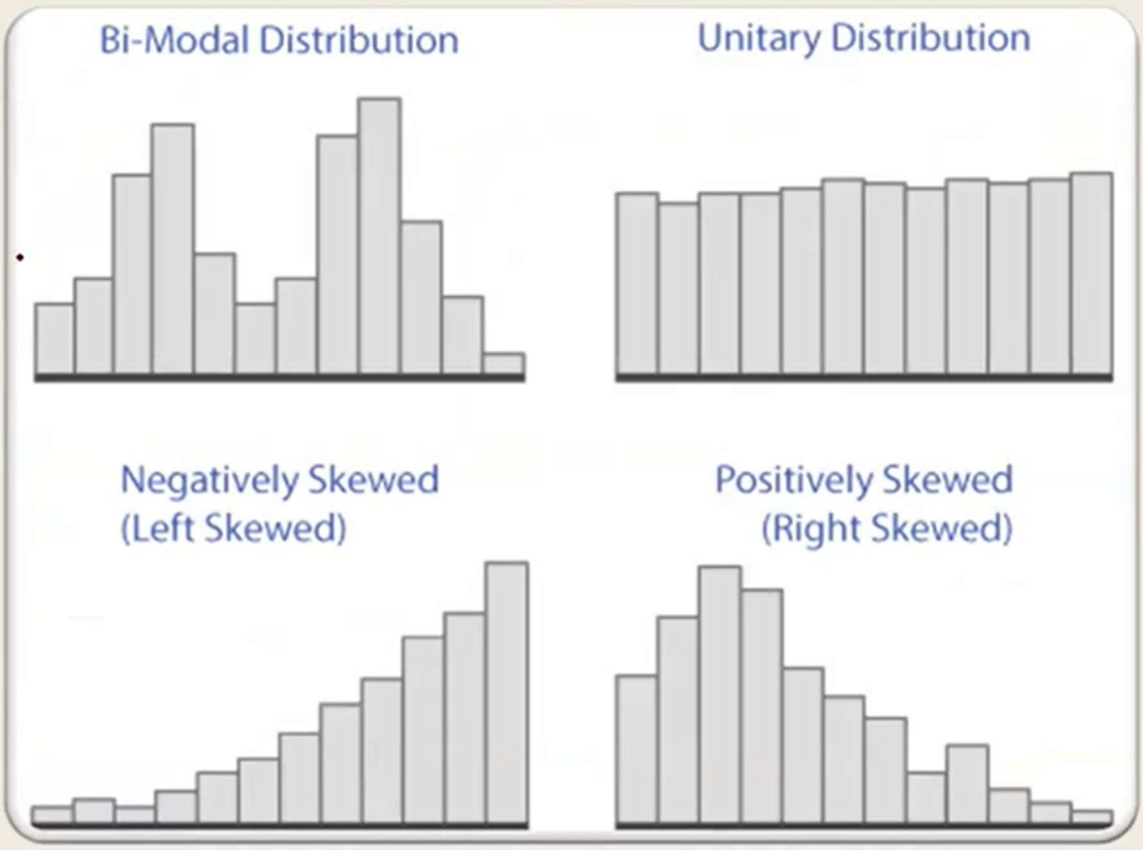
WEIGHT	FREQUENCY	CALCULATIONS	RELATIVE FREQUENCY
100 – 110	8	8 ÷ 50 =	0.16
110 – 120	16	16 ÷ 50 =	0.32
120 – 130	12	12 ÷ 50 =	0.24
130 – 140	8	8 ÷ 50 =	0.16
140 – 150	+ 6	6 ÷ 50 =	+ 0.12
	SUM = 50		SUM = 1



Different Charts and their use:-

Types of charts	
Name	Description
Line chart	Used for time series data
Bar chart	Used to compare different categories
Pie chart	Used to evaluate the share of each category
Histogram	Used for continuous data and reveals the distribution
Scatterplot	Used to evaluate relation between two variables





Different plots of Histogram