جامعة الانبار

1987   1408

UNIVERSITY OF ANBAR

الكلية : كلية طب العام

الفرع : طب الاسرة والمجتمع

المرحلة : الثالثة

أستاذ المادة : د بديعه ثامر يحيى

اسم المادة باللغة العربية : الاحصاء الحياتي

اسم المادة باللغة الانكليزيه : Biostatistics

اسم المحاضرة الرابعه باللغة العربيه : عرض البيانات

اسم المحاضرة الرابعه باللغة الانكليزية : Presentation of data
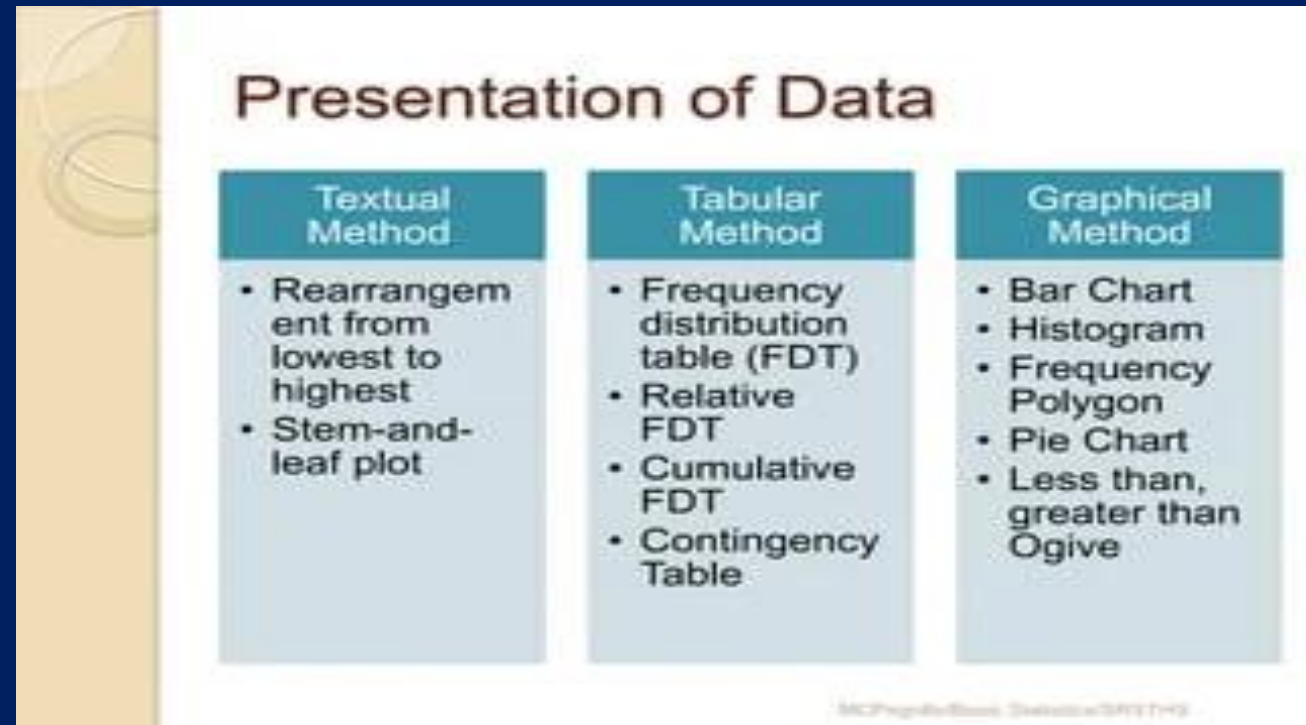
L4

Presentation of data

Presentation of data: method by which the data is organized and communicated information using a variety of tools such as tables graphs and diagram

There are generally three forms of presentation of data :

1- Textual descriptive presentation

2- Tabular presentation

3- Diagrammatic presentation

Presentation of Data

Textual Method	Tabular Method	Graphical Method
• Rearrangement from lowest to highest • Stem-and-leaf plot	• Frequency distribution table (FDT) • Relative FDT • Cumulative FDT • Contingency Table	• Bar Chart • Histogram • Frequency Polygon • Pie Chart • Less than, greater than Ogive

Textual of descriptive data presentation

Textual presentation uses statements with numerals or numbers to describe data.

* The main aims of textual presentation are to focus attention to some important data and to supplement tabular presentation.

• The disadvantage, especially if it is too long, is that it is boring to read and the reader may not even be able to grasp the quantitative relationships of the data presented.

• The reader may even skip some statements

Textual Presentation of Data

Example. You are asked to present the performance of your section in the Statistics test. The following are the test scores of your class:

34	42	20	50	17	9	34	43
50	18	35	43	50	23	23	35
37	38	38	39	39	38	38	39
24	29	25	26	28	27	44	44
49	48	45	45	45	46	45	46

- Textual or Descriptive Presentation of Data is one of the most common forms of data presentation.

- In this, data is a part of the text of the study or a part of the description of the subject matter of the study. It is usually preferred when the quantity of data is not very large.

- **For example,** there are 50 students in a class, among them 30 are boys and 20 are girls. This is the data that can be understood with the help of a simple text and no table or pie diagram is required for the same.

Tabular presentation

- **Purpose of a table.**

The purpose is to facilitate the study and interpretation, the making of inferences and implications of the relationships of statistical data

* Table construction for data presentation is part of analysis because the data are separated and grouped according to class or category

Characteristics of Table

:1- serial number

2- Title: should have a precise title, simple , self – explanatory , refers to place time and person

3- Left column have different items on which the information have been collected

4-Caption : the heading column is indicting different categories ,and different period

5- box head : put the title in the upper middle part of Table.

6- Body of Table : all numerical data put in the body of the Table

7- Foot note : below the Table that indicates the source of data , any remarks or abbreviations .

8- Total should be shown

Table Number: ....
Title: ....
(Head Note, if any)

Stub (Row Heading)	Caption (Column Heading)				Total (Rows)
	Sub-head		Sub-head		
	Column-head	Column-head	Column-head	Column-head	
Stub Entries (Row Entries)			Body		
Total Columns					

Source Note:
Footnote:

- The most important advantage of Table   that it organizes data for further statistical treatment and decision-making

- Classification used is of four kinds

1- Qualitative

2- Quantitative

3- Temporal

4- Spatial

Qualitative Classification

- When classification is done according to attributes such as social , physical status , nationality ..etc

- Example Qualitative Table :

sex	Location	Location	
	Rural	Urban	total
Male	79	90	169
Female	59	80	139

Table 1: literacy in India by sex and location

Quantitative classification

- In quantitative classification , the data are classified as the basis of characteristics for example age , sex , height …etc

Patient	f	M or x	fm or fx	cf
1-2	22	1.5	33	22
3-4	16	3.5	56	38
5-6	2	5.5	11	40
7-8	2	7.5	15	42
9-10	0	9.5	0	42
11-12	6	11.5	69	48
13-14	2	13.5	27	50
Total	50		$\sum fm = 211$	

Temporal classification :

- In this classification time become classify variable and data are categorized according to time (hours , days , month , year)

Year	Sale (Units)
2015	25,000
2016	46,000
2017	70,000
2018	90,000
2019	1,00,000

•Spatial classification

• When classification is done on the basis of place, it is called spatial classification. The place may be (village, town , block, district , state country, etc)

Region	Very High Density Urban	High Density Urban	Medium Density Urban	Low Density Urban	Rural	Remote
US	0.007%	0.082%	0.357%	0.779%	32.544%	66.23%
Canada	0.003%	0.015%	0.026%	0.047%	5.319%	94.59%
Western Europe	0.19%	0.36%	0.92%	1.63%	28.76%	68.14%
Easter Europe	0.010%	0.026%	0.068%	0.189%	5.319%	94.388%

•Diagrammatic presentation

- Diagrammatic presentation of data translates quite effective the highly abstract idea contained in numbers into more concrete and easily comprehensive

- There are 3 king

1- geometric diagram

2- frequency diagram

3-Arithmatic line graph

Note : (Geometry = Bar and pie diagram)

•Bar diagram

• **simple bar diagram** : bar diagram comprise a group of equispaced and equiwidth rectangular bar for each class or category of data . height or length of the bar reads the magnitude of data
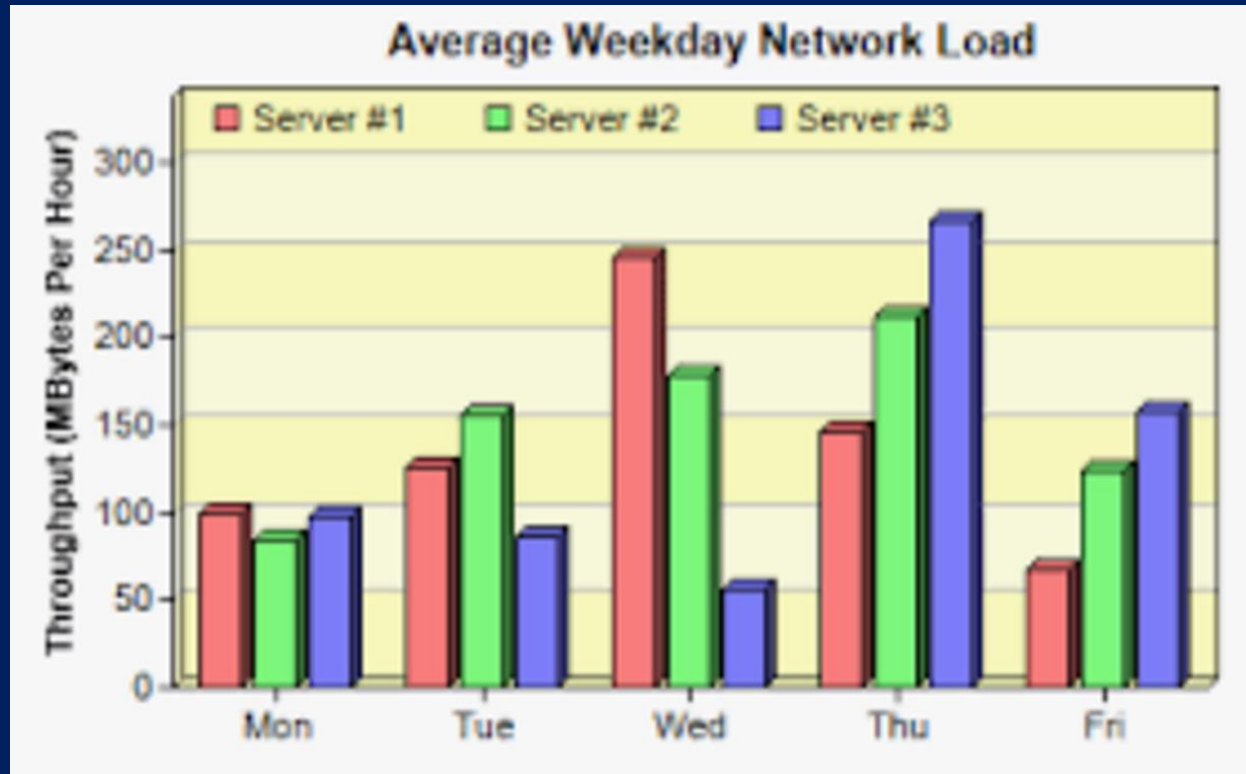
• Bars should have same width, there are

spaces between columns .

It's used for percentage of

discontinuous data (discrete data).

• Distribution of a sample

of Anbar University

Colleges students in 2017

النسبة المئوية لعينات الطلبة في الاقسام الداخلية
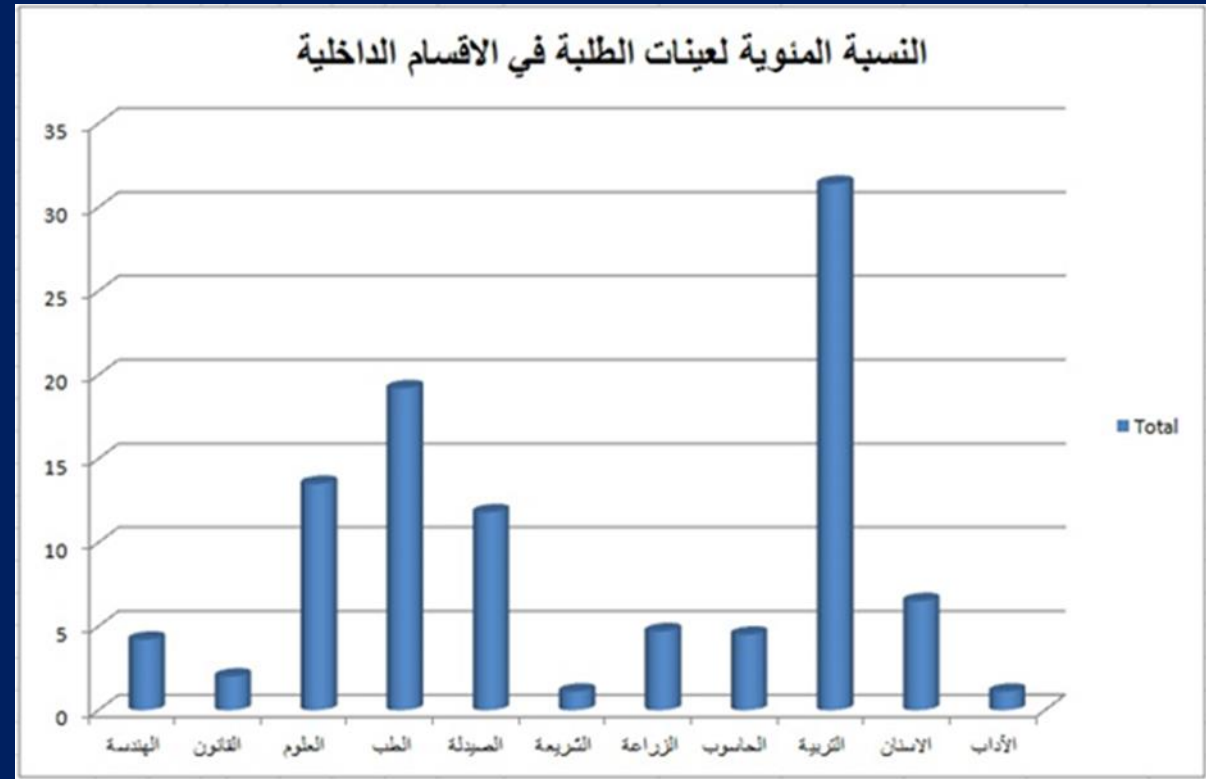
- Multiple Bar diagram

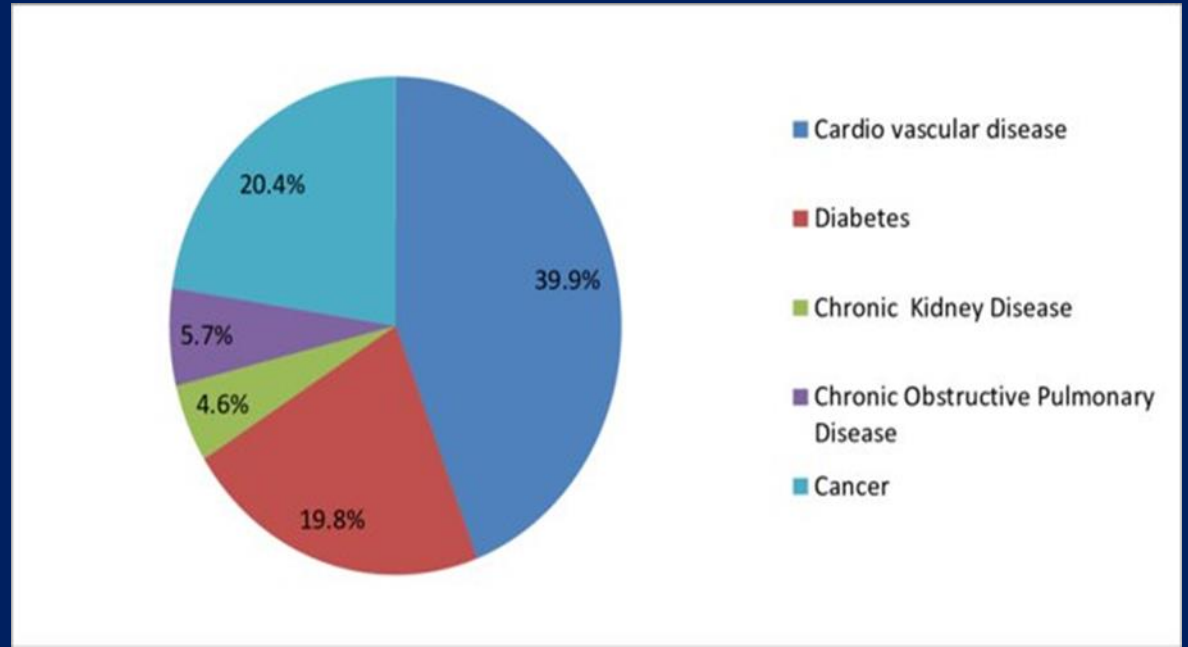 are used for comparing two or more set of data

•Pie Diagram

It is called a circle graph,

that represents the parts of

a whole. Each 'section' or 'slice

of the pie is a data percentage.

 From biggest to smallest,

segments are arranged

in a clockwise formation.

This way, the pie chart features

 easy-to-compare subjects, easy-to-understand way

- frequency diagram: Histogram and frequency polygon:

- **Histogram**:It displays a frequency distribution graphically in the form of a histogram, which is a special type of bar graph.

- When we construct a histogram the values of the variable under consideration are represented by the horizontal axis, while the vertical axis has as its scale the frequency of occurrence.

- Above each class interval on the horizontal axis a rectangular bar, or cell, as it is sometimes called, is erected so that the height corresponds to the respective frequency when the class intervals are of equal width.

- The cells of a histogram must be joined and, to accomplish this, we must take into account the true boundaries of the class intervals to prevent gaps from occurring between the cells of our graph.

- Ex : frequency distribution of age

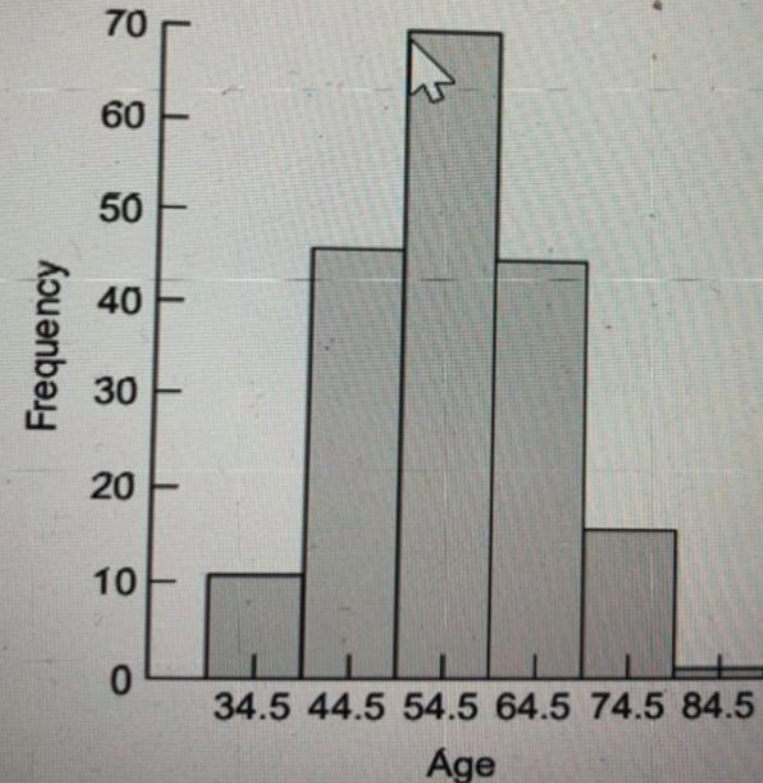| Class interval	f
29.5 – 39.5	11
39.6 – 49.4	46
49.5 – 59.5	70
59.6 – 69.4	45
69.5 – 79.5	16
79.6 – 89.4	1
Total	189

FIGURE 2.3.2   Histogram of ages of
189 subjects from Table 2.3.1.

• histogram: The frequency histogram is a very effective graphical and easily interpreted method for summarizing data provides information about:

  o * the average (mean) of the data

  o *the variation present in the data

  o *the pattern of variation

• * whether the process is within specifications
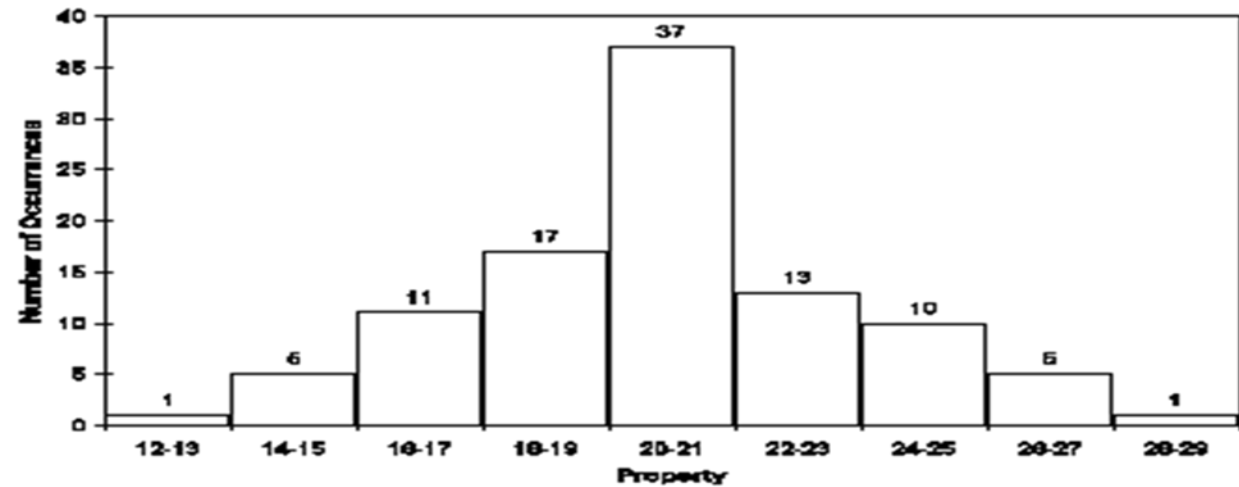
• Part of the power of histograms is that they allow us to analyze extremely large data sets by reducing them to a single graph that can show primary, secondary and tertiary peaks in data as well as give a visual representation of the statistical significance of those peaks.

• the underlying frequency distribution (shape) of a set of continuous data. This allows the inspection of the data for its underlying distribution (e.g., normal distribution), outliers, skewness-------

- **The Frequency Polygon** A frequency distribution can be
- portrayed graphically in yet another way by means of
- a frequency polygon which is a special kind of line graph.

- To draw a frequency polygon
- * we first place a dot above the midpoint of each
- class interval represented on the horizontal axis
- of a graph corresponds to the frequency of the relevant class
- interval.
- * Connecting the dots by straight lines produces
- the frequency polygon.

Scores: 1,1,2,2,2,2,2,3,3,3,3,4,4,5
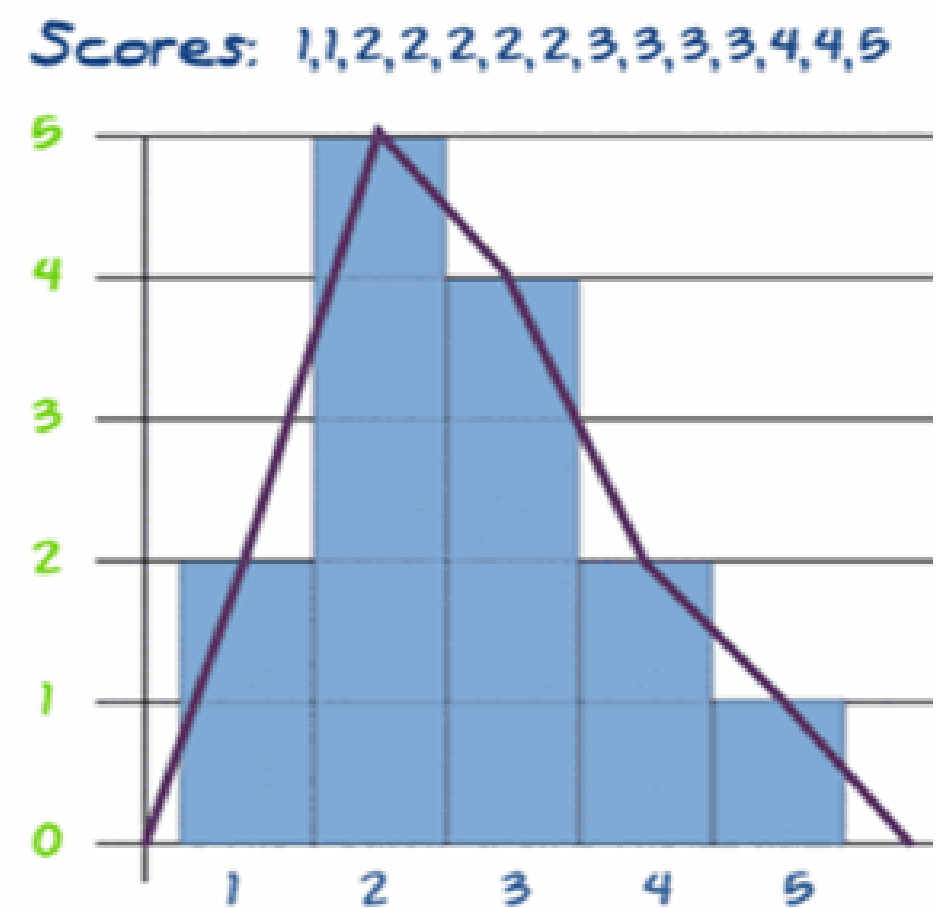
Note that the polygon is brought down to the horizontal axis at the ends at points that would be the midpoints if there were an additional cell at each end of the corresponding histogram.

- The total area under the frequency polygon is equal to the area under the histogram

- Arithmetic line graph :also called series graph , in this graph , time (day / week/ month / year etc) its plotted along x – axis and the value of variable (time series data) along y – axis