

UNIT - III

GRAPHICAL REPRESENTATION

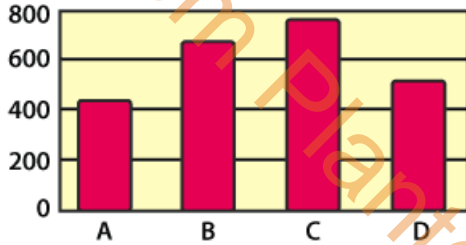
MEANING:

Graphical Representation is a way of analysing numerical data. It exhibits the relation between data, ideas, information and concepts in a diagram. It is easy to understand and it is one of the most important learning strategies. It always depends on the type of information in a particular domain. **There are different types of graphical representation. Some of them are as follows:**

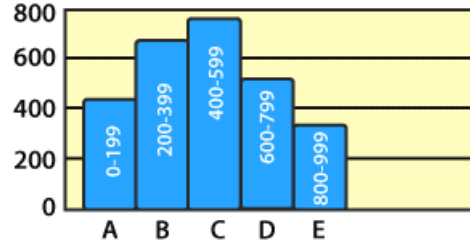
- **Line Graphs** – Line graph or the linear graph is used to display the continuous data and it is useful for predicting future events over time.
- **Bar Graphs** – Bar Graph is used to display the category of data and it compares the data using solid bars to represent the quantities.
- **Histograms** – The graph that uses bars to represent the frequency of numerical data that are organised into intervals. Since all the intervals are equal and continuous, all the bars have the same width.
- **Line Plot** – It shows the frequency of data on a given number line. ‘ x ‘ is placed above a number line each time when that data occurs again.
- **Frequency Table** – The table shows the number of pieces of data that falls within the given interval.
- **Circle Graph** – Also known as the pie chart that shows the relationships of the parts of the whole. The circle is considered with 100% and the categories occupied is represented with that specific percentage like 15%, 56%, etc.
- **Stem and Leaf Plot** – In the stem and leaf plot, the data are organised from least value to the greatest value. The digits of the least place values from the leaves and the next place value digit forms the stems.
- **Box and Whisker Plot** – The plot diagram summarises the data by dividing into four parts. Box and whisker show the range (spread) and the middle (median) of the data.

TYPES OF GRAPHICAL REPRESENTATION

Bar Graphs



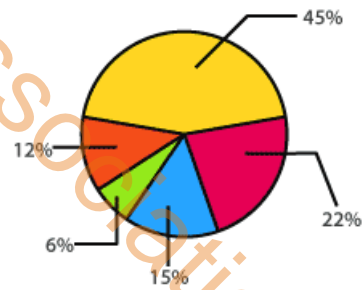
Histograms



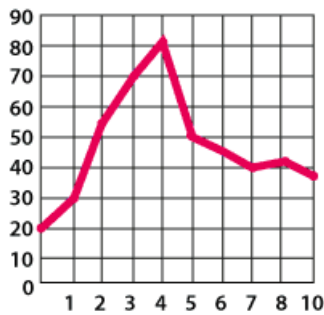
Frequency Table

Rulers of France		
Reign (Years)	Tally	Frequency
1-15		18
16-30		11
31-45		6
46-60		4
61-75		1

Circle Graph



Line Graphs

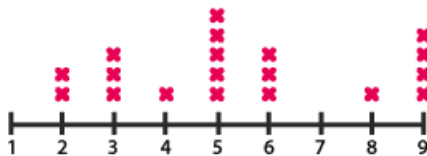


Stem and Leaf Plot

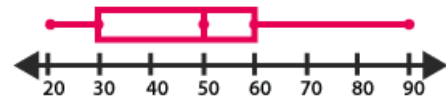
Stem	Leaf
0	1, 1, 2, 2, 3, 4, 4, 4, 4, 5, 8
1	0, 0, 0, 1, 1, 3, 7, 9
2	5, 5, 7, 7, 8, 8, 9, 9
3	0, 1, 1, 1, 2, 2, 2, 4, 5
4	0, 4, 8, 9
5	2, 6, 7, 7, 8
6	3, 6

Key : 6 | 3 = 63 Year

Line Plot



Box and Whisker Plot



General Rules for Graphical Representation of Data

There are certain rules to effectively present the information in the graphical representation. They are:

- **Suitable Title:** Make sure that the appropriate title is given to the graph which indicates the subject of the presentation.
- **Measurement Unit:** Mention the measurement unit in the graph.
- **Proper Scale:** To represent the data in an accurate manner, choose a proper scale.
- **Index:** Index the appropriate colours, shades, lines, and design in the graphs for better understanding.
- **Data Sources:** Include the source of information wherever it is necessary at the bottom of the graph.
- **Keep it Simple:** Construct a graph in an easy way that everyone can understand.
- **Neat:** Choose the correct size, fonts, colours etc., in such a way that the graph should be a visual aid for the presentation of information.

ADVANTAGES OF GRAPHICAL REPRESENTATION OF DATA:

Graphical representation of reports enjoys various advantages which are as follows:

1. **Acceptability:** Such a report is acceptable to busy persons because it easily highlights the theme of the report. This helps to avoid wastage of time.
2. **Comparative Analysis:** Information can be compared in terms of graphical representation. Such comparative analysis helps for quick understanding and attention.
3. **Less cost:** Information if descriptive involves huge time to present properly. It involves more money to print the information but the graphical presentation can be made in a short but catchy view to make the report understandable. It obviously involves less cost.

4. **Decision Making:** Business executives can view the graphs at a glance and can make a decision very quickly which is hardly possible through the descriptive reports.
5. **Logical Ideas:** If tables, design, and graphs are used to represent information then a logical sequence is created to clear the idea of the audience.
6. **Helpful for less literate Audience:** Less literate or illiterate people can understand graphical representation easily because it does not involve going through line by line of any descriptive report.
7. **Less Effort and Time:** To present any table, design, image, or graphs require less effort and time. Furthermore, such a presentation makes a quick understanding of the information.
8. **Less Error and Mistakes:** Qualitative or informative or descriptive reports involve errors or mistakes. As graphical representations are exhibited through numerical figures, tables, or graphs, it usually involves less error and mistake.
9. **A complete Idea:** Such representation creates a clear and complete idea in the mind of the audience. Reading a hundred pages may not give any scope to make a decision. But an instant view or looking at a glance obviously makes an impression in the mind of the audience regarding the topic or subject.
10. **Use in the Notice Board:** Such representation can be hanged in the notice board to quickly raise the attention of employees in any organization.

DISADVANTAGES OF GRAPHICAL REPRESENTATION OF DATA:

The graphical representation of reports is not free from limitations. The following are the problems of graphical representation of data or reports:

1. **Costly:** Graphical representation of reports are costly because it involves images, colours, and paints. A combination of material with human efforts makes the graphical presentation expensive.
2. **More time:** Normal report involves less time to represent but graphical representation involves more time as it requires graphs and figures which are dependent on more time.

3. **Errors and Mistakes:** Since graphical representations are complex, there is each and every chance of errors and mistakes. This causes problems for a better understanding of general people.
4. **Lack of Secrecy:** Graphical representation makes the full presentation of information that may hamper the objective to keep something secret.
5. **Problems to select a suitable method:** Information can be presented through various graphical methods and ways. Which should be the suitable method is very hard to select.
6. **The problem of Understanding:** All may not be able to get the meaning of graphical representation because it involves various technical matters which are complex to general people.

Last, of all, it can be said that graphical representation does not provide proper information to general people.

