

Data Handling

Introduction

- In this chapter we shall learn how to make a given set of data easily understandable.
- By data, we mean a collection of numbers gathered to give some specific information. For example the number of runs scored in a cricket match, the number of pens in your table, etc .
- One of the major part of mathematics, deals with organising and analysing various data.
- It is also useful in other subjects like statistics, physics, economics, etc.

Representing data

- The major goal of this chapter is to learn ways of representing data in a coherent manner.
- We **can** do this by using a variety of techniques to be discussed now.
- First and foremost we can use simple tally table (shown below) to represent the frequency with which a particular event is occurring .

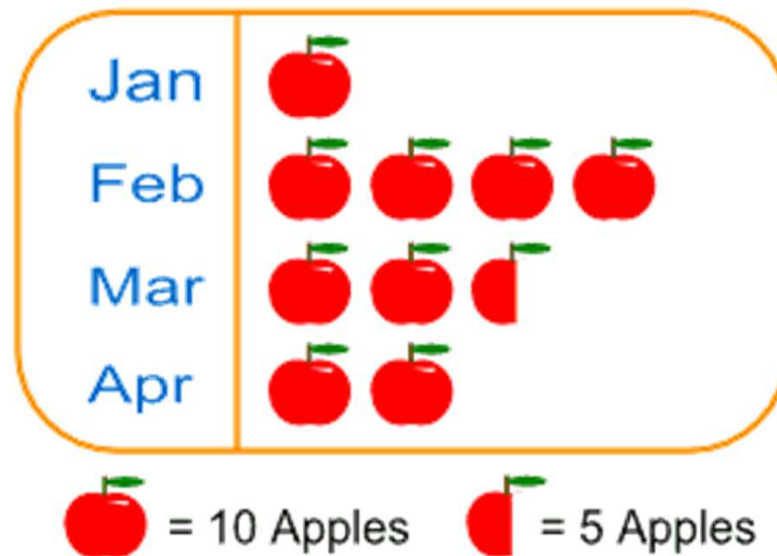
1		6	
2		7	
3		8	
4		9	
5	 	10	

Pictograph

- . We can use a pictograph to represent data.
- . A **pictograph** is nothing but representing a particular set of data using pictures of objects.
- . It is widely used in newspapers and other forms of media.

Pictograph

- For example, the pictograph depicted below shows the number of apples sold in Jan, Feb, Mar and Apr.

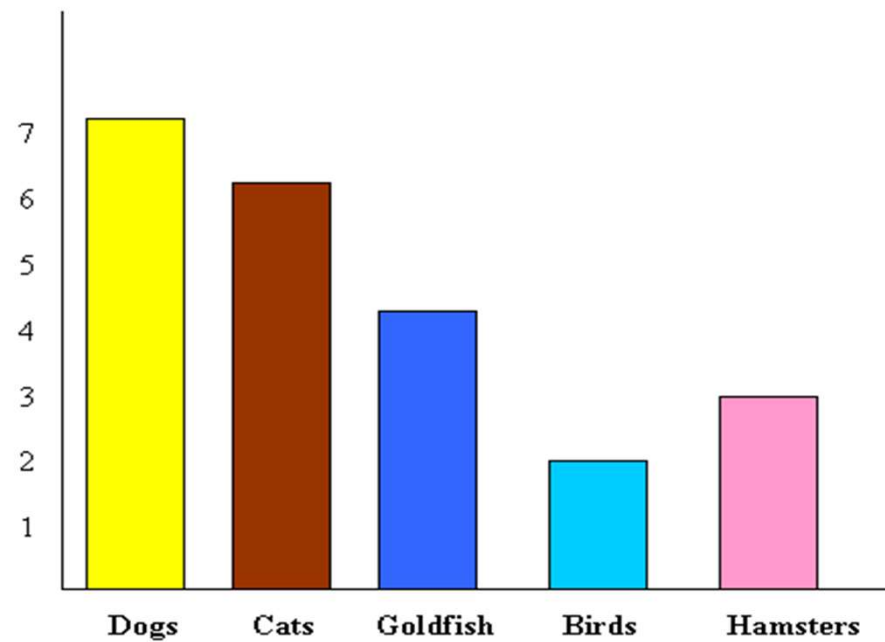


Bar Graph

- One of the most widely used methods of representing data is via **bar-graphs**.
- These are horizontal or vertical bars at a fixed distance representing certain specific information.
- This form of data representation is widely used in televisions.

Bar Graph

- For example, Bar graph, depicted below shows the availability of animals over some given area ! The advantage with Bar graphs is that they directly , give us some indication of measure between the entities. For example, we can directly say , the number of Birds is half the number of cats present !



MODE-Mode of a set of observations is the value of the observation that occurs most frequently.

$$\textbf{\underline{Mode=3Median-2Mean}}$$

Steps to find Mode:

- Obtain the set of observations i.e. ungrouped data
- Count the number of times the various values repeat themselves. In other words, prepare the frequency table.
- Find the value which occurs the maximum number of times i.e. obtain the value which has the maximum frequency.
- The value obtain in step-3 is the Mode.

MEDIAN-

Median of a group of observations is the value of the variable which divides the group into two equal parts.

Steps to find Median:

Arrange the observation in ascending or descending order of magnitude.

Determine the total number of observations, say, n .

If n is *odd*, then use the formula :

$$\text{Median} = (n+1)\text{th} / 2$$

If n is *even*, then use the following formula:

$$\text{Median} =$$

PROBABILITY

ACTIVITY-

Take a coin, toss it 10 times and note down the number of times head and tail come up. Record your observations in the form of table. Repeat the experiment by increasing the no. of tosses to 20, 30, and 50 and record your observations in the table. You will find that as the no. of tosses gets larger, the value of fractions in fourth and fifth row of the table comes closer to 0.5.