

## TYPES OF CLASSIFICATION

Broadly, the data can be classified on the basis of following four criteria:

- Geographical, *i.e.*, area-wise, *e.g.*, cities, districts, etc.
- Chronological, *i.e.*, on the basis of time.
- Qualitative, *i.e.*, according to some attributes.
- Quantitative, *i.e.*, in terms of magnitudes.

### Geographical Classification

In this type of classification data are classified on the basis of geographical or vocational differences between the various items, like Countries, States, cities, regions, zones, areas, etc. For instance, the data about the production and per capita availability of milk in India for the years 2005-06 to 2011-12 is given in the following table :

PRODUCTION AND PER CAPITA AVAILABILITY OF MILK

Year	Per Capita Availability (Grams/day)	Production (million tonnes)
2005-06	241	97.1
2006-07	251	102.6
2007-08	260	107.9
2008-09	266	112.2
2009-10	273	116.4
2010-11	281	121.8
2011-12	290	127.9

Geographical classification is usually listed in alphabetical order for easy reference. Items may also be listed by size to emphasise the important areas as in ranking the States by population. Normally, in reference table the first approach is followed and in summary tables the second approach is followed.

\* Source: *Economic Survey 2012-13*, Government of India, P. 185.

## Chronological Classification

When data are observed over a period of time the type of classification is known as chronological classification. For example, we may present the figures of population (or production, sales, etc.) as follows:

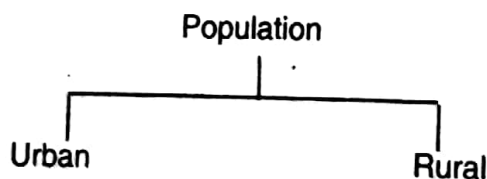
POPULATION OF INDIA FROM 1951 TO 2011

Year	Population (in crore)	Year	Population (in crore)
1951	36.11	1991	84.64
1961	43.92	2001	102.87
1971	54.82	2011	121.00
1981	68.33		

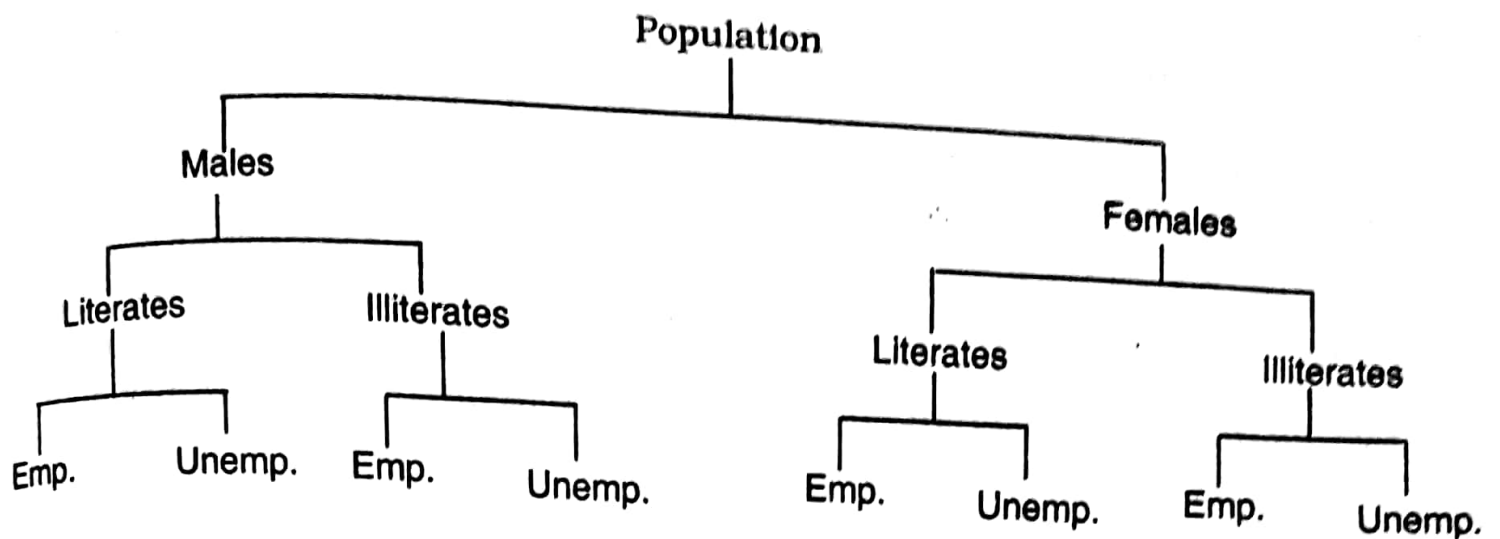
Time series are usually listed in chronological order, normally starting with the earliest period. When the major emphasis falls on the most recent events, a reverse time order may be used.

## Qualitative Classification

In qualitative classification data are classified on the basis of some attribute or quality such as sex, colour of hair, literacy, religion, etc. The point to note in this type of classification is that the attribute under study cannot be measured: one can only find out whether it is present or absent in the units of the population under study. For example, if the attribute under study is population, one can find out how many persons are living in urban area and how many in rural area. Thus when only one attribute is studied two classes are formed, one possessing the attribute and the other not possessing the attribute. This type of classification is known as simple classification. For example, the population under study may be divided into two categories as follows:



In a similar manner, we may classify population on the basis of sex, i.e., into males and females, or literacy, i.e., into literate and illiterate, and so on. The type of classification where only two classes are formed is also called two-fold or dichotomous classification. If instead of forming only two classes we further divide the data on the basis of some attribute or attributes so as to form several classes, the classification is known as manifold classification. For example, we may first divide the population into males and females on the basis of the attribute 'sex'; each of these classes may be further subdivided into 'literate' and 'illiterate' on the basis of the attribute 'literacy'. Further classification can be made on the basis of some other attribute, say, employment. An example of manifold classification is given here:



Note. Emp. indicates Employed and Unemp. indicates Unemployed.

### Quantitative Classification

Quantitative classification refers to the classification of data according to some characteristics that can be measured, such as height, weight, income, sales, profits, production, etc. For example, the students of a college may be classified according to weight as follows:

Weight (in lbs.)	No. of Students
90-100	50
100-110	200
110-120	260
120-130	360
130-140	90
140-150	40
<b>Total</b>	<b>1,000</b>

Such a distribution is known as empirical frequency distribution or simple frequency distribution.

**Illustration 1.** In a survey of 35 families in a village, the number of children per family was recorded and the following data obtained:

1	0	2	3	4	5	6
7	2	3	4	0	2	5
8	4	5	12	6	3	2
7	6	5	3	3	7	8
9	7	9	4	5	4	3

Represent the data in the form of a discrete frequency distribution.

**Solution.**

**FREQUENCY DISTRIBUTION OF THE NUMBER OF CHILDREN\***

No. of Children	Tally Bars	Frequency
0		2
1		1
2		4
3		6
4		5
5		5
6		3
7		4
8		2
9		2
10	—	0
11	—	0
12		1
		<b>Total 35</b>

It is clear from the table that the number of children varied from 0 to 12. There were 2 families with no child, 5 families with 4 children each and only one family with 12 children.

**Illustration 2.** Count the number of letters in each word of the para given below (ignoring comma, full-stop, etc.) and prepare a discrete frequency distribution.

"Today, to a very striking degree, our culture has become a statistical culture. Even a person who may never have heard of an index number, is attached in an intimate fashion by the gyrations of those index numbers which describe the cost of living."

- \* A frequency distribution or frequency table is simply a table in which the data grouped into classes and the number of cases which fall in each class are recorded. The numbers in each class are referred to as 'frequencies', hence the term 'frequency'. When the number of items are expressed by their proportion in each class, the table is usually referred to as a 'relative frequency distribution', or simply a 'percentage distribution',  
— Morris Hamburg