CLASSIFICATION OF DATA

INTRODUCTION

After the data have been collected, the next step is to present the data in some orderly and logical form so that their essential features may become explicit. The unorganised and shapeless data can neither be easily competent nor interpreted.

"Classified and arranged facts speak themselves; unarranged, unorganised they are dead as mutton".

- Prof. J.R. Hicks

CLASSIFICATION OF DATA

- "Classification is a process of arranging things or data in groups or classes according to their resemblances and affinities and gives expression to the unity of attributes that may subsist amongst a diversity of individuals."
- "Classification is the grouping of related facts into classes."
- The Process of classification data are classified into various homogenous groups or classes on the basis of similarities and resemblances.
- Classification condenses the data by dropping out unnecessary details. It facilitates comparison between different sets of data clearly showing the different points of agreement and disagreement. It enables us to study the relationship between several characteristics and make further statistical treatment like tabulation, etc.

DEFINITIONS

"Classification is the process of arranging things in groups according to their resemblances and affinities."

-Connor

"Classification is the process of arranging data into sequences and groups according to their common characteristics or separating them into different but related parts."

- Secrist

"The process of grouping large number of individual facts and observations on the basis of similarity among the items is called classification."

- Stockton & Clark

CHARACTERICTICS OF CLASSIFICATION

- Classification performs homogeneous grouping of data
- It brings out points of similarity and dissimilarities.
- The classification may be either real or imaginary
- Classification is flexible to accommodate adjustments

OBJECTIVES OF CLASSIFICATION

- To condense the mass of data in such a way that their similarities and dissimilarities become very clear.
- To facilitate comparisons i.e. , to make the data comparable.
- To point out the most important features of the data at a glance.
- To present the data in a brief form.
- To enable statistical treatment of the data collected .
- To make data attractive and effective.

METHODS OF CLASSIFICATION

- GEOGRAPHICAL CLASSIFICATION
- CHRONOLOGICAL CLASSIFICATION
- QUALITATIVE CLASSIFICATION
- QUANTITATIVE CLASSIFICATION

GEOGRAPHICAL CLASSIFICATION

When the data is classified on the basis of geographical or locational differences between the various items, it is known as Geographical Classification. E.g. area wise, zone wise, state wise, etc.

e.g. NO. OF XYZ BANK BRANCHES IN JAIPUR IN 2018

STATE	NO. OF FIRMS
NORTH ZONE	02
EAST ZONE	04
WEST ZONE	05
SOUTH ZONE	03

CHRONOLOGICAL CLASSIFICATION

When data is classified on the basis of time, it is known as chronological classification. e.g. Years, Month, Weeks, Days etc.

e.g. Sales of ABC LTD.

YEAR	SALES(IN RS. CRORES)
2014	36.1
2015	43.9
2016	54.8
2017	68.4
2018	84.4

QUALITATIVE CLASSIFICATION

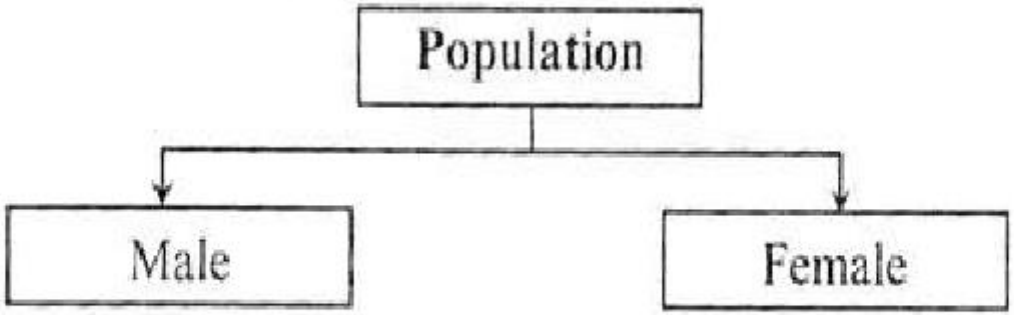
In this type of classification, data are classified on the basis of some attribute or quality such as sex, literacy, religion, employment, etc.

This classification may be two types.

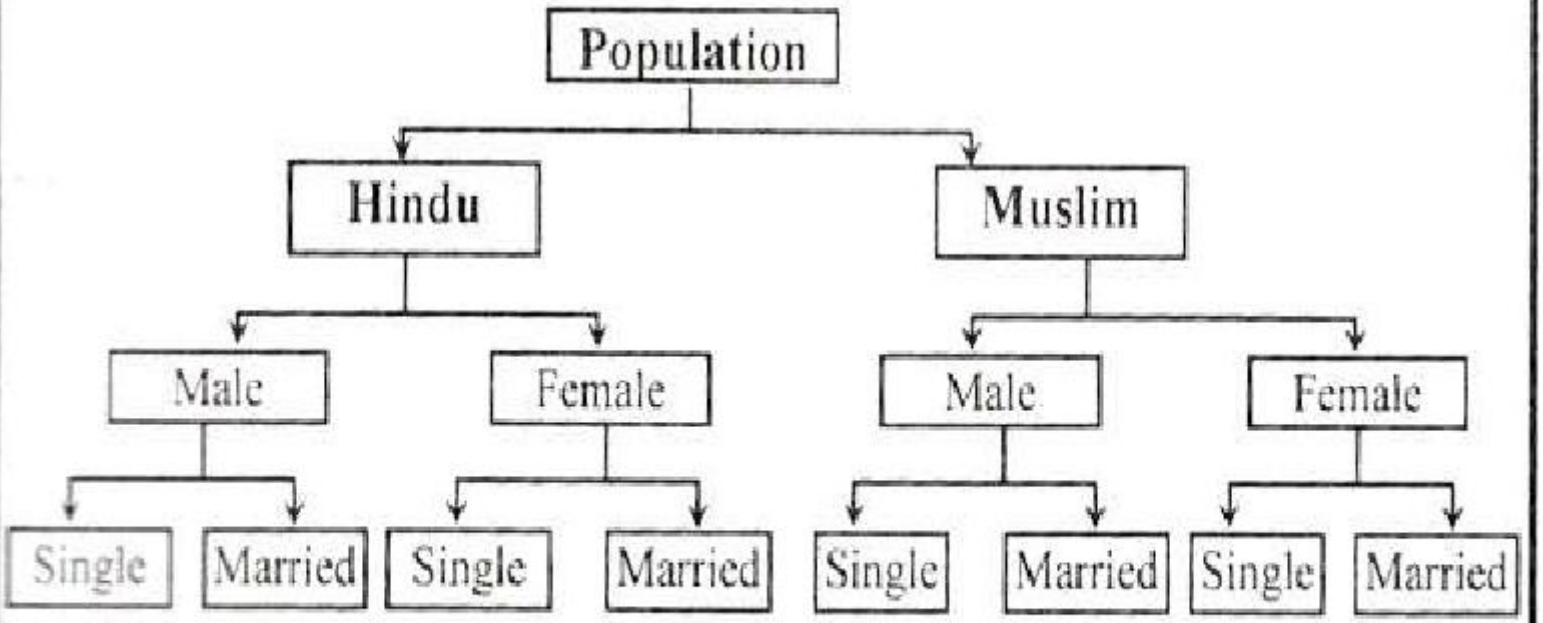
i) **Simple classification**

ii) **Manifold classification**

(a) Simple Classification



(b) Manifold Classification



QUANTITATIVE CLASSIFICATION

Classification is said to be quantitative when the data are expressed numerically. These types of data are known as numerical data or quantitative data. Height, weight, age, profit, turnover, income, death etc. are some of examples of this type of data.

INCOME(PER MONTH)	NO. OF WORKERS
< 10000	15
10000- 15000	20
15000-20000	29
> 20000	10

VARIABLE

Any quantitative characteristic under study is known as variable. Basically there are two types of variables.

i. **Discrete variable:** A variable is said to be discrete if it takes only countably many values (whole numbers). For example: Number of buses, number of persons, family size etc.

ii. **Continuous variable:** A variable is said to be continuous if it takes all possible real values (whole number as well as fractional values) within a certain range. For example: heights, weights, temperature records, marks obtained by students etc.

FREQUENCY DISTRIBUTION

The Frequency distribution is a statistical table which shows the values of the variable arranged in order of magnitude, either individually or in groups. There are two types of frequency distributions.

- Discrete frequency distribution
- Grouped frequency distribution

USEFUL TERMS ASSOCIATED WITH GROUPED FREQUENCY DISTRIBUTION

A. *Class interval*
B. *Class frequency*
C. *Class limits*
D. *Mid Value*
E. *Width or Magnitude of the class*
F. Frequency density = class frequency / width of the class

KINDS OF CONTINUOUS SERIES

INCLUSIVE SERIES

- Inclusive series are those which includes the upper limit of the class interval. E.g.

Marks	No. of students
0-9	5
10-19	7
20-29	3
30-39	4
40-49	6

EXCLUSIVE SERIES

- Exclusive series are those which excludes the upper limit of the class interval. E.g.

Marks	No. of students
0-10	5
10-20	7
20-30	3
30-40	4
40-50	6

OPEN END CLASS INTERVAL

- When the lower limit of the first class-inteval or the upper limit of the last class-interval, are not given then subtract the class length of the next immediate class-interval from the upper limit. This will give us the lower limit of the first class-interval. Similarly add the same class length to the lower limit of the last class-interval.

With open ends	Completed classes	With open ends	Completed classes
Below 10	0 - 10	Below 10	0 - 10
10 - 20	10 - 20	10 - 25	10 - 25
20 - 30	20 - 30	25 - 40	25 - 40
30 - 40	30 - 40	40 - 70	40 - 70
40 - 50	40 - 50	above 70	70 - 100
above 50	50 - 60		

CUMULATIVE FREQUENCY SERIES

- Cumulative frequency series is that series in which the frequencies are continuously added corresponding to each class-interval in the series.
- There are two types of cumulative frequency distributions:
  - **Less than cumulative frequency distribution**
  - **More than cumulative frequency distribution**

Less than cumulative frequency distribution

- It is obtained by adding successively the frequencies of all the previous classes including the class against which it is written. The cumulate is started from the lowest to the highest size.

Marks	students
0-10	2
10-20	5
20-30	7
30-40	9
40-50	8
50-60	3
60-70	6

convert

Marks	students
Less than 10	2
Less than 20	7
Less than 30	14
Less than 40	23
Less than 50	31
Less than 60	34
Less than 70	40

More than cumulative frequency distribution

- It is obtained by finding the cumulate total of frequencies starting from the highest to the lowest class.

Marks	students
0-10	2
10-20	5
20-30	7
30-40	9
40-50	8
50-60	3
60-70	6

Marks	students
More than 0	40
More than 10	38
More than 20	33
More than 30	26
More than 40	17
More than 50	9
More than 60	6