MATH TIP OF THE DAY

Measures of Central Tendency

Mean average

Median middle

Mode most common

MashUp Math

MEANING

CENTRAL TENDENCY OR AVERAGE OR MEASURE OF CENTRAL VALUE

The tendency of quantitative data
To concentrate around a particular value
Is called central tendency

AVERAGE (CENTRE OF THE DISTRIBUTION)

- It represents the whole series
- It conveys a general idea about the whole group.
- It is a value around which other values cluster.
- It is a value lying between the maximum and minimum values.
- It is generally located at the centre of the distribution.
- It is found by dividing the sum of the data by the no: of items in the data set.
- It is also called the “mean”

DEFINITION

“An Average Is A Figure That Represents The Whole Group”

CLARK

MOST COMMON MEASURES OF CENTRAL TENDENCY

1. Arithmetic Mean
2. Median
3. Mode
4. Geometric Mean
5. Harmonic Mean

IMPORTANCE / FUNCTIONS / USES/ OBJECTIVES AVERAGES

1. Gives a general idea about the whole group

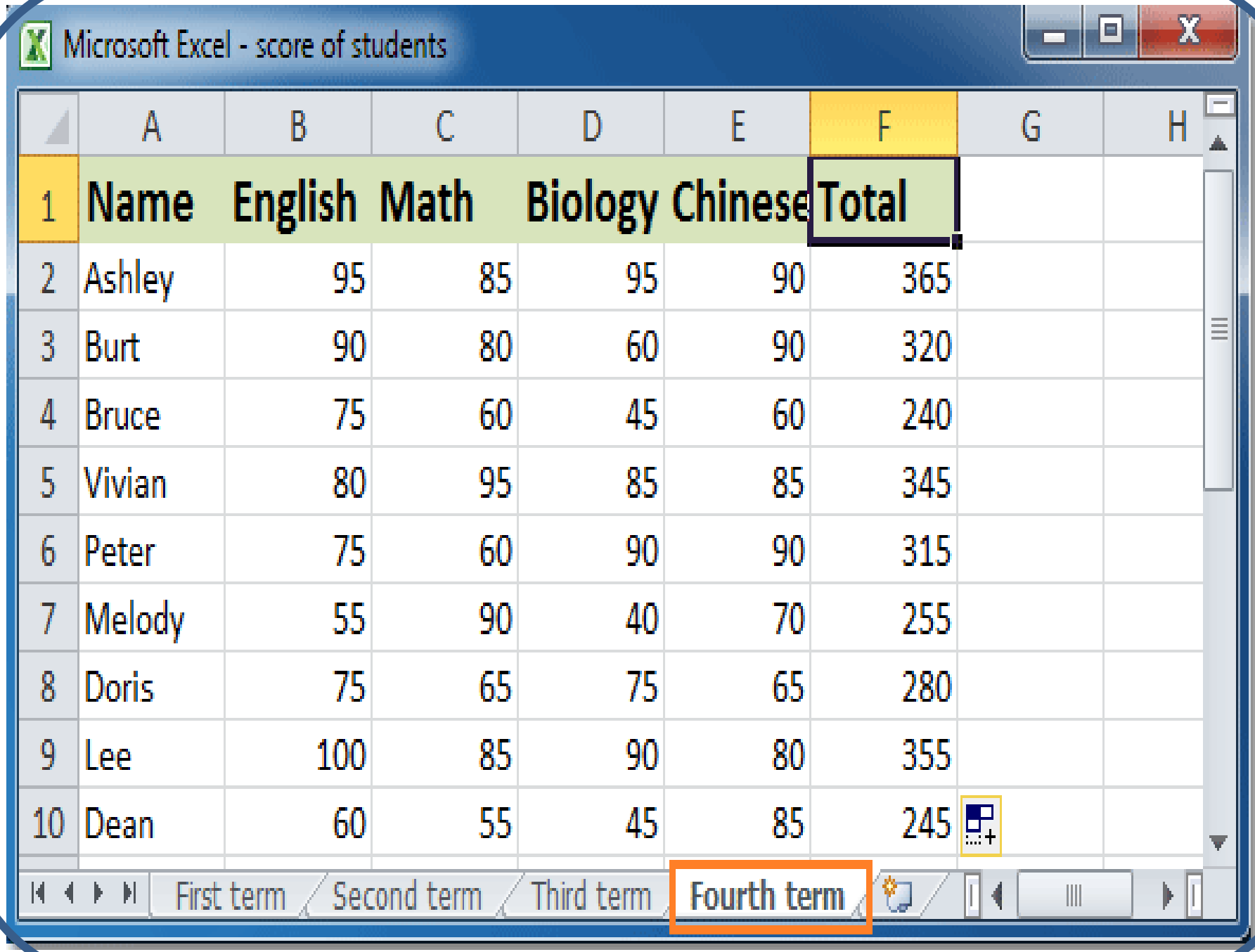
- Simplifies complexity of the data
- Data can be easily understood

Table 1. Income statement.

Income	
Sale of Crop Products	$50,000
Sale of Livestock Products	$25,000
Government Payments	$10,000
Total Income	$85,000
Expenses	
Seed	$10,000
Fertilizer	$20,000
Feed	$10,000
Processing	$10,000
Marketing	$5,000
Interest	$5,000
Depreciation	$10,000
Total Expenses	$70,000
Net Income	$15,000

2. USED FOR SUMMARIZING THE DATA

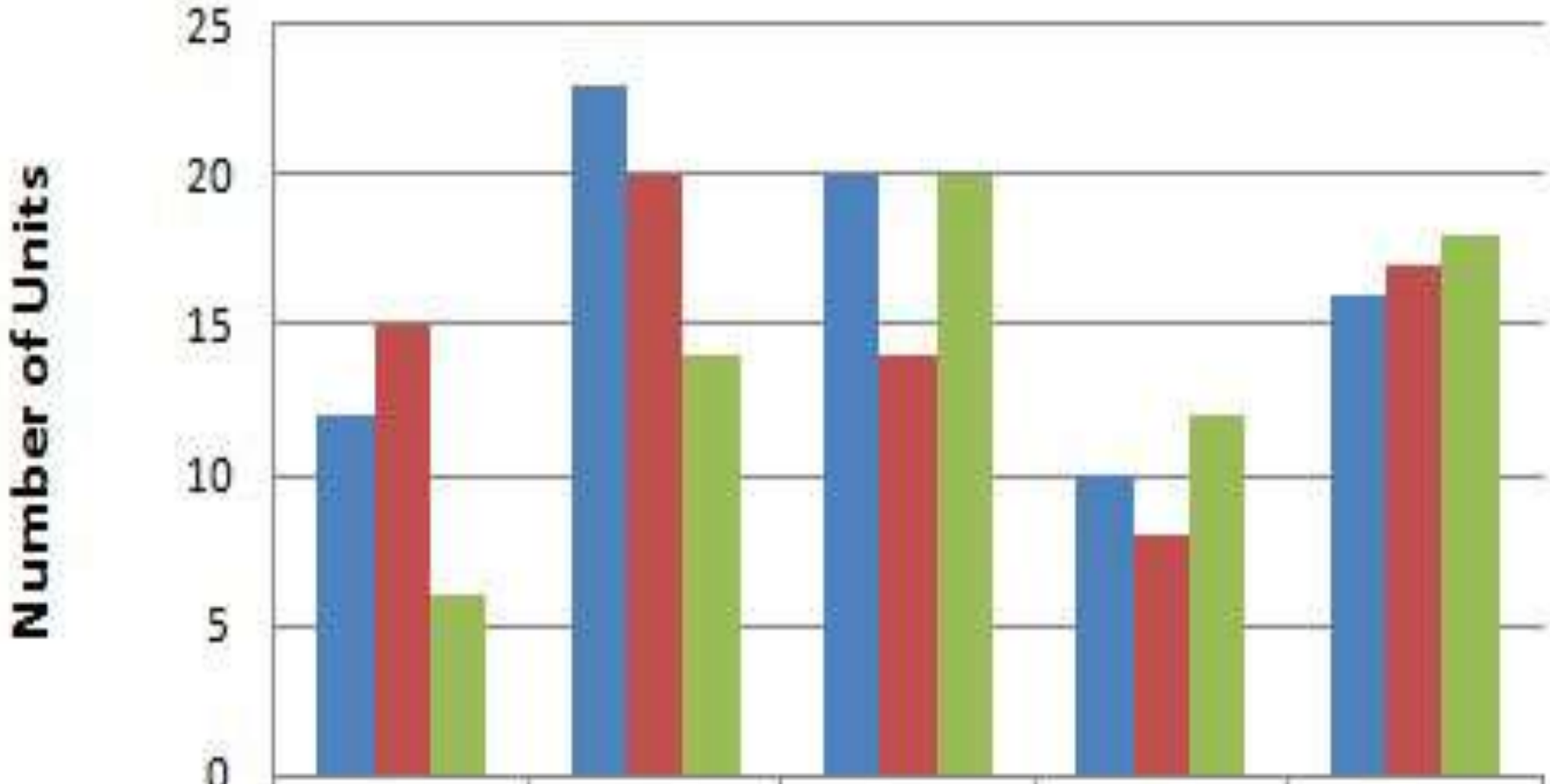
- Data can be expressed in numbers.
- It reveals the salient features of the data.
- Ex: Average marks of a student in different subjects reveals the efficiency of the student.


Microsoft Excel - score of students
A B C D E F G H
1 Name English Math Biology Chinese Total
2 Ashley 95 85 95 90 365
3 Burt 90 80 60 90 320
4 Bruce 75 60 45 60 240
5 Vivian 80 95 85 85 345
6 Peter 75 60 90 90 315
7 Melody 55 90 40 70 255
8 Doris 75 65 75 65 280
9 Lee 100 85 90 80 355
10 Dean 60 55 45 85 245
First term
Second term
Third term
Fourth term

3. HELPS COMPARISON

Comparing two sets of data.

Ex: Average income of Indians and Americans reveals that Americans are economically better then Indians.

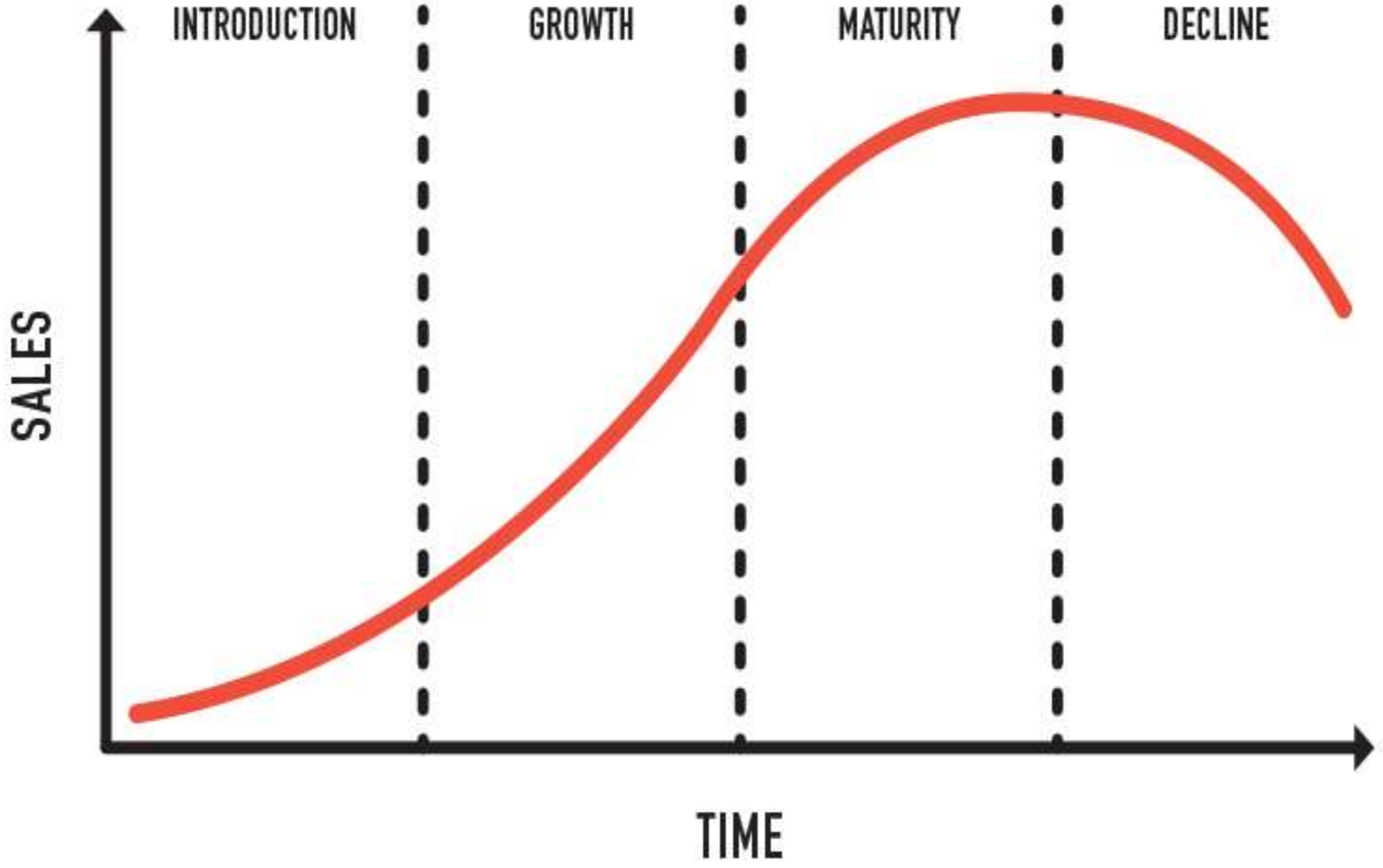


	A	B	C	D	E
In Stock	12	23	20	10	16
Purchased	15	20	14	8	17
Sold	6	14	20	12	18

4. HELPS IN DECISION MAKING

- It helps in formulation of policies.
- Ex: If average sales in a shop is very poor, the shop owner has to formulate policies to increase the sales.

PRODUCT LIFECYCLE

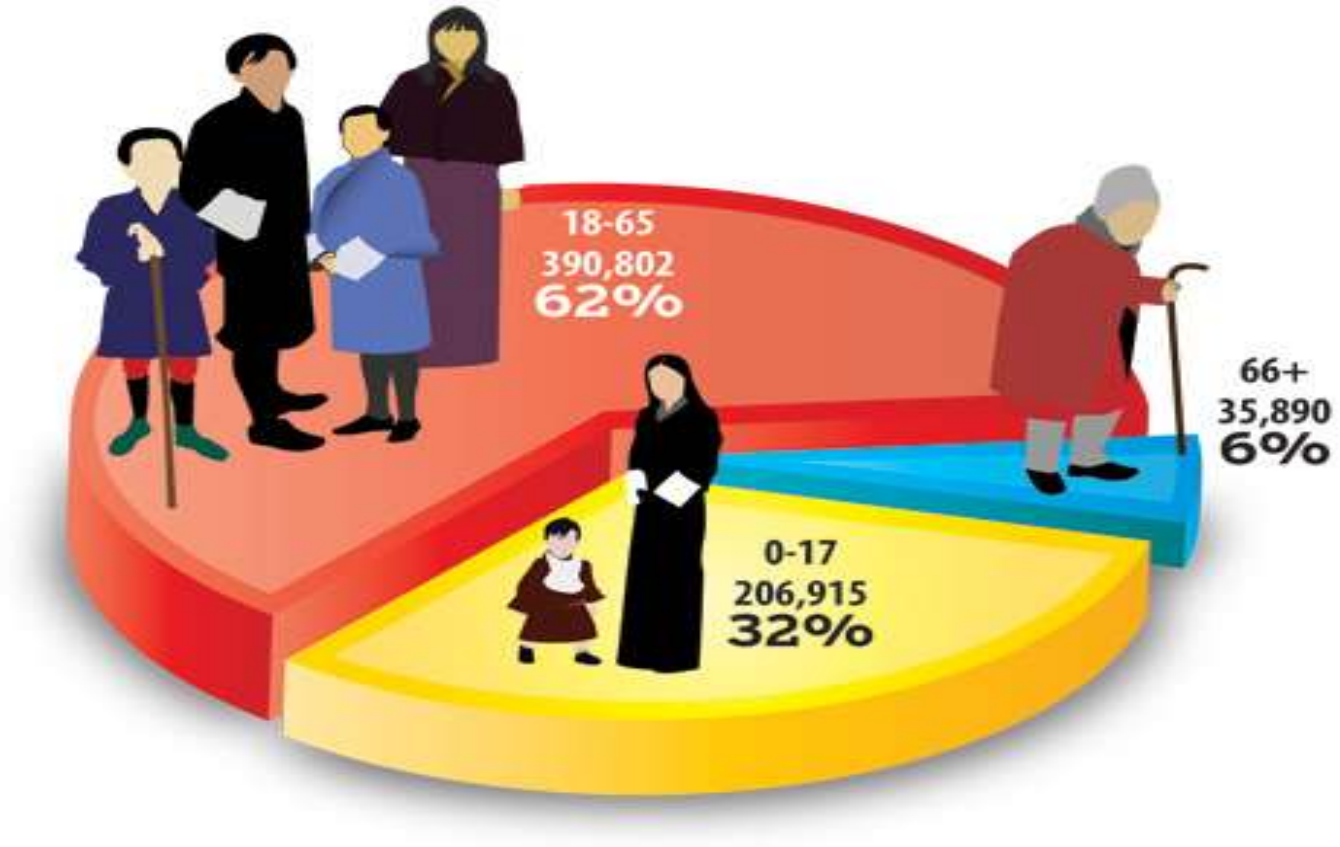


5. Constitute the basis of statistical Analysis

- The basic purpose of statistical analysis is to develop the summary measures which will describe the data adequately.

6. IT REPRESENTS THE UNIVERSE

- It gives the summary of mass of facts.
- It possess the characteristics of the whole group.



ESENTIAL PROPERTIES / CHARACTERISTICS OF A GOOD AVERAGE

1. Clearly defined.
2. Based on all the observations of the data.
3. Easy to calculate and simple to follow.
4. Not to be influenced by sampling fluctuations.
5. Amenable to further algebraic treatment.
6. Not be effected by extreme values.