Frequency Distribution Table

The number of times a particular observation occurs is called its frequency. The number of observations in a particular class (group) is called the frequency of that group.

Ungrouped Frequency Distribution

To prepare an, Ungrouped Frequency Distribution Table, follow the steps given below.

Step 1: Prepare a table with three columns: first for variables or items under study such as marks, weights, heights etc., second for Tally marks and third for the Frequency.

Step 2: Place all the values of the variables in the first column in ascending order.

Step 3: Take the first observation, match it with the variable in first column and put a bar in the second column. Continue this process till all the observations in the fifth bar as shown in the following 𝍸

Step 4: Give a suitable title which conveys accurately what the table is about.

Let us understand with an Example:

Example: The marks obtained by 50 students in a class test of math (out of 15) are given below:

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

11, 11, 9, 0, 0, 3, 9, 9, 7, 14, 15, 15, 14, 7, 5

A. Arrange these data and form a frequency table.
B. What us the highest mark?

C. What is the range of marks?

D. Which marks is occurring most frequently?

Solution: (i) The data in ascending order is shown below:

0, 0, 0, 0, 0, 1, 1, 2, 2, 2, 2, 2, 3, 3, 3, 3, 3, 3, 4, 4, 4, 4, 5, 5, 5, 5, 5, 6, 6, 6, 7, 7, 7, 8, 8,8, 9, 9, 9, 9, 9, 9, 9, 9, 11, 11, 14, 14, 15, 15

Marks	Tally marks	No. of students
0	𝍸	5
1	||	2
2	𝍸	5
3	𝍸 |	6
4	||||	4
5	𝍸	5
6	|||	3
7	|||	3
8	|||	3
9	𝍸 |||	8
11	||	2
14	||	2
15	||	2

Total – 50

Grouped Frequency Distribution

When the raw data are in large number and the difference between the greatest and the smallest observation is large, we condense the data into classes (groups).

There are two types of Classes:

- **Exclusive Classes:** Class intervals where the upper limits do not belong to the class are called exclusive classes.
  Example: The classes like 0-10, 10-20, 20-30, 30-40,…. etc. are exclusive classes.
- **Inclusive Classes:** Class intervals where the upper limits belong to the class are called inclusive classes.

Example: The classes like 0-9, 10-19, 20-29, 30-39,….etc. are inclusive classes.

To prepare a Grouped Frequency Distribution Table, we need follow the steps given below.

Step 1: Group the data into different classes.

Step 2: Represent the items in each class by 'tally marks' (i.e., a 'I' for each item). The four consecutive tally marks are represented by vertical lines. The fifth tally mark is placed diagonally (\) across the four tally marks, so that counting of frequency becomes less laborious.

Step 3: Count the tally marks in each class.

Step 4: The number of tally marks in each class is its frequency.

Let us understand with an example:

Example: Marks obtained by 40 students in an examination are given below:

69, 59, 49, 39, 84, 68, 77, 48, 47, 57, 46, 41, 44, 67, 57, 45, 34, 36, 87, 89, 65, 41, 84, 78, 52, 49, 75, 37, 38, 42, 73, 31, 34, 37, 56, 59, 64, 85, 81, 62

Prepare a frequency distribution table.

Solution: The lowest mark is 31 and the highest mark is 89.

Hence, Range = 89-31 = 58

Let us consider that we wish to distribute the above data in 6 classes.

The number greater than and nearest to 58 is 60. Thus the class size is 10 and we can take the classes as:

30 – 40, 40 – 50, 50 – 60, 60 – 70, 70 – 80 and 80 – 90

Now, we count the number of students obtaining marks faling in each class.

This is done by using tally marks.

Class-interval	Tally-Marks	Frequency
30 — 40	|||| |||	8
40 — 50	|||| ||||	10
50 — 60	||||		6
60 — 70	||||		6
70 — 80	||||	5
80 — 90	||||	5
		Total = 40

Now, the required frequency distribution table is prepared as follows: