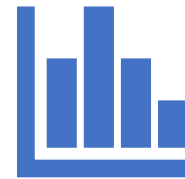


Frequency Distribution

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Data Types

- Quantitative: Numbers representing counts or measurements
 - Discrete: Counts
 - Continuous: Measurements
- Qualitative: Quality, Attribute



Frequency
Distribution

Data types

Raw Data

Grouped Data

Frequency Distribution

lists data values (either individually or by groups of intervals), along with their corresponding frequencies or counts

Frequency Distribution objectives

Objective

Large data sets can be summarized.

We can gain some insight into the nature of data.

We have a basis for constructing important graphs.

Frequency
Distribution



Class Limits

Class Boundaries

Class Mark

Class Interval

Constructing A Frequency Distribution

Decide on the number of classes

Calculate Range of the data

Calculate Class Interval

Starting Point

List the lower-class limits

List the upper-class limits

Distribute the data into appropriate class

Total the frequency column

Example 1

The following data shows the Marks of 30 Students Obtained in the Final Exam of an Elementary Statistics Class. Construct the Frequency distribution for the following data.

58	55	31	61	77	66	76	58	68	38
44	49	54	41	29	81	90	45	70	40
61	51	48	67	88	67	36	69	71	57

Example 2

Compressive strength was measured on 60 specimens of a new aluminum alloy undergoing development as a material for the next generation of aircraft. Construct Frequency distribution of following data.

66.4	67.7	68.0	68.1	68.3	68.4	68.6	68.9	69.1	69.2
69.3	69.3	69.5	69.5	69.6	69.7	69.8	69.8	69.9	70.0
70.0	70.1	70.2	70.3	70.3	70.4	70.5	70.6	70.8	70.9
71.0	71.1	71.2	71.3	71.3	71.5	71.6	71.6	71.6	71.7
71.8	71.8	71.9	72.1	72.2	72.3	72.4	72.6	72.7	72.9
73.1	73.3	73.5	74.5	74.6	75.3	75.8	76.2	76.4	77.5

Cumulative Frequency Distribution

In a frequency table you can also find a 'running total' of frequencies. This is called the cumulative frequency. It is useful to know the running total of the frequencies as this tells you the total number of data items at different stages in the data set.

Cumulative Frequency Table showing the marks obtained by students in a Quiz

Mark	Frequency	Cumulative frequency
1	1	1
2	3	$3+1=4$
3	4	$4+4=8$
4	6	$6+8=14$
5	9	$9+14=23$
6	11	$11+23=34$
7	15	$15+34=49$
8	18	$18+49=67$
9	10	$10+67=77$
10	5	$5+77=82$
Total	82	

This tells you that

1 students scored 1 mark

4 students scored marks of 2 or less

8 students scored marks of 3 or less

Categorical Distribution

Data are grouped according to some
quality or attribute

Grades	f
A	10
B	25
C	10
D	3
F	2

Example 3

Construct a categorical distribution for the following data, obtained in a study in which 40 drivers were asked to judge the maneuverability of a certain make of car:

Very good, good, good, fair, excellent, good, good, good, very good, poor, good, good, good, good, very good, good, fair, good, good, very poor, very good, fair, good, good, excellent, very good, good, good, good, fair, fair, very good, good, very good, excellent, very good, fair, good, good, and very good