

LESSON 9

WEEK 11 AND WEEK 12

LEARNING OUTCOMES

At the end of this lesson students should be able to summarize data in a table to show the frequency distribution.

TOPIC OUTLINES

Prepare the frequency distribution

Frequency Distribution Tables

- If a large number of measurements of a particular variable is taken, some values may occur more than once. A frequency distribution is obtained by recording the number of times each value occurs. The table formed by recording the frequency values is known as a frequency distribution table.
- Frequency distribution table are of 2 types:
 - i) Ungrouped frequency distribution table
 - ii) Grouped frequency distribution table

a) Ungrouped frequency distribution

Used if the number of item of data is not very large. The variable in question is listed in the first column while the frequency of its occurrence is listed in the next column.

Example 1:

Given the heights of 25 students in centimetres. Organize the data in a frequency distribution table.

165, 155, 156, 163, 160,
163, 160, 158, 158, 160,
165, 165, 157, 158, 159,
160, 163, 164, 165, 163,
160, 157, 158, 157, 160

Solution:

Step 1: Re-arrange the given heights in ascending order

Step 2: For each height value, count the number of times it occurs


Height	Frequency, f
155	1
156	1
157	3
158	4
159	1
160	6
163	4
164	1
165	4
	$\Sigma f = 25$

b) Grouped Frequency Distribution table

When the volume of data that need to be tabulated is large, it is preferable to group the data into bands or groups. This is known as grouped frequency distribution.

Example 2

Given below is the list of exam marks for 100 students. Organise these marks into a frequency distribution table.



50	80	68	71	57	55	80	88	70	65
60	83	91	87	87	47	71	23	43	58
40	73	56	53	59	39	92	52	59	50
61	95	61	62	93	78	99	83	76	39
92	47	62	57	40	83	47	43	66	38
28	43	41	60	37	31	31	35	63	66
45	33	40	61	69	43	27	38	16	19
37	16	91	19	81	62	95	90	21	90
71	67	85	28	77	42	51	73	34	60
73	56	39	22	34	82	54	45	66	90

Solution

Step 1: The raw data can be organised into groups of 10 marks as shown in the table below.

Step 2: Scan the given raw data and produce a tally for the data that falls into a particular category. When the tally reaches a count of 5, cross the tally as shown below:

-1111-

Step 3: For each group, count the tally to determine the frequency value.

Marks	Tally	Frequency (f)
0 - 9		0
10 - 19	1111	4
20 - 29	TTTT 1	6
30 - 39	TTTT TTTT 111	13
40 - 49	TTTT TTTT 1111	14
50 - 59	TTTT TTTT 1111	14
60 - 69	TTTT TTTT TTTT 11	17
70 - 79	TTTT TTTT	10
80 - 89	TTTT TTTT 1	11
90 - 100	TTTT TTTT 1	11
		$\Sigma f = 100$

Exercise

Name two types of frequency distribution.

State the steps involved to prepare a frequency distribution table.

Basic Reading

LCCI, Business Statistics, Saravanan Kullandavelu, page 3.2-3.4

