In the previous lecture we have discussed
Data
Raw data
Different component of data condensation
Classification, tabulation and graphical representation
Principles of constructing table
Different components of table
Class limit, class interval,
Relative frequency, cumulative relative frequency etc.

Contingency table (also known as a cross tabulation or crosstab)
In statistics, a *contingency table* (also known as a cross tabulation or crosstab) is a type of *table* in a matrix format that displays the (multivariate) frequency distribution of the variables. They are heavily used in survey research, business intelligence, engineering and scientific research.

A contingency table presents the results of two or more categorical variables. The joint responses are classified so that the categories of one variable are located in the rows and the categories of the other variable are located in the columns.

The values located at the intersections of the rows and columns are called ***cells***. Depending on the type of contingency table constructed, the cells for each row-column combination contain the frequency, the percentage of the overall total, the percentage of the row total, or the percentage of the column total.

Table 1: Frequency distribution of students by religion and sex

Religion	Sex		Total
	Male	Female	
Muslim	25	20	45
Hindu	12	12	24
Christian	8	6	14
Buddha	5	3	8
Others	2	2	4
Total	52	43	95

Test yourself
W2D1_ Assignment 002

Problem:

A sample of 500 shoppers was selected in a large metropolitan area to determine various information concerning consumer behavior. Among the questions asked was "do you enjoy shopping for clothing?" the results are summarized in the following cross classified table:

Table 2: Frequency distribution of preference of shopping for clothing of the consumer

Enjoy shopping for clothing	Sex		Total
	Male	Female	
Yes	136	224	360
No	104	36	140
Total	240	260	500

a. Construct contingency tables based on total percentages, row percentages and column percentages.
b. Determine the proportion
   i. Male among total respondents
   ii. Female among total respondents
   iii. Proportion of people who enjoys shopping
   iv. Proportion of people who does not enjoys shopping
c. Determine the proportion (or percentage) of
   i. Male among those who enjoy shopping.
   ii. People who enjoys shopping among male

Test yourself:
W2D1_ Assignment 002

Solution:
The table was given as -

Table 2: Frequency distribution of preference of shopping for clothing of the consumer

Enjoy shopping	Sex		Total
	Male	Female	
Yes	136	224	360
No	104	36	140
Total	240	260	500

Workout:

a.

Table 2: Frequency distribution of preference of shopping for clothing of the consumer

Enjoy shopping	Sex		Total
	Male	Female	
Yes	**0.377 or 37.7%**	**0.622 or 62.2%**	**100%***
	0.566 or 56.6%	**0.861 or 86.1%**	
No	**0.7428 or 74.28%**	**0.257or 25.7%**	**100%***
	0.433 or 43.3%	**0.138 or 13.8%**	
Total	**100%***	**100%***	

*: ignoring rounding error

b. The proportion of

i. Male among total respondents	$\frac{(136+104)}{360} = \frac{240}{500} = 0.48$
ii. Female among total respondents	*Do your self*
iii. People who enjoys shopping	*Do your self*
iv. People who does not enjoys shopping	$\frac{(\_\_\_+\_\_\_)}{500} = \frac{140}{500} = \_\_\_$

c. Determine the proportion (or percentage) of

i. Male, among those who enjoy shopping.	$\frac{136}{360} = 0.37$
ii. People who enjoys shopping among male	$\frac{136}{240} = \_\_\_$

For any queries related to this presentation please contact

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