

# Summarizing Data

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# Outline

- 1 Introduction
- 2 Tabular Summary

# Introduction

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# Summarizing Data

- Raw data by itself is not useful
- Need to extract insight from data
- Data needs to be summarized to gain insights
- Can summarize in two ways:
  - Tabular summary
  - Graphical summary

## Tabular Summary

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# Tabular Summary

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## Frequency Table

# Frequency Table

- Organizes data by listing distinct values or classes
- Shows how often each value or class occurs
- Can be constructed for categorical or numerical data:
  - For categorical variable, it shows how many times each category appears in the sample
  - For discrete numeric variable, it shows how many times each value appears in the sample
  - For continuous numeric variable, classes or bins are formed first, then the table shows how many values fall in each class
- Forms the basis for graphical summaries like bar charts and histograms

## Example: Frequency Table for Categorical Variable

Suppose we have a discrete variable with four categories: A, B, C and D. The data in the sample is: A, B, A, D, A, A, B, C, C, B, A, A, C, D, D, B, D, C, C, B, C. The Frequency table would be:

Category	Tally	Frequency
A		6
B		5
C		6
D		4

The tally column is only used to keep track of the data when counting by hand.

One can add a percentage column in necessary.

# Questions?

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