



# Multivariate Analysis

## Introduction to Multivariate Analysis

# Objective

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Objective

Describe attributes of  
multivariate data  
visualization

# Terms



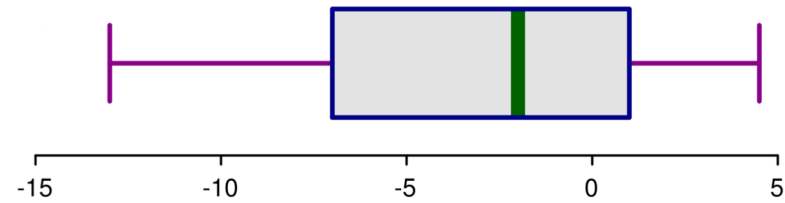
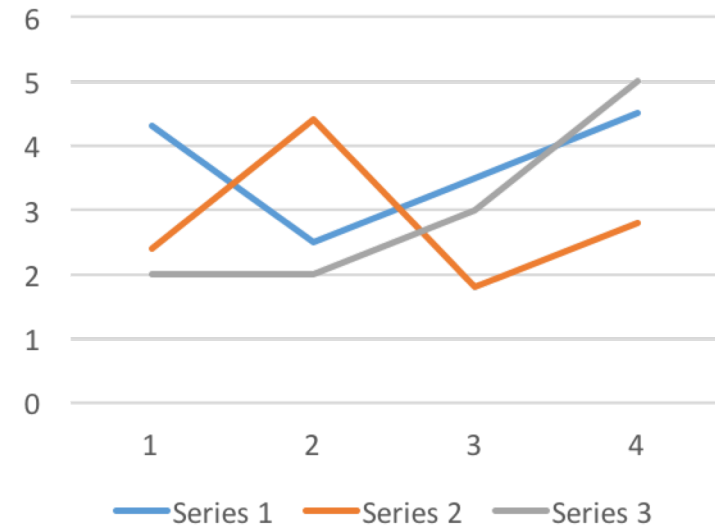
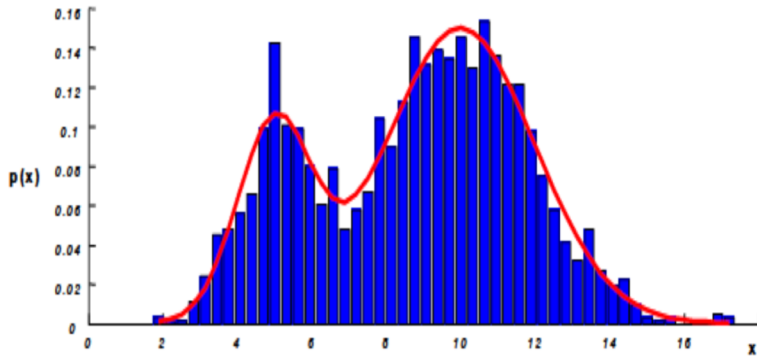
## | Multivariate Data

- Any statistical technique used to analyze data from more than one variable
- Used to process information in a meaningful way

## | Curse of Dimensionality

- The more dimensions in a visualization, the less effective standard computational and statistical techniques become.

# Univariate Visualization



# Representation



What are the two main ways of presenting multivariate data sets?

| Directly (textually) – Tables

| Symbolically (pictures) –  
Graphs

How do we **decide** **which** to **use**, and **when**?

# Tables

## Use tables when:

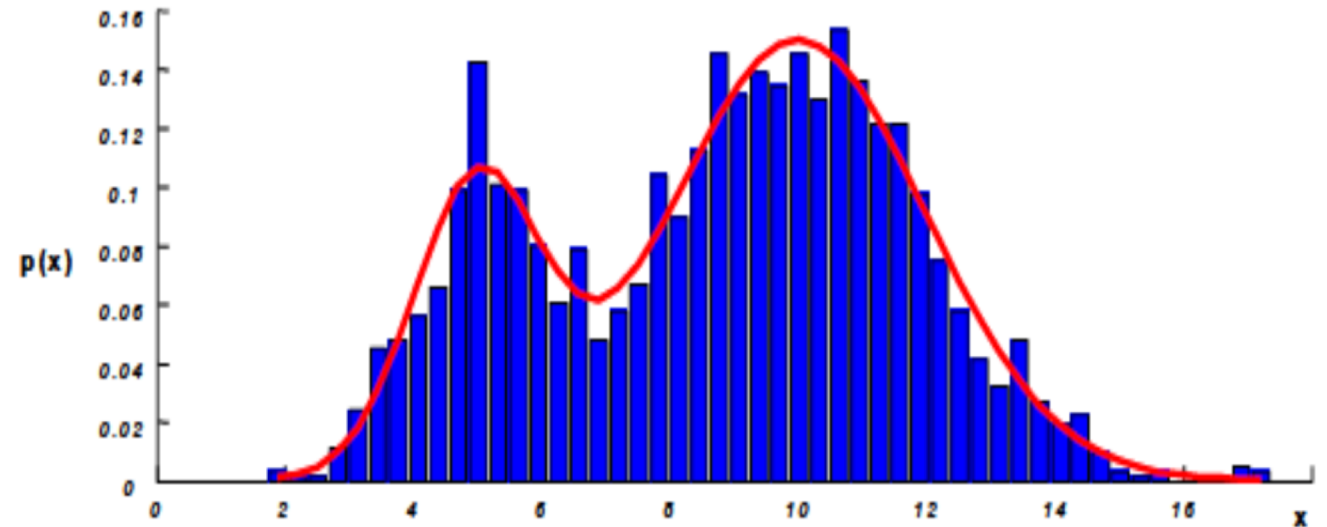
- The document will be used to look individual value
- The document will be used to compare individual values
- Precise values are required
- The quantitative info to be communicated involves more than one unit of measure

Category 1	Category 2	Category 3	Category 4
value	value	value	value
value	value	vale	valye

# Graphs

## Use graphs when

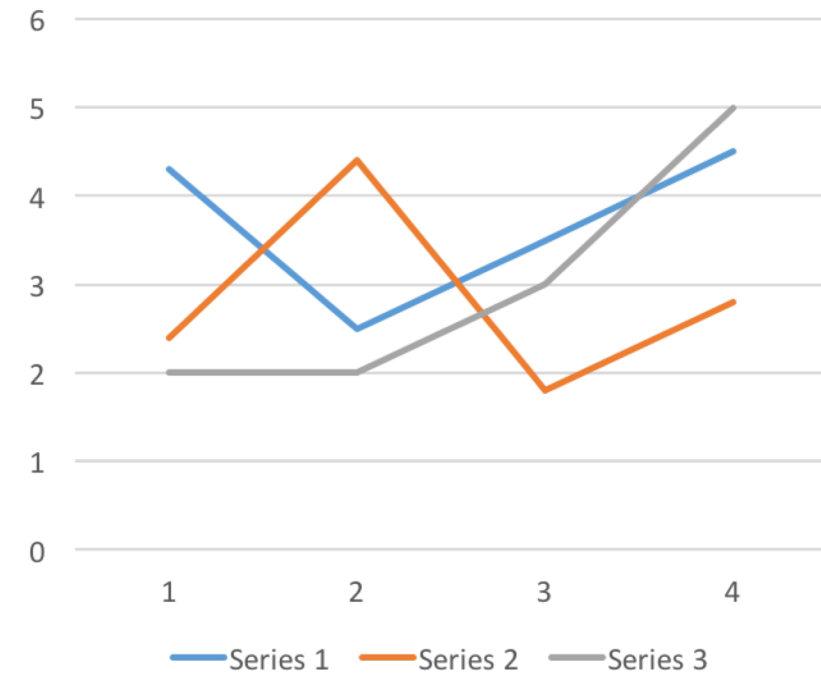
- The message is contained in the shape of the values
- The document will be used to reveal relationships among values



# Graphs

## Graph

- Visual display that illustrates one or more relationships among entities
- Shorthand way to present information
- Allows a trend, pattern or comparison to be easily comprehended





# Task-Centric Graphing

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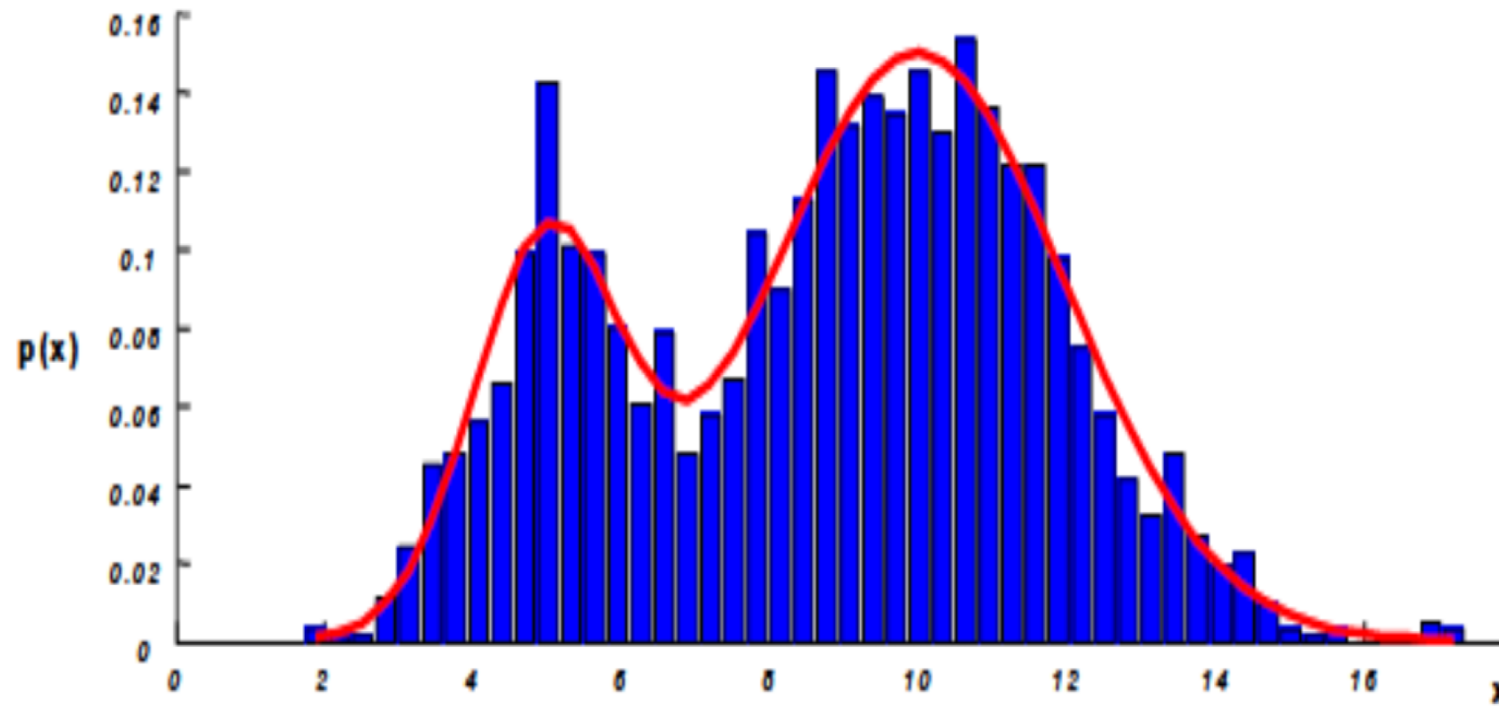
Why do you need  
a graph?

What questions  
are being  
answered?

What data is  
needed to answer  
those questions?

Who is the  
audience?

# Univariate Graph



# Bivariate Case – Stacked Bars

