



Leadership

INTRODUCTION TO BUSINESS INTELLIGENCE

BIA 3713

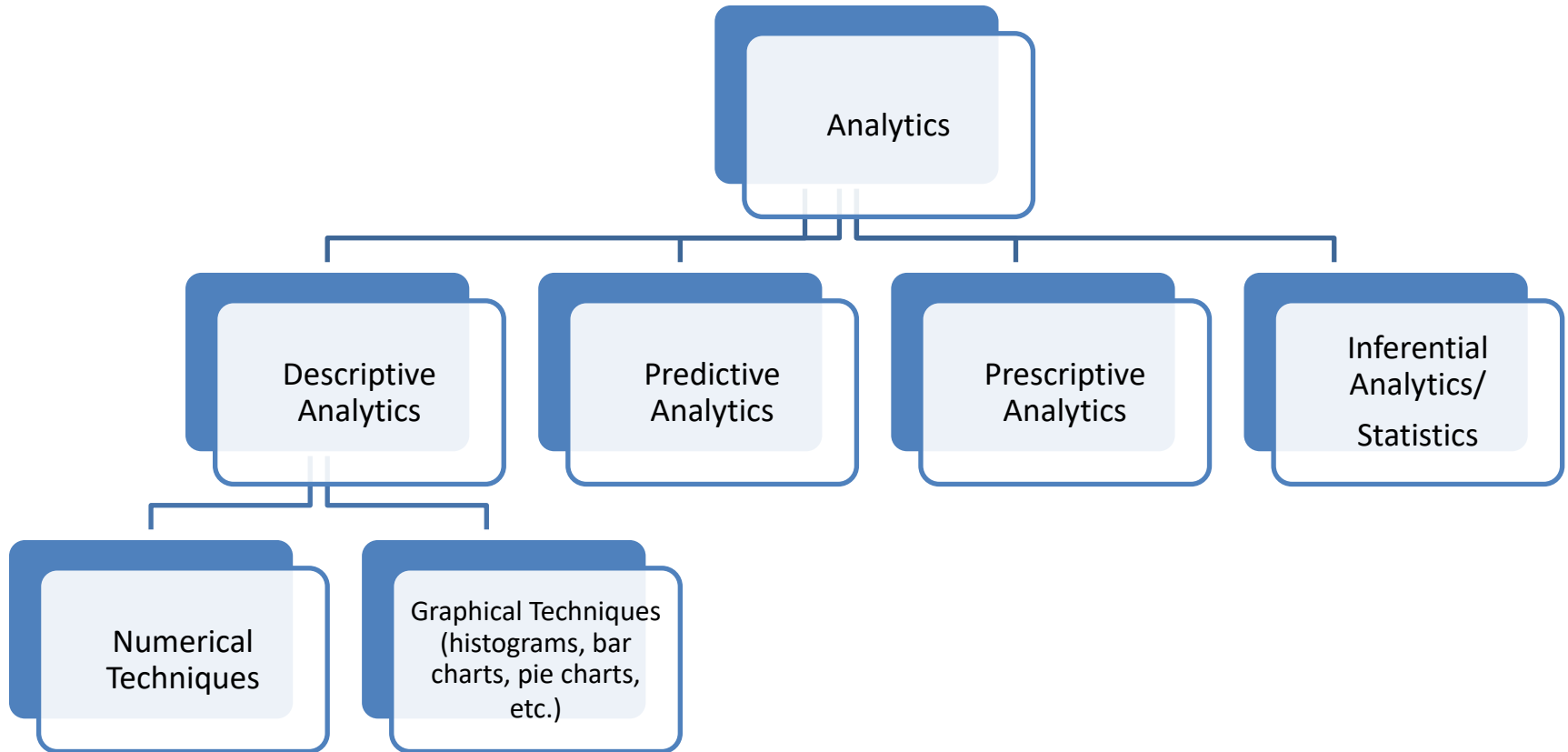
WEEK 3

Naveen Kumar

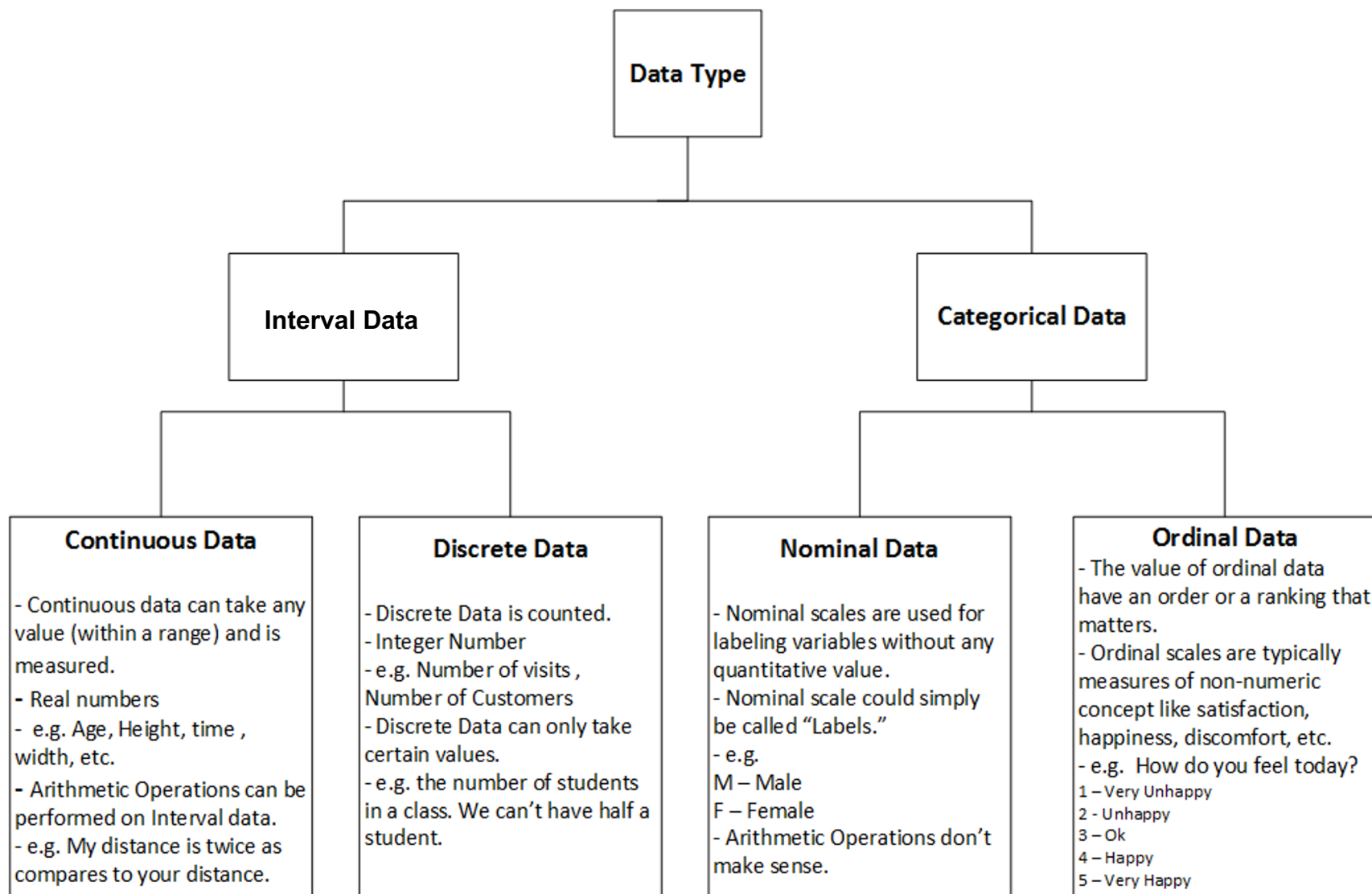
Agenda

- Introduction to Descriptive Analytics
 - Data Types
 - Graphical Summary Measures
- Discussion (Video Lectures and Reading Materials)
- Quiz 1
- Summary and Conclusion

Analytics



Data Type



Interval Data

Continuous Data

- Real numbers:
 - Examples: age, height, width, average weight time
- Arithmetic can be performed on continuous data

Discrete Data

- Integer numbers:
 - Examples: number of visits, number of customers
- Arithmetic can be performed on discrete data

Categorical Data

Nominal Data

- Values are not quantitative and do not have any rank order
 - Example: Marital status coded as Single = 1, Married = 2, Divorced = 3
- Cannot be used for arithmetic
 - (e.g. does $\text{Single} * 2 = \text{Married}$?!)

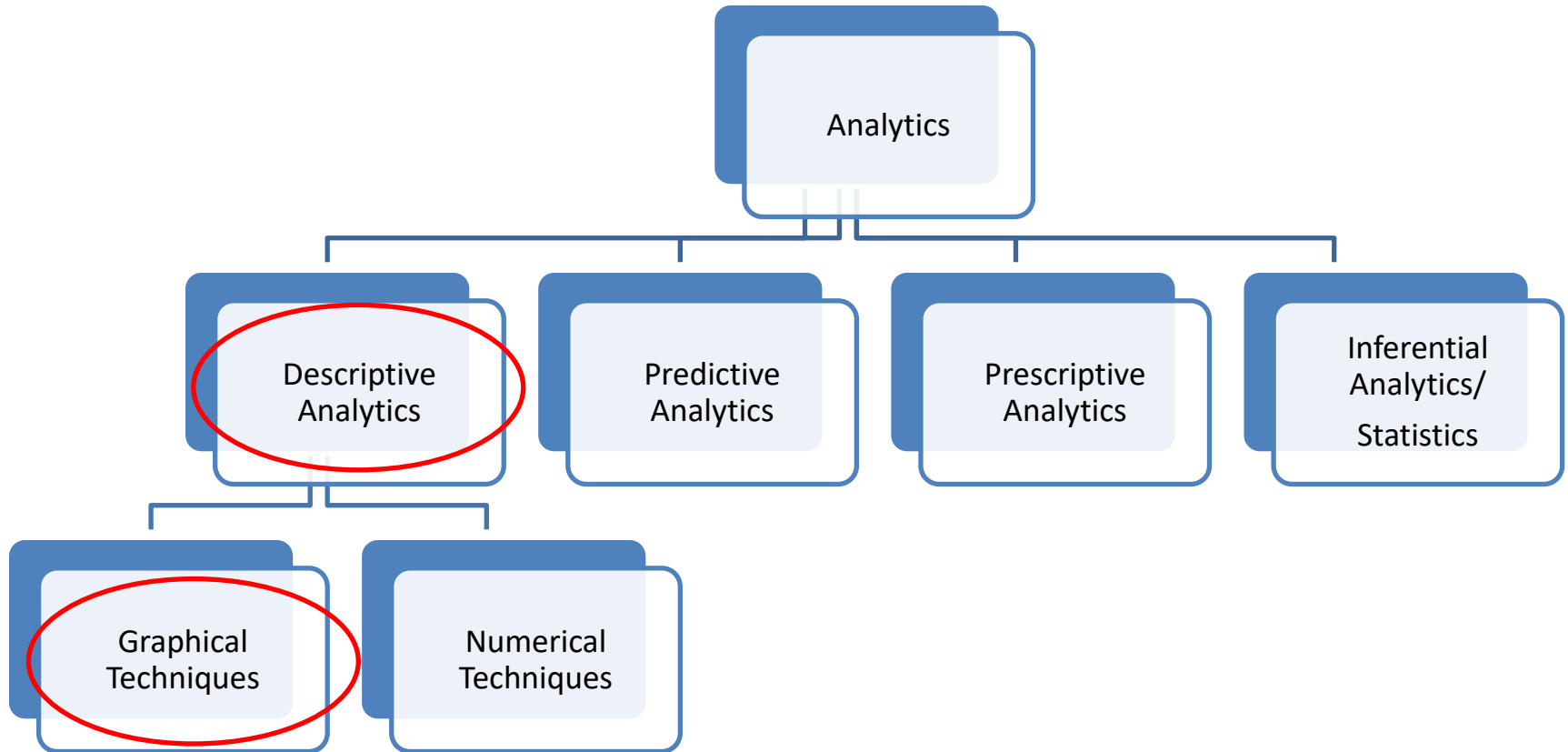
Ordinal Data

- Values have a rank order
 - Example: College course rating system, poor = 1, fair = 2, good = 3, very good = 4, excellent = 5
- While it's still not meaningful to do arithmetic on this data (e.g. does $2 * \text{fair} = \text{very good}$?), we can say: excellent > poor or fair < very good.
- Order is maintained no matter what numeric values are assigned to each category

Key Points

- All calculations are permitted on interval data
- Only a ranking process is allowed for ordinal data
- Typically, no calculations are performed on nominal data, except for counting the number of observations in each category

Analytics: Graphical Techniques

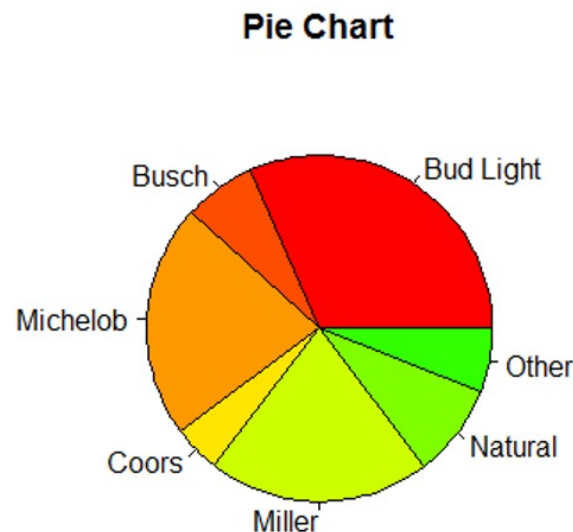
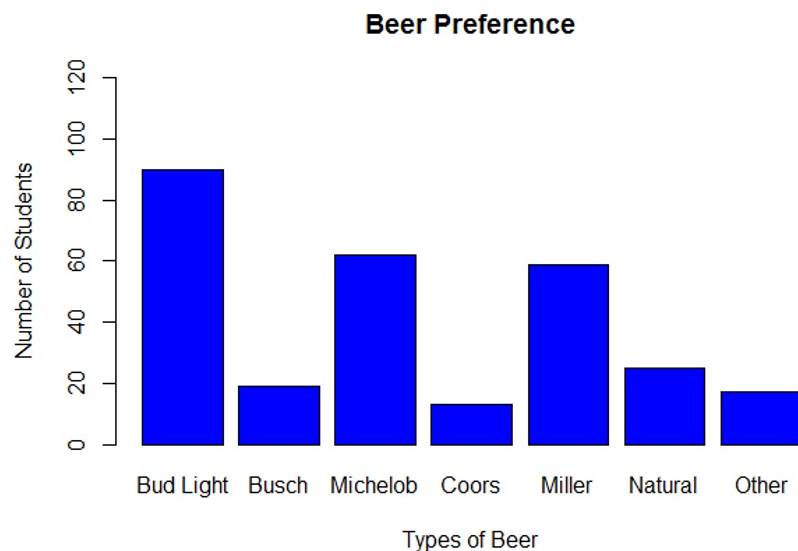


Graphical Techniques

- Presents data in ways that make it easy to extract useful information
- Objectives
 - Understand and use appropriate graphical methods suitable for a given set of data
 - Transform raw data into information through graphical display using prominent graphical methods
 - Describe the relationship between two variables

Categorical Data: Nominal

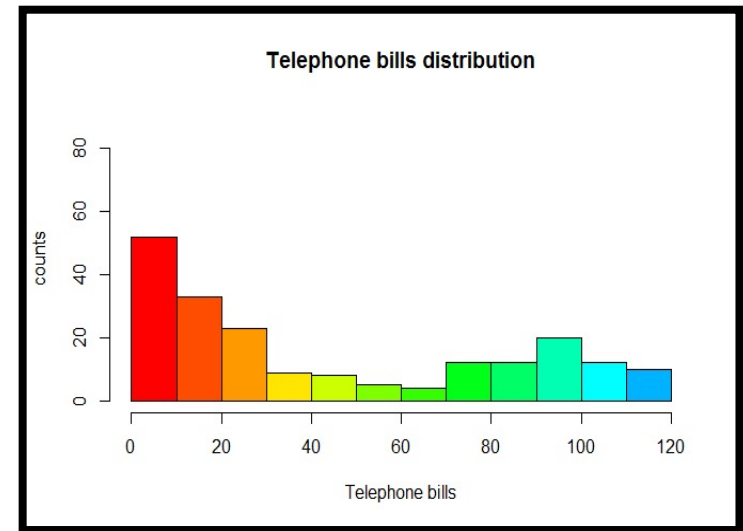
- Typically, the permissible calculation on nominal data is to count the frequency of each value or variable
- Can be visualized with bar graph or pie chart



Graphical Measures: Interval Data

Histogram

- To graphically describe interval data
- Construct a frequency distribution from which a histogram can be drawn
- Create sets of intervals (called bins) that cover the complete range of observations and count the number of observations that fall into each set



Summary and Questions

