Business Statistic

Week 1-1 - Introduction

Introduction

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Class Management

- You are NOT ALLOWED to use LAPTOP, HANDPHONE, or any other ELECTRONIC DEVICES without permission

- You are NOT ALLOWED to EAT in the classroom

- Students with attendance LESS THAN 75% is NOT allowed to enter the FINAL EXAM

Grade Composition

- Mid-Term Assignment   : 10%

- Mid-term Test   : 30%

- Final-Term Assignment   : 10%

- Final-term Test   : 40%

- Homework, quizzes and class activities : 10%

Grading

Final Score	Grade
80 < Final Score	A
70 < Final Score ≤ 80	AB
65 < Final Score ≤ 70	B
60 < Final Score ≤ 65	BC
50 < Final Score ≤ 60	C
40 < Final Score ≤ 50	D
Final Score ≤ 40	E

NOW!

- What will you get in this class?

- What is the function of this class for your life?

- Reading:

Mid-Term Assignment

- Make a group of **2 students**

- Find one MICRO or SMALL BUSINESS.

- Make a STATISTIC REPORT about that business. e.g.:
  Busines history, Products, Sales, Revenue etc.

- At the end of the report, make ANALYSIS, CONCLUSION and
  SUGGESTION about the business based on the data you've
  collected.

Mid-Term Assignment

Scoring System:

- Data presentation : 50%

- Analysis : 30%

- Conclussion and suggestion : 20%

Introduction in Business Statistic

Descriptive vs. Inferential (Inductive)

Population vs. Sample

Parameter vs. Statistic

Types of Variables and Data

Measurement Scale

Statistics in Business

DESCRIPTIVE STATISTICS

- Descriptive statistics are the methods that help collect, summarize, present, and analyze a set of data.

INFERENTIAL STATISTICS

- Inferential statistics are the methods that use the data collected from a small group to draw conclusions about a larger group.

Basic Vocabulary of Statistics

VARIABLE

- A variable is a characteristic of an item or individual.

DATA

- Data are the different values associated with a variable.

Basic Vocabulary of Statistics

POPULATION

- A population consists of all the items or individuals about which you want to reach conclusions.

SAMPLE

- A sample is the portion of a population selected for analysis.

Basic Vocabulary of Statistics

PARAMETER

- A parameter is a measure that describes a characteristic of a population.

STATISTIC

- A statistic is a measure that describes a characteristic of a sample.

Type of Variables and Data

Categorical

Numerical

- Discreet
- Continous

Type of Variables and Data

Categorical variables (qualitative variables) have values that can only be placed into categories such as yes and no.

Numerical variables (quantitative variables) have values that represent quantities.

- **Discrete variables** have numerical values that arise from a counting process.
- **Continuous variables** produce numerical responses that arise from a measuring process.

Type of Variables and Data

Question	Rsponses	Data Type
Do you currently have a profile on Facebook?	❑ Yes ❑ No	Categorical
How many text messages have you sent in the past week?	_____	Numerical (discrete)
How long did it take to download a video game?	_____ seconds	Numerical (continuous)

Measurement Scale

Categorical Data	Numerical Data
• Nominal • Ordinal	• Interval • Ratio

Measurement Scale

A **nominal scale** classifies data into distinct categories in which no ranking is implied.

An **ordinal scale** classifies values into distinct categories in which ranking is implied.

An **interval scale** is an ordered scale in which the difference between measurements is a meaningful quantity but does not involve a true zero point.

A **ratio scale** is an ordered scale in which the difference between the measurements involves a true zero point, as in height, weight, age, or salary measurements.
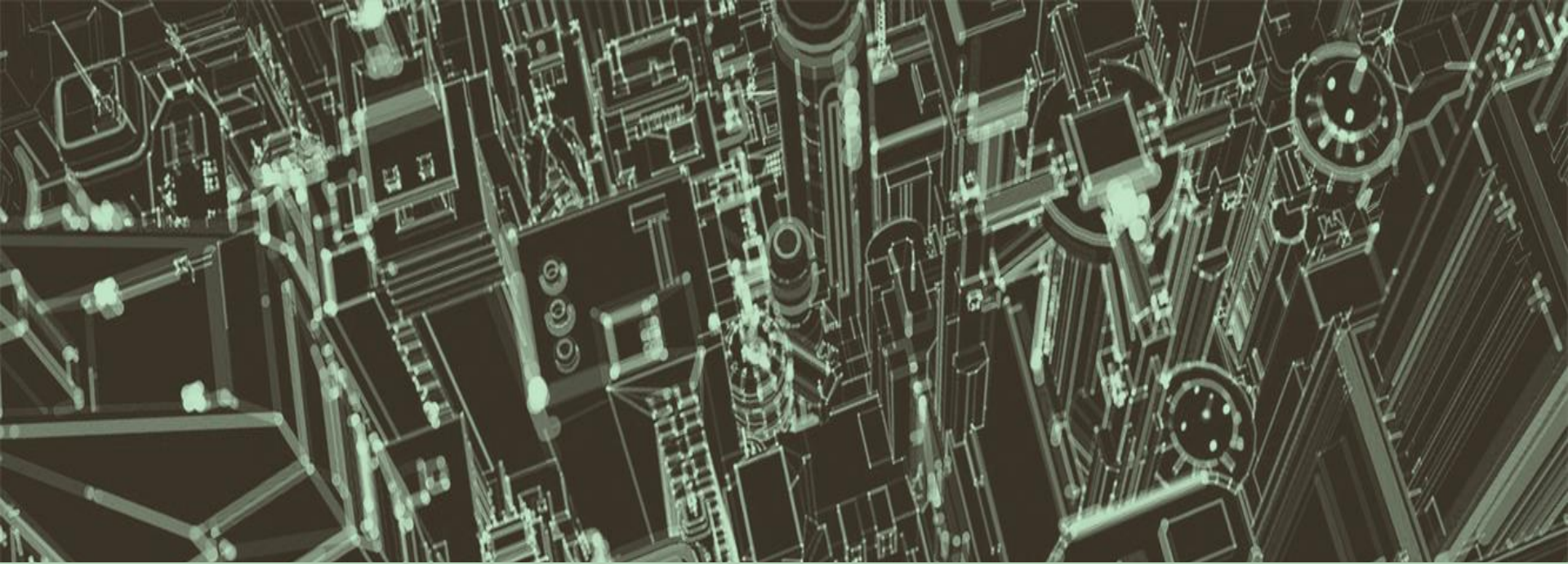
Measurement Scale

Categorical Variable	Categories
Do you currently have a Facebook profile?	❑ Yes ❑ No
Types of investments	❑ Stocks ❑ Bonds ❑ Other ❑ None
Internet email provider	❑ Gmail ❑ Windows Live ❑ Yahoo ❑ Other

Measurement Scale

Categorical Variable	Ordered Categories
Student class designation	Freshman - Sophomore - Junior – Senior
Product satisfaction	Very unsatisfied - Fairly unsatisfied - Neutral - Fairly satisfied - Very satisfied
Faculty rank	Professor - Associate Professor - Assistant Professor – Instructor
Standard & Poor's bond ratings	AAA - AA - A - BBB - BB - B - CCC - CC - C - DDD - DD – D
Student grades	A - B - C - D - F

Measurement Scale

Numerical Variable	Level of Measurement
Temperature (in degrees Celsius or Fahrenheit)	Interval
Standardized exam score (e.g., ACT or SAT)	Interval
Time to download a file (in seconds)	Ratio
Age (in years or days)	Ratio
Cost of a personal computer system (in U.S. dollars)	Ratio

Exercise

1

For each of the following variables, determine whether the variable is categorical or numerical. If the variable is numerical, determine whether the variable is discrete or continuous. In addition, determine the measurement scale.

a.   Number of telephones per household

b.   Length (in minutes) of the longest telephone call made in a month

c.   Whether someone in the household owns aWi-Fi-capable cell phone

d.   Whether there is a high-speed Internet connection in the household

2

The following information is collected from students upon exiting the campus bookstore during the first week of classes.

a. Amount of time spent shopping in the bookstore

b. Number of textbooks purchased

c. Academic major

d. Gender

Classify each of these variables as categorical or numerical.If the variable is numerical, determine whether the variable isdiscrete or continuous. In addition, determine the measurement scale for each of these variables.
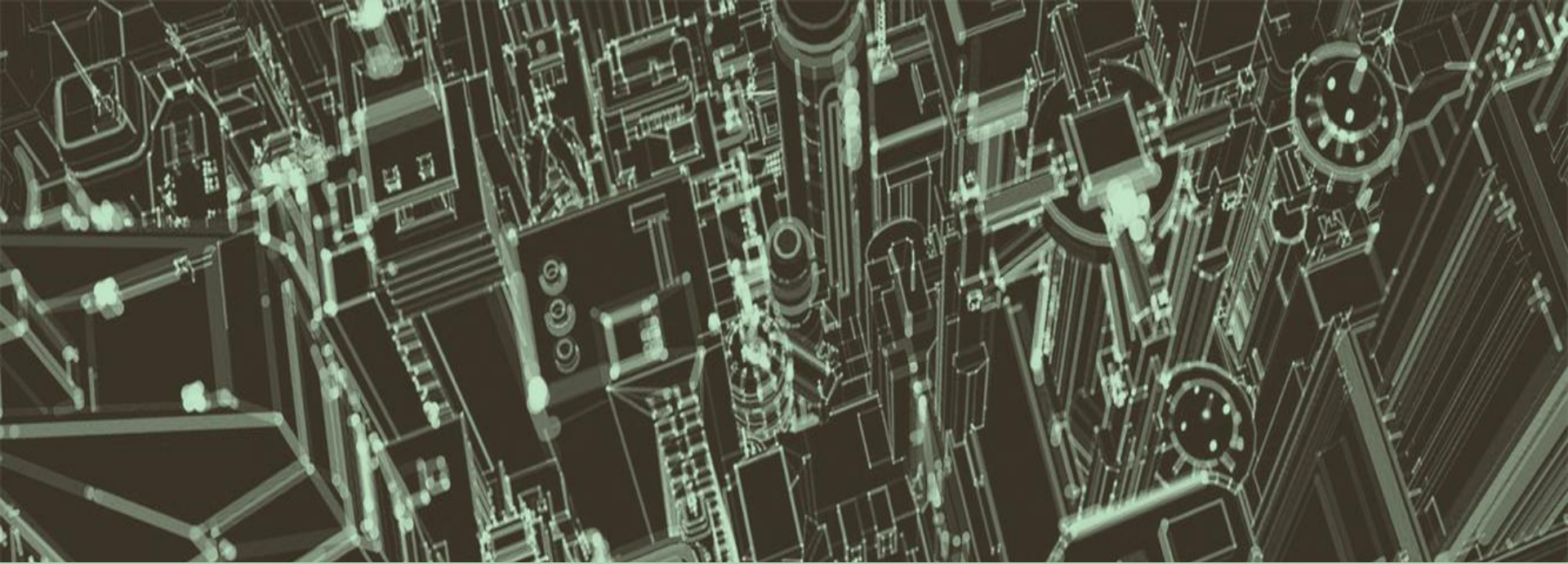
3

For each of the following variables, determine whether the variable is categorical or numerical. If the variable is numerical, determine whether the variable is discrete or continuous. In addition, determine the measurement scale for each variable.

a. Name of Internet service provider

b. Time in hours spent surfing the Internet per week

c. Number of emails received in a week

d. Number of online purchases made in a month

4

For each of the following variables, determine whether the variable is categorical or numerical. If the variable is numerical, determine whether the variable is discrete or continuous. In addition, determine the measurement scale for each variable.

a. Amount of money spent on clothing in the past month

b. Favorite department store

c. Most likely time period during which shopping for clothing takes place (weekday, weeknight, or weekend)

d. Number of pairs of shoes owned

THANK YOU