

# STOR 320 Final Project I

Lecture 6

Yao Li

Department of Statistics and Operations Research UNC Chapel Hill



## Introduction to Project

| Process                    | Deliverable               | Points |
|----------------------------|---------------------------|--------|
| Data to Questions          | Project Proposal          | 10     |
| Questions to Investigation | Exploratory Data Analysis | 20     |
| Investigation to Modeling  | Final Written Paper       | 40     |
| Modeling to Communication  | Final Presentation        | 30     |



### Introduction to Project

#### Final Project Score

- 30% of Course Grade
- Mostly Objective:
  - Follow All Rules
  - Meet All Deadlines
  - Well-Defined Rubrics
- Partially Subjective
  - Interest Level
  - Verbal Communication
  - Written Communication
  - Grammar and Spelling

- Members of the Group Will Receive Approximately the Same Grade
- 10 Points of the Final Written
  Paper Based on Peer Scoring



### Introduction to Project

Four Roles

- Randomly Assigned to Research Groups of 4 or 5
- Group Assignment: google sheet
- Each Part of the Project Will State the Expectations of All Members of the Group According to Their Role



#### Role 1: Creator

- Schedule a 10-minute Meeting with the instructor on Sep 22 or 24 or 26 (1:00 PM – 2:20 PM).
  - Location: Hanes 334
- 5-minute presentation, 5-minute Q&A
- Verbally Explain the Dataset(s) Your Group has Chosen
- Verbally Communicate the Initial Questions Your Group Plans to Pursue
- State the Roles the Other Members Have Chosen
- Lead Designer in Slides for Final Presentation

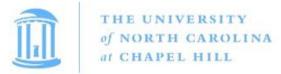


#### • Role 2: Interpreter

- Schedule a 10 Minute Meeting with the instructional assistant.
- Briefly Discuss Any Interesting Results from the Initial Questions
- Discuss Your Group's Findings on The Follow-up Questions
- Explain Which Areas Your Group Will Focus on For the Final Presentation and Paper
- Responsible for Watching Practice Presentation Before Presentation Day



- Role 3: Orator(s)
  - Deliver a 5-7 Minute Presentation
  - Use a Slide Show
  - Explain the Data You Used
  - Show Visuals/ Tables to Illustrate Discoveries
  - Discuss Details of Methods Used For Questions Your Group Investigated
  - Groups of 5 Will Have 2 Orators



#### Role 4: Deliverer

- Proposal, EDA, and Final Paper Will Follow RMarkdown Templates
- Ensure that These Parts are Organized According To Templates
- Ensure that These Parts are Free of Grammar and Spelling Errors
- Ensure that These Parts are Clearly Explained and Hit All Requirements
- Submit All Submissions Before deadlines in HTML
- Submit Slides Before Final Presentation Day



- Abbreviated Roles
  - Creator (C)
  - Interpreter (I)
  - Orator (O)
  - Deliverer (D)

 For Each Part, There Are Clearly Defined Expectations for Each of These 4 Roles



### Part 1: Project Proposal

- Select Data From Online (CIOD)
  - Must Contain At Least 5 Variables (Non-Identifier)
  - May Be Divided Into Multiple Data Sets (Requires Joins)
  - At Least 2 Variables Must Be Categorical or You Must Have a Clear Idea on How You Will Treat Numerical Variables as Categorical
- 2 Initial Questions From Each Member (CIOD)
  - Innovative Thought
  - Non-Trivial (Not Obvious)
  - Groups of 4 = 8 Questions
  - Groups of 5 = 10 Questions
- Delegate Your Roles (CIOD)



### Part 1: Project Proposal

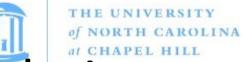
- Template Submitted in HTML via Canvas by Sep 21
- Communication of Proposal (C)
  - Schedule a 10-minute Meeting with the instructor.
  - Have Computer With Data Ready
  - Information on:
    - Data Source
    - Variables Contained
    - Types of Variables
    - Questions Your Group Will Investigate and Variables of Interest
    - What Roles Your Other Members Are Taking



## Part 2: Exploratory Data Analysis

- Investigate Initial Questions (CIOD)
  - Divide All Initial Questions Evenly Among the Group
  - Each Member Must Create 2 Tables or Figures that Investigate Answers to the Questions Posed
  - 1 Table or Figure for Each Proposed Question

- Follow up Questions (CIOD)
  - Propose 4 Additional Questions You Want to Explore for Statistical Significance Based on What You Found in Pursuit of Answering Initial Questions



## Part 2: Exploratory Data Analysis

- Investigate Follow-Up Questions (CIOD)
  - Display 2 Tables or Figures Illustrating Your Attempt to Answer 2 of the Four Follow-Up Questions

- Summarize Investigation (CIOD)
  - Follow Rmarkdown Template
  - Results From Initial Questions Should Be Divided According to Each Member
  - Follow-Up Questions Should Be Proposed
  - Results from Investigating Follow-Up Questions



## Part 2: Exploratory Data Analysis

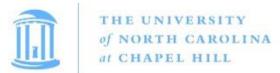
- Written Summary (CIOD)
  - Paragraph 1: Describes what you learned from your investigation of the initial questions.
  - Paragraph 2: Describes what you learned from your investigation of the follow-up questions
- Template Submitted as HTML via Canvas by Due Date (D)
- Schedule a 10-Minute with the instructor or IA
  (I)



### Helpful Advice

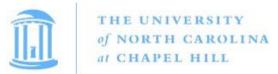
#### Project Proposal

- Choose Roles Based Off Strengths and Availability
- Select a Dataset That is Interesting With Many Variables (>10)
- Pick Very General Initial Questions
- Work as a Team to Come Up With All Initial Questions Then Split Them Up as a Group



## Helpful Advice

- Exploratory Data Analysis
  - Meet to Discuss Results
  - Discuss Follow-Up Questions
  - Investigate the Follow-Up Questions as a Team
  - Discuss the Information That Will Be Written About in the Summary



## Helpful Advice

#### General Advice

- Do Your Job and Hold Each Other Accountable
- Be Prepared to Evaluate Each Other at the End
- Read the Rubrics To Ensure You Get All Points