



*Final Project I*

## Intro to Project



- Process
  - Data to Questions
  - Questions to Investigation
  - Investigation to Modeling
  - Modeling to Communication
- Randomly Assigned to Research Groups of 4 (or 5)
- Four Deliverables
  - Project Proposal (10 Pts)
  - Exploratory Data Analysis (20 Pts)
  - Final Presentation (30 Pts)
  - Final Written Paper (40 Pts)

## Intro to Project



- Requirements on Deliverables
  - 4 Clearly Defined Roles
    - Requires Accountability
    - Demands Work from Everyone
    - Forces Delegation
    - Reason: Different People Have Different Skills
- Each Part of the Project Will State the Expectations of All Members of the Group According to Their Role

## Intro to Project



- Final Project Score
  - 30% of Course Grade
  - Members of the Group Will Receive the Approximately the Same Grade
- Mostly Objective:
  - Follow All Rules
  - Meet All Deadlines
  - Well-Defined Rubrics
- Partially Subjective:
  - Verbal Communication
  - Written Communication
  - Grammar and Spelling
- 4 Points of the Final Written Paper Based on Your Average Rank

## Four Roles



- Purpose of Each Role is To Distribute the Burden of Handling in Deliverables
- Role 1: Creator
  - Schedule a 5 Minute Meeting with Dr. Mario in Office Hours
  - 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

## Four Roles



- Role 2: Interpreter
  - Schedule a 5 Minute Meeting with Dr. Mario in Office Hours
  - Briefly Discuss Any Interesting Results that Came Out of 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

## Four Roles



- Role 3: Orator
  - Deliver a 3-5 Minute Presentation on the Day of Final Exam
  - Use a Slide Show
  - Explain the Data You Used
  - Show Visuals/ Tables to Illustrate Discoveries
  - Discuss Details of Methods Used For Questions Your Group Pursued Deeper After the EDA
  - Summarization of Written Paper
  - Groups of 5 Will Have 2 Orators

## Four Roles



- Role 4: Deliverer
  - Both the EDA and Final Written 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 Both Parts Before 5 PM on Due Dates in HTML



## Four Roles



- 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

## Part 1 Project Proposal



- Delegate Your Roles (CIOD)
- Communication of Proposal (C)
  - Set Up Meeting in Office Hours Prior to October 5 at 5PM (5 Minute Block)
  - Be On Time With Computer
  - Have Data Ready to Show
  - 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)
  - As a Group 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 1 Table 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
- Rmarkdown Template Should be Edited, Proofread, and Submitted in HTML via Sakai by Due Date. (D)
- 5-Minute Presentation (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
  - After Exploring Initial Questions Meet to Discuss Results
  - Discuss Creatively in a Group Regarding Possible Follow-Up Questions
  - Investigate the Follow-Up Questions as a Team
  - Discuss the Information That Will Be Written About in the Summary
  - The More Time You Take on This Part the Easier the Final Presentation and Paper Will Be



## Helpful Advice



- General Advice
  - Do Your Job and Hold Each Other Accountable
  - When One Person Messes Up the Whole Team Loses Points
  - Be Prepared to Evaluate Each Other at the End
  - You Will Rank Every Member of Your Group on a 1-4 Scale from Least Helpful to Most Helpful
  - Clear Descriptions and Rubrics Are Available on Website so Read Them To Ensure You Get All Points

Closing



Disperse  
and Make  
Reasonable  
Decisions