*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 5 or 6

- 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
    - Interest Level
    - Verbal Communication
    - Written Communication
    - Grammar and Spelling
  - 2% of Grade is Peer Reviews
    - Fill out survey found on the course website
    - Four surveys will be available
    - If giving everyone a 5, don't need to complete survey

# Four Roles

- Purpose of Each Role is To Distribute the Burden of Handing 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
  - Lead Designer in Slides for Final Presentation

# Four Roles



- Role 2: Interpreter(s)
  - Schedule a 10 Minute Meeting with Dr. Mario
  - 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 Exam Day
  - Groups of 6 will have 2 Interpreters

# Four Roles



- Role 3: Orators
  - 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 Will Have 2 Orators

## Four Roles



- 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 Templates Before 5 PM on Due Dates in HTML
  - Submit Slides Before Final Presentation on Exam Day

## 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

- Delegate Your Roles (CIOD)

# Part 1
# Project Proposal



- Template Submitted in HTML via Sakai by Due Date (D)

- Communication of Proposal (C)
  - Schedule a 5 Minute Meeting in Office Hours Within 4 Days After Due Date
  - 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
  - Attempt Some Basic Modeling to Answer These Questions or Perform Statistical Tests

# 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

- Template Submitted in HTML via Sakai by Due Date (D)

- Schedule a 10-Minute Presentation in Office Hours within 4 Days After Due Date (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 Score Every Member of Your Group on a 0-5 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