For your final project, you are ask to write a paper and give a presentation on the day of the final exam.

Introduction:

If you take a look back at where we've been this semester- it is a long path!

Some of the things we have learned about:

Maximum Likelihood estimators, permutation tests, bootstrap, Likelihood ratio tests, goodness of fit testing, inference for two-way tables, rating and ranking, Bayesian Inference, linear models, simple linear regression, regression diagnostics, logistic regression, multiple quantitative predictors, lions and tigers- OH MY!

Yes- we have covered a lot of territory. The goal of this project to put into practice some of the concepts you learned this semester.

Outline for this project:

You should have the following sections.

1. Find data and form some questions you would like to answer using that data.
2. Decide which techniques you are going to use to answer your questions from part 1. For this project, you need to use:
    a. two techniques found in 4.10, 4.11 chapter 5 and
    b. two techniques from Chapter 6 & 7.
3. Be sure to discuss why you are using the techniques- i.e. plot data, give assumptions, etc.
4. Analyze and interpret your results- both the good and possibly bad.
5. Adjust your models- can they be made better? Why or why not?

Some advice:

Choosing the correct analysis depends, at the very least, on the answer to the following four questions:

1. What type of variable do we have?
2. How many groups are being studied or compared?
3. What is the research question? Are we asking " is it this" so that we need to conduct a hypothesis test? Or are we asking "what is it" so that we need to calculate a point estimate or a confidence interval?
4. What assumptions can we safely make about the data? Can we assume that the data are normally distributed? Can we assume the variances of the two populations are equal? Are the groups dependent or independent?

Part one: The write up. Write & code your work.

Part two: give a 15 minute presentation to class. See rubric below.

Category	Scoring Criteria	Total Points	Score
Organization (10 points)	The type of presentation is appropriate for the topic and audience.	5	
	Information is presented in a logical sequence.	5	
Content (55 points)	Introduction is attention getting, lays out the problem well, and establishes a framework for the rest of the presentation.	5	
	Technical terms are well-defined in language appropriate for the target audience.	5	
	Presentation contains accurate information.	10	
	Material included is relevant to the overall message/purpose.	10	
	Appropriate amount of material is prepared, and points made reflect well their relative importance.	20	
	There is an obvious conclusion summarizing the presentation.	5	
Presentation (35 points)	Speaker maintains good eye contact with the audience and is appropriately animated (e.g., gestures, moving around, etc.). OR- did well using Zoom	5	
	Speaker uses a clear, audible voice.	5	
	Delivery is poised, controlled, and smooth- well practiced.	5	
	Good language skills and pronunciation are used.	5	
	Visual aids are well prepared, informative, effective, and not distracting. Also, appropriate referencing of figures that is/ was not generated by presenter.	5	
	Length of presentation is within the assigned time limits.	5	
	Speaker is able to answer questions professionally.	5	
Score	**Total Points**	**100**	

BOTH due on Dec 4, 1:30 to 4