

Class project description

1. **10% grade, due** before Final exam, **submit** from Blackboard in Word or PDF format.
2. **Data source is flexible**
 - a. You can conduct your own **experiment** (e.g. lab, cooking, anything) and collect some continuous outcome/response data, with at least **two** factors that you hypothesize to be related your outcome variable.
 - b. You can use **your own data** that you may find somewhere/online. The data needs to have at least 50 observations with at least 2 factors and a continuous outcome. You can make certain hypotheses to research an interesting question.
 - c. You can use the data from Textbook **Appendix C1-C5**. Data sets are described in the appendix C and you can look at the **Project** section at the end of each chapter to get idea of possible research questions. You need analyze at least two factors. I have created a project folder in the class website with these datasets.
3. **Report format.**
 - The project is a good practice, like, writing a scientific report or mini-paper.
 - You can include your code as part of the report or in the appendix for supporting materials or for your own record (not required).
 - You need to have these sections:
 - **Title, author** (your name)
 - **Introduction:** Description of data, your research question and hypothesis
 - **Methods:**
 - Design: how you design your experiments (how to randomize or use blocking, etc); how other people collect the data;
 - What analysis methods you are using? ANOVA, regression, testing of interaction, etc?
 - Software: R or your other choices
 - **Results**
 - Table/figures that can summarize/represent your data or findings
 - Description of the results and whether your hypothesis is confirm or not after your experiment
 - **Conclusion**
 - What your take home message? What is your final answer regarding to the research questions that you've state in the introduction.