

AP STATISTICS: FINAL PROJECT

Project Overview

With this project you must demonstrate your statistical knowledge of experimental design, descriptive statistics, and inferential statistics. Your project must be based on one of the following hypothesis tests:

1. Chi-Square
2. Regression Analysis
3. One or Two Sample Mean
4. One or Two Sample Proportion
5. One-way ANOVA

You must gather your own data which will allow you to do inferences using one of the models listed above. You must create an original study which does not have an obvious conclusion before the study is performed. Originality and complexity will be factors in your grade.

Experimental Design

- You must work with data in order to answer a question, which you create with a sample in hopes of extending your conclusion to a population that you define.
- The data must be collected in a way which fulfills the assumptions of the required test.
- The experimental design may be an observational study, a controlled experiment, or a survey.
- **You must clear your procedures of collecting data with your teacher before proceeding.**

Descriptive Statistics

- Any descriptive statistics relevant to your project should be included.
- At least two graphs (such as boxplot, scatter diagram, stem-and-leaf, histogram, etc.) should be part of your presentation. The graphs can be a way to summarize descriptive statistics.

Hypothesis Test

- The type of test should be identified and an explanation of why this type of test was chosen should be included.
- The hypothesis should be stated in symbols and words.
- An appropriate level of the test should be chosen and stated.
- The test statistic used to perform the test should be identified.
- The value of the test statistic and the corresponding P-value should be stated.
- The conclusion of the test should be succinctly stated.

Format and Style

- The report should be typed in googledocs to allow collaboration.
- Symbols and equations may be inserted by hand. Googledocs can create mathematical symbols (see me).
- It should have a cover page and be placed in a report binder.
- Graphs should be neatly constructed and include color. Graphs should have an appropriate title and have properly labeled axes.

The Report

- You will work in pairs. You will submit **one** report for your group.

- The report should have each of the following sections **in the order given:**
 1. **The Abstract**

A one page overview of the study covering all important details. This page should summarize the crucial points of the study from beginning to conclusion.
 2. **The Study**
 - a. The question: A description of the question you are trying to answer.
 - b. The sample: A careful description of how the sample(s) were obtained. Be very specific. Include size, population of interest, and description of sample. Also include a copy of the survey if you used one.
 - c. A table or list containing your data values.
 - d. Relevant descriptive statistics and graphs.
 - d. Significance test: Why the test is appropriate. The hypothesis, test statistic, and p-value. **Do not write a conclusion until part 4.**
 3. **Discussion**
 - a. Weaknesses of your study. Include any possible confounding variables.
 - b. Extrapolate. Do you feel comfortable extrapolating your results?
 4. **Conclusion**

Include meaning of p-value and amount of evidence. Explain what lead you to the conclusion(s) that you have drawn.

Oral Presentation ([Oral Presentation Rubric](#))

- Each student must have a part in your oral presentation (5 to 10 minutes).
- Must include an electronic presentation ([Googledocs](#), [Prezi](#), etc.) with appropriate tables and graphs ([example 1](#), [example 2](#)).
- Must describe your statistical question, method of data collection, test used, and results.

[Back To Home Page](#)