

Math 1040 Term Project, Spring 2013

This project will allow you to pull together methods you have studied, starting with choosing a research question, then designing a method for collecting data, analyzing your results, and posting your work in your e-Portfolio. Part of the project will be completed individually and part will be completed as a group. Below are the due dates and the details for each part of the term project. No late work will be accepted.

21 February

Each student should submit two possible research questions. The research questions will ask how one **quantitative** variable is related to a second **quantitative** variable (such as “Is shoe size of adult men related to height of adult men?”) Your questions should be different from this example! As you think about possible questions, remember that you will actually be going out and collecting this data.

26 February

Do not miss this class day! We will take class time for you to form your groups, exchange contact information, look over the various possible research questions submitted by your group members, and choose one question to be used for the term project.

28 February

Each group will submit their chosen term project research topic and plan for data collection.

- ⤴ Data must be collected by gathering it on your own. Do not use collected data available to you on the Internet.
- ⤴ Your sample size will be between 30 and 50.
- ⤴ It is important that your data be collected randomly. Explain how you will introduce randomness into your data collection.

Submit this assignment in the following format:

Our group consists of the following students:_____.

Our first quantitative variable is _____. The unit of measurement for this variable is _____. A few possible values for this first quantitative variable are _____, _____, and _____.

Our second quantitative variable is _____. The unit of measurement for this variable is _____. A few possible values for this second quantitative variable are _____, _____, and _____.

Our research question is "Is _____ related to _____?"
(first variable) (second variable)

To answer this research question, we will gather data as follows:

_____ ... _____.

Your written plan needs to be specific and use complete, well written sentences. If you need help with your writing skills, go to the SLCC Writing Center.

12 March

Each group will submit the group's data organized into a table. Each group member's name who participated in data collection should be included with the table. Be sure that every member of the group has **their own copy** of this data in addition to the copy that you turn in.

***** You now have everything you need to get started, so get started! *****

18 April

The Written Report

EACH INDIVIDUAL STUDENT will submit a written report that they have created on their own. **This is not a group part of the project! Do not work together on this!!!**

The written report should include the following:

- ⤴ **Purpose of the study** (the research question)
- ⤴ **Study Design** (description of the study design including the data collection plan)
- ⤴ **The Data, Statistics and Graphs**
 1. all data, organized into a table

2. statistics for your first quantitative variable: mean, standard deviation, five-number summary, range, mode, outliers
3. histogram for your first quantitative variable
4. boxplot for your first quantitative variable
5. statistics for your second quantitative variable: mean, standard deviation, five-number summary, range, mode, outliers
6. histogram for your second quantitative variable
7. boxplot for your second quantitative variable
8. statistics for testing the correlation between your two variables: linear correlation coefficient (**USE R AND NOT R²**) and equation for line of regression
9. scatterplot that includes line of regression

▲ **Difficulties/surprises encountered**

▲ **Analysis.** Include a discussion of the distribution of each variable and the correlation, or lack of correlation, between the two variables. Include a comparison of your value for R with the critical value for your sample size. A critical value table with degrees of freedom up to 100 is posted in MyStatLab.

▲ **Interpretation and conclusions.** Include your conclusion about correlation from the above comparison of R with critical value. State in your own words if and how you have answered the original question.

Your writing must have correct grammar and spelling. Strive to create a college level report that looks professional. If you need help with your writing skills, go to the SLCC Writing Center. Only hard copies of this assignment will be accepted. Do not e-mail it.

30 April

Each student will post both their written report and reflective writing in their e-Portfolio. **Carefully read and follow the e-Portfolio instructions that are posted on your website.**

For the reflective writing component, each student must write two to three paragraphs responding to one of the following questions and add this reflective writing to your ePortfolio.

▲ What process did you go through to complete this assignment?

▲ What challenges did you face in completing the assignment? How did you address them?

- ^ What impact did this project have on your understanding of statistics?

Your writing must have correct grammar and spelling. Strive to create a college level reflection that looks professional. If you need help with your writing skills, go to the SLCC Writing Center.

Grading:

Assignment:	Points:
Possible research questions	10
Group declaration of topic and data collection plan	20
Collected data	10
Written Report	70
e-Portfolio and Reflective Writing	40
Total Points =	150