As you are aware, for 15% of your course grade, you will be proposing, designing, carrying out and analyzing an experiment of your choice. Ideally, you should propose and design an experiment, which uses methods learnt in this class to reach conclusions. However, feel free to do one of the following:

a) Go to the library and find real data from a published source and analyze it. (Might lead to a loss of some points)

b) Write a report on a RECENTLY published article on some new innovative nonparametric technique. The article should have used statistics to reach conclusions and your report should critique the study.

c) Design an experiment – work out all the details and then make up hypothetical data and analyze the hypothetical data.

The first step is a preliminary proposal, which is due no later than October 15. This proposal should state the option you have chosen (e.g. carrying out a real experiment or one of (a), (b) or (c)). For those of you who design an experiment or pick option (c), the proposal should clearly specify the following:

1) The statement of the problem and the population/ populations you will be studying.
2) The potential variables.
3) An outline of how you plan to collect the data and analyze it.

As an example, suppose you want to test two competing drugs for reducing number of angina attacks in heart patients. Potential questions to be answered – 1) How are you going to collect your sample?” (If your sample happens to be patients in one particular county, then can you extend the results to all human beings? 2) What kind of a design should you use – paired samples or not? 3) What statistical method should you use to analyze the data? 4) Should you fix some variables for all the subjects or at least record them, so you can make adjustments later? 5) Should you use a double blind study? BE SURE TO DESIGN THE EXPERIMENT VERY CAREFULLY.

Your final report will be due on the last day of class. It should start with a one page "summary" or abstract of the experiment with the final conclusion (e.g. Drug A cures common cold faster than Drug B.). This summary should be general and understandable to a general audience. The rest of the report should be written for a student of statistics - it should include an introduction, a description of the experimental plan, graphical or tabular presentations of the data and precise conclusions (e.g. tests, confidence intervals, p-values etc).