Project #1
Due Date: Monday, September 8.

You have been given the following documents:
- United States Life Tables 2000, National Vital Statistics Reports, Volume 51, Number 3.
- Revised Birth and Fertility Rates for the United States, 2000 and 2001, National Vital Statistics Reports, Volume 51, Number 4
- Age: 2000 Census 2000 Brief

Based on the information in these documents, construct a model for the population of the United States for the period 2000 – 2100. This model must take into account the age structure of the population. You may use information from other sources to construct your model.

Use your model to answer the following questions:

1. What is the expected population for the United States for the period 2000-2100?
2. What is your estimate for the population in 2060?
3. How accurate is your estimate?
4. What are the sources of error for your estimate? Rate their significance.
5. In 2000, how many workers support one retiree?
6. Estimate the number of workers needed to support one retiree in 2060.
7. How accurate is your estimate?

You will give a 10-minute presentation to the class on Monday, September 8 to discuss your model, and its results.

Rules:
- The assignment is due at the beginning of class on Monday, September 8, 2003.
- This project is to be completed by teams of 1–4 students, and all students shall make a reasonable contribution to the solution of the problem. Separate from the assignment, each student shall hand in a sheet that describes the work of the group. This will be used in grading; students in the same group may receive different grades.
- You may not discuss this project with other members of class, or with anyone outside of class. You may (only) discuss the project with the instructor.
- Aside from the restrictions in above, the use of outside references is acceptable, and indeed encouraged. However, all outside references need to be properly acknowledged.
- Answers should be a well-written paper that describes the problem and the solution. All of the usual rules of English grammar and composition apply.
- Papers need to be neat, clean, and paper-clipped or stapled. They do not need to be typed or written in ink, but they must be legible and easily readable.
- Copying the work of another student or portions of a published work constitutes plagiarism. Plagiarism or any other form of academic dishonesty will be cause for immediate failure of the course.

Grading Criteria
Your paper will be graded on the following criteria:
- How reasonable is the model?
- Were all the assumptions made in the model explained? Were they justified?
- How closely are the parameters in the model tied to data?
- How well were the questions answered?
- How good was the error analysis?
- Was the paper well-written?