Software Analysis and Design

In this phase, you need to use your understanding of the user requirements and your initial high level design ideas from the last project and develop both an analysis model and a design model for your software. Specifically you need to do the following: (some of this may already be completed in your last deliverable)

Analysis

1. Develop an information model. Describe what information will be represented and how this information will be represented in your system.
2. Develop functional models. Specify how functions will modify data and how they may communicate information among themselves.
3. Develop behavioral models. Identify input events, internal states, and how the system moves from state to state.
4. Develop the user interface model. Come up with a simple prototype of the system that models expected behavior (most teams will have an initial start on this part from the last deliverable).

Design

5. Choose a system architecture that seems appropriate. (check out Chapter 10 for help on this if you're not sure)
6. Partition the analysis model into subsystems. Make sure each subsystem is functionally cohesive. Design the subsystem interfaces (how they communicate with each other). Develop appropriate data structures. Specify appropriate algorithms for manipulating your information.
7. Design the user interface. Base the design on the end-user's perspective. Develop high-fidelity versions and get some initial feedback from the client.
    a. To do this, you will need to create a simple prototype. This prototype does not need any real functionality. You can simply "stub" out the functions (for example, you don't have to use a full database in a prototype, a simple file will work). The goal is to illustrate how the system will work in a version that will give the user a real understanding of the interface.
    b. Show your prototype to the client and potential end-users. Gather information on what they tell you about the system. Use this information to re-visit your requirements and see what/how they might change.
8. Provide a listing of modified requirements, and an updated plan for completion of the project.

Submission

Create a report that documents your efforts for numbers 1-8 above. Remember, lists, sketches, drawings, and tables are effective methods for communicating complex information. Put this report at the front of your project binders (that have been returned to you). Turn in your project binders at class time on Monday October 27, 2008.