6-1. Using the standard solitaire game, Klondike, suggest an implementation(Stack, cues, List, etc (Data Structures)). Be specific in how it will handle the different aspects of the game.

6-2. Graphs - Suppose you had a graph, and you wanted to find paths between vertices. How would you represent the graph as a linked structure? How would you represent the graph if you did not use a list structure? At least one of your responses to another student should consider if recursion useful or problematic with their representation? At least one of your responses to other students should consider if it makes a difference if you are constrained to find the shortest path (instead of any path)? Or, does it make a difference if you are trying to find all the paths in the graph (all paths between all possible pairs of vertices)?

7. Binary Tree Applications - How can priority queues be implemented? Defend your position.

8. Sorting Factors- Name at least two factors that should be considered in selecting a sort. Start a separate thread for each. Explain the ramifications of each factor.

9. Sorting Application - Pick one of the sorts and comment on how well the sort will solve the following problem At most, two students may select the same sort/implementation combination. Then respond to other students as you would normally.

It's time for a fire drill. Just as you are leaving work, your boss informs you that you need to incorporate a debugged, working sort into the hands-on demo scheduled first thing the day after tomorrow for the firm's most important client. No bells and whistles are expected. Tomorrow evening you are "expected" to attend the reception being given for the client, so the work must be finished before then. From your experience with the system, you know the data files tend to run a few hundred items, usually random, but a substantial minority is fairly ordered. The data records are small. Your boss does not know if this will become a permanent feature or not. You may assume that the integration into the system can be done in a couple of hours.

10. Searching Sorted Data - You need to design a data storage scheme for Hayseed Heaven library data system. There are several hundred thousand large data records. You expect frequent insertions/deletions as well as frequent queries, involving multiple attributes. There is no requirement for printing the file in order. You may assume the initial file is available sorted. The queries are in real time and primarily occur on the ISBN number, title, and author fields. There are occasional queries on the publisher and subject fields of the record. You may make reasonable assumptions about hardware availability. The entire system is archived monthly. What do you propose and why?

11. Transposition and Hashing - Suppose you have to store employee records for your employer, the largest company in the state of Maryland. The primary key is the Social Security number. You need to primarily access individual records, but occasionally expect to need to print out the file for an employee directory. Identify one other way in which you need to access the data and justify a hashing and collision-handling scheme.  At least one of your responses to other students should identify a previously unstated way to access the data.