Lab 7b

Classes

Introduction

This lab is a continuation of what you did in Lab 7a. In Lab 7a you took a text file and did some analysis on it. It was rather painful to pull apart strings. This lab will require you to do the same thing you did in Lab7a and extend it. In my sample program I show you how I defined a Class Student. My definition was rather simplistic but we covered in lecture how much more could be in a class.

In this lab I want you to extend the definition of the Class Student. It should have the same data fields as before, but I want you to add the following methods:

1. A method which allows me to search for a particular student. I will give you either the name or the student id. (this means really two methods, same name, different parameters). Your method should return a student which can then be accessed from outside the class.
2. A method which deletes a student. I will give you either the name or the student id as before. Before deleting the student you should confirm with a "Do you really want to delete (student name, student id) query". Of course this makes sense.
3. A method which adds a student. You get from me a lastname, firstname, id, gender, grade. You then construct the student and add them to the list of students.
4. A method which sorts the students by name.
5. A method which sorts the students by number.
6. A method which prints out all the students and associated data. If the array has been sorted, then this should print the sorted array.
7. A method which prints out the students as a class (see discussion below). It takes as a parameter the filename I want to call it.
8. A method which reads in the students as a class. It takes as a parameter the name of a file which I will give. If the file doesn't exist your program should catch the error and ask to try again (different name) or cancel.
9. A method which prints out statistics on the file: Specifically, number of girls, number of boys, number in each grade.

NOTE: There will be at most 100 students, so you can use an array of size 100. Use the same class list as before for input.

Note: Implement the class student in a **separate file.**

To solve the issue of how to print out an object, look on-line using the following search in google:

Google java reading and writing objects.

At the time of this writing this got a good page. Use this and a textbook.

http://avajava.com/tutorials/lessons/how-do-i-write-an-object-to-a-file-and-read-it-back.html

There are things here that are not needed. You don't need a package. You don't need the "override" thing you see in the class definition. You do need the little bit about Serialization you see in the class declaration and the import.