Assignment 12 01/25/2017

The file stars.txt contains actual data (somewhat processed) from online astronomy databases. Each line contains information about a single star. The information for each star is as follows:

- Three floating point values: the x, y and z position of the star.
- A unique identifier for the star known as the Henry Draper number.
- The magnitude (or brightness) of the star.
- Another identifier (the Harvard Revised number).
- A space separated list of names for the star (possibly empty). A star may have more than one name.

Your program will function in the following way:

1. When it begins, it should load all of the star data into a map where the key is the Henry Draper number. Store everything except the names of the star.
2. In another separate structure, store the relationships between Henry Draper numbers and star names (use star name as the key, and Henry Draper number as the value). Note that the same name may be used for more than one star, so you'll need to use a multimap container.
3. Ask the user for a star name or Henry Draper number.
4. If the user enters a name, find and display the star information (all information about the star) for all stars with that name. Do so by first looking up the Henry Draper number(s), then looking up the star(s). This process must be O(log n) (don't do a linear search).
5. If the user enters a number, look up and display the star's information. This must also be O(log n) (don't do a linear search).
6. Repeat steps 3-5 until the user enters a value of -1.

You should make a class named Star to store information about each star. Your map could then use an int as a key and a Star object as the value.

Submit your program via online submission system and turn in a printed copy of your code in class on Friday. Thoroughly test your program.