Homework 5, CSCE 240, Fall 2014

Overview

This is an exercise in

- overloading operators;
- information hiding, also called encapsulation.

This Assignment

C++ has a built-in `set` container that acts like a mathematical set.

However, the container does not have the usual functions one applies to sets. Your assignment is to implement these functions as ordinary functions and then to use operator overloading to invoke those functions using operators instead of textual references to function names.

You are to use `string` data as the element data in the set.

Specifically, you are to implement:

- `add(string elt)`
- `containsElt(string elt)`
- `containsSet(MySet thatSet)`
- `equals(MySet thatSet)`
- `getElts()`
- `isContainedIn(MySet thatSet)`
- `remove(string elt)`

The semantics of these should be self evident.

You are then to use operator overloading to implement

- `<=` for "this set is contained in that set"
- `>=` for "that set is contained in this set"
- `==` for equality of sets

- `<<` to implement `toString()` as an operator for a set.

I have given you a set testing function. Your code must at least pass these tests on the sample data and on the data I choose to use when your programs are run for a grade.