CS 132 - Intro to Computer Science II - Spring 2005
Homework #4
HW #3 due: Wednesday, March 2nd, <u>beginning</u> of lab

<u>HOMEWORK #4:</u>

Purpose: simple practice designing and implementing an ADT

You may have noticed that our concept of a **bag** is not that far removed from that of a **set** --- except, of course, that a set has no concept of duplicate members. That is, an element is either in a set, or it isn't --- it cannot be in there twice. So, write a class **set**,

  *   creating an appropriate pseudo-UML for the class, **set_uml.txt**,

  *   creating **set.h**, **set.cpp**, (using a dynamic-array-based implementation), and **trySet.cpp**,

  *   and redirecting the output of **trySet** into **hw4_out**.

The **set** ADT should be analogous to bag, except for those changes needed by its lack of duplicates (bag's member operation count would be replaced by a member operation contains, for example, that simply lets you know if the target is in the set or not --- and bag's erase and erase_all would be replaced with a single operation remove, to remove the target if it is in the set).

Since I would like you to submit the pseudo-UML on cs-server --- and I want to be able to read it there --- type it in using ASCII formatting (that is, a line of dashes can suffice for the division between two sub-rectangles). Call this file **set_uml.txt**

Be careful --- this is very similar to **bag**, but you should carefully edit any parts that you borrow from bag. You'll lose points for parts that obviously do not pertain to sets/are obviously part of bag (<u>even in comments</u>).

And, of course, try out **set**'s operations as thoroughly as you can in **trySet.cpp**; test your set class at least as thoroughly as the posted **babytest_bag.cpp** tests out the bag class. And remember to compare expected and actual in such tests.

 Make sure, when you are done, that you have submitted to me the following files
(using **~st10/132submit** on cs-server):

    set_uml.txt, **set.h**, **set.cpp**, **trySet.cpp**, **hw4_out**