CPP Assignment #4

Practice inheritance in OO design. Learn how to apply xUnit test in project development.

- 1. Design a sorted list inherited from list implied by Assignment #3. Provide sorting automatically when add a Data. Use quick-sort algorithm.
- 2. Install and test exxunit by emdline, do it under shell:

```
tar zxvf cpp4_xunit.tar.gz
cd bankaccount
make
./runner
make clean
make GUI=y
./runner
```

requirement:

A: read BankAccount class file and BankAccountTest.h file, learn how to write a TestSuite.

B: read to cxxtest-guide-3.10.1.pdf to learn cxxtest MACROs.

3. Build dereferee package used by pointer intrusion test and verify it.

cd dereferee/Dereferee make

make cd demo make cd .. build/run-demo

copy build/gcc_bfd_platform.o to your list project for eclipse test.

4. Install cxxtest and dereferee package plugin in eclipse start eclipse, and select **help->Software Update** (Figure-1)

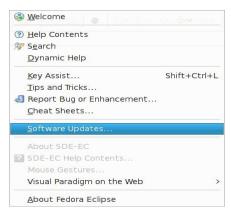


Figure-1: help->Software Updates..

click Add site (Figure-2), add "http://web-cat.cs.vt.edu/eclipse/" to Location. Installed Software Available Software type filter text Version ▶ □ ◀ Eclipse Update Site ▶ □ ◀ EMF Update Site ▶ □ ◀ Fedora Eclipse JDT ▶ □ ◀ Fedora Eclipse SDK Add Site... Add Site D Local.. Manage Sites... D Location: http://web-cat.cs.vt.edu/eclipse D Archive. D Refresh. D D ? Cancel ✓ Show only the latest versions of available software ☑ Include items that have already been installed Open the 'Automatic Updates' preference page to set up an automatic update schedule.

Figure-2: Add Site

Close

?

Select Web-CAT Eclipse C++ Feature and click Install (Figure-3) Installed Software Available Software type filter text Name Version Install... ▶ □ ◀ EMF Update Site ▶ □ ◀ Fedora Eclipse JDT Properties ▶ □ ◀ Fedora Eclipse SDK ▷ □ ╣ http://download.eclipse.org/tools/cdt/releases/europa Add Site... ▶ □ ╣ http://download.eclipse.org/tools/cdt/releases/europa ▷ □ ╣ http://download.eclipse.org/tools/cdt/releases/ganymede Manage Sites... ▷ □

| http://download.eclipse.org/tools/emf/updates/ ▶ □

| http://pmd.sourceforge.net/eclipse Re<u>f</u>resh ▷ □

| http://sourceware.org/eclipse/update ▶ □ ■ Uncategorized 👿 🦣 Web-CAT Eclipse C++ Feature □ 🖗 Web-CAT Eclipse Java Feature 1.3.0 ▷ □

Mylyn for Eclipse 3.4 ✓ Show only the <u>l</u>atest versions of available software ☑ Include items that have already been installed Open the 'Automatic Updates' preference page to set up an automatic update schedule. ? Close

Figure-3: Install plugin

5. Read cxxtest_eclipse.pdf to learn and test your installation.

You should copy dereference/Dereference/build/gcc_bfd_platform.o to your bankaccount eclipse project directory

set linker option in eclipse bankaccount project properties (Figure-4,Figure-5)

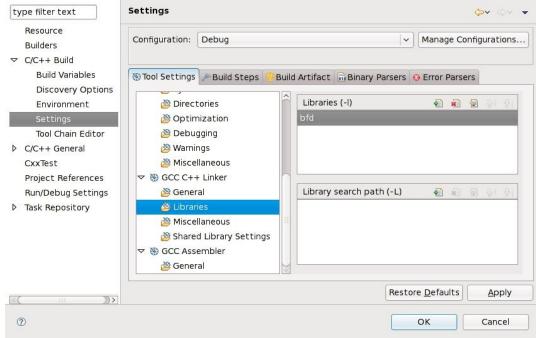


Figure-4: linker properties

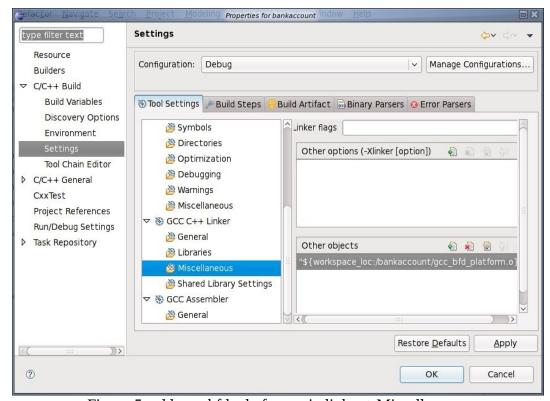


Figure-5: add gcc_bfd_platform.o in linker->Miscellaneous

Settings type filter text Resource Configuration: Debug Manage Configurations... Builders **Build Variables** Tool Settings Build Steps Build Artifact 🗟 Binary Parsers 👩 Error Parsers Discovery Options ☐ Do not search system directories (-nostdinc) Environment □ Preprocess only (-E) Preprocessor Directories Tool Chain Editor Defined symbols (-D) **a a a** Optimization DEREFEREE_NO_CONST_CAST Debugging CxxTest **Warnings** Project References Miscellaneous Run/Debug Settings S GCC C Compiler ▶ Task Repository Preprocessor Undefined symbols (-U) Symbols Directories Optimization Restore Defaults Apply ? OK Cancel

if you use Fedora 10, set additional compile option (Figure-10)

Figure-6: Option for fedora 10

NOTE: if you have compile error in **fedora 10** such as: "'malloc' was not declared in this scope". Edit that source file,add "#include <cstdlib>" and #include <cstring> manually.

- 6. Write a xUnit test suite to test your List class and SortedList class. You should test every member function provided by these classes.
- 7. Talk with you group about your SortedList class design, and test methods.