Implement (using standard ANSI C++) the Ckey and Citem classes described below. These classes will be the basis for an electronic dictionary that you will be building over several assignments. Hand in an assignment cover sheet together with hard-copy of your code; and submit your code to the class account on ada (where your code should compile and run).

Step 1). Define and implement a class Ckey. This class should have a word object for a dictionary. The data members should be defined as protected and not private to allow derived classes direct access to the parent’s data members. The word will be your key for any future ordering of word-related items. You may build Ckey on C-strings or class string. You will need the following operations:

- constructor, destructor, and copy constructor
- bool operator==(const CKey& rhskey) const;
- bool operator< (const CKey& rhskey) const;
- Ckey& operator=(const CKey& rhskey);
- friends operator<< and operator>> for input/output (making them such that they can use either files or standard input/output)

and any others that you think might be needed.

Step 2). Define and implement a class Citem. Construct this class to represent definitions of words such that Citem is a derived class of Ckey. Thus, it will inherit the word object so the definition can be associated with the corresponding word. It will also inherit bool comparison operators and all public member functions from its parent class Ckey. Thus, in Citem, there will be no bool comparison operators. You will want to define:

- constructor, destructor, and copy constructor
- Citem& operator=(const Citem& rhsitem);
- friends operator<< and operator>> for input/output

Step 3). Test the Ckey and Citem classes. Implement tests of these classes in a file prog1.cpp. Display the tests to standard out showing that all operations in both classes have been tested, including inherited operations. Your main program does not need to be modularized.

Step 4). Place files in prog1 directory and submit prog1. The directory should contain the files: ckey.h, ckey.cpp, citem.h, citem.cpp, prog1.cpp, words.txt, and defs.txt files.