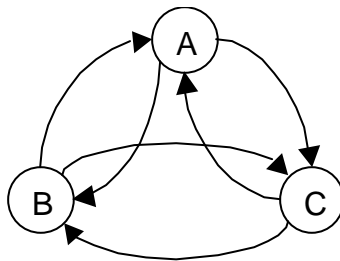


**CS-183**  
**C++ Program #3**  
**Dynamic Objects & the Canonical Form**

**Date Assigned:**      **Monday, October 1, 2001**  
**Date Due:**            **Friday, October 12, 2001**

Suppose we wish to represent a particular arrangement of atoms in a molecule using object-oriented techniques. In such a model, the nodes of the molecule would be objects that hold data values and pointers to other atoms that they bind with. For example, a three atom molecule could be represented with the following object configuration:



Using pointers to dynamic objects, write the C++ code (class declarations and definitions) to implement this Triangle class abstraction. Make sure that users can create and destroy Triangle objects at will; and that Triangle objects are copied and passed by value properly in the user's code. Be sure to test all the functionality of your implementation by writing a main program that requires Triangle objects to be created, destroyed, copied, passed by value, and any other type of use of Triangles that seems appropriate. The data contained in the nodes can be simple characters, as shown above. Make sure that Triangle objects can be easily printed by the user program (text output only, no need to try to show the links, only the node values).

As always, when you are finished with your program, submit a report detailing your implementation, along with a summary of your time spent on designing, implementing, and debugging/testing your class. Be sure to email to [blessing@msoe.edu](mailto:blessing@msoe.edu) your source files (.cpp and .h), your project files (.dsw and .dsp), and your report (.doc or .pdf).