**CSC 232 – Software Development**

**Project Assignment #3 – Containers**

# Due Monday, November 6, by the beginning of class

Work with your group members to complete this assignment. Your work should be committed to the GitHub repository; this is how it will be graded.

***Part One: Create a* ContainerItem**

You should create a class called **ContainerItem** that represents an item that can contain other items. This class should include a collection of Items within it, and should provide methods to add an item to the collection, remove an item from the collection, and query the collection as needed. Getting the description of the ContainerItem should list its own description and a list of the items within the container.

There are two ways to create this class:

* Make the ContainerItem a sub-class of the Item class.
* Change Item to be an interface, then make CommonItem and ContainerItem classes that implement that interface.

Either of these approaches will work. The sub-class option is probably the most straight-forward. Do not simply make ContainerItem its own class!

***Part Two: Extend the Driver***

In addition to keeping track of the current Location, the Driver (or command processor) should also maintain a ContainerItem named **inventory**. This **inventory** variable will store the items that the character in the game is carrying. You should also add at least one other ContainerItem to the location. The driver should be modified to recognize the following additional commands (you can change the details, but the basic functionality should be available):

* **take *name***: If there is an item with the given name in the current location, remove it from the location and add it to the inventory.
* **drop *name***: If there is an item with the given name in the inventory, remove it from the inventory and add it to the location.
* **take *name* from *container***: If there is an item with the given name in the specified container, remove it from the container and add it to the inventory.
* **put *name* in *container***: If there is an item with the given name in the inventory, remove it from the inventory and add it to the specified container.
* **inventory**: List the items in the inventory.

Note that the above commands involving containers should work if the container is in the location or in the player’s inventory. Also, for the above commands, if there is not an item with the given name, do nothing.