CS3377 Assignment 7

An "Inventory" class specification can be defined with the following header:

```
class InventoryItem
{
public:
     // Constructor
     InventoryItem(char *desc, double cost, int units);
     // Destructor
     ~InventoryItem();
     const char *getDescription() const;
     double getCost() const;
     int getUnits() const;
private:
     char *description;  // The item description
     double cost;        // The item cost
     int units;          // Number of units on hand
};
```

This class models an item sold at a store.

Question1: Finish the specification with whatever code needed (additional attributes of methods) in a header file, then write an implementation for this class (always in a separate "cpp" file).
Question2: Add a static member variable to "`InventoryItem`" class called `number_articles`, of type "int". This variable should keep how item articles are sold by the store. Add a static member function called `getNumberArticles` that return that number.
Question 3: Design and implement class called Stock that has the following incomplete header:

```
class Stock
{
private:
     InventoryItem *list;  // The list of items in stock
};
```

The class stock acts as a collection of inventory items. To be able to behave as an array, we want to provide the following functions:

1- Overload the subscript operator "[]", so that we can access inventory items within a Stock object, as if the Stock object is an array.
2- Overload the addition stream output operator "<<" so that you can create a nice formatted printout of a stock content, just by printing the stock object
3- Finish the specification with whatever code needed (additional attributes and methods) in a header file, then write an implementation for this class (always in a separate "cpp" file).

Question4: Write a main function that does the following:

- Create a set of inventory objects, with initial cost and units.
- Add all these items to a stock object.
- Main code should simulate creation of a stock of items in a first step (which can be static, i.e. no user input), then the process of buyers purchasing items (which should be dynamic, by asking the user which items to purchase). Add an option to print how the remaining stock information (total number of articles, list of each item description and units in hand),

- Make use of the [] and << operator function overloaded.
- Make sure that your constructors and destructors are coded to initialize and free resources.
- *Input Validation*: Do not accept a negative value for the quantity of items being purchased.
- Beyond the requirements listed above, you can make any logical assumption.
- Submit a zip file containing all cpp and header files, according to assignment guidelines.