CSCI 201 – Computer Science 1

Homework 10 Creating a collection of fraction objects.
Due date: Tuesday April 9

Objective. *Learn to build a simple collection class using either an array or a vector to store the collection.*

The task here is to create and test a collection of fraction objects. The collection should provide the following operations:

1. *An operation to add a* `fraction` *to the collection.* The fraction object will be created in the main program and passed as a parameter to this method. The method will return true or false to indicate if the operation was successful.
2. *An operation to print the entire collection.* This method will write all the fraction objects to the specified output stream, one per line. It will not return anything.
3. *An operation to search for a specific fraction in the collection.* The target fraction will be passed as a parameter to the method. The method returns the index of the location in the list where the fraction was found; if the fraction was not found, it returns -1.

Question 1. Building a collection with an array.

Create a new folder for defining and testing this class. Copy the `fraction.h` and `fraction.cpp` files into this folder. Create the following files:
1. The file `fractionList.h` that defines the data abstraction for this collection of fractions. This definition should use an **array of fractions** to store the collection.
2. The file `fractionList.cpp` that shows how all the methods in `fractionList.h` will be implemented.
3. The main program. To test the collection class, you will have to write a main program that declares (and creates) the `fractionList` objects and invokes all the methods of the `fractionList` class.

What to submit. Start a script session. Compile the fraction class, and the fractionList class separately. Compile the main program with both the objectcode(.o) files. Display and data files that you are using to test the program. Run the code ("./a.out"). Create a folder Hwork10Q1 in your CourseFiles folder. Upload the files `fractionList.h`, `fractionList.cpp`, the main program and the script file to this folder.

Question 2. Building a collection with an vector.

Create a new folder for defining and testing this class. Copy the `fraction.h` and `fraction.cpp` files into this folder. Create the following files:
1. The file `fractionList.h` that defines the data abstraction for this collection of fractions. This definition should use an **vector of fractions** to store the collection.
2. The file `fractionList.cpp` that shows how all the methods in `fractionList.h` will be implemented.
3. The main program. To test the collection class, you will have to write a main program that

declares (and creates) the `fractionList` objects and invokes all the methods of the `fractionList` class.

What to submit. Start a script session. Compile the fraction class, and the fractionList class separately. Compile the main program with both the objectcode(.o) files. Display and data files that you are using to test the program. Run the code ("./a.out"). Create a folder Hwork10Q2 in your CourseFiles folder. Upload the files `fractionList.h`, `fractionList.cpp`, the main program and the script file to this folder.