CS3305 Data Structures

Spring 2021

Assignment No. 3

**For both problems follow the Program Submission guidelines outlined on D2L**

**(60 points)**

1. The goal of the assignment is to reinforce implementation of dynamic arrays in C++. Specifically, the assignment is to implement a set using a dynamic array. You need to implement functions that execute the following set operations:

* union
* intersection
* insertion - if the element is already in the set, then nothing happens
* deletion - if the element is not in the set, then nothing happens
* query to check whether an element is in a set
* query to find the number of number of elements in a set
* display the members of the set
* a destructor
* a copy constructor
* an overloaded assignment operator

In addition to your programming solution, the assignment must include:

* preconditions and postconditions for the functions.

(**40 points)**

1. Write a program that uses a dynamic list (array) of strings to keep track of a list of chores that you have to accomplish today.

The user of the program can request several services:

(1) Add an item to the list of chores;

(2) Ask how many chores are in the list;

(3) Have the list of chores printed to the screen;

(4) Delete an item from the list;

(5) Exit the program.

If you know how to read and write strings from a file, then have the program obtain its initial list of chores from a file. When the program ends, it should write all unfinished chores back to this file. The list can be an unordered list.