Homework 4

Due 13 February 2022, 11:59pm

**Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What to submit**:

* For text response:

Create a pdf file that shows all your answer for problems that requires text response. Upload this file to Gradescope.

* For programming:

For each programming question, run `make submission` to generate a zip file and upload it into Canvas.

**Questions**:

1. (programming) Implement the ordered list ADT using a **resizable dynamic array**. Hint: You should order the linked list items 1 to N (1-based indexing) to distinguish it from an array that indexes from 0 to N-1 (0-based indexing).
   1. Download the starter code.
   2. abstract\_list.hpp has the Abstract interface that the array-based implementation you are going to build would be inherited form.
   3. array\_list.hpp has the methods declaration of all the required operation for the array-based implementation class and your implementation should go in array\_list.tpp.
   4. Your tests should go in test\_array\_list.cpp.
2. (programming) Implement the ordered list ADT using a **linked list**. Hint: You should order the linked list items 1 to N (1-based indexing) to distinguish it from an array that indexes from 0 to N-1 (0-based indexing).
   1. Download the starter code
   2. Node.hpp and Node.cpp are a provided node class definition and implementation. You use to help you design the required class.
   3. abstract\_list.hpp has the Abstract interface that the linked list you are going to build would be inherited form.
   4. linked\_list.hpp has the methods declaration of all the required operation for the linked list class and your implementation should go in linked\_list.tpp.
   5. Your tests should go in test\_linked\_list.cpp.