CSE211

DATA STRUCTURES

FALL 2022

LABWORK 1 – SECTION 1

**Q1 (50pts):** Write a **member** function into a given IntSLList class which returns the pointer of minimum value of a list. Then utilizing this find\_min() function, write a **non-member** C++ function which takes an IntSLList reference as a parameter, deletes the node in the list and returns the value in the node.

Prototype of your functions should exactly be:

***int \* find\_min();*** *//member function*

***int delete\_min(IntSLList & list);*** *//non-member function*

**Important:** Your work should compile & run along with the example main file provided to you. You can compile multiple cpp files using:

g++ main.cpp intsllist.cpp delete\_min.cpp

Also, make no changes to the given IntSLList class except corresponding areas for your functions. You can use existing functions from the IntSLList class.

**Q2 (50pts):** You will see that there is a member function definition in IntSLList.h named *add\_duplicate(int val),* but there is no code associated with it in the .cpp file. Your task is to implement this member function. The function searches the list and finds the node with given value and adds a copy of the node next to it. For example, if the

contents of the linked list is

0 1 2 3 2 4

before the function call(add\_duplicate(2)), it should become

0 1 2 2 3 2 2 4

after the call.

You are **not allowed** to call any pre-existing functions from the IntSLList class, but you can check the code and get inspiration. Also, do not forget about corner-cases and memory leaks.