**MSCF Financial Computing I**

**Mini 1, 2022**

**Homework 6**

***Due At 11:59 pm Sunday, Oct. 9, 2022***

***You will lose 10 points per hour after that time***

1. **AVL Tree Insert (100 points)**

The **AVLTree.py** file contains code that we looked at during lecture, implementing left-side-only inserts into an AVL Tree. The **hw6.py** file contains test code for the left side inserts. Run **hw6.py** to confirm that the left side insert code seems to work.

**1.a** Define a new **AVLTree** method named **is\_AVLTree()** that returns **True** if the current object is a valid AVL Tree, and **False** otherwise. To qualify as a valid AVL Tree, the tree must obey the usual ordering rule for BSTs, and must have correct Balance Factors at each node (that is, Balance Factor = height(left subtree) – height(right subtree) at each node). Uncomment the test code for part **1.a**; save and test.

**1.b** Develop the necessary code to handle right-side-only inserts into an AVL Tree. Uncomment the test code for part **1.b**; save and test.

**1.c** Complete all necessary code to handle arbitrary inserts. Uncomment the test code for part **1.c**; save and test.

***REMEMBER*** to put all team members’ names and Andrew IDs into your source code files.One team member should put your finished **AVLTree.py** and **hw6\_1.py** files into a **Team\_***N***\_HW6.zip** archive, where *N* is your team number, and upload to Canvas.