2016 Fall CIS200 – Lab 8

Student Name: Section #:

**Question 1**:

Let A be an array of *n* elements. Write a *template* function, maxfunc(…), which takes an unsorted array of type <class T> and an integer size as an input parameters and returns the element with the maximum value. Assume the operators < and > are defined for the class T. In this question, You must write all functions you call, and also needs to write a main() to test the following data arrays:

4 1 13 3 2

* 1. 4.1 8.1 5.2 2.3

the student is in class // > is judged on the basis of alphabetical order

In addition, the results should be printed out in main( ) routine.

**Question 2**:

Given the following segment of codes, please add a copy constructor in the derived class B and the base class A, and test it using the main routine.

**class A**

**{**

**int valuea;**

**public:**

**int getValuea() const { return valuea; }**

**void setValuea (int x) { valuea = x; }**

// copy constructor

**};**

**class B : public A**

**{**

**int valueb;**

**public:**

**int getValueb() const { return valueb; }**

**void setValueb (int x) { valueb = x; }**

// copy constructor

**};**

Modify the definitions of the above two classes to template classes, i.e., “int valuea;” and “int valueb;” should be changed to a generic data type. After the modification, you need to test these two template classes with the following test cases:

1. Create an instance of class B with float data type (valuea = 1.34 and valueb = 3.14)
2. Create an instance of class B with integer data type (valuea = 1 and valueb = 3)
3. Create an instance of class B with char data type (valuea = ‘a’ and valueb = ‘c’)
4. Create an instance of class B with string data type (valuea = “good” and valueb = “morning”)
5. Create an instance of class B with Date data type (valuea = {27,10,2014} and valueb = {2,11,2014}). Date is a struct and defined as

struct Date

{

int day;

int month;

int year;

};

You should use cout to print out all the results on computer screen and make corresponding screen shots.

**Submission:**

Provide a Microsoft word that contains the following items:

1. Your name
2. Source code (identify which compiler you used)
3. Executable module instructions (if any)
4. Test data and expected results
5. Running log/output in the format of screenshots

Submit the word document to Canvas. The file name should be yourName\_lab8.doc.