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**CS2400**

**Answer Sheet for Laboratory Assignment #13**

**(80 pts.)**

**Turn this sheet to your TA at the end of the laboratory for grading.**

1. (5 pts) What is the error message?

my\_int.cc: In function ‘bool is\_prime(const my\_int&)’:

my\_int.cc:211:48: error: passing ‘const my\_int’ as ‘this’ argument discards qualifiers [-fpermissive]

211 | limit = sqrt(static\_cast<double>(num.get\_int()));

| ^

my\_int.cc:167:5: note: in call to ‘int my\_int::get\_int()’

167 | int my\_int:: get\_int()

| ^~~~~~

my\_int.cc:217:21: error: passing ‘const my\_int’ as ‘this’ argument discards qualifiers [-fpermissive]

217 | if (num.get\_int() % n == 0)

| ^

my\_int.cc:167:5: note: in call to ‘int my\_int::get\_int()’

167 | int my\_int:: get\_int()

| ^~~~~~

2. (5 pts) What do you have to do to correct the problem?

The const qualifier needed to be removed because you cannot cast a constant variable

3. (5 pts) Submit the fixed code.

bool is\_prime(my\_int& num);

bool is\_prime(my\_int& num)

{

  double limit;

  int n; *//divisor*

  bool prime= true;

  limit = sqrt(static\_cast<double>(num.get\_int()));

  n = 2;

*while* (n <= limit && prime)

  {

*if* (num.get\_int() % n == 0)

     prime = false;

*else*

     n++;

   }

*return* prime;

}

4. (15 pts) overload the **>** operator as a friend function of the class my\_int

3 pts for the function declaration (prototype).

6 pts for the function definition.

4 pts for the statements that test this operator in the main function.

2 pts for the documentation for this function.

5.(40 pts) You are defining an ADT as a class. Your intent is to use this ADT in a program. Which of the following parts go into the ADT **interface file**, the ADT **implementation file**, or the **application file**. Write your answer.

a) the class definition

Interface File

b) the declaration (prototype) of a function to serve as an ADT operation and is neither a friend nor a member of the class

Implementation file

c) the declaration (prototype) of an overloaded operator that is to serve as an ADT operation and is neither a friend nor a member of the class.

Implementation File

d) the definition of a function that is to serve as an ADT operation, and is neither a friend nor a member of the class.

Implementation File

e) the definition of a friend function that is to serve as an ADT operation.

Implementation File

f) the definition of a member function

Implementation File

g) the definition of an overloaded operator that is to serve as an ADT operation and is a friend.

Implementation File

h) the main part (function) of your program.

Application File

6.(5 pts.) After separating what file was created when the command

g++ -c –Wall my\_int.cc was executed?

My\_int.o

7. (5 pts) Submit all three files (both .cc .h files) to lab13 on Blackboard.