If this lab is an Individual assignment, you must do all coded programs on your own. You may ask others for help on the language syntax, but you must organize and present your own logical solution to the problem. No lab is complete until the MyClass submits the signed pledge form associated with that lab. I realize that no coded programs will be graded until I turn in the sign & pledge form associated with that program; any late penalties will continue to compound until the pledge form is submitted.

If this lab is a team assignment, both team members may share logic as they program side by side on their own computers. Each person must type all of his/her own code as part of the learning process. Team assignments are never to be “You do this portion and I’ll do that portion” or “You do this lab and I’ll do the next lab”.

Some of the lab assignments will have short answer questions. These short answer questions will be spot checked and graded for completion, but not checked for accuracy. Once these labs are graded and returned, I encourage you to compare answers with another class member who has also had the lab graded and returned.

I/We realize that the penalty for turning in work that is not my own, or assisting others in doing so, can range from an "F" in the class to dismissal from Trinity University. I realize that it is a violation of academic integrity to share any portion of this lab with any person (outside my 2320 team & professor)!

OOP-3 Interface
Individual/Team (1-2 Persons) Assignment
Answers To Questions 5 Points - Program 20 Points

Short Answer Questions – 5 Points
Electronic Solutions Of Short Answer Questions Will Not Be Accepted. Print A Copy Of Short Answer Question & Write Answers On Printed Copy

1-5] The slides describe the 5 things that should be in each and every .hpp file is to contain. List them in the general order that they should appear.

1. ___________________________________ All of the I_ essential to the class.
2. ___________________________________ All of the D_ essential to the class.
3. ___________________________ ___________________________ All S_ and C_ definitions.
4. ____________________________________ Prototypes for all F_.
5. ____________________________________ All T_ Functions.

6] _____ {T/F} An Application will never involve more than 3 or 4 interface files.

7] According to the slides, the ifndef, define, and endif help to prevent multiple redefinitions of

V__________________________ C__________________________
C__________________________ F__________________________

8] In order to avoid duplication of declarations, each .hpp also should contain an appropriately named ifndef, define, and endif combination. Write these three statements for the Employee Class.
The slides describe the 2 things that should be in each and every .hpp file is to contain. List them in the general order that they should appear.

9. ___________________________________ An I_?_ Statement for the Interface File
10. ___________________________________ All N_?_ Functions/Methods

Partitioning a class into .hpp and .cpp files improves software design in many ways. The slides only specify four of those reasons. List them.

11. ___________________________________ C_?_ is faster
12. ___________________________________ Easier to P_?_ a project for teams
13. ___________________________________ R_?_ opportunities reduces project time/cost
14. ___________________________________ Assists in better D_?_

Why is compilation faster when you partition a large project, with several classes, into .hpp and .cpp components?

________________________________________________________________________________________
________________________________________________________________________________________

Why is project time and cost reduced with good generic .hpp and .cpp class components?

________________________________________________________________________________________
________________________________________________________________________________________

Why is better design accomplished through generic .hpp and .cpp class components?

________________________________________________________________________________________
________________________________________________________________________________________

class Person
{
    public:
        Name (char NewFirst[ ] = "", char NewLast[ ] = "");
        ~Name(void);
        void Set (char NewFirst[ ] = "", char NewLast[ ] = "");
    private:
        int NoCharsInFirstName,
        NoCharsInLastName;
        char *First,
        *Last;
};

18] __________________________________________________________ In the Person class above, NoCharsInFirstName & NoCharsInLastName would be considered _?_ (Indigenous, Exogenous) data.

19] __________________________________________________________ In the Person class above, *First & *Lastwould be considered _?_ (Indigenous, Exogenous) data.
20] {Indigenous, Exogenous} data is not part of the structure, but accessed through pointers that are in the structure. (i.e. First & Last)

21] {Indigenous, Exogenous} data is completely contained by the structure. (i.e. No)

22-26] The slides describe the 5 things that should be in each and every .hpp file is to contain. List them in the general order that they should appear.

22. ______________________________________________________________________
23. ______________________________________________________________________
24. ______________________________________________________________________
25. ______________________________________________________________________
26. ______________________________________________________________________

27-28] The slides describe the 2 things that should be in each and every .hpp file is to contain. List them in the general order that they should appear.

27. ______________________________________________________________________
28. ______________________________________________________________________

29] One Of the ways to launch the windows command window is to hold down the start menu and enter __?__ into the command box.

30] In Visual Studio, the program executable will be in the D__?__ folder.

31] Our project executable is named P__?__.

32] {T/F} One of the ways that you can launch the executable is to "double-click on it with the mouse".

33] Suppose we have a folder, called Student, in the C:\Temp directory. Write the command, that we could enter into the command window, that would change the current directory to the Debug folder within the Student project.

34] Assume that the Debug folder of the Student Project is the current directory, write the command, that we could enter into the command window, to launch the executable.

35] Assume that the Debug folder of the Student Project is the current directory, write the command, that we could enter into the command window, to redirect the program output to a file called "output.txt".

36] The extension on our executable will be __?__.

37] The command, that we could enter into the windows command window, to clear the screen is __?__.

38] The command, that we could enter into the windows command window, to display the ASCII file, called output.txt, is __?__. 
39] The windows equivalent of the Linux "clear" command is _?_.

40] The windows equivalent of the Linux "cat" command is _?_.

41] STL is an acronym for _?_.

Programming Component 20 Points

1] Make a copy of your project folder. Name the folder **TomH-MyClass** (Use your first name and last initial). Roger Rabbit & Mickey Mouse, working as a team, should call their folder **RogerR-MickeyM-MyClass**.

You are to create a class of your choice. It may not be Student, Auto, Part, or Employee. Name it appropriately; do not call it MyClass. I would like this class to be something that either you, or someone else to collect or organize. (i.e. you might choose stamps, friends, etc.)

You are to select the private data appropriate to this class. It must include at least 2 string & 2 numerical fields. You are to complete all of the functions below for your class. Use overloads! Replace the ?? with items appropriate for your class.

You are to have an Appropriate TestMyClass( void) function which systematically tests each and every one of your functions. You may use code from any project that I have given you. You might start with your Student Class – rename some variables and continue from there! You test code should be realistic (i.e. if you have chosen coins, the name of a coin might be penny, but it should not be "Sarah").

Name all files, variables, data members, etc. very well!

```cpp
class MyClass
{
public:
    MyClass (void);
    ~MyClass (void);
    MyClass(void);
    MyClass(??);
    void Display (char Message [ ] = "");
    void Display50 (void);
    void Set (??);
    bool Get (void);
    long int Key(void);
    // I have decided that ?? is to be the Primary Character Key for the MyClass Object.
    bool operator == (const char Key[ ]); // == operator
    bool operator != (const char Key[ ]); // != operator
    bool operator > (const char Key[ ]); // > operator
    bool operator >= (const char Key[ ]); // >= operator
    bool operator < (const char Key[ ]); // < operator
    bool operator <= (const char Key[ ]); // <= operator
    void operator =  (const char Key[ ]); // = operator
    // I have decided that ?? is to be the Primary Long Key for the MyClass Object.
    bool operator == (const long Key); // == operator
    bool operator != (const long Key); // != operator
    bool operator > (const long Key); // > operator
    bool operator >= (const long Key); // >= operator
    bool operator < (const long Key); // < operator
    bool operator <= (const long Key); // <= operator
    void operator =  (const long Key); // = operator
    // I have decided that ?? is to be the Primary Object Key for the MyClass Object.
    bool operator == (const MyClass & S); // == operator
    bool operator > (const MyClass & S); // > operator
    bool operator >= (const MyClass & S); // >= operator
    bool operator < (const MyClass & S); // < operator
    bool operator <= (const MyClass & S); // <= operator
    void operator = (const MyClass & S); // = operator
};```
bool operator >= (const MyClass & S);
bool operator <  (const MyClass & S);
bool operator <=  (const MyClass & S);
bool operator !=  (const MyClass & S);
void operator =   (const MyClass & S);
friend ostream & operator << (ostream & OutputStream, MyClass ??);

What To Turn In

No Lab Is Complete Until Both Are Complete

1] You sign & submit the Pledge form.
   a) Make sure that all program files have a header box with a purpose that clearly defines what you are accomplishing in this lab.
   b) Make sure that each and every program function has a well formed documentation box that clearly describes the purpose.
   c) Make sure that each and every program function header box has the appropriate Written By and Date.
   d) Review the Pledge statement
   e) Sign & Pledge
   f) Record the amount of time you think you spent on this lab
   g) Staple all pages of this lab. Fold in half length-wise (like a hot-dog). Put your name on the outside. Place it on the professor desk before the beginning of lecture on the day it is due. The penalty for late homework will not exceed 25% off per day.

2] Place all programming code associated with this program, if any, in the Professor’s Code Drop Box
   a) I do not accept programs by mail; do not submit labs via email!

Comments

A] Programs that do not compile are worth little, if anything.
B] If a print statement format is off, the penalties will often be less than the 25% per day late penalty; turn in the lab. You would not be happy if you went to Best Buy and purchased a large screen TV that did everything except show the picture; you would consider it pretty worthless. Most users consider software that does not work properly pretty useless as well. If the lab is not working correctly, credit will be small (if any); you might be better to accept a 25% (1 day) late penalty and turn in the lab working correctly!
C] Start all programs early so that you can get in contact with the professor if you have problems.
D] If you are turning in this lab late, you may
   ➢ hand it to me if I am in the office
   ➢ put it in the mail box outside my office door
   ➢ slide it under the outer door to our suite (if locked)
   ➢ slide it under my office door. The sooner I get late labs, the sooner the late penalty meter quits clicking.
E] Backup your programs in at least three places. Put a copy on your Y drive. Put a copy on your flash drive. Put a copy on your personal computer. Send yourself a copy in your e-mail.