

Lab 7

Turn In:

1. Code Assignment – Exercise #1 Due in class on ?????, ????, 2012
 - a) For each exercise, a hardcopy package must be generated to include the following items:
 - Cover Sheet (see the sample copy include in lecture note)
 - Exercise/problem statement
 - Copy of your source file (C++ program named as **cis25Fall2012YourNameLab7Ex1**)
 - Copy of output (copy and paste from output screen as possible)
 - b) Submitting one hard copy package for each exercise; and
 - c) Emailing each document as follows,
 - One message for each exercise.
 - Attaching the source file that was created in part a).
 - The SUBJECT line of each message should have one of the following lines:

CIS 25 Fall 2012 Your Name : Lab 7 - Exercise #1

Or,

cis25Fall2012YourNameLab7Ex1.cpp

2. Q.E.D.

1. Code Assignment/Exercises

You are asked to provide C++ implementation/code for the given **C++ classes**.

1. Name your program as `cis25Fall2012YourNameLab7Problem1.cpp`.
2. Run your program and save the output.

Important Reminder:

- DO NOT CHANGE ANY names for member data, functions, and arguments (as shown below), and
- DO NOT CHANGE ANY local variables in `main()` (as shown below), and
- Create the program with **`main()` updated properly in order to perform the operations and to display the results**, and
- Run and attach the output of your program at the end of `main()` as COMMENT

Hint!

- If needed, value of **PI** is given as a fraction value of **157/50**.
- When adding two `CircleYourName` objects, the result is another `CircleYourName` object, which has its radius to be the sum of the other 2 radii and the center will be the midpoint of the 2 given centers.
- When displaying a circle, it should show the center, the radius, and the area.
- When adding two `CylinderYourName` objects, the result is another `CylinderYourName` object that has the larger base of the 2 given bases; the base will be located at the midpoint of the 2 given bases. The height if the new cylinder will be the smaller height of the 2 given cylinders.
- When displaying a cylinder, it should show the base (with details for center and radius), the area (which would be the area of the tube plus the 2 bases), and volume.

Task #1:

Complete the classes being laid out below.

```
class BoxYourName : public RectangleYourName
{
public:

    // update and add constructors and destructor

    // add getters & setters

    // add supported functions

    // add operator functions

private:
    FractionYourName height;
};

class CircleYourName {
public:
```

```

// update and add constructors and destructor

// add getters & setters

// add supported functions

// add operator functions

private:
    PointYourName center;
    FractionYourName radius;
};

class CylinderYourName : public CircleYourName
{
public:

    // update and add constructors and destructor

    // add getters & setters

    // add supported functions

    // add operator functions

private:
    FractionYourName height;
};

```

Task #2

(1) Run a menu program and save the output. A sample program output is given as follows,

- (a) The output screen should have the following lines displayed before any other display or input can be seen,

```

CIS 25 - C++ Programming
Laney College
Your Name

Assignment Information --
Assignment Number:  Lab 8,
                   Exercise #1
Written by:        Your Name
Due Date:          Due Date

```

- (b) Then, the output screen should also be followed by,

MENU

- (1) Create 2 YourNameRectangle objects
- (2) Create 2 YourNameCircle objects
- (3) Create 2 YourNameBox objects
- (4) Create 2 YourNameCylinder objects
- (5) Compare 2 selected objects by area
- (6) Compare 2 selected objects by volume

(7) Print selected objects

(8) Quit

Enter your option (1, 2, 3, 4, 5, 6, 7, or 8) : **1**

//Provide some sample output of your program

Enter your option (1, 2, 3, 4, 5, 6, 7, or 8) : **2**

//Provide some sample output of your program

Enter your option (1, 2, 3, 4, 5, 6, 7, or 8) : **3**

//Provide some sample output of your program

Enter your option (1, 2, 3, 4, 5, 6, 7, or 8) : **4**

//Provide some sample output of your program

Enter your option (1, 2, 3, 4, 5, 6, 7, or 8) : **5**

//Provide some sample output of your program

Enter your option (1, 2, 3, 4, 5, 6, 7, or 8) : **6**

//Provide some sample output of your program

Enter your option (1, 2, 3, 4, 5, 6, 7, or 8) : **7**

//Provide some sample output of your program

Enter your option (1, 2, 3, 4, 5, 6, 7, or 8) : **8**

Thank you and good bye!