BSc (Hons) in Information Technology
Year 1

Lab Exercise 4

IT1050 – Object Oriented Concepts — Semester 1, 2020

Objectives:

- **Using structures and functions in C++**

Exercise 4:

There's a block of land with a pond and a building as given in the diagram bellow. The pond is in blue color and the building is in grey color. The rest of the area is covered with grass.

In the main program you have to calculate the grass grown area using the structures Circle, Rectangle, and Square.

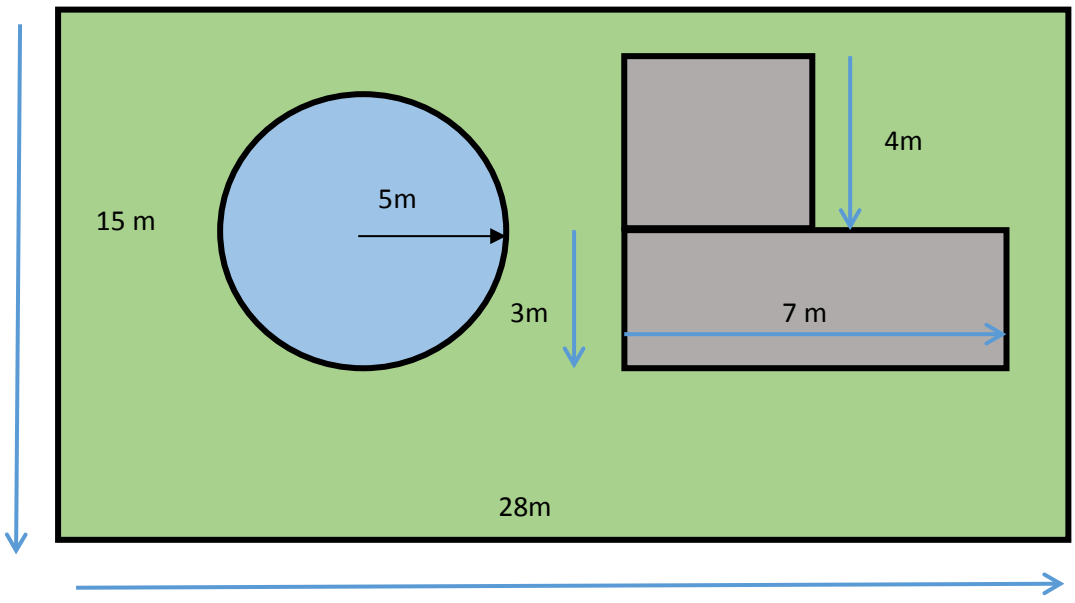
Hint: You have to calculate the green color area.

Do the following in your program;

1) In the Circle structure include member variable radius (float) , in the Rectangle structure include member variables length (float) and width (float) and in the Square structure include member variable length (float).

2) Write three functions to find the area of a Circle, area of a Rectangle and the area of a Square.

3) Input the data and find the area of the green colour area, using the functions implemented above. Format the output to 3 decimal places.



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Exercise 2:

1) The owner of the above land wants to build a fence around the main land. Write a function to find the perimeter of a Rectangle **which uses a reference parameter** to update the perimeter when the length and the width of the rectangle are given as parameters.

2) Write another function to find the cost of building a fence when the perimeter and the cost per unit (in meters) are given.

3) Print the total cost in the main program with 2 decimal places.

Note :

Area of a Circle : PI x radius x radius

Where PI is 22.0/7