Gebze Institute of Technology
Department of Computer Engineering

CSE 241
Object Oriented Programming
Fall 2011
Homework # 9
Polymorphism
Due date December 19th 2011

In this homework you will design and implement classes for the shape hierarchy that we discussed in the class.

Part A
Your shapes will include

- Square
- Rectangle
- Triangle
- Circle
- Ellipse

Your shapes will have functions for

- area
- perimeter
- number of corners
- shape name

Then you will implement the following functions

1. toltalarea: takes a vector of shape pointers a returns the total areas of the shapes
2. totalContiniousPerimeter: takes a vector of shapes and returns the total perimeters of circles and ellipses

Part B
Do the same hierarchy and functions without using any virtual functions. Use a member variable to show you the type of the class in a switch or if statement.

Part C (Bonus 50 points)
Do the same hierarchy and functions without using any virtual functions. Use function pointers and tables as we discussed in the class. You should not use any shape names in function totalarea() other than the base class name.

Notes:

- You should strictly follow the homework submission details and email your homework to the TA.
- Your program should use the OO principles.