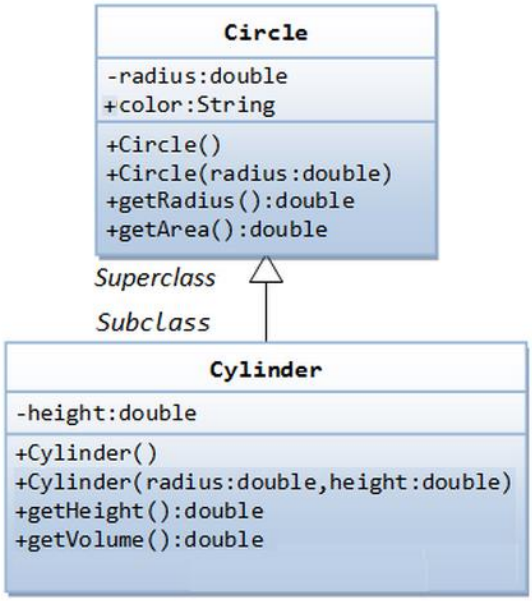
Lab-4: Inheritance

Objectives

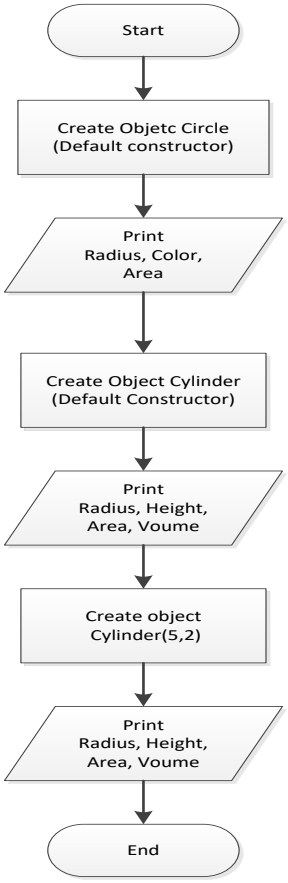
You will learn to apply the concept of Inherence

Exercises

Given the following figure:



1. Write inheritance hierarchies for classes circle a cylinder. Use Circle as the superclass of the hierarchy. Specify the instance variables and methods for each class (see above). Write a program that instantiates objects of your classes and outputs each object's area. The program has three classes: *Circle.java*, *Cylinder.java* and *Test.java*. The class "*Test.java*" has the following flowchart:



2. Define a Person class with first, last name, address, phone number and age. Define a Student class as a subclass of Person class. A student object keeps the record of three midterms and one final exam. The highest possible score for the midterm is 50 and for the final is 100. The three midterms and the final exam are respectively 60% and 40% of the course score. The final course grade is computed as:

Course Score	***Final course grade***
85 ≤ score ≤ 100	A
78 ≤ score ≤ 85	B
65 ≤ score ≤ 78	C
40 ≤ score ≤ 65	D
0 ≤ score ≤ 40	F

Write a test program to calculate the final course grade. Test with two options; in the first option, the values (midterm and final exam) are entered by the constructor. The second option, the user enters the midterms and final exam by keyboard. Draw a class diagram of the final program