**Assignment 1**

1. Look at the class module2.SuperStudy.

**package module2;**

**public class SuperStudy**

**{**

**public void X()**

**{ System.out.println("I am in SuperStudy.X()"); }**

**public static void main(String[] args)**

**{**

**SuperStudyChild ssc = new SuperStudyChild();**

**ssc.X();**

**}**

**}**

**class SuperStudyChild extends SuperStudy**

**{**

**public void X()**

**{**

**X();**

**System.out.println("I am in SuperStudyChild.X()");**

**}**

**}**

a. What is the problem?

b. How can we rectify the problem?

2) Create an abstract base class Quadrilateral.

a. Derive the following classes – Square, Rectangle and Parallelogram.

b. The base class should have the following attributes – base (Integer), height (Integer).

c. The base class should have the following methods – area, getter and setter methods for the attributes. Abstract method will area.

d. The base should have default and parameterized constructors.

e. Can a Square be modelled as a Rectangle?

3) Expand the example of AbstractSearch class to IntegerSearch and StringSearch classes. public abstract class AbstractSearch { public abstract boolean search(Object [] obj\_list, Object obj); }

4) Write a class to find integers from an array of integer based on the given input.

a. Scan the whole input list to find matches.

b. When the integer is found a listener would be informed and the listener will print a message saying the number and at what index it is found.

c. The print message should not be hardcoded.