```java
-------------Person.java-------------
package com.ameya.models;

public class Person {

    protected int uid;
    protected String firstName;
    protected String lastName;
    public Person() {
        System.out.println("Default Constructor Person");
    }
    public Person(int uid, String firstName, String lastName) {
        this.uid = uid;
        this.firstName = firstName;
        this.lastName = lastName;
    }
    public int getUid() {
        return uid;
    }
    public void setUid(int uid) {
        this.uid = uid;
    }
    public String getFirstName() {
        return firstName;
    }
    public void setFirstName(String firstName) {
        this.firstName = firstName;
    }
    public String getLastName() {
        return lastName;
    }
    public void setLastName(String lastName) {
        this.lastName = lastName;
    }
    public void printInfo() {
        System.out.println("++++ Person's printInfo ++++");
    }
}
-------------------Student.java------------------
package com.ameya.models;

```

```java
public class Student extends Person {
    private int yearOfPassing;
    private String courseName;
    public Student() {

    }
    public Student(int uid, String firstName, String lastName, int
    yearOfPassing, String courseName) {
        super(uid, firstName, lastName);
        this.yearOfPassing = yearOfPassing;
        this.courseName = courseName;
    }
    public int getYearOfPassing() {
        return yearOfPassing;
    }
    public void setYearOfPassing(int yearOfPassing) {
        this.yearOfPassing = yearOfPassing;
    }
    public String getCourseName() {
        return courseName;
    }
    public void setCourseName(String courseName) {
        this.courseName = courseName;
    }
    @Override
    //The name , return type, param-list must be same
    //U cannot override method to make it more private
    public void printInfo() {
        System.out.println("uid :: "+uid);
        System.out.println("firstName :: "+firstName);
        System.out.println("lastName :: "+lastName);
        System.out.println("yearOfPassing :: "+yearOfPassing);
        System.out.println("courseName :: "+courseName);
    }
}
------------TestInheritance.java-------------
package com.ameya.test;

import com.ameya.models.Person;
import com.ameya.models.Student;

```

```java
82  public class TestInheritance {
83      public static void main(String[] args) {
84
85          Person student=new Student(10, "Ameya", "lastName",2000,
            "Master Of Computer Science.");
86          student.printInfo();
87      }
88  }
89
90  -------------Shape2D.java-------------
91  package com.ameya.models;
92
93  public abstract class Shape2D {
94      protected double dim1;
95      protected double dim2;
96      protected String color;
97      public Shape2D() {}
98      public Shape2D(double dim1, double dim2, String color) {
99          super();
100         this.dim1 = dim1;
101         this.dim2 = dim2;
102         this.color = color;
103     }
104     public Shape2D(double dim1, double dim2) {
105         super();
106         this.dim1 = dim1;
107         this.dim2 = dim2;
108     }
109     public String getColor() {
110         return color;
111     }
112     public void setColor(String color) {
113         this.color = color;
114     }
115     abstract public void draw();
116     abstract public void area();
117 }
118 -----------------Rectangle.java-------------
119 package com.ameya.models;
120
121 public class Rectangle extends Shape2D {
```

```java
122

123

124    public Rectangle(double dim1, double dim2) {
125        super(dim1, dim2);
126    }

127

128    @Override
129    public void draw() {
130        System.out.println("++++ Drawing a Rectangle ++++");

131

132    }

133

134    @Override
135    public void area() {
136        System.out.println("++++ Area :: "+(dim1*dim2)+" ++++");
137    }

138

139 }
```
----------TestAbstractInheritance.java-------------
```java
package com.ameya.test;

import com.ameya.models.Rectangle;
import com.ameya.models.Shape2D;

public class TestAbstractInheritance {

    public static void main(String[] args) {
        Shape2D obj=new Rectangle(5, 4);
        obj.setColor("BLUE");
        processShape2D(obj);
    }
    private static void processShape2D(Shape2D shape) {
        if(shape instanceof Rectangle) {
            System.out.println("Shape is refering to Rectangle");
        }
        shape.draw();
        shape.area();
        System.out.println("Color :: "+shape.getColor());
    }
}
```