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Program:	BS in Software Engineering
Course:	Object Oriented Programming (SWE-103)
Page Numbers:	

QUES 3:

```
public class Main{

    public static void main(String[] args) {

        GeometricFigure [] objArray = new GeometricFigure[2];

        objArray[0] = new Square(3,3,"Square");

        objArray[1] = new Triangle(4,3,"Triangle");


        for (int i=0;i<2;i++){

            objArray[i].calculateArea();

        }


    }

}


abstract class GeometricFigure{
```

```java
    float height,width,area;

    String figureType;


    GeometricFigure(float height, float width, String figureType){

        this.height = height;

        this.width = width;

        this.figureType = figureType;

    }


    abstract void calculateArea();

}


class Square extends GeometricFigure{


    Square(float height, float width, String figureType) {

        super(height, width, figureType);

    }


    @Override

    void calculateArea() {

        area = this.width*this.height;

        System.out.println("Area of " + figureType +" "+ area);

    }

}


class Triangle extends GeometricFigure{


    Triangle(float height, float width, String figureType) {

        super(height, width, figureType);

    }


    @Override
```

```java
    void calculateArea() {

        area = this.width*this.height;

        System.out.println("Area of " + figureType +" "+ area);

    }

}
```

QUES 4:

```java
/*
 * To change this license header, choose License Headers in Project Properties.

 * To change this template file, choose Tools | Templates

 * and open the template in the editor.
 */
package le4;


/**
 *

 * @author Abdul Moiz Chishti
 */
public interface Turner {


    public void turn();



}
package le4;


/**
 *

 * @author Abdul Moiz Chishti
 */
public class Leaf implements Turner {

    public void turn(){
```

```java
        System.out.println("Changing colours");

    }

}
package le4;

/**
 *
 * @author Abdul Moiz Chishti
 */
public class Page implements Turner{
    public void turn(){
        System.out.println("Going to the next page");

    }

}
package le4;

/**
 *
 * @author Abdul Moiz Chishti
 */
public class Pancake implements Turner{
    public void turn(){
        System.out.println("Flipping");

    }
}
/*
 * To change this license header, choose License Headers in Project Properties.
```

```
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package le4;

/**
 *
 * @author Abdul Moiz Chishti
 */
public class Le4 {

  /**
   * @param args the command line arguments
   */
  public static void main(String[] args) {
    // TODO code application logic here


    Leaf l=new Leaf();
    l.turn();
    Page p=new Page();
    p.turn();
    pc.turn();
  }

}
```

Output:

```
run:
Changing colours
Going to the next page
Flipping
BUILD SUCCESSFUL (total time: 0 seconds)
```

QUES 5:

```java
import java.util.*;

public class Inventory {

    public static void main(String[] args) {
        Scanner user_input = new Scanner(System.in);
        System.out.println("Welcome to the inventory program\n");
        System.out.println("This will help keep track of your inventory of office supplies");


        InventoryItem[] Stock;
        InventoryItem[10] = Stock;
        Stock[1] = new InventoryItem("Test", 123456, 500, .99);
        System.out.println("Please enter the Item Nmae");
        Item Name = user_input.nextline();


        class InventoryItem {

            String ItemName;
            int ItemNumber;
            int InStock;
            double UnitPrice;
            double InventoryValue;

            public InventoryItem(String ItemName, int ItemNumber, int InStock, double UnitPrice) {
                this.ItemName = ItemName;
                this.ItemNumber = ItemNumber;
                this.InStock = InStock;
                this.UnitPrice = UnitPrice;
                this.InventoryValue = UnitPrice * InStock;


            }
```

```java
        public void output() {

            System.out.println("Item Name = " + ItemName);

            System.out.println("Item Number = " + ItemNumber);

            System.out.println("In Stock = " + InStock);

            System.out.println("Item Price = $" + UnitPrice);

            System.out.println("Item value of stocked items = $" + InventoryValue);


        }
    }
}
```

QUES 6:

```java
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package javaapplication28;
interface Y{
    abstract void mul(int a,int b);
}
interface Z{
    abstract void div(int a,int b);
}
class c{
    int div(int a,int b){
        System.out.println(a + "/" + b+"="+a/b);
        return 0;
    };
```

```java
        }
        interface X{

            abstract void add(int a,int b);
            abstract void sub(int a,int b);
        }

        abstract class A extends c implements X,Y{

            @Override
            public void add(int a, int b) {
                System.out.println(a + "+" + b+"="+(a+b));
            }

            @Override
            public void sub(int a, int b) {
                System.out.println(a + "+" + b+"="+(a-b));
            }


            @Override
            public void mul(int a, int b) {
                System.out.println(); //To change body of generated methods, choose Tools | Templates.
            }
        }
        class b extends A{
            public void mul(int a ,int b){
                System.out.println(a + "*" + b+"="+(a*b));
        }
        }
```

```java
public class JavaApplication28 {

    /**
     * @param args the command line arguments
     */
    public static void main(String[] args) {
        // TODO code application logic here
        A ob=new A();
        b ob1=new b();


        ob.add(2,4);
        ob.sub(4,5);
        ob1.mul(7, 8);

    }

}
```