Labsheet 08

01)

```
package com.mycompany.accountobj;
abstract class BankAccount
{
   private int accountNo;
   private double balance;

   //seter method
   public void setAccNo(int n)
   {
     accountNo=n;
   }

   public void setBalance(double b)
   {
     balance=b;
   }

   //getter method
   public int getAccNo()
   {
     return accountNo;
   }

   public double getBalance()
   {
     return balance;
   }

   abstract double calculateInterest();
}

public class SavingsAccount extends BankAccount
{
   private final double savingsInterest=0.12;

   @Override
   public double calculateInterest()
   {
```

```
        double balance=getBalance();
        return balance*savingsInterest;
    }
}

public class CheckingAccount extends BankAccount
{
    private final double checkingInterest=0.02;

    @Override
    public double calculateInterest()
    {
        double balance=getBalance();
        return balance*checkingInterest;
    }
}

public class AccountObj
{
    public static void main(String[] args)
    {
        SavingsAccount s1=new SavingsAccount();
        s1.setAccNo(1000);
        s1.setBalance(20000000.00f);
        double savingsInterest=s1.calculateInterest();
        System.out.println(savingsInterest);

        CheckingAccount c1=new CheckingAccount();
        c1.setAccNo(2000);
        c1.setBalance(1000000);
        double checkingInterest=c1.calculateInterest();
        System.out.println(checkingInterest);
    }
}
```

02)

```
package com.mycompany.shapemain;
abstract class Shape
{
    abstract double calculateArea();
```

```
   abstract double calculatePerimeter();
}

public class Circle extends Shape

{
   private int radius;

   public void setRadius(int r)
   {
     radius=r;
   }

   public int getRadius()
   {
     return radius;
   }

   public double calculateArea()
   {
     return 3.14*radius*radius;
   }

   public double calculatePerimeter()
   {
     return 2*3.14*radius;
   }
}

public class Rectangle extends Shape
{
   private int length,width;

   //setter method
   public void setLength(int l)
   {
     length=l;
   }
   public void setWidth(int w)
   {
      width=w;
```

```
    }

     //getter method
    public int getLength()
    {
       return length;
    }
    public int getWidth()
    {
       return width;
    }

    public double calculateArea()
    {
      return length*width;
    }

    public double calculatePerimeter()
    {
      return (2*length)+(2*width);
    }
}

public class Triangle extends Shape
{
    private int base,height;

    //settor method
    public void setBase(int b)
    {
      base=b;
    }
    public void setHeight(int h)
    {
      height=h;
    }

    //getter method
    public int getBase()
    {
      return base;
```

```
    }
    public int getHeight()
    {
      return height;
    }

    public double calculateArea()
    {
      return 0.5*base*height;
    }

    public double calculatePerimeter()
    {
      return 3*base;
    }
}

public class ShapeMain
{
    public static void main(String[] args)
    {
       Circle c1=new Circle();
       c1.setRadius(10);
       System.out.println("Area is "+c1.calculateArea());
       System.out.println("Perimeter is "+c1.calculatePerimeter());

       Rectangle r1=new Rectangle();
       r1.setLength(10);
       r1.setWidth(5);
       System.out.println("Area is "+r1.calculateArea());
       System.out.println("Perimeter is "+r1.calculatePerimeter());

       Triangle t1=new Triangle();
       t1.setBase(12);
       t1.setHeight(6);
       System.out.println("Area is "+t1.calculateArea());
       System.out.println("Perimeter is "+t1.calculatePerimeter());


    }
}
```