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ASSIGNMENT #2

CS127T Object Oriented Prog.

Q#2(A):

CODE:

```
using System;

namespace ConsoleApplication18
{
    class cellphone
    {
        protected string catagory;

        public virtual void ringing()
        {
            Console.WriteLine("ringing the "+catagory);
        }
    }
    class smartphones:cellphone
    {
        string n;
        public smartphones(string n)
        {
            n=this.n;
            catagory = "Smart phones";
        }
        public void run()
        {
            ringing();
        }

        public override void ringing()
        {
            Console.WriteLine(catagory+"is ringing:");
        }
    }
    class Program
    {
        static void Main(string[] args)
        {
            smartphones S = new smartphones("");
            S.run();
            Console.ReadLine();

        }
}
```

Q#2(B):

CODE:

```
using System;

namespace ConsoleApplication18
{
    public abstract class cellphone
    {
        protected string catagory;

        public abstract void ringing();

    }
    class smartphones:cellphone
    {

        public smartphones()
        {
            catagory = "Smart phones";
        }
        public void run()
        {
            ringing();
        }

        public override void ringing()
        {
            Console.WriteLine(catagory+" is ringing");
        }
    }
    class androidphone:smartphones
    {
         public androidphone()
        {
            catagory = "Android phones";
        }
         public override void ringing()
         {
             Console.WriteLine(catagory + " is ringing");
         }
         public void run()
         {
             ringing();
         }


    }
    class windowsphone : androidphone
    {
         public windowsphone()
        {
            catagory = "Windows phones";
        }
         public override void ringing()
         {
```

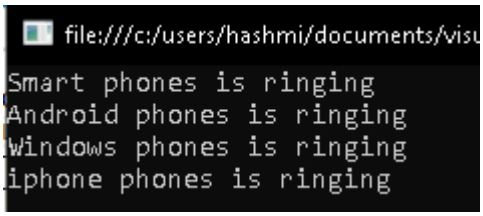
```
            Console.WriteLine(catagory + " is ringing");
        }
        public void run()
        {
            ringing();
        }


    }
    class iphone : windowsphone
    {
        public iphone()
        {
            catagory = "iphone phones";
        }
        public override void ringing()
        {
            Console.WriteLine(catagory + " is ringing");
        }
        public void run()
        {
            ringing();
        }


    }
    class Program
    {
        static void Main(string[] args)
        {
            smartphones S = new smartphones();
            S.run();
            androidphone A = new androidphone();
            A.run();
            windowsphone W = new windowsphone();
            W.run();
            iphone I = new iphone();
            I.run();
            Console.ReadLine();

        }
    }
}
```

OUTPUT:



Q1:

CODE:

```
using System;

namespace Employee
{
   public abstract class  Quadrilateral
    {
        public struct cord
        {
        public int x;
        public int y;

        public cord (int p1,int p2)
        {
        x=p1;
        y=p2;

        }

        }
        cord c1,c2,c3,c4;

        public Quadrilateral(int x1,int y1,int x2,int y2,int x3,int y3,int x4,int y4)
        {

        c1=new cord(x1,y1);
        c2=new cord(x2,y2);
        c3=new cord(x3,y3);
        c4=new cord(x4,y4);

        }


        public int lena()
        {
        return Math.Abs(c2.x-c1.x);
        }

         public int lenb()
        {
        return Math.Abs(c4.x-c3.x);
        }

         public int lenc()
        {
        return Math.Abs(c3.x-c1.x);
        }


         public int lend()
        {
        return Math.Abs(c4.x-c2.x);
        }
```

```
        public int height()
        {
        return Math.Abs(c3.y-c1.y);

        }
        public override string ToString()
        {
        return string.Format("Total area:"+getArea());
        }
        public abstract double getArea();
    }

    class Trapezoid:Quadrilateral
    {
        public Trapezoid(int x1, int y1, int x2, int y2, int x3, int y3, int x4, int y4)
:


            base(x1, y1, x2, y2, x3, y3, x4, y4)
        {
            sidea = lena();
            sideb = lenb();
            theight = height();

        }

        public int sidea;
        public int sideb;
        public int theight;

        public  override double getArea()

        {
            return ((sidea + sideb / 2) * theight);

        }

        public override string ToString()
        {
            return base.ToString();
        }
    }

     class Parallelogram : Trapezoid
    {

        public Parallelogram (int x1, int y1, int x2, int y2, int x3, int y3):

            base(x1, y1, x2, y2, x3, y3, 0, 0)
            {

            side=lena();
            pheight=height();
            }


            public int side ;
            public int pheight;
```

```
            public  double getAAarea()

    {
    return side*pheight;
    }
        public override string ToString()
        {
            return base.ToString();
        }



    }

    class Rectangle : Parallelogram
{

        public Rectangle(int x1, int y1, int x2, int y2, int x3, int y3) :

            base(x1, y1, x2, y2, x3, y3)
            {

            sideA=lena();
            sideB=lenc();
            }


            public int sideA ;
            public int sideB;

            public  double getAArea()
    {
    return sideA*sideB ;
    }
        public override string ToString()
        {
            return base.ToString();
        }

}

     class square : Rectangle
    {
        public square(int x1, int y1, int x2, int y2) :

            base(x1, y1, x2, y2, 0, 0)
            {

            Side=lena();

            }


            public int Side;


            public double getAarea()
```

```
{
return Side*Side;
}
    public override string  ToString()
    {
        return base.ToString();
    }


}
        class Bonus
        {
            static void Main(string[] args)
            {

                square S = new square(5, 20, 20, 20);
                Rectangle R = new Rectangle(5, 20, 20, 20, 5, 30);
                Parallelogram P = new Parallelogram(5, 20, 20, 20, 10, 30);
                Trapezoid T = new Trapezoid(5, 20, 10, 10, 5, 20,34,4);
                Console.WriteLine("Trapezoid"+T);
                Console.WriteLine("Rectangle" + R);
                Console.WriteLine("square" + S);
                Console.WriteLine("Parallelogram" + P);


               Console.Read();
            }

        }

    }
```

OUTPUT: