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Game Developement

ASSIGNMENT # 03

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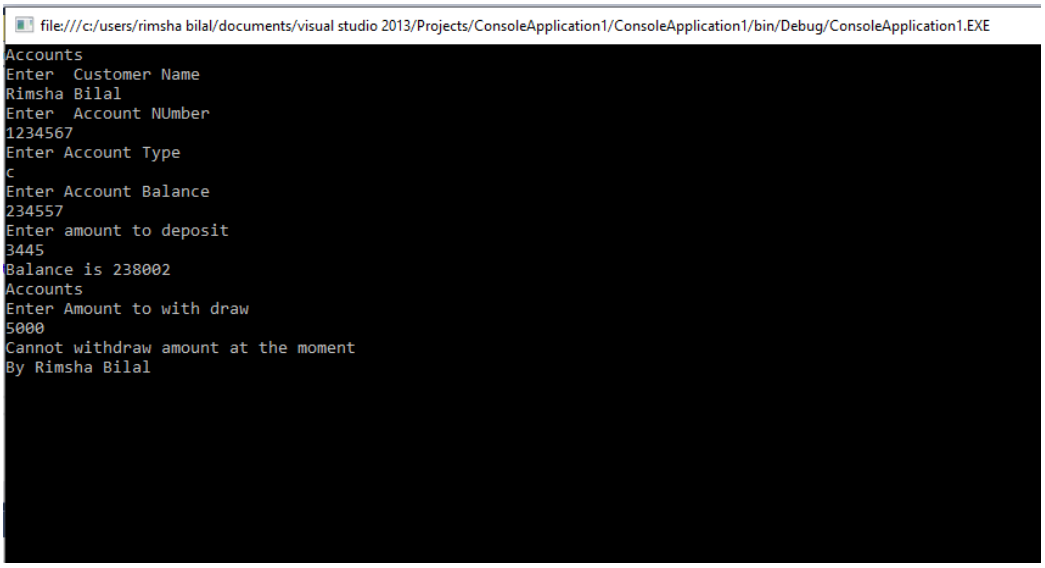
Question#01:

```
using System;
namespace assignmant3._1
{public class Account
 {     protected String cname;
       protected int accountNo;
       public char type;
       protected double balance;
       public Account() { Console.WriteLine("Accounts"); }
       public void enterData(){
          Console.WriteLine("Enter  Customer Name");
          cname = Console.ReadLine();
          Console.WriteLine("Enter  Account NUmber");
          accountNo = Convert.ToInt32(Console.ReadLine());
          Console.WriteLine("Enter Account Type");
          type = Convert.ToChar(Console.ReadLine());
          Console.WriteLine("Enter Account Balance");
          balance = Convert.ToDouble(Console.ReadLine());  }
          public void display(){
          Console.WriteLine("Customer Name is" + cname + "Account Number is" + accountNo + "Account
Type is"
          + type + "Account Balance is" + balance); }
          public void deposit(){
          double amount;
          Console.WriteLine("Enter amount to deposit");
          amount = Convert.ToDouble(Console.ReadLine());
          balance = balance + amount;
          Console.WriteLine("Balance is " + balance); }}
          public class sav_acc : Account {
          double interest;
       public double compute_interest()
       {
          int time, rate = 10;
          Console.WriteLine("Enter time"); time = Convert.ToInt32(Console.ReadLine());
          interest = balance * (Math.Pow((1 + rate / 100.0), time)) - balance;
          return interest;
       }
       void update_balance() {
       balance = balance + compute_interest();
      Console.WriteLine("Current Balance is " + balance); }
       public void withDrawal1()
       { int amount;
          Console.WriteLine("Amount to withdrawn");
          amount = Convert.ToInt32(Console.ReadLine());
          if (amount <= balance) {
          balance = balance - amount;
         update_balance(); }
          else { Console.WriteLine("Amount an't be with drawn"); }} }
```

```
public class cur_acc : Account
{ int penality;
int minimumBalance()
{   int ret1 = 1;
  if (balance <= 500) { penality = 50; balance = balance - penality; ret1 = 0; }
  else { Console.WriteLine("NO penality immposed"); }
  return ret1; }
public void withDrawal(){
  int amount;
  Console.WriteLine("Enter Amount to with draw");
  amount =  Convert.ToInt32(Console.ReadLine());
  int k = minimumBalance();
  if (k == 1)
  {if (amount <= balance) { balance = balance - amount; }
   else { Console.WriteLine("Can't withdraw at the moment"); } }
  else { Console.WriteLine("Cannot withdraw amount at the moment"); }} }
 class Program  {
 static void Main(string[] args)
{Account obj = new Account();
obj.enterData(); obj.deposit();
if (obj.type == 'S' || obj.type == 's') { sav_acc s = new sav_acc(); s.withDrawal1();}
 else if (obj.type == 'C' || obj.type == 'c') { cur_acc c = new cur_acc();          c.withDrawal();}
 else { Console.WriteLine("Invalid Account type"); }
 Console.WriteLine("By Rimsha Bilal");
  Console.ReadKey(); } }}
```

OUTPUT:

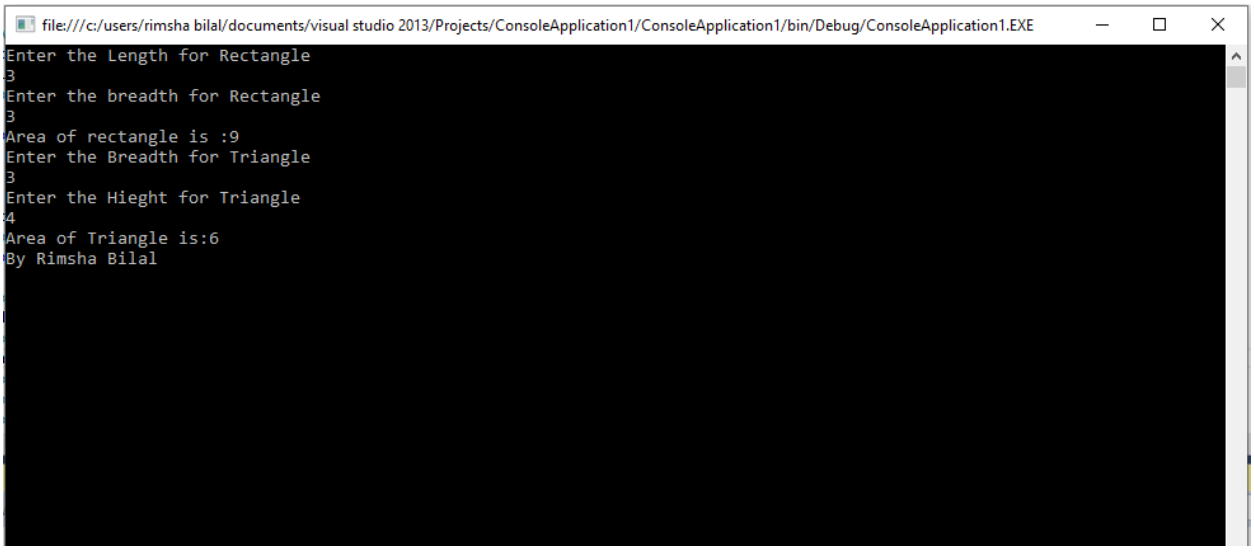


Question#02:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
```

```
using System.Threading.Tasks;
namespace ConsoleApplication1
{ class CalcAvgPerc //Calculate the Average marks and percentage for students
   {public float length, breadth, hieght, breadthfortriangle;
    static void Main(string[] args)
     {CalcAvgPerc a = new CalcAvgPerc();
        a.Rectangle();
        a.Triangle();
        Console.ReadKey(); }
      public void Rectangle()
     {Console.WriteLine("Enter the Length for Rectangle");
      length = float.Parse(Console.ReadLine());
     Console.WriteLine("Enter the breadth for Rectangle")
      breadth = float.Parse(Console.ReadLine());
       Console.WriteLine("Area of rectangle is :{0}", length * breadth); }
     public void Triangle()
     {Console.WriteLine("Enter the Breadth for Triangle ");
        breadthfortriangle = float.Parse(Console.ReadLine());
        Console.WriteLine("Enter the Hieght for Triangle ");
        hieght = float.Parse(Console.ReadLine());
        Console.WriteLine("Area of Triangle is:{0}", (breadthfortriangle * hieght) / 2);
        Console.WriteLine("By Rimsha Bilal");
        Console.ReadKey();}}}
```

OUTPUT:



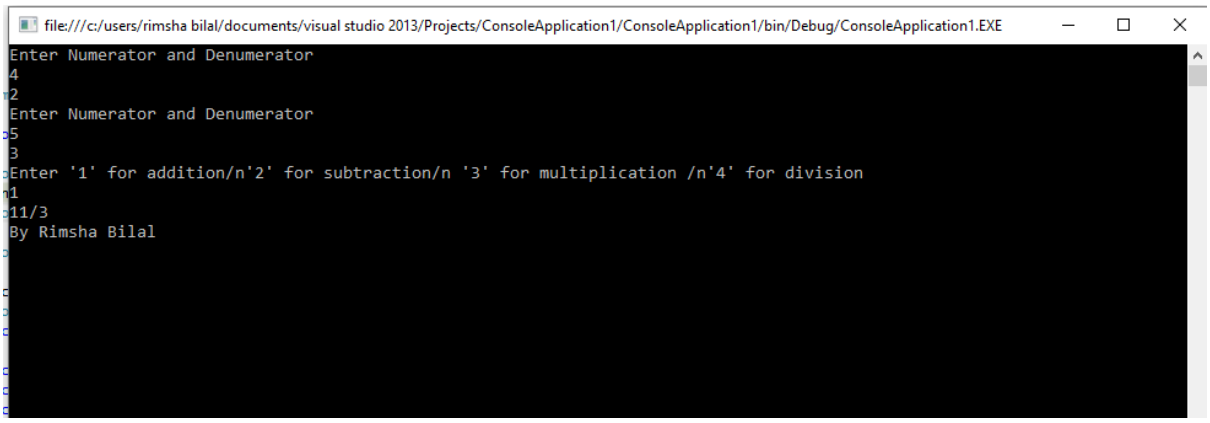
Question#03:

```
using System;
namespace Assignment3._3
{public class RationalNumbers
   {   private int numerator, denumerator;
      public RationalNumbers() { }
      public RationalNumbers(int n1, int d1)
```

```
{ numerator = n1; denumerator = d1;
   if (denumerator == 0 || denumerator < 0)
   { Console.WriteLine("Denumerator can't be zero"); return; }
   reduce(); }
  void reduce()
  {
   int n;
   if (numerator < 0) { n = -numerator; }
   else { n = numerator; }
   int d = denumerator;
   int largest;
   if (n > d) { largest = n; }
   else { largest = d; }
   int gcd = 0; //greatest common divisor
   for (int loop = largest; loop >= 2; loop--)
   { if (numerator % loop == 0 && denumerator % loop == 0) { gcd = loop; break; }}
  if (gcd != 0) { numerator /= gcd; denumerator /= gcd; }
}
//addition operator
public static RationalNumbers operator +(RationalNumbers r1, RationalNumbers r2)
{
   RationalNumbers r3 = new RationalNumbers();
   r3.numerator = r1.numerator * r2.denumerator + r1.denumerator * r2.numerator;
   r3.denumerator = r1.denumerator * r2.denumerator;
   r3.reduce(); return r3;
}
//subtraction operator
public static RationalNumbers operator -(RationalNumbers r1, RationalNumbers r2)
{
   RationalNumbers r3 = new RationalNumbers();
   r3.numerator = r1.numerator * r2.denumerator - r1.denumerator * r2.numerator;
   r3.denumerator = r1.denumerator * r2.denumerator;
   r3.reduce(); return r3;
}
//multiplication operator
public static RationalNumbers operator *(RationalNumbers r1, RationalNumbers r2)
{
   RationalNumbers r3 = new RationalNumbers();
   r3.numerator = r1.numerator * r2.numerator;
   r3.denumerator = r1.denumerator * r2.denumerator;
   r3.reduce(); return r3;
}
//division operator
public static RationalNumbers operator /(RationalNumbers r1, RationalNumbers r2)
{
   RationalNumbers r3 = new RationalNumbers();
   r3.numerator = r1.denumerator * r2.numerator;
   r3.denumerator = r2.denumerator * r1.numerator;
   r3.reduce(); return r3;
}
public void printRational1()
```

```
        {
            if (denumerator == 0) { Console.WriteLine("DIVIDE BY ZERO ERROR!!!"); }
            else if (numerator == 0) { Console.WriteLine(0); }
            else { Console.WriteLine(numerator + "/" + denumerator); }
        }
    }
    class Program
    {
        static void Main(string[] args)
        {
            RationalNumbers r1, r2, r3;
            int n, d;
            Console.WriteLine("Enter Numerator and Denumerator"); n =
Convert.ToInt32(Console.ReadLine()); d = Convert.ToInt32(Console.ReadLine());
            r1 = new RationalNumbers(n, d);
            Console.WriteLine("Enter Numerator and Denumerator"); n =
Convert.ToInt32(Console.ReadLine()); d = Convert.ToInt32(Console.ReadLine());
            r2 = new RationalNumbers(n, d);
            int choice;
            Console.WriteLine("Enter '1' for addition/n'2' for subtraction/n '3' for multiplication /n'4' for
division"); choice = Convert.ToInt32(Console.ReadLine());
            switch (choice)
            {
                case 1: r3 = r1 + r2; r3.printRational1(); break;
                case 2: r3 = r1 - r2; r3.printRational1(); break;
                case 3: r3 = r1 * r2; r3.printRational1(); break;
                case 4: r3 = r1 / r2; r3.printRational1(); break;
            }
            Console.WriteLine("By Rimsha Bilal");
            Console.ReadKey(); } }}
```

OUTPUT:



Question#04:

```
using System;
using System.Collections.Generic;
```

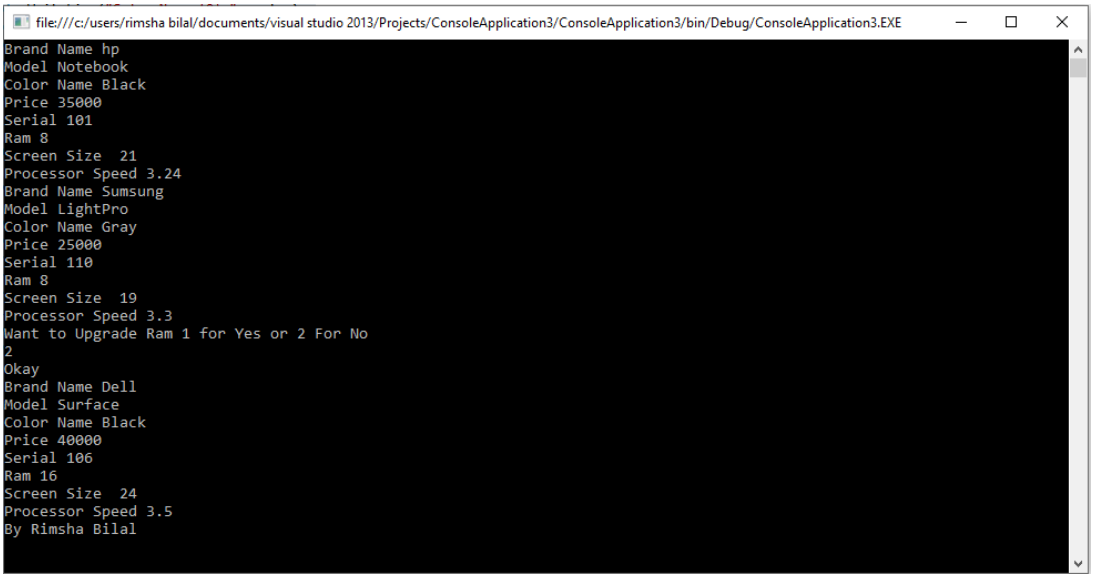
```
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace AQ4
{ class laptop
   { public string brand, color, model;
      public int serial, ram;
      public double pspeed, price, ssize;

      public laptop()
      {
         brand = "hp"; color = "Black"; model = "Notebook";
         serial = 101; ram = 8;
         pspeed = 3.24; price = 35000; ssize = 21;
         Console.WriteLine("Brand Name {0} ", brand);
         Console.WriteLine("Model {0} ", model);
         Console.WriteLine("Color Name {0} ", color);
         Console.WriteLine("Price {0}", price);
         Console.WriteLine("Serial {0} ", serial);
         Console.WriteLine("Ram {0} ", ram);
         Console.WriteLine("Screen Size  {0} ", ssize);
         Console.WriteLine("Processor Speed {0} ", pspeed);

      } public laptop(string brands, string colors, string models, int serials, int rams, double ps, double
prices, double ssizes)
      {   brand = brands; color = colors; model = models; serial = serials; ram = rams;
         pspeed = ps; price = prices; ssize = ssizes;
         Console.WriteLine("Brand Name {0} ", brand);
         Console.WriteLine("Model {0} ", model);
         Console.WriteLine("Color Name {0} ", color);
         Console.WriteLine("Price {0}", price);
         Console.WriteLine("Serial {0} ", serial);
         Console.WriteLine("Ram {0} ", ram);
         Console.WriteLine("Screen Size  {0} ", ssize);
         Console.WriteLine("Processor Speed {0} ", pspeed);
      }
      public void getbrand()
      { brand = "Dell";}
      public void getcolor()
      {color = "White"; }
      public void getmodel()
      {  model = "Surface"; }
      public void getserial()
      {  serial = 106; }
      public void getsram()
      {ram = 16; int x;
         Console.WriteLine("Want to Upgrade Ram 1 for Yes or 2 For No");
         x = Convert.ToInt32(Console.ReadLine());
         if (x == 1)
         {ram = Convert.ToInt32(Console.ReadLine()) }
         else
```

```
        {Console.WriteLine("Okay"); } }
    public void getspeed()
    { pspeed = 3.5; }
    public void getprice()
    {
        price = 40000; }
    public void getsize()
    { ssize = 24; }
    public void display()
    {  Console.WriteLine("Brand Name {0} ", brand);
        Console.WriteLine("Model {0} ", model);
        Console.WriteLine("Color Name {0} ", color);
        Console.WriteLine("Price {0}", price);
        Console.WriteLine("Serial {0} ", serial);
        Console.WriteLine("Ram {0} ", ram);
        Console.WriteLine("Screen Size  {0} ", ssize);
        Console.WriteLine("Processor Speed {0} ", pspeed);}}
class Program
{ static void Main(string[] args)
  { laptop la = new laptop();
   laptop lap = new laptop("Sumsung", "Gray", "LightPro", 110, 8, 3.30, 25000, 19);
      la.getbrand(); la.getbrand(); la.getmodel();
      la.getserial(); la.getsram();
      la.getspeed(); la.getprice(); la.getsize();
      la.display();
      Console.WriteLine("By Rimsha Bilal");
      Console.ReadKey();}}}
```

OUTPUT:



Question#05:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace AQ5
{class number
  {public double num;
   public int result;
    public void get()
    {Console.WriteLine("Enter Number for factorial");
     num = Convert.ToDouble(Console.ReadLine());}
      public void verify()
      {
         if (num >= 0)
         { Console.WriteLine("Entered Number is Whole Number ");
           if (num > 0){
 Console.WriteLine("Entered Number Is a Positive Number. So Factorial is Possible");
               for (double x = num - 1; x > 0; x--)
               { num = num * x;
               }
               result = (int)num;
               Console.WriteLine("Factorial Is {0}", result);}}
          else{
            Console.WriteLine("Given Number is Not a Whole Number and Also Not +ve");
     }}
   class Program
   {static void Main(string[] args)
     { number n = new number();
        n.get();
        n.verify();
        Console.WriteLine("Rimsha bilal");
        Console.ReadLine();}}}
```

OUTPUT: