**Lab 6**

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**Programming 3- Sec004**

**Question 1**

using System;

using System.Collections.Generic;

using System.ComponentModel;

using System.Data;

using System.Drawing;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

using System.Windows.Forms;

namespace Ass6Q1

{

public partial class Form1 : Form

{

public Form1()

{

InitializeComponent();

}

private async void btnCalculate\_Click(object sender, EventArgs e)

{

// retrieve user's input as an integer

int a = int.Parse(tbA.Text);

int b = int.Parse(tbB.Text);

int c = int.Parse(tbC.Text);

int p = int.Parse(tbP.Text);

int q = int.Parse(tbQ.Text);

int r = int.Parse(tbR.Text);

lblResult.Text = "Calculating...";

// Task to perform calculation in separate thread

Task<int> calculateTask = Task.Run(() => CalculateFirstPart(a,b,c) / CalculateSecondPart(p,q,r));

// wait for Task in separate thread to complete

await calculateTask;

// display result after Task in separate thread completes

lblResult.Text = calculateTask.Result.ToString();

}

//calculating first part of the Equation

private int CalculateFirstPart(int number1, int number2, int number3)

{

int a = number1 \* number1;

int b = number2 \* number2;

int c = number3 \* number3;

int d = a + b + c;

return d;

}

//calculating Second part of the Equaltion

private int CalculateSecondPart(int number1, int number2, int number3)

{

int p = number1 \* number1;

int q = number2 \* number2;

int r = number3 \* number3;

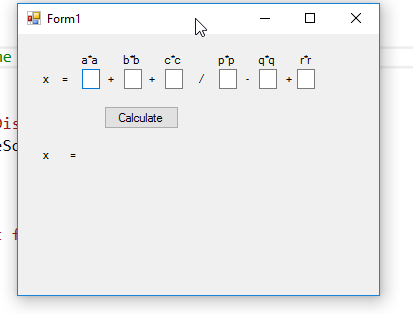
int s = p - q + r;

return s;

}

}

}

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**Question 2**

**Student.cs**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Ass6Q2

{

class Students

{

public string FirstName { get; }

public string LastName { get; }

private decimal monthlyFee;

public Students(string firstName, string lastName, decimal monthlyFee)

{

// Console.WriteLine(" " + FirstName + " " + LastName + " due amount is: " + MonthlyFee);

FirstName = firstName;

LastName = lastName;

MonthlyFee = monthlyFee;

}

public decimal MonthlyFee

{

get

{

return monthlyFee;

}

set

{

if (value >= 0M)

{

monthlyFee = value;

}

}

}

public override string ToString() =>

$"{FirstName,-10} {LastName,-10} {MonthlyFee,0:C}";

}

}

**Driver class**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Ass6Q2

{

class Program

{

static void Main(string[] args)

{

var students = new[]

{

new Students("Tanmay","Parmar",550.00M),

new Students("Keval","Patel",450.00M),

new Students("Himanshu","Patel",110.50M),

new Students("Nirav","Patel",400.75M),

new Students("Jay","Vasavda",200.70M),

new Students("Abhi","Gajjar",150.52M),

new Students("Harshit","Master",250.53M),

new Students("Syed","Azib",650.58M),

new Students("Pranav","Bhatt",356.60M),

new Students("Anand","Patel",520.65M)

};

Console.WriteLine("All the students are here: ");

foreach (var element in students)

{

Console.WriteLine(element);

}

var between400to600 =

from s in students

where (s.MonthlyFee >= 400.00M) && (s.MonthlyFee <= 600.00M)

select s;

Console.WriteLine("\nStudents who pays $400.00 to $600.00" +

$"{400.00:C} - {600.00:C} per month:");

foreach(var element in between400to600)

{

Console.WriteLine(element);

}

var nameSorted =

from s in students

orderby s.LastName

select s;

//Header

Console.WriteLine("\n Sorted Student By Last Name: ");

// foreach(var element in nameSorted)

// {

// Console.WriteLine(element);

// }

// Display result first name from Linq

if(nameSorted.Any())

{

Console.WriteLine("\nDisplay first name from Sorted List: ");

Console.WriteLine(nameSorted.First());

}

else

{

Console.WriteLine("not found");

}

Console.WriteLine();

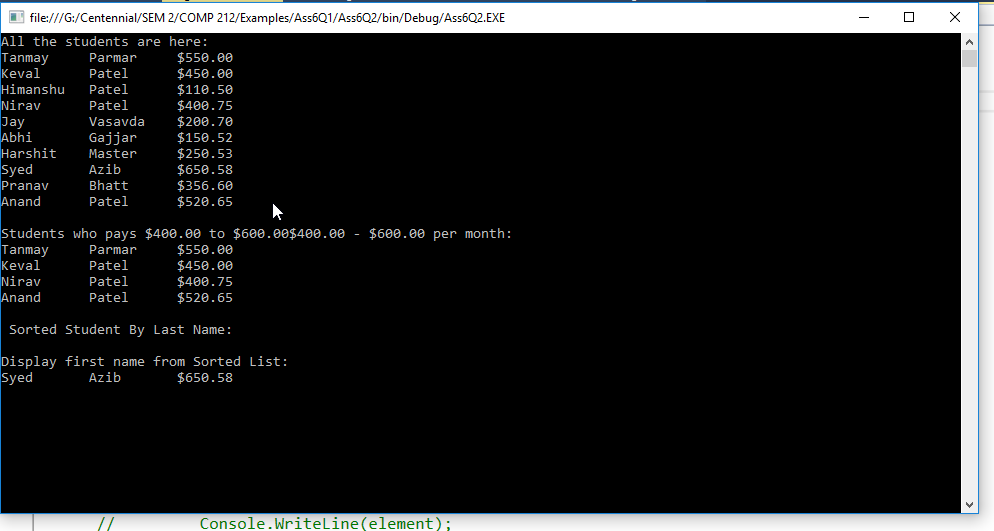
Console.ReadLine();

}

}

}

**Result:**

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