Punjab University College of Information Technology, Lahore

Assignment 1

Enterprise Application Development

Name: Muhammad Jahanzaib

Roll No: BCSF17A554

Submitted To: Dr. Muhammad Abdullah

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Task-1:

```
PS C:\Users\Jahanzaib\Desktop\.NetCore\Assignment1> dotnet run
Enter Temperature in decimal format: 0
Very Cold Weather...!
PS C:\Users\Jahanzaib\Desktop\.NetCore\Assignment1> dotnet run
Enter Temperature in decimal format: -27
Freezong Weather...!
PS C:\Users\Jahanzaib\Desktop\.NetCore\Assignment1> dotnet run
Enter Temperature in decimal format: 30
its Hot...!
```

```
using System;

namespace Task1

{

   class Program

   {

      static void Main(string[] args)

      {

         decimal value =0;

         checkPoint: //GoTo checkPoint

         Console.Write("Enter Temperature in decimal format: ");

         try

         {

          value=   Convert.ToDecimal(Console.ReadLine());


            switch(value)

            {

               case decimal t when (t<0):

                  Console.WriteLine("Freezing Weather...!");

                  break;
```

```
        case decimal t when (t<10):
          Console.WriteLine("Very Cold Weather...!");
          break;

        case decimal t when (t<20):
          Console.WriteLine("Cold Weather...!");
          break;

        case decimal t when (t<30):
          Console.WriteLine("Normal in Temp...!");
          break;

        case decimal t when (t<=40):
          Console.WriteLine("its Hot...!");
          break;

        case decimal t when (t>40):
          Console.WriteLine("its Very Hot...!");
          break;

       default:
       Console.WriteLine("Please Enter correct temperature value");
       break;

    }

}
```

```
        catch (System.Exception)
        {
            Console.WriteLine("Alert! Please Input correct Temperature value in decimal Format");
            goto checkPoint;
        }
    }
  }
}
```

Task2:

```
PS C:\Users\Jahanzaib\Desktop\.NetCore\Assignment1> dotnet run
Enter first number
Enter Second number
45
Enter Operatortion which you want to perform!{+ , - , * , /, Quit: q}
+
Result of 25 + 45 is 70
PS C:\Users\Jahanzaib\Desktop\.NetCore\Assignment1> dotnet run
Enter first number
56
Enter Second number
0
Enter Operatortion which you want to perform!{+ , - , * , /, Quit: q}
/
Division by Zero is not possible
PS C:\Users\Jahanzaib\Desktop\.NetCore\Assignment1>
```

```
using System;


namespace Task2
{
  class Program
  {
    static void Main(string[] args)
```

```
{
    decimal Answer=0,value1=0,value2=0;
    char Operator;
    Console.WriteLine("Enter first number");
    Check1:
    try
    {
       value1= decimal.Parse(Console.ReadLine());
    }
    catch (Exception )
    {
      Console.WriteLine("Please enter a valid value");
      goto Check1;

    }
    Console.WriteLine("Enter Second number");
    check2:
    try
    {
        value2= decimal.Parse(Console.ReadLine());
    }
    catch (System.Exception)
    {
     Console.WriteLine("Please enter a valid value");
     goto check2;

    }
```

```
Console.WriteLine("Enter Operatortion which you want to perform!{+ , - , * , /, Quit: q}");

check3:
try
{
   Operator= Convert.ToChar(Console.ReadLine());
}
catch (System.Exception)
{
   Console.WriteLine("Please enter a valid Operator");
   goto check3;

}
switch (Operator)
{
   //Addition
   case char c when (c=='+'):
   Answer=value1+value2;
   Console.WriteLine($"Result of {value1} + {value2} is {Answer}");
   break;

   //Subtraction
   case char c when (c=='-'):
   Answer=value1-value2;
   Console.WriteLine($"Result of {value1} - {value2} is {Answer}");
   break;
```

```
        //Multiplication
        case char c when (c=='*'):
        Answer=value1*value2;
        Console.WriteLine($"Result of {value1} * {value2} is {Answer}");
        break;

        //Division
        case char c when (c=='/'):
        division(value1,value2);
        break;

        //Modolus
        case char c when (c=='%'):
        Answer=value1%value2;
        Console.WriteLine($"Result of {value1} % {value2} is {Answer}");
        break;
        //Quit
        case 'q':
        break;

        default:
        Console.WriteLine("Please Choose right option or enter \"q\" to quit");
        goto check3;

    }
void division(decimal a, decimal b)
{
```

```
        if(b==0)
        {
           Console.WriteLine("Division by Zero is not possible");
            return;

        }
        else
        {
           Answer=a/b;
           Console.WriteLine($"Result of {value1} / {value2} is {Answer}");
        }


      }
      }

   }
}
```

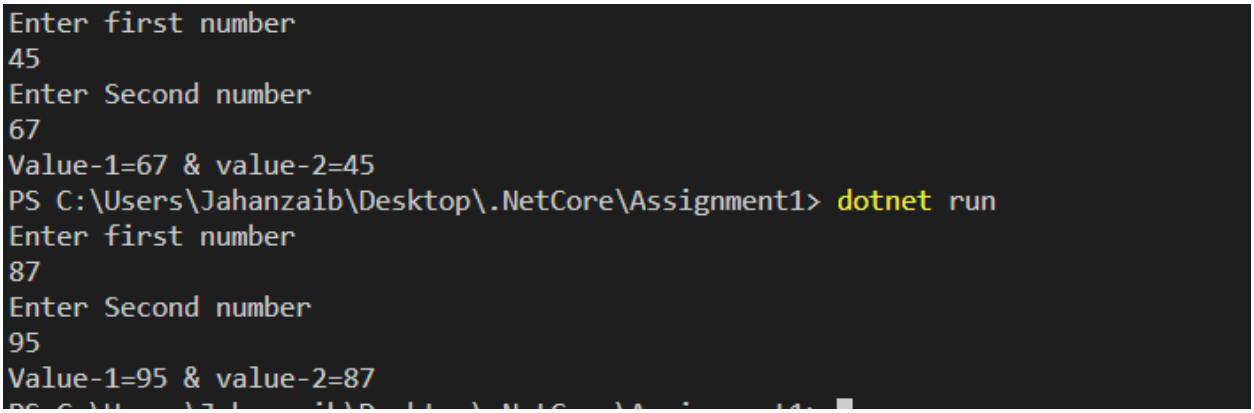
Task3:

```
PS C:\Users\Jahanzaib\Desktop\.NetCore\Assignment1> dotnet run
Enter Floating point value
23.5
**********Banker's Algorithm**********
24
**********Traditional Way**********
24
PS C:\Users\Jahanzaib\Desktop\.NetCore\Assignment1> dotnet run
Enter Floating point value
24.5
**********Banker's Algorithm**********
24
**********Traditional Way**********
25
PS C:\Users\Jahanzaib\Desktop\.NetCore\Assignment1>
```

```
using System;


namespace Task3
{
    class Program
    {
        static void Main(string[] args)
        {
        double value=0.0;
        check1:
        Console.WriteLine("Enter Floating point value");
        try
        {
            value= Convert.ToDouble(Console.ReadLine());
        }
        catch (System.Exception)
```

```
        {
            Console.WriteLine("Enter valid floating point value");
            goto check1;


        }
        Console.WriteLine("**********Banker's Algorithm**********");
        BnakersAlgo(value);
        Console.WriteLine("**********Traditional Way**********");
        traditionalRounding(value);
        void BnakersAlgo(double val)
        {
            Console.WriteLine($"{System.Convert.ToInt32(val)}");
        }
        void traditionalRounding(double val)
        {
            Console.WriteLine(Math.Round(value:val, digits:0 ,
mode:MidpointRounding.AwayFromZero ));
        }


        }


    }
}
```

Task4:

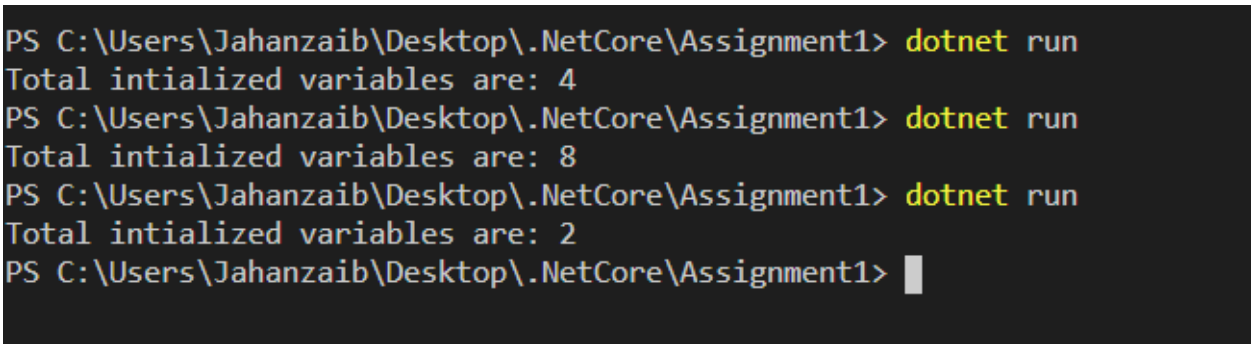



```
using System;


namespace Assignment1
{
   class Program
   {
      static void Main(string[] args)
      {
         decimal swap=0,value1=0,value2=0;


         Console.WriteLine("Enter first number");
         Check1:
         try
         {
            value1= decimal.Parse(Console.ReadLine());
```

```
}
catch (Exception )
{
  Console.WriteLine("Please enter a valid number");
  goto Check1;

}
Console.WriteLine("Enter Second number");
check2:
try
{
    value2= decimal.Parse(Console.ReadLine());
}
catch (System.Exception)
{
 Console.WriteLine("Please enter a valid number");
 goto check2;

}
Swapping(value1,value2);
void Swapping(decimal val1, decimal val2)
{
   swap= val1;
   val1=val2;
   val2=swap;
   Console.WriteLine($"Value-1={val1} & value-2={val2}");
}
```

```
    }


  }
}
```

Task5:




```
using System;


namespace Assignment1
{
  class Program
  {
    static void Main(string[] args)
    {
      myNewClass var1= new myNewClass();
       myNewClass var2= new myNewClass();
         myNewClass var3= new myNewClass();
       myNewClass var4= new myNewClass();
     Console.WriteLine($"Total intialized variables are: {Assignment1.myNewClass.count}");
    }
```

```
    }
    class myNewClass
    {
       public static int count=0;
        //Constructor
        public  myNewClass()
        {
         count+=1;
        }
    }

}
```

Task6:

```
PS C:\Users\Jahanzaib\Desktop\.NetCore\Assignment1> dotnet run
Enter number of subjects
5
Enter marks of your 1 subject
85
Enter marks of your 2 subject
67
Enter marks of your 3 subject
87
Enter marks of your 4 subject
50
Enter marks of your 5 subject
72
Your GPA is: 2.94
PS C:\Users\Jahanzaib\Desktop\.NetCore\Assignment1>
```

```
using System;


namespace Task6
```

```
{
    class Program
    {
        static void Main(string[] args)
        {
        int subjects=0;
        check1:
        Console.WriteLine("Enter number of subjects");
        try
        {
            subjects= Convert.ToInt32(Console.ReadLine());
        }
        catch (System.Exception)
        {
           Console.WriteLine("Enter valid number of subjects");
           goto check1;
        }
        decimal[] grades= new decimal[subjects];
        for (int i = 0; i < subjects; i++)
         {
          check2:
          Console.WriteLine($"Enter marks of your {i+1} subject");
          try
          {
              grades[i]=Convert.ToDecimal(Console.ReadLine());

          }
```

```
  catch (Exception)
  {
      Console.WriteLine("Enter valid marks of subject");
     goto check2;
  }

}
 GPACalculator(grades,subjects);
}
static void GPACalculator(decimal[] grades,int CountOfSubjects)
{
    int CreditHours=3;
    double gradesPoint=0;
    double totalMarks=0;
    double grandTotal=0;
    double result=0;

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

        if (grades[i] <50)
        {
            gradesPoint=0;
        }
        else if(grades[i]>=50 && grades[i]<55)
        {
            gradesPoint=1.00;
```

```
}
  else if(grades[i]>=55 && grades[i]<58)
{
   gradesPoint=1.70;
}
  else if(grades[i]>=58 && grades[i]<61)
{
   gradesPoint=2.00;
}
  else if(grades[i]>=61 && grades[i]<65)
{
   gradesPoint=2.30;
}
  else if(grades[i]>=65 && grades[i]<70)
{
   gradesPoint=2.70;
}
  else if(grades[i]>=70 && grades[i]<75)
{
   gradesPoint=3.00;
}
  else if(grades[i]>=75 && grades[i]<80)
{
   gradesPoint=3.30;
}
  else if(grades[i]>=80 && grades[i]<85)
{
```

```
            gradesPoint= 3.7;
        }
         else if(grades[i]>=85)
        {
            gradesPoint= 4.00;
        }
        else
        {
            Console.Write("You entered invalid value");

        }
        totalMarks=Convert.ToDouble(gradesPoint*CreditHours);
        grandTotal= grandTotal+totalMarks;


    }
    int totalCreditHours=CreditHours*CountOfSubjects;
    result= grandTotal/totalCreditHours;
    Console.WriteLine($"Your GPA is: {Math.Round(value:result, digits:2 ,
mode:MidpointRounding.AwayFromZero)}");


  }


 }
}
```