

BÀI TẬP BUỔI 3

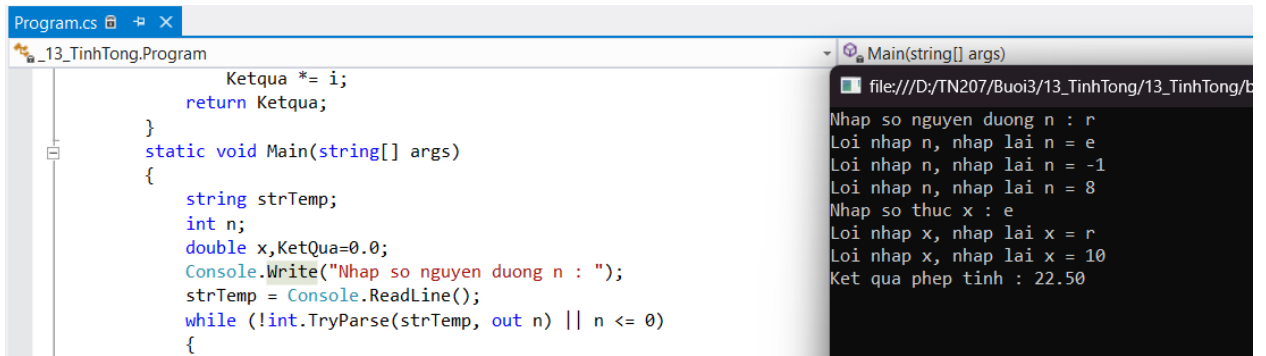
Học phần: Lập trình .NET_TN207

Sinh viên thực hiện: Nguyễn Phước Trọng – B2014625

1. Tạo ứng dụng 13_TinhTong cho phép nhập số nguyên dương n , số thực x và tính giá trị biểu th

```
Program.cs # X
_13_TinhTong.Program Main(string[] args)
{
    class Program
    {
        static int GiaiThua(int n)
        {
            int Ketqua = 1;
            for (int i = 1; i <= n; i++)
                Ketqua *= i;
            return Ketqua;
        }
        static void Main(string[] args)
        {
            string strTemp;
            int n;
            double x, KetQua=0.0;
            Console.Write("Nhap so nguyen duong n : ");
            strTemp = Console.ReadLine();
            while (!int.TryParse(strTemp, out n) || n <= 0)
            {
                Console.Write("Loi nhap n, nhap lai n = ");
                strTemp = Console.ReadLine();
            }
            Console.Write("Nhap so thuc x : ");
            strTemp = Console.ReadLine();
            while (!double.TryParse(strTemp, out x) || n <= 0)
            {
                Console.Write("Loi nhap x, nhap lai x = ");
            }
        }
    }
}
```

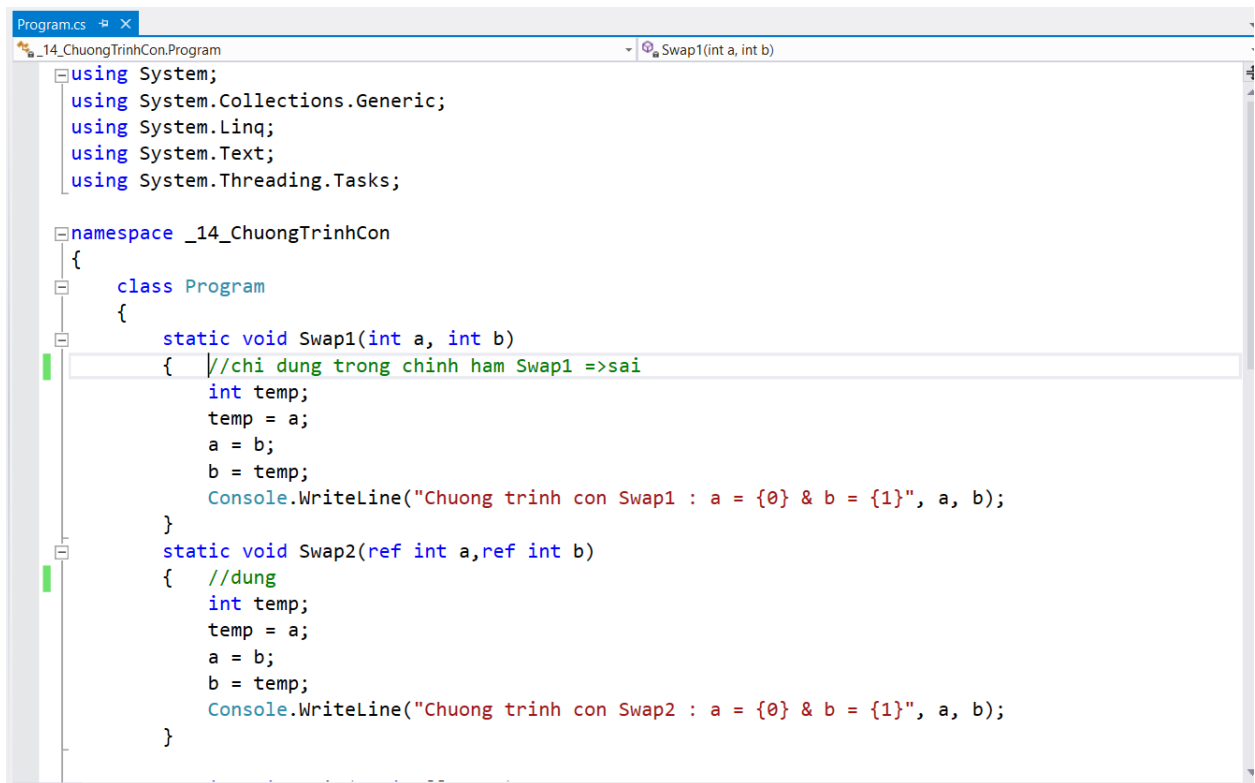
```
Program.cs # X
_13_TinhTong.Program Main(string[] args)
{
    double x, KetQua=0.0;
    Console.Write("Nhap so nguyen duong n : ");
    strTemp = Console.ReadLine();
    while (!int.TryParse(strTemp, out n) || n <= 0)
    {
        Console.Write("Loi nhap n, nhap lai n = ");
        strTemp = Console.ReadLine();
    }
    Console.Write("Nhap so thuc x : ");
    strTemp = Console.ReadLine();
    while (!double.TryParse(strTemp, out x) || n <= 0)
    {
        Console.Write("Loi nhap x, nhap lai x = ");
        strTemp = Console.ReadLine();
    }
    for (int i = 1; i <= n; i++)
    {
        KetQua += (x + Math.Pow(-1, i) * i) / GiaiThua(n - i + 1);
    }
    Console.WriteLine("Ket qua phap tinh : " + KetQua.ToString("#,##0.00"));
    Console.ReadLine();
}
}
```



```
Program.cs
_13_TinhTong.Program
Main(string[] args)

Ketqua *= i;
return Ketqua;
}
static void Main(string[] args)
{
    string strTemp;
    int n;
    double x, KetQua=0.0;
    Console.WriteLine("Nhap so nguyen duong n : ");
    strTemp = Console.ReadLine();
    while (!int.TryParse(strTemp, out n) || n <= 0)
    {
        Console.WriteLine("Loi nhap n, nhap lai n = e");
        strTemp = Console.ReadLine();
    }
    Console.WriteLine("Nhap so thuc x : e");
    while (n > 0)
    {
        Console.WriteLine("Loi nhap x, nhap lai x = r");
        Console.WriteLine("Loi nhap x, nhap lai x = 10");
        Console.WriteLine("Ket qua phép tính : 22.50");
    }
}
```

2. Tạo ứng dụng 14_ChuongTrinhCon cho phép thực hiện ví dụ truyền tham số cho chương trình con theo giá trị và theo tham chiếu.



```
Program.cs
_14_ChuongTrinhCon.Program
Swap1(int a, int b)

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

namespace _14_ChuongTrinhCon
{
    class Program
    {
        static void Swap1(int a, int b)
        {
            //chỉ dùng trong chính hàm Swap1 => sai
            int temp;
            temp = a;
            a = b;
            b = temp;
            Console.WriteLine("Chương trình con Swap1 : a = {0} & b = {1}", a, b);
        }
        static void Swap2(ref int a, ref int b)
        {
            //dùng
            int temp;
            temp = a;
            a = b;
            b = temp;
            Console.WriteLine("Chương trình con Swap2 : a = {0} & b = {1}", a, b);
        }
    }
}
```

```
Program.cs
_14_ChuongTrinhCon.Program
Swap1(int a, int b)

    a = b;
    b = temp;
    Console.WriteLine("Chuong trinh con Swap1 : a = {0} & b = {1}", a, b);
}
static void Swap2(ref int a, ref int b)
{
    //dung
    int temp;
    temp = a;
    a = b;
    b = temp;
    Console.WriteLine("Chuong trinh con Swap2 : a = {0} & b = {1}", a, b);
}

static void Main(string[] args)
{
    int a = 5, b = 7;
    Console.WriteLine("Gia tri ban dau : a = {0} & b = {1}", a, b);
    Swap1(a, b);
    Console.WriteLine("Sau khi hoan doi (Swap1) : a = {0} & b = {1}", a, b);
    Console.WriteLine("Gia tri ban dau : a = {0} & b = {1}", a, b);
    Swap2(ref a, ref b);
    Console.WriteLine("Sau khi hoan doi (Swap2) : a = {0} & b = {1}", a, b);
    Console.ReadLine();
}
}
```

```
Program.cs
_14_ChuongTrinhCon.Program
Swap1(int a, int b)

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

namespace _14_ChuongTrinhCon
{
    class Program
    {
        static void Swap1(int a, int b)
        {
            //chi dung trong chinh ham Swap1 => sai
            int temp;
            temp = a;
            a = b;
            b = temp;
            Console.WriteLine("Chuong trinh con Swap1");
        }
    }
}
```

```
file:///D:/TN207/Buoi3/14_ChuongTrinhCon/14_ChuongTrinhC
Gia tri ban dau : a = 5 & b = 7
Chuong trinh con Swap1 : a = 7 & b = 5
Sau khi hoan doi (Swap1) : a = 5 & b = 7
Gia tri ban dau : a = 5 & b = 7
Chuong trinh con Swap2 : a = 7 & b = 5
Sau khi hoan doi (Swap2) : a = 7 & b = 5
```

3. Tạo ứng dụng 15_ThaoTacTrenMang

```
Program.cs x
_15_ThaoTacTrenMang.Program NhapMang(int[] A)
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace _15_ThaoTacTrenMang
{
    class Program
    {
        static void NhapMang(int[] A)
        {
            string StrTemp;
            Console.WriteLine("Nhap Mang A : ");
            for (int i=0; i<A.Length; i++)
            {
                Console.Write("nhap phan tu thu {0} : " ,(i+1));
                StrTemp= Console.ReadLine();
                while( !int.TryParse(StrTemp, out A[i]))
                {
                    Console.Write("nhap sai !nhap lai phan tu thu " + (i + 1)+ ": ");
                    StrTemp = Console.ReadLine();
                }
            }
        }
    }
}
```

```
Program.cs x
_15_ThaoTacTrenMang.Program NhapMang(int[] A)
static void InMang(int[] A)
{
    Console.Write("Mang gom cac phan tu : ");
    foreach (int item in A)
    {
        Console.Write(item +"\t");
    }
}
static void Main(string[] args)
{
    int n;
    string StrN;
    int[] arrayA;

    Console.Write("nhap so phan tu cua mang : ");
    StrN = Console.ReadLine();
    while(!int.TryParse(StrN, out n) || n<=0)
    {
        Console.Write("nhap sai! nhap lai so phan tu cua mang :");
        StrN = Console.ReadLine();
    }
    arrayA = new int[n];
    NhapMang(arrayA);
    InMang(arrayA);
    Console.ReadLine();
}
```

The image shows a C# program in Visual Studio and its execution output in the console. The program, named `Program.cs`, is part of a project `_15_ThaoTacTrenMang`. It defines a `Program` class with a static method `NhapMang(int[] A)`. This method prompts the user to enter an array of 5 integers. It uses a `for` loop to iterate through the array, asking for each element. If the user enters an invalid integer, it prompts them to re-enter the value. Once all elements are entered, it displays the array.

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

namespace _15_ThaoTacTrenMang
{
    class Program
    {
        static void NhapMang(int[] A)
        {
            string StrTemp;
            Console.WriteLine("Nhap Mang A : ");
            for (int i=0; i<A.Length; i++)
            {
                Console.Write("nhap phan tu thu {0} : ",(i+1));
                StrTemp= Console.ReadLine();
                while( !int.TryParse(StrTemp, out A[i]))
                {
                    Console.Write("nhap sai !nhap lai phan tu thu " + (i+1) + " : ");
                    StrTemp = Console.ReadLine();
                }
            }
        }
    }
}
```

The console output shows the program's execution. It starts by asking for the number of elements in the array (5). Then it prompts for each element. The user enters 3, d, 3, 12, and t. The program correctly identifies 'd' and 't' as invalid and prompts for correct values. Finally, it displays the array: `Mang gom cac phan tu : 3 3 4 12 -10`.

4. Tạo ứng dụng 16_SuDungCauTruc

```
Program.cs
_16_SuDungCauTruc.Program
Main(string[] args)

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

namespace _16_SuDungCauTruc
{
    class Program
    {
        struct SinhVien
        {
            public String MSSV;
            public String FullName;
            public int Age;
        }
        static void Main(string[] args)
        {
            SinhVien Student;
            string StrTuoi;

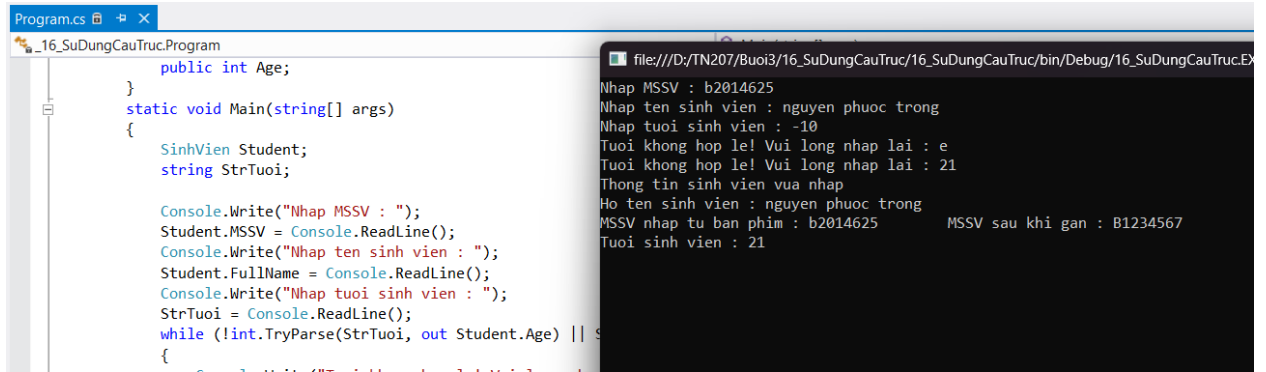
            Console.Write("Nhap MSSV : ");
            Student.MSSV = Console.ReadLine();
            Console.Write("Nhap ten sinh vien : ");
            Student.FullName = Console.ReadLine();
            Console.Write("Nhap tuoi sinh vien : ");
            StrTuoi = Console.ReadLine();
        }
    }
}
```

```
Program.cs
_16_SuDungCauTruc.Program
Main(string[] args)

        public int Age;
    }
    static void Main(string[] args)
    {
        SinhVien Student;
        string StrTuoi;

        Console.Write("Nhap MSSV : ");
        Student.MSSV = Console.ReadLine();
        Console.Write("Nhap ten sinh vien : ");
        Student.FullName = Console.ReadLine();
        Console.Write("Nhap tuoi sinh vien : ");
        StrTuoi = Console.ReadLine();
        while (!int.TryParse(StrTuoi, out Student.Age) || Student.Age < 16 )
        {
            Console.WriteLine("Tuoi khong hop le! Vui long nhap lai : ");
            StrTuoi = Console.ReadLine();
        }
        Console.WriteLine("Thong tin sinh vien vua nhap");
        Console.WriteLine("Ho ten sinh vien : " + Student.FullName + "\t");
        Console.WriteLine("MSSV nhap tu ban phim : " + Student.MSSV + "\t");
        Student.MSSV = "B1234567";
        Console.WriteLine("MSSV sau khi gan : " + Student.MSSV + "\t");
        Console.WriteLine("Tuoi sinh vien : " + Student.Age + "\t");

        Console.ReadLine();
    }
}
```



The image shows a C# program in a text editor and its execution in a console window. The program is named `Program.cs` and is part of a project `_16_SuDungCauTruc`. The code defines a `Student` class with a `FullName` property and a `Static void Main` method. The `Main` method prompts the user to enter their MSSV, name, age, and full name. It then displays the entered information and calculates the MSSV after a certain operation.

```
public int Age;
static void Main(string[] args)
{
    SinhVien Student;
    string StrTuoi;

    Console.WriteLine("Nhap MSSV : ");
    Student.MSSV = Console.ReadLine();
    Console.WriteLine("Nhap ten sinh vien : ");
    Student.FullName = Console.ReadLine();
    Console.WriteLine("Nhap tuoi sinh vien : ");
    StrTuoi = Console.ReadLine();
    while (!int.TryParse(StrTuoi, out Student.Age) || Student.Age < 0 || Student.Age > 100)
    {
        Console.WriteLine("Nhap sai! Vui long nhap lai!");
        StrTuoi = Console.ReadLine();
    }

    Console.WriteLine("Thong tin sinh vien vua nhap");
    Console.WriteLine("Ho ten sinh vien : {0} MSSV nhap tu ban phim : {1} MSSV sau khi gan : {2}", Student.FullName, Student.MSSV, Student.MSSV + 1);
    Console.WriteLine("MSSV nhap tu ban phim : {0} MSSV sau khi gan : {1}", Student.MSSV, Student.MSSV + 1);
    Console.WriteLine("Tuoi sinh vien : {0}", Student.Age);
}
```

The console output shows the following sequence of events:

```
Nhap MSSV : b2014625
Nhap ten sinh vien : nguyen phuoc trong
Nhap tuoi sinh vien : -10
Tuoi khong hop le! Vui long nhap lai : e
Tuoi khong hop le! Vui long nhap lai : 21
Thong tin sinh vien vua nhap
Ho ten sinh vien : nguyen phuoc trong
MSSV nhap tu ban phim : b2014625 MSSV sau khi gan : B1234567
Tuoi sinh vien : 21
```

5. Tạo ứng dụng `17_XuLyNgoaiLe` cho phép áp dụng xử lý ngoại lệ, tìm kết quả của phép chia nguyên giữa hai số nguyên `a`, `b` được nhập trước


```
Program.cs  x
g_17_XuLyNgoaiLe.Program  Main(string[] args)
{
    class Program
    {
        static void Main(string[] args)
        {
            int a, b;
            string StrA, StrB;
            Console.WriteLine("Nhap a : ");
            StrA = Console.ReadLine();
            Console.WriteLine("Nhap b : ");
            StrB = Console.ReadLine();

            try
            {
                a = int.Parse(StrA);
                b = int.Parse(StrB);
                Console.WriteLine("Ket qua a/b = " + a / b);
            }
            catch (DivideByZeroException)
            {
                Console.WriteLine("Loi chia cho b!");
            }
            catch (Exception)
            {
                Console.WriteLine("Loi thuc thi phep toan!");
            }
        }
    }
}

Program.cs  x
g_17_XuLyNgoaiLe.Program  Main(string[] args)
{
    a = int.Parse(StrA);
    b = int.Parse(StrB);
    Console.WriteLine("Ket qua a/b = " + a / b);

    }
    catch (DivideByZeroException)
    {
        Console.WriteLine("Loi chia cho b!");
    }
    catch (Exception)
    {
        Console.WriteLine("Loi thuc thi phep toan!");
    }
    finally
    {
        Console.WriteLine("Ket thuc thuc thi");
    }
    Console.ReadLine();
}
}
```

```
Program.cs g_17_XulyNgoaiLe.Program Main(string[] args)
Console.WriteLine("Nhap a : ");
StrA = Console.ReadLine();
Console.WriteLine("Nhap b : ");
StrB = Console.ReadLine();

try
{
    a = int.Parse(StrA);
    b = int.Parse(StrB);
    Console.WriteLine("Ket qua a/b = " + a / b);
}
catch (DivideByZeroException)
```

```
Program.cs file:///D:/TN207/Buoi3/g_17_XulyNgoaiLe/g_17_XulyNgoaiLe/bin/Debug/g_17_XulyNgoaiLe.EXE
Nhap a :
10
Nhap b :
0
Loi chia cho b!
Ket thuc thuc thi
```

```
Program.cs g_17_XulyNgoaiLe.Program Main(string[] args)
Console.WriteLine("Nhap a : ");
StrA = Console.ReadLine();
Console.WriteLine("Nhap b : ");
StrB = Console.ReadLine();
try
{
    Ket qua a/b = 2
    Ket thuc thuc thi
}
catch
{
}
catch
```