**C#.NET Exercise**

**Lab Objective**

Estimated time to complete this lab: **60 minutes**

The objective of this exercise is providing a clear understanding basics of c# programming and logical think of programming. In this lab you can understand of control-break statements clearly.

The Lab is structured to 7 Exercises. Each exercise contains several tasks. Each exercise presents different code.

**EXERCISE1: write a program to caluculate and print the series of Xth powers of 2,where 0<=x<=10(1,2,4,8,16….)without using arithematic operators or mathematiacal functions(i.e,\*,/,+,-,methods of system.Math are not allowed)**

**Task1: Creating new project “Exercise2” to “Lab5” Solution**

1. Right Click on “Lab5” Solution
2. On list choose “Add” and click on “New Project”
3. In the **New Project** dialog box select the **Visual C# Windows** project type.
4. Select the **Console Application** template.
5. Provide a name for the new project by entering “Exercise5” in the **Name** box.
6. Click OK.

**Task2: copy the code**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

namespace ConsoleApplication1

{

class Square

{

public static void Main()

{

Console.Write("Enter a number =>");

int a = Convert.ToInt32(Console.ReadLine());

if(a>0 && a<=10)

{

for (int i = 0; i < 6; i++)

{

a = a << 1;

Console.Write("{0},",a);

}

}

Console.ReadKey();

}

}

}

1. Right click on your project “Exercise2” and click on Build (or) Press Ctrl+Shift+B to build the solution.

2. Press **Ctrl+F5** to build and run the application. The program now compiles without any errors. Press any key to terminate the application

3. It shows your output window.

**EXERCISE2: What will be the output of this program**

**Task1: Creating new project “Exercise2” to “Lab5” Solution**

1. Right Click on “Lab5” Solution
2. On list choose “Add” and click on “New Project”
3. In the **New Project** dialog box select the **Visual C# Windows** project type.
4. Select the **Console Application** template.
5. Provide a name for the new project by entering “Exercise5” in the **Name** box.
6. Click OK.

**Task2: copy the code**

Using system,

Class A

{

Protected int n=1;

Public A()

{

N++;

Console.writeline(“n=” + n.Tostring());

}

}

Class B: A

{

Public B ()

{

N=10;

Console.writeline (“n=” + n. tostring());

}

Class MainClass

[STATHread]

Static Void Main(string[] args)

{

A a = new B();

**}**

1. Right click on your project “Exercise2” and click on Build (or) Press Ctrl+Shift+B to build the solution.
2. Press **Ctrl+F5** to build and run the application. The program now compiles without any errors. Press any key to terminate the application

3. It shows your output window.

**EXERCISE3: what will be the output of this program**

**Task1: Creating new project “Exercise3” to “Lab5” Solution**

1. Right Click on “Lab5” Solution
2. On list choose “Add” and click on “New Project”
3. In the **New Project** dialog box select the **Visual C# Windows** project type.
4. Select the **Console Application** template.
5. Provide a name for the new project by entering “Exercise3” in the **Name** box.
6. Click OK.

**Task2: copy the code**

Using system;

Class Mainclass

{

Static void f(string s)

{

S += “world”;

}

[STAThread]

Static void Main (string[] args)

{

String s = “Hello”;

f(s);

console.writeline(s);

}

}

1. Right click on your project “Exercise3” and click on Build (or) Press Ctrl+Shift+B to build the solution.
2. Press **Ctrl+F5** to build and run the application. The program now compiles without any errors. Press any key to terminate the application

3. It shows your output window

ANS:

n=2

n=10

**EXERCISE4: C# what will be the output of this program**

**Task1: Creating new project “Exercise4” to “Lab5” Solution**

1. Right Click on “Lab2” Solution
2. On list choose “Add” and click on “New Project”
3. In the **New Project** dialog box select the **Visual C# Windows** project type.
4. Select the **Console Application** template.
5. Provide a name for the new project by entering “**Exercise4**” in the **Name** box.
6. Click OK.

**Task2: copy the code**

Using system;

Class A

{

Static int n =1;

Public void f()

{

N++;

}

Public void Report()

{

Console.writeline(n.Tostring());

}

}

Class Mainclass

{

[STAThread]

Static void Main (string[] args)

{

A x =new A(), Y = new A();

x.f();

x.Report();

y.f();

y.Report ();

}

}

1. Right click on your project “Exercise4” and click on Build (or) Press Ctrl+Shift+B to build the solution.

2. Press **Ctrl+F5** to build and run the application. The program now compiles without any errors. Press any key to terminate the application

3. It shows your output window

Ans:

2

3

Because n is declared as static.

**EXERCISE5: C# what will be the output of this program**

**Task1: Creating new project “Exercise5” to “Lab5” Solution**

1. Right Click on “Lab2” Solution
2. On list choose “Add” and click on “New Project”
3. In the **New Project** dialog box select the **Visual C# Windows** project type.
4. Select the **Console Application** template.
5. Provide a name for the new project by entering “**Exercise5**” in the **Name** box.
6. Click OK.

**Task2: copy the code**

Using system;

Namespace consoleApplication

{

Public class Myclass

{

Public delegate void LogHandlerv(string message);

Public void process(LogHandler logHandler)

{

If(loghandler ! = null)

{

Loghandler(“begin”);

}

If (loghandler != null )

{

Loghandler (“End”);

}

}

Public class Mylogger

{

Public void logger(string s)

{

Console.writeline(s);

}

}

Public class TestApplication

{

Static void Logger (string s)

{

Console.writeline(s);

}

Static void Main(string[] args)

{

MyLogger f1 =new MyLogger();

Myclass myclass= new Myclass();

Myclass.LogHandler myLogger =null;

myLogger += new Myclass.LogHandler(Logger);

myLogger += new MyClass.LogHandler(f1.Logger);

myClass.Process(myLogger);

return;

}

}

}

1. Right click on your project “Exercise5” and click on Build (or) Press Ctrl+Shift+B to build the solution.
2. Press **Ctrl+F5** to build and run the application. The program now compiles without any errors. Press any key to terminate the application

3. It shows your output window

output is

begin

begin

End

End

**EXERCISE6: C# what is the difference between**

**Task1: Creating new project “Exercise6” to “Lab5” Solution**

1. Right Click on “Lab2” Solution
2. On list choose “Add” and click on “New Project”
3. In the **New Project** dialog box select the **Visual C# Windows** project type.
4. Select the **Console Application** template.
5. Provide a name for the new project by entering “**Exercise6**” in the **Name** box.
6. Click OK.

**Task2: copy the code**

Sqlconnection conn= new sqlconnection(MyConnectString);

Sqlcommand cmd = new sqlcommand(“sp\_Myproc”, conn);

Conn.open ();

cmd.ExecuteNonQuery();

And

Sqlconnection conn=new sqlconnection (Myconnectstring);

Sqlcommand cmd = new sqlcommand(“sp\_Myproc”, conn);

Using (conn)

{

Conn.open ();

cmd.ExecuteNonQuery();

}

1. Right click on your project “Exercise6” and click on Build (or) Press Ctrl+Shift+B to build the solution.
2. Press **Ctrl+F5** to build and run the application. The program now compiles without any errors. Press any key to terminate the application

3. It shows your output window

Ans: In the second example the connection will be live only with in the using scope and connection will close when control comes out of using scope. But in first example the connection will be still open until the function returns to calling function.

**EXERCISE7: C# write a program to round a double to the nearesr (not the smallest)integer without using the system.Mathmethods(you may use the arithematic operators) ,The rounding must be done according to the scientificrules i.e.1.1 becomes1,3,9 becomes 4,18.5 becomew 19**

**Task1: Creating new project “Exercise7” to “Lab5” Solution**

1. Right Click on “Lab2” Solution
2. On list choose “Add” and click on “New Project”
3. In the **New Project** dialog box select the **Visual C# Windows** project type.
4. Select the **Console Application** template.
5. Provide a name for the new project by entering “**Exercise7**” in the **Name** box.
6. Click OK.

**Task2: copy the code**

ANS

using System;

namespace ConsoleApplication1

{

class Program

{

static void Main(string[] args)

{

double number = 0;

Console.Write("Please enter number:");

number = Convert.ToDouble(Console.ReadLine());

Console.WriteLine("Rounded value of {0} is {1}", number, (int)(number + 0.5));

Console.ReadKey();

}

}

}

1. Right click on your project “Exercise7” and click on Build (or) Press Ctrl+Shift+B to build the solution.
2. Press **Ctrl+F5** to build and run the application. The program now compiles without any errors. Press any key to terminate the application
3. It shows your output window

**EXERCISE8: C# write a program to round a double to the nearesr (not the smallest)integer without using the system.Mathmethods(you may use the arithematic operators) ,The rounding must be done according to the scientificrules i.e.1.1 becomes1,3,9 becomes 4,18.5 becomew 19**

**Task1: Creating new project “Exercise8” to “Lab2” Solution**

1. Right Click on “Lab2” Solution
2. On list choose “Add” and click on “New Project”
3. In the **New Project** dialog box select the **Visual C# Windows** project type.
4. Select the **Console Application** template.
5. Provide a name for the new project by entering “**Exercise8**” in the **Name** box.
6. Click OK.

**Task2: copy the code**

Class A

{

Int X;

Public abstract void f(int n);

Private virtual void g(unsigned n)

{

X=n as int;

}

Public string ToString()

{

Return x.Tostring();

}

}

1. Right click on your project “Exercise8” and click on Build (or) Press Ctrl+Shift+B to build the solution.
2. Press **Ctrl+F5** to build and run the application. The program now compiles without any errors. Press any key to terminate the application
3. It shows your output window

Ans:

The error occurs at X=n as int; because as operator must be used with either object type or nullable type.But here is int is not nullable and is value type.

**EXERCISE9:**

imagine we have a custom class:

Class A

{

Int n;

String s;

Public A()

{

}

//other stuff…

}

And an array of this class:

A [] v = new A[10];

What should we do to make that array sortable?

use

Array.Sort

(

v

)

;