ANONYMOUS FUNCTIONS DEMO

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Project801

{

/// <summary>

/// Author: Chirag Mehta

/// Purpose: ANONYMOUS FUNCTIONS DEMO

/// Date :18/09/2018

/// </summary>

class Mathematics

{

public static int Factorial(int n)

{

int i,fact=1;

for (i = 1; i <= n; i++)

fact \*= i;

return fact;

}

public static int Power(int sup,int sub)

{

int result = 1;

for (int i = 1; i <= sub; i++)

result \*= sup;

return result;

}

public static int Add(int a,int b)

{

return a + b;

}

}

class Program

{

public delegate int MyDelegate(int n);

public delegate int MyAdd(int a,int b);

static void Main(string[] args)

{

//ANONYMOUS TYPE

var data = new { id = 5, name = "abc", salary = 25000 };

int a1, a2;

//Console.WriteLine("Enter input");

//int input = int.Parse(Console.ReadLine());

////ANONYMOUS METHODS

//MyDelegate MyFactorial = delegate (int p)

//{

// return Mathematics.Factorial(p);

//};

Console.WriteLine("Enter input");

a1 = int.Parse(Console.ReadLine());

Console.WriteLine("Enter input");

a2= int.Parse(Console.ReadLine());

MyAdd MyAddition = delegate (int in1, int in2)

{

return Mathematics.Add(in1, in2);

};

// int n = int.Parse(Console.ReadLine());

// Console.WriteLine(MyFactorial(input));

Console.WriteLine(MyAddition(a1,a2));

//Console.WriteLine(Mathematics.Power(2, 3));

Console.ReadLine();

}

}

}

FILEINFO

using System;

using System.Collections.Generic;

using System.IO;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Project604

{

/// <summary>

/// Author: Chirag Mehta

/// Purpose: C# CODE TO PRINT FILE CREATION DATE,

/// FILE SIZE,

/// DIRECTORYNAME,

/// EXTENSION NAME

/// LASTMODIFIEDDATE

/// Date :15/09/2018

/// </summary>

class Program

{

static void Main(string[] args)

{

FileInfo f1 = new FileInfo("Hello.txt");

Console.WriteLine($"\nCREATION TIME:\t{f1.CreationTime}");

Console.WriteLine($"\nFILE SIZE:\t{f1.Length}bytes");

Console.WriteLine($"\nDIRECTORY NAME:\t{f1.DirectoryName}");

Console.WriteLine($"\nEXTENSION:\t {f1.Extension}");

Console.WriteLine($"\nLAST MODIFIED:\t{f1.LastWriteTime}");

Console.ReadLine();

}

}

}

REFLECTION DEMO

using System;

using System.Collections.Generic;

using System.Linq;

using System.Reflection;

using System.Text;

using System.Threading.Tasks;

namespace Project603

{

/// <summary>

/// Author: Chirag Mehta

/// Purpose: REFLECTION DEMO

/// Date :15/09/2018

/// </summary>

class Program

{

static void Main(string[] args)

{

Assembly myassembly = Assembly.LoadFrom("MyLibrary.dll");

//TO PRINT CLASSES IN THE LIBRARY

foreach(var types in myassembly.GetTypes())

foreach(var t in types.GetMethods())

Console.WriteLine($"{types.Name}:{t.Name}");

Console.ReadLine();

}

}

}

LINQ AND LAMBDA

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Project407

{

class Program

{

static void Main(string[] args)

{

List<int> data = new List<int> { 45, 67, 90, 92, 35, 60 };

//for loop

for(int i=0;i<data.Count;i++)

{

if(data[i]%3==0 || data[i]%5==0)

{

Console.WriteLine(data[i]);

}

}//

foreach(var d in data)

{

if (d %3==0 || d%5==0)

Console.WriteLine(d);

}

//linq

var result = from d in data

where (d % 3 == 0 || d % 5 == 0)

select d;

foreach(var r in result)

Console.WriteLine(r);

//lambda

data.Where(d => d % 3 == 0 || d % 5 == 0).ToList().ForEach(p => Console.WriteLine(p));

Console.ReadLine();

}

}

}

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Project504

{

/// <summary>

/// Author: Chirag Mehta

/// Purpose: ADVANCDE LINA AND LAMBDA EXPRESSIONS

/// Date :14/09/2018

/// </summary>

///

class Employee

{

public int id;

public string name;

public int salary;

}

class Program

{

static void Main(string[] args)

{

List<Employee> employee = new List<Employee>()

{

new Employee(){id=1, name="Rajiv", salary=4000 },

new Employee(){id=2, name="Raj", salary=4600 },

new Employee(){id=3, name="Ankit", salary=4500 },

new Employee(){id=4, name="Amit", salary=5000 },

};

//LAMBDA

Console.WriteLine("USING LAMBDA\n");

employee.Where(e => e.salary > 4000).ToList().

OrderByDescending(e => e.salary).ToList().

ForEach(e => Console.WriteLine($"Id={e.id} Name={e.name} Salary={e.salary}"));

//LINQ

Console.WriteLine("USING LINQ\n");

var result = from e in employee

where e.salary > 4000

orderby e.salary descending

select e;

foreach(var r in result)

Console.WriteLine($"Id={r.id} Name={r.name} Salary={r.salary}");

Console.ReadLine();

}

}

}

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Project503

{

/// <summary>

/// Author: Chirag Mehta

/// Purpose: LAMBDA AND LINQ ORDERBY

/// Date :14/09/2018

/// </summary>

class Program

{

static void Main(string[] args)

{

List<int> data = new List<int>() { 87,65,46,68,93,83};

//USING LAMBDA

Console.WriteLine("USING LAMBDA");

data.Where(p => p % 2 == 1).ToList().

OrderByDescending(p => p).ToList().

ForEach(p => Console.WriteLine(p));

Console.WriteLine("USING LINQ");

//USING LINQ

var result = from d in data

where d % 2 == 1

orderby d descending

select d;

foreach(var r in result)

Console.WriteLine(r);

Console.ReadLine();

}

}

}

**ABSTRACT CLASS DEMO**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Project313

{

/// <summary>

/// Author: Chirag Mehta

/// Purpose: Abstract Class Demo

/// Date :11/09/2018

/// </summary>

///

abstract class Salary

{

/// <summary>

/// Calculation of PF

/// </summary>

/// <param name="basic"></param>

/// <returns></returns>

public int GetPF(int basic)

{

return (12 \* basic) / 100;

}

/// <summary>

/// Calculation of HRA

/// </summary>

/// <param name="basic"></param>

/// <returns></returns>

public int GetHRA(int basic)

{

return (40 \* basic) / 100;

}

public abstract int GetTA();

public abstract int GetSP();

}

/// <summary>

/// Calculation of PF,HRA,TA and SP for Capgemini

/// </summary>

class Capgemini : Salary

{

public override int GetSP()

{

return 12000;

}

public override int GetTA()

{

return 3000;

}

}

/// <summary>

/// Calculation of PF,HRA,TA and SP for Sogeti

/// </summary>

class Sogeti : Salary

{

public override int GetSP()

{

return 10000;

}

public override int GetTA()

{

return 4000;

}

}

/// <summary>

/// Calculation of PF,HRA,TA and SP for IGate

/// </summary>

class IGate : Salary

{

public override int GetSP()

{

return 9000;

}

public override int GetTA()

{

return 3500;

}

}

class Program

{

static void Main(string[] args)

{

Capgemini cap = new Capgemini();

Console.WriteLine(cap.GetHRA(20000));

Console.WriteLine(cap.GetPF(20000));

Console.ReadLine();

}

}

}

**STATIC CLASS DEMO**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Project307

{

/// <summary>

/// Author: Chirag Mehta

/// Purpose: Static Class Demo

/// Date :11/09/2018

/// </summary>

///

public static class Mathematics

{

/// <summary>

/// Adding two numbers

/// </summary>

/// <param name="a">First Number</param>

/// <param name="b">Second Number</param>

/// <returns>Result</returns>

///

public static int AddNumbers(int a, int b)

{

return a + b;

}

/// <summary>

/// Multiplying two numbers

/// </summary>

/// <param name="a">First Number</param>

/// <param name="b">Second Number</param>

/// <returns>Result</returns>

///

public static int MulNumbers(int a, int b)

{

return a \* b;

}

/// <summary>

/// Dividing two numbers

/// </summary>

/// <param name="a">First Number</param>

/// <param name="b">Second Number</param>

/// <returns>Result</returns>

///

public static int DivNumbers(int a, int b)

{

return a / b;

}

}

class Program

{

static void Main(string[] args)

{

Console.WriteLine(Mathematics.AddNumbers(3,2));

Console.WriteLine(Mathematics.MulNumbers(3,2));

Console.WriteLine(Mathematics.DivNumbers(6,3));

Console.ReadLine();

}

}

}

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Project306

{

/// <summary>

/// Author: Chirag Mehta

/// Purpose: Calculating nCr and nPr using static method.

/// Date :11/09/2018

/// </summary>

public class Mathematics

{

/// <summary>

/// Calculating Factorial

/// </summary>

/// <param name="n">Input Value</param>

/// <returns>Factorial</returns>

private static int Factorial(int n)

{

int i, fact = 1;

for (i = 1; i <= n; i++)

fact \*= i;

return fact;

}

/// <summary>

/// Calculating Combination

/// </summary>

/// <param name="n">Input Value</param>

/// <param name="r">Input Value</param>

/// <returns>Combinnation</returns>

///

public static int Calculate\_nCr(int n,int r)

{

return (Factorial(n)/(Factorial(n - r) \* Factorial(r)));

}

/// <summary>

/// Calulation Permutation

/// </summary>

/// <param name="n">Input Value</param>

/// <param name="r">Input Value</param>

/// <returns>Permutation</returns>

///

public static int Calculate\_nPr(int n,int r)

{

return (Factorial(n) / Factorial(n - r));

}

}

class Program

{

static void Main(string[] args)

{

Mathematics obj = new Mathematics();

Console.WriteLine(Mathematics.Calculate\_nCr(3, 2));

Console.WriteLine(Mathematics.Calculate\_nPr(3,2));

Console.ReadLine();

}

}

}

**SOLID PRINCIPLES**

**DICTIONARY**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Project802

{

class Program

{

static void Main(string[] args)

{

Dictionary<string, int> myscores = new Dictionary<string, int>();

myscores.Add("Telugu", 80);

myscores.Add("Tamil", 90);

myscores.Add("Hindi", 95);

myscores.Add("Bengali", 75);

myscores.Add("Marathi", 80);

//To print Telugu Marks

Console.WriteLine(myscores["Telugu"]);

//To print all subjects i.e. only keys

foreach(var s in myscores.Keys)

Console.WriteLine(s);

//Print all subjects with marks

foreach(var s in myscores)

Console.WriteLine($"{s.Key} : {s.Value}");

Console.ReadLine();

}

}

}

**SERIALIZE**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

using System.IO;

using System.Runtime.Serialization.Formatters.Binary;

namespace Project603

{

[Serializable]

public class Employee

{

public int id;

public string name;

public int salary;

}

class Program

{

public static List<Employee> employees = new List<Employee> ();

static void Main(string[] args)

{

int ch;

do

{

Console.WriteLine("1. Add Employee : ");

Console.WriteLine("2. Search Employee : ");

Console.WriteLine("3. Exit ");

Console.WriteLine("Enter your choice : ");

ch = int.Parse(Console.ReadLine());

switch(ch)

{

case 1: AddEmployee();

break;

case 2: SearchEmployee();

break;

default:

break;

}

}while(ch != 3);

}

public static void AddEmployee()

{

Employee emp = new Employee();

Console.WriteLine("Enter Id : ");

emp.id = int.Parse(Console.ReadLine());

Console.WriteLine("Enter Name : ");

emp.name = Console.ReadLine();

Console.WriteLine("Enter Salary : ");

emp.salary = int.Parse(Console.ReadLine());

//Storing new employee in collection

employees.Add(emp);

//Now we will serialize this and store in file

//Serialization is process of converting an object to a file

Stream s = File.Open("data.txt", FileMode.Create, FileAccess.ReadWrite);

BinaryFormatter b = new BinaryFormatter();

b.Serialize(s, employees);

s.Close();

Console.WriteLine("Details Saved Successfully");

}

public static void SearchEmployee()

{

int id;

Console.WriteLine("Enter employee id to search : ");

id = int.Parse(Console.ReadLine());

//Get the list from file using de-serialization

Stream s = File.Open("data.txt", FileMode.Open, FileAccess.Read);

BinaryFormatter b = new BinaryFormatter();

List<Employee> emps = (List<Employee>)b.Deserialize(s);

s.Close();

//LINQ

var result = from e in emps

where e.id == id

select e;

if (result.Count() == 0)

Console.WriteLine("No Data Found");

else

{

foreach(var r in result)

Console.WriteLine($"Id : {r.id}, Name : {r.name}, Salary : {r.salary}");

}

}

}

}

**EXCEPTION HANDLING**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Project409

{

class Program

{

static void Main(string[] args)

{

try

{

int a, b, c;

Console.WriteLine("Enter the first number");

a = int.Parse(Console.ReadLine());

Console.WriteLine("Enter the second number");

b = int.Parse(Console.ReadLine());

c = b / a;

Console.WriteLine(c);

}

catch (FormatException Ex)

{

Console.WriteLine("Only numbers are allowed");

}

catch (DivideByZeroException Ex)

{

Console.WriteLine("Second number cant be zero");

}

catch (Exception Ex)

{

Console.WriteLine("Some error occured");

}

Console.ReadLine();

}

}

}

**ARRAY LIST**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

using System.Collections;

namespace Project405

{

class Program

{

static void Main(string[] args)

{

int sum = 0;

ArrayList data = new ArrayList();

for(int i=0;i<5;i++)

{

Console.WriteLine("Enter the number");

data.Add(Console.ReadLine());

}

foreach (var n in data)

sum += Convert.ToInt32(n);

Console.WriteLine("Sum is "+sum);

Console.ReadLine();

}

}

}

**QUIZ APPLICATION**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Project202

{

/// <summary>

/// Author : Jayesh Singh

/// Purpose : To create a quiz application

/// Date : 10-Dep-2018

/// </summary>

class Program

{

static void Main(string[] args)

{

int score = 0, ans;

string name;

Console.WriteLine("Enter your name");

name = Console.ReadLine();

Console.WriteLine("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

Console.WriteLine("Hi {0}, Welcome to quiz by Jayesh\n",name);

Console.WriteLine("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

Console.WriteLine("Q1. Capital of Maharashtra");

Console.WriteLine("1. Mumbai 2. Pune 3. Kolkata 4. Chennai");

Console.WriteLine("Enter your choice");

ans = int.Parse(Console.ReadLine());

if (ans == 1)

score += 20;

Console.WriteLine("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

Console.WriteLine("Hi {0}, Welcome to quiz by Jayesh\n", name);

Console.WriteLine("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

Console.WriteLine("Q2. Capital of Tamil Nadu");

Console.WriteLine("1.Mumbai 2.Pune 3.Kolkata 4.Chennai");

Console.WriteLine("Enter your choice");

ans = int.Parse(Console.ReadLine());

if (ans == 4)

score += 20;

Console.WriteLine("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

Console.WriteLine("Hi {0}, Welcome to quiz by Jayesh\n", name);

Console.WriteLine("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

Console.WriteLine("Q3. Capital of West Bengal");

Console.WriteLine("1.Mumbai 2.Pune 3.Kolkata 4.Chennai");

Console.WriteLine("Enter your choice");

ans = int.Parse(Console.ReadLine());

if (ans == 3)

score += 20;

Console.WriteLine("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

Console.WriteLine("Hi {0}, Welcome to quiz by Jayesh\n", name);

Console.WriteLine("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

Console.WriteLine("Q4. Capital of Karnataka");

Console.WriteLine("1.Mumbai 2.Bengaluru 3.Kolkata 4.Chennai");

Console.WriteLine("Enter your choice");

ans = int.Parse(Console.ReadLine());

if (ans == 2)

score += 20;

if(score >= 60)

Console.WriteLine("Congrats {0} you have scored {1}",name,score);

else

Console.WriteLine("Try again");

Console.ReadKey();

}

}

}