## Assignments to be done in this session

* + 1. Write a console based application to dynamically load an assembly. Display the available types and their members. Prompt the user to invoke any method at runtime.

using System;

using System.Reflection;

namespace Reflection

{

class Student

{

public int RollNo

{

get; set;

}

public string Name

{

get; set;

}

public double Marks

{

get; set;

}

public Student()

{

RollNo = 0;

Name = string.Empty;

Marks = 0;

}

// Constructor

public Student(int rollno, string name, double marks)

{

RollNo = rollno;

Name = name;

Marks = marks;

}

public void Data()

{

Console.WriteLine(" Student Roll No. : {0}", RollNo);

Console.WriteLine("Student Name : {0}", Name);

Console.WriteLine("Student Marks :{0}", Marks);

}

}

class reflection

{

static void Main(string[] args)

{

Assembly executing = Assembly.GetExecutingAssembly();

Type[] t = executing.GetTypes();

foreach (var elements in t)

{

Console.WriteLine("Class : {0}", elements.Name);

MethodInfo[] m = elements.GetMethods();

foreach (var method in m)

{

Console.WriteLine("Method : {0}", method.Name);

ParameterInfo[] p = method.GetParameters();

foreach (var parameter in p)

{

Console.WriteLine("Parameter : {0} Type : {1}", parameter.Name, parameter.ParameterType);

}

Console.ReadKey();

}

}

}

}

}

* + 1. Define a SoftwareAttribute which is having its base class as “Attribute” with following private members:
       - String ProjectName.
       - String Description.
       - String ClientName.
       - String StartedDate.
       - String EndDate.

1. Write properties for all these members.
2. Design a simple Console Application for testing refection concept of .NET Framework:
   * Define SoftwareAttribute as Custom Attribute
   * Write two classes HDFCAccount, ICICIAccount Apply

SoftwareAttribute to these classes.

* + Write Test class which will read attributes applied on each classes using reflection technique.

**Code :-**

using System;

using System.Reflection;

using System.Collections.Generic;

[AttributeUsage(AttributeTargets.All)]

public class SoftwareAttribute : Attribute

{

String ProjectName;

String Description;

String ClientName;

String StartedDate;

String EndDate;

public SoftwareAttribute(String pname, String des, String cname, String sdate, String edate)

{

ProjectName = pname;

Description = des;

ClientName = cname;

StartedDate = sdate;

EndDate = edate;

}

public static void AttributeDisplay(Type classType)

{

Console.WriteLine("Methods of class {0}", classType.Name);

MethodInfo[] methods = classType.GetMethods();

for (int i = 0; i < methods.GetLength(0); i++)

{

object[] attributesArray = methods[i].GetCustomAttributes(true);

foreach (Attribute item in attributesArray)

{

if (item is SoftwareAttribute)

{

SoftwareAttribute attributeObject = (SoftwareAttribute)item;

Console.WriteLine("{0} - {1}, {2}, {3} , {4} ,{5} ", methods[i].Name, attributeObject.ProjectName, attributeObject.Description, attributeObject.ClientName, attributeObject.EndDate, attributeObject.EndDate);

}

}

}

}

}

class ICICI

{

double AccountNumber;

string Name;

double Bankbalance;

public ICICI(double a, string n, double b)

{

AccountNumber = a;

Name = n;

Bankbalance = b;

}

[SoftwareAttribute("accessor", "account number", "client name icici", "2th aug", "4th aug")]

public double getAccountNumber()

{

return AccountNumber;

}

[SoftwareAttribute("accessor", "account holder name", "client name icici", "2th aug", "4th aug")]

public string getName()

{

return Name;

}

[SoftwareAttribute("accessor", "bankbalance", "client name icici", "2th aug", "4th aug")]

public double getbankbalance()

{

return Bankbalance;

}

}

class HDFC

{

double AccountNumber;

string Name;

double Bankbalance;

public HDFC(double accountNumber, string name, double bankbalance)

{

AccountNumber = accountNumber;

Name = name;

Bankbalance = bankbalance;

}

[SoftwareAttribute("accessor", "account number", "client name HDFC", "2th aug", "4th aug")]

public double getAccountNumber()

{

return AccountNumber;

}

[SoftwareAttribute("accessor", "account holder name", "client name HDFC", "2th aug", "4th aug")]

public string getName()

{

return Name;

}

[SoftwareAttribute("accessor", "bank balance", "client name HDFC", "2th aug", "4th aug")]

public double getbankbalance()

{

return Bankbalance;

}

}

class AtrributeClass

{

static void Main(string[] args)

{

SoftwareAttribute.AttributeDisplay(typeof(ICICI));

Console.WriteLine();

SoftwareAttribute.AttributeDisplay(typeof(HDFC));

Console.WriteLine();

}

}

