**Lab 1**

1. Write a program to show function overloading in C#.

using System;

namespace Assignment1

{

class FunctionOverloading

{

static int Area(int l) => l \* l;

static int Area(int l, int b) => l \* b;

static void Main(string[] args)

{

Console.WriteLine($"The area of square with length 5 is {Area(5)}");

Console.WriteLine($"The area of rectangle with length 5 and breadth 7 is {Area(5,7)}");

Console.ReadLine();

}

}

}

1. Write a program to show Inheritance in C#.

namespace Assignment1

{

class InheritanceTest

{

public class Animal

{

public string color = "white";

public virtual void eat()

{

Console.WriteLine("\tEating...");

}

}

public class Dog : Animal

{

public override void eat()

{

Console.WriteLine("\tDog is Eating...");

}

public void bark()

{

Console.WriteLine("\tBarking...");

}

public void showColor()

{

Console.WriteLine($"\tAnimal Base Color: {base.color}"); // use of base keyword

Console.WriteLine($"\tDog color: {color}");

}

}

static void Main(string[] args)

{

Dog dog = new Dog();

dog.bark();

dog.showColor();

dog.eat();

Console.ReadLine();

}

}

}

1. Write a program to Handle DivdeByZeroException and IndexOutOfRangeException.

class ExceptionTest

{

static void Main(string[] args)

{

// WAP to Handle DivdeByZeroException and IndexOutOfRangeException

var a = 11;

var b = 0;

try

{

var c = a / b;

}

catch (DivideByZeroException e)

{

Console.WriteLine(e.Message);

}

List<string> languages = new List<string>() {

"Python","Java","C#","JavaScripr","C++","PHP","R","Scala","Swift","Kotlin"

};

for (int i = 0; i < 11; i++)

{

try

{

Console.WriteLine(languages[i]);

}

catch (ArgumentOutOfRangeException e)

{

Console.WriteLine(e.Message);

}

}

Console.ReadLine();

}

}

1. WAP to handle file in C#.
   1. Create and Write to a file

File.WriteAllText("newfile.txt", "Creating and Writing to a file");

* 1. Check whether file exists

if (!File.Exists("newfile.txt"))

{

Console.WriteLine("File doesnot exist");

}

else

{

Console.WriteLine("File Exists");

}

* 1. Read from a file

string txt = File.ReadAllText("newfile.txt");

Console.WriteLine(txt);

1. WAP in LINQ Syntax
   1. First create List of strings with 4 string values

List<string> fruits = new List<string>() {

"apple","mango","banana","grapes"

};

* 1. Get and show all string from List with LINQ

var fruitQuery = from fruit in fruits select fruit;

Console.WriteLine("Get and show all item in queryList");

foreach (var fruit in fruitQuery)

{

Console.Write(fruit + ", ");

}

* 1. Filter and show the list containing the matching string text.

var matchFruits = from fruit in fruits where fruit.Contains("ap") select fruit;

Console.WriteLine("\nFiltering and showing item which contain 'ap'");

foreach (var fruit in matchFruits)

{

Console.Write(fruit + ", ");

}

Console.ReadLine();

1. Write an asynchronous program in C#.