**Lab Exercise 1: Hello World**

**Problem:**

Write a C# program that prints "Hello, World!" to the console.

**Solution:**

using System;

class Program {

static void Main() {

Console.WriteLine("Hello, World!");

}

}

**Lab Exercise 2: User Input and Output**

**Problem:**

Write a C# program that asks for the user's name and then greets them.

**Solution:**

using System;

class Program {

static void Main() {

Console.Write("Enter your name: ");

string name = Console.ReadLine();

Console.WriteLine("Hello, " + name + "!");

}

}

**Lab Exercise 3: Simple Arithmetic Operations**

**Problem:**

Write a C# program to take two numbers as input and display their sum, difference, product, and quotient.

**Solution:**

using System;

class Program {

static void Main() {

Console.Write("Enter first number: ");

int num1 = Convert.ToInt32(Console.ReadLine());

Console.Write("Enter second number: ");

int num2 = Convert.ToInt32(Console.ReadLine());

Console.WriteLine("Sum: " + (num1 + num2));

Console.WriteLine("Difference: " + (num1 - num2));

Console.WriteLine("Product: " + (num1 \* num2));

Console.WriteLine("Quotient: " + (num1 / (float)num2));

}

}

**Lab Exercise 4: Even or Odd**

**Problem:**

Write a C# program that checks whether a number is even or odd.

**Solution:**

using System;

class Program {

static void Main() {

Console.Write("Enter a number: ");

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

if (num % 2 == 0)

Console.WriteLine("Even");

else

Console.WriteLine("Odd");

}

}

**Lab Exercise 5: Find the Largest Number**

**Problem:**

Write a C# program that takes three numbers as input and determines the largest.

**Solution:**

using System;

class Program {

static void Main() {

Console.Write("Enter first number: ");

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

Console.Write("Enter second number: ");

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

Console.Write("Enter third number: ");

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

int max = (a > b) ? (a > c ? a : c) : (b > c ? b : c);

Console.WriteLine("Largest number: " + max);

}

}

**Lab Exercise 6: Simple Calculator Using Switch**

**Problem:**

Write a C# program that acts as a simple calculator using a switch statement.

**Solution:**

using System;

class Program {

static void Main() {

Console.Write("Enter first number: ");

double num1 = Convert.ToDouble(Console.ReadLine());

Console.Write("Enter an operator (+, -, \*, /): ");

char op = Convert.ToChar(Console.ReadLine());

Console.Write("Enter second number: ");

double num2 = Convert.ToDouble(Console.ReadLine());

double result = 0;

switch (op) {

case '+': result = num1 + num2; break;

case '-': result = num1 - num2; break;

case '\*': result = num1 \* num2; break;

case '/': result = (num2 != 0) ? num1 / num2 : double.NaN; break;

default: Console.WriteLine("Invalid operator!"); return;

}

Console.WriteLine("Result: " + result);

}

}

**Lab Exercise 7: Factorial of a Number**

**Problem:**

Write a C# program to compute the factorial of a given number.

**Solution:**

using System;

class Program {

static void Main() {

Console.Write("Enter a number: ");

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

int factorial = 1;

for (int i = 1; i <= num; i++) {

factorial \*= i;

}

Console.WriteLine("Factorial: " + factorial);

}

}

**Lab Exercise 8: Fibonacci Series**

**Problem:**

Write a C# program to display the first N Fibonacci numbers.

**Solution:**

using System;

class Program {

static void Main() {

Console.Write("Enter number of terms: ");

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

int a = 0, b = 1, c;

Console.Write(a + " " + b + " ");

for (int i = 2; i < n; i++) {

c = a + b;

Console.Write(c + " ");

a = b;

b = c;

}

}

}

**Lab Exercise 9: Reverse a String**

**Problem:**

Write a C# program to reverse a string.

**Solution:**

using System;

class Program {

static void Main() {

Console.Write("Enter a string: ");

string str = Console.ReadLine();

char[] charArray = str.ToCharArray();

Array.Reverse(charArray);

Console.WriteLine("Reversed string: " + new string(charArray));

}

}

**Lab Exercise 10: Check for Palindrome**

**Problem:**

Write a C# program to check whether a string is a palindrome.

**Solution:**

using System;

class Program {

static void Main() {

Console.Write("Enter a string: ");

string str = Console.ReadLine();

string reversed = new string(str.Reverse().ToArray());

if (str.Equals(reversed, StringComparison.OrdinalIgnoreCase))

Console.WriteLine("Palindrome");

else

Console.WriteLine("Not a Palindrome");

}

}