**C# Console Programming**

**1. Demonstrate the working of C# SDK**

This program prints a message to verify that the C# SDK is working correctly.

using System;  
  
class Program  
{  
 static void Main()  
 {  
 Console.WriteLine("C# SDK is working correctly.");  
 }  
}

**2. Use of Various Data Types in C#**

This program demonstrates different data types available in C#.

using System;  
  
class DataTypesExample  
{  
 static void Main()  
 {  
 int intValue = 10;  
 float floatValue = 10.5f;  
 double doubleValue = 20.99;  
 char charValue = 'A';  
 bool boolValue = true;  
 string stringValue = "Hello, C#";  
  
 Console.WriteLine("Integer: " + intValue);  
 Console.WriteLine("Float: " + floatValue);  
 Console.WriteLine("Double: " + doubleValue);  
 Console.WriteLine("Char: " + charValue);  
 Console.WriteLine("Boolean: " + boolValue);  
 Console.WriteLine("String: " + stringValue);  
 }  
}

**3. Understanding Control Statements**

This program demonstrates the use of control statements such as if-else, loops, and switch case.

using System;  
  
class ControlStatements  
{  
 static void Main()  
 {  
 int number = 10;  
  
 // If-Else statement  
 if (number % 2 == 0)  
 Console.WriteLine("Even Number");  
 else  
 Console.WriteLine("Odd Number");  
  
 // For Loop  
 for (int i = 1; i <= 5; i++)  
 Console.WriteLine("For Loop Iteration: " + i);  
  
 // While Loop  
 int count = 0;  
 while (count < 3)  
 {  
 Console.WriteLine("While Loop Iteration: " + count);  
 count++;  
 }  
  
 // Switch Case  
 int day = 3;  
 switch (day)  
 {  
 case 1:  
 Console.WriteLine("Monday");  
 break;  
 case 2:  
 Console.WriteLine("Tuesday");  
 break;  
 case 3:  
 Console.WriteLine("Wednesday");  
 break;  
 default:  
 Console.WriteLine("Invalid Day");  
 break;  
 }  
 }  
}

**4. Understanding Library Functions**

This program demonstrates some commonly used built-in library functions in C#.

using System;  
  
class LibraryFunctions  
{  
 static void Main()  
 {  
 string text = "Hello, C#";  
 Console.WriteLine("Upper Case: " + text.ToUpper());  
 Console.WriteLine("Lower Case: " + text.ToLower());  
 Console.WriteLine("Length: " + text.Length);  
  
 double sqrtValue = Math.Sqrt(25);  
 Console.WriteLine("Square Root of 25: " + sqrtValue);  
  
 int maxValue = Math.Max(10, 20);  
 Console.WriteLine("Max Value between 10 and 20: " + maxValue);  
 }  
}

**5. Various Operators in C#**

This program demonstrates different types of operators used in C#.

using System;  
  
class OperatorsExample  
{  
 static void Main()  
 {  
 int a = 10, b = 5;  
   
 // Arithmetic Operators  
 Console.WriteLine("Addition: " + (a + b));  
 Console.WriteLine("Subtraction: " + (a - b));  
 Console.WriteLine("Multiplication: " + (a \* b));  
 Console.WriteLine("Division: " + (a / b));  
 Console.WriteLine("Modulus: " + (a % b));  
  
 // Unary Operators  
 Console.WriteLine("Increment: " + (++a));  
 Console.WriteLine("Decrement: " + (--b));  
  
 // Logical Operators  
 bool x = true, y = false;  
 Console.WriteLine("AND Operator: " + (x && y));  
 Console.WriteLine("OR Operator: " + (x || y));  
 Console.WriteLine("NOT Operator: " + (!x));  
  
 // Bitwise Operators  
 int bitA = 5, bitB = 3; // 5 = 101, 3 = 011  
 Console.WriteLine("Bitwise AND: " + (bitA & bitB));  
 Console.WriteLine("Bitwise OR: " + (bitA | bitB));  
 Console.WriteLine("Bitwise XOR: " + (bitA ^ bitB));  
  
 // Assignment Operators  
 int num = 10;  
 num += 5;  
 Console.WriteLine("Assignment += : " + num);  
  
 // Conditional (Ternary) Operator  
 int min = (a < b) ? a : b;  
 Console.WriteLine("Minimum Value: " + min);  
 }  
}