# Conditional Statements and Loop Statements in C#

## 1. Conditional Statements in C#

A conditional statement in C# allows a program to make decisions based on conditions.

### Types of Conditional Statements

• if statement

• if-else statement

• if-else if-else statement (Else If Ladder)

• switch statement

• Ternary Operator (?:)

### Example 1: if Statement

using System;  
  
class Program  
{  
 static void Main()  
 {  
 int num = 10;  
  
 if (num > 0) // Condition is true  
 {  
 Console.WriteLine("The number is positive.");  
 }  
 }  
}

### Example 2: if-else Statement

using System;  
  
class Program  
{  
 static void Main()  
 {  
 int num = -5;  
  
 if (num > 0)  
 {  
 Console.WriteLine("The number is positive.");  
 }  
 else  
 {  
 Console.WriteLine("The number is negative.");  
 }  
 }  
}

### Example 3: if-else if-else (Else If Ladder)

using System;  
  
class Program  
{  
 static void Main()  
 {  
 int num = 0;  
  
 if (num > 0)  
 {  
 Console.WriteLine("The number is positive.");  
 }  
 else if (num < 0)  
 {  
 Console.WriteLine("The number is negative.");  
 }  
 else  
 {  
 Console.WriteLine("The number is zero.");  
 }  
 }  
}

### Example 4: switch Statement

using System;  
  
class Program  
{  
 static void Main()  
 {  
 int day = 3;  
  
 switch (day)  
 {  
 case 1:  
 Console.WriteLine("Monday");  
 break;  
 case 2:  
 Console.WriteLine("Tuesday");  
 break;  
 case 3:  
 Console.WriteLine("Wednesday");  
 break;  
 case 4:  
 Console.WriteLine("Thursday");  
 break;  
 case 5:  
 Console.WriteLine("Friday");  
 break;  
 case 6:  
 case 7:  
 Console.WriteLine("Weekend");  
 break;  
 default:  
 Console.WriteLine("Invalid Day");  
 break;  
 }  
 }  
}

### Example 5: Ternary Operator

using System;  
  
class Program  
{  
 static void Main()  
 {  
 int num = 8;  
 string result = (num % 2 == 0) ? "Even" : "Odd";  
 Console.WriteLine("The number is " + result);  
 }  
}

## 2. Loop Statements in C#

A loop statement is used to execute a block of code multiple times.

### Types of Loop Statements

• for loop

• while loop

• do-while loop

• foreach loop

### Example 6: for Loop

using System;  
  
class Program  
{  
 static void Main()  
 {  
 for (int i = 1; i <= 5; i++)   
 {  
 Console.WriteLine("Iteration " + i);  
 }  
 }  
}

### Example 7: while Loop

using System;  
  
class Program  
{  
 static void Main()  
 {  
 int count = 1;  
  
 while (count <= 5)  
 {  
 Console.WriteLine("Iteration " + count);  
 count++;  
 }  
 }  
}

### Example 8: do-while Loop

using System;  
  
class Program  
{  
 static void Main()  
 {  
 int num = 1;  
  
 do  
 {  
 Console.WriteLine("Iteration " + num);  
 num++;  
 } while (num <= 5);  
 }  
}

### Example 9: foreach Loop

using System;  
  
class Program  
{  
 static void Main()  
 {  
 string[] fruits = { "Apple", "Banana", "Cherry" };  
  
 foreach (string fruit in fruits)  
 {  
 Console.WriteLine(fruit);  
 }  
 }  
}