**// Print String**

Console.WriteLine("Hello World");

**// Print int**

Console.WriteLine(5);

// **Print double**

Console.WriteLine(3.14159265358979);

**//new line**

Console.WriteLine("I love");

Console. Write("this ");

Console. Write ("Book!");

**//string concatination**

string age = "twenty six";

string text = "He is " + age + " years old.";

Console.WriteLine(text);

**//**

int age = 26;

string text = "He is " + age + " years old.";

Console.WriteLine(text);

//

string s = "Four: " + 2 + 2;

Console.WriteLine(s);

// Four: 22

string s1 = "Four: " + (2 + 2);

Console.WriteLine(s1);

// Four: 4

//place holder

string str = "Hello World!";

// Print (the normal way)

Console.Write(str);

//

string str = "Hello World!";

// Print (the normal way)

Console.Write(str);

// Print (through formatting string)

string str = "Hello World!";

// Print (the normal way)

Console.Write(str);

// Print (through formatting string)

Console.Write("{0}", str);

//

String name = "John";

int age = 18;

String town = "Seattle";

Console.Write ("{0} is {1} years old from {2}! \n", name, age, town);

Console.ReadKey ();

**//** reading number

static void Main(string[] args)

{

Console.Write("a = ");

int a = int.Parse(Console.ReadLine());

Console.Write("b = ");

int b = int.Parse(Console.ReadLine());

Console.WriteLine("{0} + {1} = {2}", a, b, a + b);

Console.WriteLine("{0} \* {1} = {2}", a, b, a \* b);

Console.Write("f = ");

double f = double.Parse(Console.ReadLine());

Console.WriteLine("{0} \* {1} / {2} = {3}",a, b, f, a \* b / f);

}

**// using ReadKey()**

ConsoleKeyInfo key = Console.ReadKey();

Console.WriteLine();

Console.WriteLine("Character entered: " + key.KeyChar);

Console.WriteLine("Special keys: " + key.Modifiers);

**// read number**

**Examples**

Console.WriteLine ("This program calculates” + "the area of a rectangle or a triangle");

Console.WriteLine ("Enter a and b (for rectangle) " + "or a and h (for triangle): ");

int a = int.Parse(Console.ReadLine ());

int b = int.Parse(Console.ReadLine());

Console.WriteLine ("Enter 1 for a rectangle or " + "2 for a triangle: ");

int choice = int.Parse(Console.ReadLine());

double area = (double)(a \* b) / choice;

Console.WriteLine("The area of your figure is " + area);

Examples:// declare and initialize some variables

byte centuries = 20;

ushort years = 2000;

decimal decimalPI = 3.141592653589793238m;

bool isEmpty = true;

char ch = 'a';

int a=27;

**Example 1**

int a = 7 + 9;

Console.WriteLine(a); // 16

string firstName = "John";

string lastName = "Doe";

// Do not forget the space between them

string fullName = firstName + " " + lastName;

Console.WriteLine(fullName); // John Doe

Example Arithmetical Operators

int squarePerimeter = 17;

double squareSide = squarePerimeter / 4.0;

double squareArea = squareSide \* squareSide;

Console.WriteLine(squareSide); // 4.25

Console.WriteLine(squareArea); // 18.0625

int a = 5;

int b = 4;

Console.WriteLine(a + b); // 9

Console.WriteLine(a + (b++)); // 9

Console.WriteLine(a + b); // 10

Console.WriteLine(a + (++b)); // 11

Console.WriteLine(a + b); // 11

Console.WriteLine(14 / a); // 2

Console.WriteLine(14 % a); // 4

int one = 1;

int zero = 0;

// Console.WriteLine(one / zero); // DivideByZeroException

double dMinusOne = -1.0;

double dZero = 0.0;

Console.WriteLine(dMinusOne / zero); // -Infinity

Console.WriteLine(one / dZero); // Infinity

**Logical Operators – Example**

bool a = true;

bool b = false;

Console.WriteLine(a && b); // False

Console.WriteLine(a || b); // True

Console.WriteLine(!b); // True

Console.WriteLine(b || true); // True

Console.WriteLine((5 > 7) ^ (a == b)); // False

**Control statements in csharp Console Application**

**Statement "if"**

**Example:**

Console.WriteLine("Enter two numbers.");

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

int firstNumber = int.Parse(Console.ReadLine());

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

int secondNumber = int.Parse(Console.ReadLine());

int biggerNumber = firstNumber;

if (secondNumber > firstNumber)

{

biggerNumber = secondNumber;

}

Console.WriteLine("The bigger number is: {0}", biggerNumber);

Console.Read();

}

**Conditional Statement "if" and Curly Brackets**

int a = 6;

if (a > 5)

Console.WriteLine("The variable is greater than 5.");

Console.WriteLine("This code will always execute!");

// **Bad practice: misleading code**

//Conditional operator

// take input from users

Console.WriteLine( "Enter your marks: ");

int marks= int.Parse(Console.ReadLine());

// ternary operator checks if

// marks is greater than 40

string result = (marks >= 40) ? "passed" : "failed";

Console.WriteLine( "You " + result +" the exam.");

//Nested conditional oprator

int number = 0;

string result;

// nested ternary operator to find whether

// number is positive, negative, or zero

result = (number == 0) ? "Zero" : ((number > 0) ? "Positive" : "Negative");

Console.WriteLine(result);

**Conditional Statement "if-else"**

**Example:**

static void Main()

{

int x = 2;

if (x > 3)

{

Console.WriteLine("x is greater than 3");

}

else

{

Console.WriteLine("x is not greater than 3");

Console.Read();

}

**Nested "if" Statements**

**Example:**

int first = 5;

int second = 3;

if (first == second)

{

Console.WriteLine ("These two numbers are equal.");

}

else

{

if (first > second)

{

Console.WriteLine ("The first number is greater.");

}

else

{

Console.WriteLine ("The second number is greater.");

}

}

**Conditional Statement "switch-case"**

|  |
| --- |
| switch (integer\_selector)  {  case integer\_value\_1:  statements;  break;  case integer\_value\_2:  statements;  break;  // …  default:  statements;  break;  } |

Example:

int number = 6;

switch (number)

{

case 1:

case 4:

case 6:

case 8:

case 10:

Console.WriteLine("The number is not prime!");

break;

case 2:

case 3:

case 5:

case 7:

Console.WriteLine("The number is prime!");

break;

default:

Console.WriteLine("Unknown number!");

break;

}

.

**While Loops**

One of the simplest and most commonly used loops is **while**.

|  |
| --- |
| while (condition)  {  loop body;  } |

// Initialize the counter

int counter = 0;

// Execute the loop body while the loop condition holds

while (counter <= 9)

{

// Print the counter value

Console.WriteLine("Number : " + counter);

// Increment the counter

counter++;

Console.ReadKey();

}

**Do-While Loops**

|  |
| --- |
| do  {  executable code;  }  while (condition); |

**Calculating Factorial – Example**

Console.Write("n = ");

int n = int.Parse(Console.ReadLine());

decimal factorial = 1;

do

{

factorial \*= n;

n--;

} while (n > 0);

Console.WriteLine("n! = " + factorial);

**For Loops**

**Example:**

Console.Write("n = ");

int n = int.Parse(Console.ReadLine());

Console.Write("m = ");

int m = int.Parse(Console.ReadLine());

decimal result = 1;

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

{

result \*= n;

}

Console.WriteLine("n^m = " + result);

int n = int.Parse(Console.ReadLine());

for (int row = 1; row <= n; row++)

{

for (int col = 1; col <= row; col++)

{

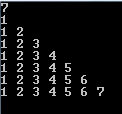
Console.Write(col + " ");

}

Console.WriteLine();

}

**Output**



Array

Example:

int[] myArray = { 1, 2, 3, 4, 5, 6};

Console.WriteLine(myArray[4]);

**Iteration with "foreach" Loop**

One of the most used constructs for iterating through elements of an array is **foreach**. The **foreach-loop construct in C#** is as follows:

|  |
| --- |
| foreach (var item in collection)  {  // Process the value here  } |

|  |
| --- |
| String [ ] capitals = { "Sofia", "Washington", "London","Paris" };  foreach (string capital in capitals)  {  Console.WriteLine(capital);  } |

**C# and VB.NET**

**Single Line Comments :**

VB.NET : ' ex: 'This is a single line comment

CSHARP : // ex: //This is a single line comment

**Multi Line Comments :**

VB.NET : Not available

CSHARP : /\*..\*/ ex: /\*Multi line comments \*/

**Conditional Statements**

**VB.NET**

If condition Then

'vb.net code

Else

'vb.net code

End If

**Csharp**

if(condition)

{

//csharp code

}

else

{

//csharp code

}

**Loops**

**VB.NET**

For counter As Integer = 0 To final

'vb.net code

Next

**Csharp**

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

{

//csharp code

}

**Operator (Equal)**

VB.NET: a=b

**Csharp** a==b;

**Declaration**

**VB.NET:**Dim i as Integer = 10

**CSHARP** int i=10;