**What are Variables in C#?**

In C#, a **variable** is a storage location identified by a name that holds a value. Variables are used to store data that can be used and manipulated throughout the program. Each variable has a data type that determines the kind of data it can hold, such as integers, floating-point numbers, strings, or custom objects.

**Declaring and Initializing Variables**

* **Declaring a Variable**: This involves specifying the data type and the name of the variable. Declaring a variable tells the compiler what kind of data the variable will hold.
* **Initializing a Variable**: This involves assigning a value to the variable at the time of declaration or later in the code. Initialization sets the initial value of the variable.

**Syntax**

1. **Declaration**:

csharp

Copy code

dataType variableName;

1. **Initialization**:

csharp

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variableName = value;

1. **Declaration and Initialization Together**:

csharp

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dataType variableName = value;

**Example of Declaring and Initializing Variables in C#**

Here's a simple example that demonstrates how to declare and initialize variables in C#:

using System;

class Program

{

static void Main(string[] args)

{

// Declaring and initializing variables

int age = 30; // Integer variable

double height = 5.9; // Double-precision floating-point variable

string name = "Alice"; // String variable

bool isStudent = true; // Boolean variable

// Displaying the values of the variables

Console.WriteLine($"Name: {name}");

Console.WriteLine($"Age: {age}");

Console.WriteLine($"Height: {height} meters");

Console.WriteLine($"Is a student: {isStudent}");

// Changing the value of a variable

age = 31; // Updating the value of the 'age' variable

Console.WriteLine($"Updated Age: {age}");

}

}

**Explanation:**

1. **Declaration and Initialization**:
   * int age = 30; declares an integer variable named age and initializes it with the value 30.
   * double height = 5.9; declares a double variable named height and initializes it with the value 5.9.
   * string name = "Alice"; declares a string variable named name and initializes it with the value "Alice".
   * bool isStudent = true; declares a boolean variable named isStudent and initializes it with the value true.
2. **Displaying Values**:
   * The Console.WriteLine method is used to print the values of the variables to the console.
3. **Updating a Variable**:
   * The value of `age