**Snippet 03 — Declaring variables with explicit types**

* **Code Recap**

string myString = "value";

int myNumber = 123;

float myFloat = 666.66F;

DateTime someDate = DateTime.Now;

1. **Working Theory (keywords & concepts)**

**string**

* Built-in type for **text values** (sequence of characters).
* In C#, string is an alias for System.String.
* Written inside **double quotes** (" ").
* Strings are **immutable** → once created, they cannot be changed (operations like Replace actually return a new string).

**int**

* Stores **32-bit signed integers** (whole numbers).
* Range: -2,147,483,648 to 2,147,483,647.
* Most common numeric type for counting and basic math.
* Suffix not required for literals (e.g., 123 is an int by default).

**float**

* Stores **32-bit floating point numbers** (decimals).
* Precision: ~7 digits.
* Requires F suffix in literals (666.66F) to explicitly mark it as float.
* Without F, the literal defaults to **double** (64-bit).

💡 Example:

float f = 3.14F;  // correct

float g = 3.14;   // ❌ error (3.14 is a double by default)

**DateTime**

* Struct in the **System namespace** for representing dates & times.
* Common properties:
  + DateTime.Now → current system date & time.
  + DateTime.Today → only the date part.
  + DateTime.UtcNow → current UTC time.
* Provides many methods: AddDays(), Subtract(), ToString("yyyy-MM-dd").

💡 Example:

DateTime deadline = DateTime.Now.AddDays(7);

Console.WriteLine(deadline);

**DateTime.Now**

* **Static property** of DateTime.
* Returns a DateTime object containing the exact local time when it was called.
* Different from new DateTime(...) → where you manually construct a date.

**Practical (from scratch)**

1. **Create project**

* dotnet new console -n Snippet03Demo
* cd Snippet03Demo

1. **Program.cs**

using System;

class Program

{

    static void Main()

    {

        string myString = "value";

        int myNumber = 123;

        float myFloat = 666.66F;

        DateTime someDate = DateTime.Now;

        Console.WriteLine($"String: {myString}");

        Console.WriteLine($"Number: {myNumber}");

        Console.WriteLine($"Float: {myFloat}");

        Console.WriteLine($"Date: {someDate}");

    }

}

1. **Run**

* dotnet run

**🔧 Extras**

* **Default literals:**
  + Numbers like 123 default to int.
  + Decimals like 3.14 default to double.
  + Add suffixes: F (float), M (decimal), D (double).
* **When to prefer decimal:**
  + Use decimal (128-bit) for money/currency to avoid floating-point rounding errors.
  + Example: decimal price = 99.99M;
* **Difference explicit vs var:**
  + string myString = "hello";
  + var myString = "hello"; → both compile the same, but explicit makes type clear at a glance.

✅ That’s snippet 03 explained: now you know how to declare variables with explicit types (string, int, float, DateTime), why suffixes matter, and how DateTime.Now works.