C# Variables

Variables play a key role as they allow us as programmers to write flexible programs. Instead of entering data directly into a program, a programmer can use variables to represent the data. Variables keep track of the data throughout the program. It is used to store, retrieve, and modify changeable data.

- A variable is a container which stores some value.
- Constants are the exact opposite of a variable; their values never change.

Variables consist of a datatype, a variable name and a value.

int myAge = 22;

- int = datatype
- myAge = variable name
- 22 = value

Variables will always be assigned with datatype.

Meaning it holds the value of a specific type, such as string, bool, int, and so on. C# is strongly typed which means once a variable has a type, that type cannot change. C# is also statically typed which means every variable must have a type.

C# Variable Naming Rules/Conventions (guidelines)

- camelCasing for local variables.
- A meaningful or descriptive name that is not too long or short.
- Can contain a-z, 0-9 and _ (other symbols are not permitted)
- No spaces
- Cannot start with #
- Cannot use a word reserved by C# language.

```
0 references
internal class Program
{
    0 references
    static void Main(string[] args)
    {
        //declaring varaible
        double myWeight;

        //initializing varaible
        myWeight = 190.5;

        //declaring constaints
        string SSN = "123-456-7890";

        SSN = "333-333-3333";

        const string phoneNumber = "123-123-4545";

        //Declaring & Initialization Syntax
        string my1stName = "Juan";

        string myLastName = "Salamanca";


        //Concatenation
        string fullName = my1stName + " " + myLastName;
        //another way of writing it
        fullName = $"{my1stName} {myLastName}";

        Console.WriteLine(fullName);

        bool isHungry = true;

        //Inferred Typing
        var myAge = 22;
    }
}
```

- Declaring refers to the process of defining a new variable, constant, or function and specifying its datatype and variable name.
- Initializing a variable is the process of assigning an initial value to it at the time of declaration. It can be done in the same statement as declaration or separately at a later point in the code.