# C# Basics

## Goal 1: Able to use reference and value types correctly

<http://www.albahari.com/valuevsreftypes.aspx>

<https://www.tutlane.com/tutorial/csharp/csharp-value-type-and-reference-type-with-examples>

The **stack** is a first-in last-out memory structure with static memory allocation (happening at compile time). Access is very fast.

* The **reference** portion of reference-typed local variables and parameters (such as the **myTextBox** reference)
* **Value-typed** local variables and **method parameters** (structs, as well as integers, bools, chars, DateTimes, etc.)

The following data is stored on the **heap** (<https://en.wikipedia.org/wiki/Heap_(data_structure)>) with dynamic memory allocation (means happening runtime). Access is slower.

* The **content** of reference-type objects.
* Anything structured inside a reference-type object.