



C# Concepts →

[Docs](#) / [C#](#) / [Data Types](#)

Data Types



Published Jan 25, 2023

[Contribute to Docs](#) →

C-sharp supports many data types that represent the size and kind of values stored in memory. The two main data types in C# are value and reference types.

Value Types

Value types are data types that are built-in to C#. The available types and their memory sizes are as follows:

Data Type	Description	Memory Size
bool	Boolean	1 byte
byte	Byte	1 byte
sbyte	Short Byte	1 byte
char	Character	2 bytes
decimal	Decimal	16 bytes
double	Double	8 bytes
float	Float	4 bytes
int	Integer	4 bytes
uint	Unsigned Integer	4 bytes
nint	Native Integer	4 or 8 bytes

Data Type	Description	Memory Size
uint	Unsigned Native Integer	4 or 8 bytes
long	Long	8 bytes
ulong	Unsigned Long	8 bytes
short	Short	2 bytes

The following code demonstrates how to instantiate a variable of each type shown above:

```
bool isOpen = true;
byte age = 45;
sbyte temperature = 58;
char grade = 'a';
decimal numberOfAtoms = 1493867940.23m;
double weightOfHippos = 243906.12;
float heightOfGiraffe = 908.32f;
int seaLevel = -24;
uint year = 2023u;
nint pagesInBook = 412;
ushort milesToNewYork = 2597;
long circumferenceOfEarth = 25000l;
ulong depthOfOcean = 28000ul;
short tableHeight = 4;
sbyte treeBranches = 33;
```

Reference Types

Reference types are objects that exist in external memory space. The reference types in C# are as follows:

- object
- string
- dynamic

All contributors



@YanisaHS

Contribute to Docs

- [Learn more](#) about how to get involved.
- [Edit this page](#) on GitHub to fix an error or make an improvement.
- [Submit feedback](#) to let us know how we can improve Docs.

Learn C# on Codecademy

Career path

Computer Science

Looking for an introduction to the theory behind programming? Master Python while learning data structures, algorithms, and more!

Includes **6 Courses**

 With **Professional Certification**

 **Beginner Friendly**

75 hours

Free course

Learn C#

Learn Microsoft's popular C# programming language, used to make websites, mobile apps, video games, VR, and more.

 **Beginner Friendly**

23 hours

 [Back to top](#)