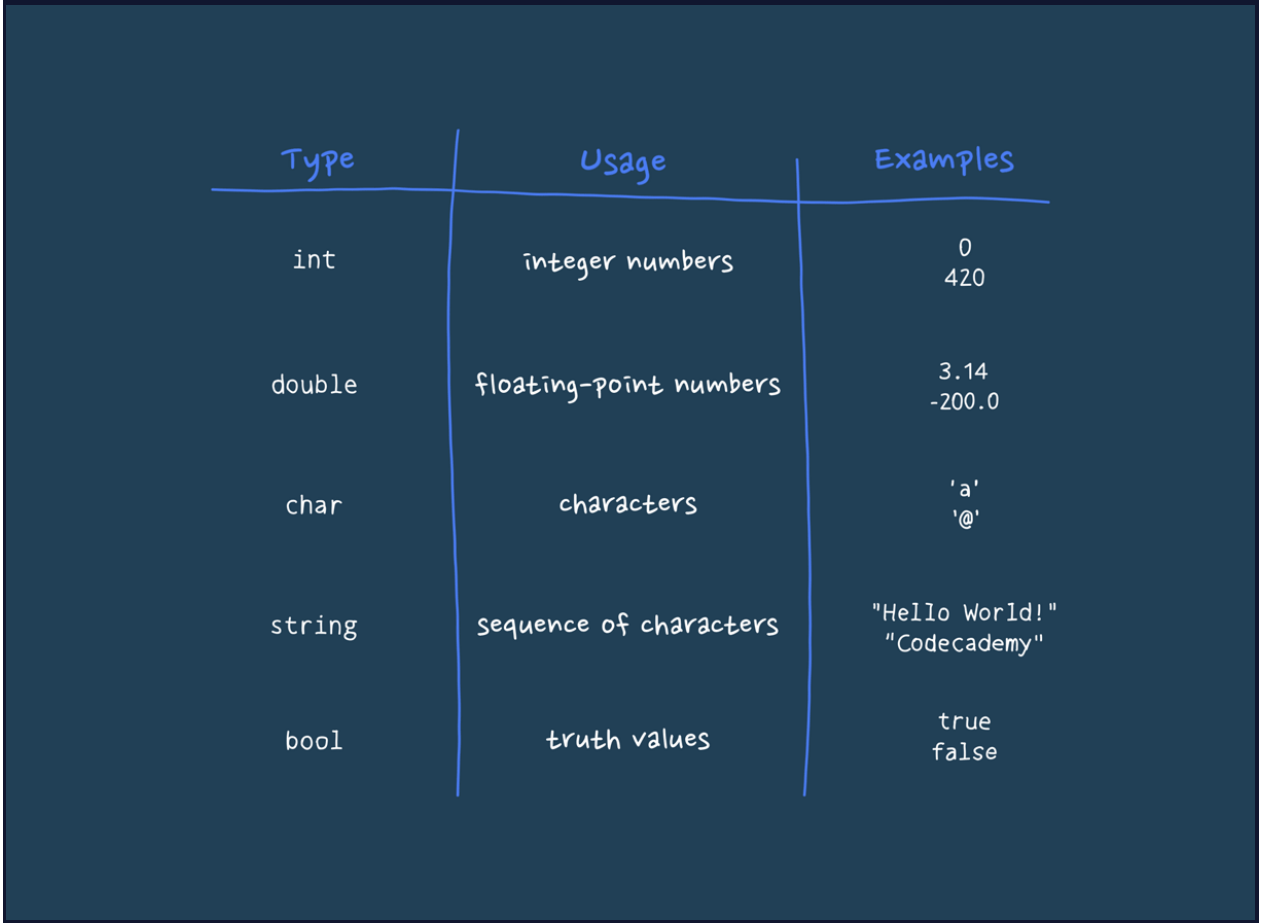
Basic Data Types

C++ is a strongly typed language.

Basic Data Types:

C++ provides a rather large number of types. However, you can write perfectly good programs using only five of those:



Type	Usage	Examples
int	integer numbers	0 420
double	floating-point numbers	3.14 -200.0
char	characters	'a' '@'
string	sequence of characters	"Hello World!" "Codecademy"
bool	truth values	true false

Here are some examples of declaring and initializing variables:

```
int age = 28;

double price = 8.99;

char grade = 'A';

std::string message = "Game Over";

bool late_to_work = true;
```

Datatype Modifiers:

As the name implies, datatype modifiers are used with built-in data types to modify the length of data that a particular data type can hold. Data type modifiers in C++ are:

- `signed`
- `unsigned`
- `short`
- `long`

We will learn about these in a bit!

Const:

`const` (constant) variables cannot be changed by your program during execution.

```
const double quarter = 0.25;

// and now variable quarter can only be 0.25
```

Simply add the keyword `const` before the data type during declaration to make the variable not modifiable.

Type Conversion:

A type cast is basically a conversion from one type to another.

The notation `(type) value` means "convert `value` to `type`". So for example:

```
double weight1;
int weight2;

weight1 = 154.49;
weight2 = (int) weight1;

// weight2 is now 154
```

Note: Going from a `double` to an `int` simply removes the decimal. There's no rounding involved.