Built-in Literals

A shorthand introduction to the new built-in literals in C++ 14.

New Built-in Literals with C++14

In C++ 14, there are a few new built-in literals. These are built-in literals for binary numbers, C++ strings, complex numbers, and time units. At first, let go over an overview of this new concept.

Type	Prefix/Suffix	Example
Binary number	0b	0b10
std::string	s	"HELLO"s
complex<double>	i	5i
complex<long double>	il	5il
complex<float>	if	5if
std::chrono::hours	h	5h
std::chrono::minutes	min	5min
std::chrono::seconds	s	5s
std::chrono::milliseconds	ms	5ms
std::chrono::microseconds	us	5us
std::chrono::nanoseconds	ns	5ns

You must keep a few special rules in mind. There is a main different between the built-in literals and the user-defined literals: the built-in literals have no underscore. For the first time, C++ supports (with C++14) a C++ string literal. So far, C++ only supported C-string literals, meaning that we must always use

a C-string literal to initialize a C++ string. The time literals are also very

convenient since they implicitly know their unit and support basic arithmetic. They are of the type `std::chrono::duration`.

Let's take a look at an example of this topic in the next lesson.