C++14 Built-In Literals

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

WE'LL COVER THE FOLLOWING

New built-in literals in C++14

In C++ 14, there are a few new built-in literals including those for binary numbers, C++ strings, complex numbers, and time units. Let's have a look at the 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

We must keep a few special rules in mind. There is one main difference between built-in literals and user-defined literals: built-in literals have no underscore. For the first time, in C++14, string literals are supported. In the past C++ only supported C-string literals, meaning that we had to always use a

C-string literal to initialize a C++ string. Time literals are also very convenient

since they implicitly know their own unit, and also support basic arithmetic. Time literals are of the type `std::chrono::duration`.

In the next lesson, we'll learn two different types of literal operators.