

C++ 2017 学习笔记

Roger Young

2017 年 3 月 20 日

Contents

1 C++ 2017 新特性	5
1.1 基本语言更新	6
1.1.1 New auto rules for direct-list-initialization	6
1.1.2 static_assert with no message	6
1.1.3 typename in a template template parameter	6
1.1.4 Removing trigraphs	6
1.1.5 Nested namespace definition	6
1.1.6 Attributes for namespaces and enumerators	6
1.1.7 u8 character literals	6
1.1.8 Allow constant evaluation for all non-type template arguments	6
1.1.9 Fold Expressions	6
1.1.10 Unary fold expressions and empty parameter packs	6
1.1.11 Remove Deprecated Use of the register Keyword	6
1.1.12 Remove Deprecated operator++(bool)	6
1.1.13 Removing Deprecated Exception Specifications from C++17	6
1.1.14 Make exception specifications part of the type system	6
1.1.15 Aggregate initialization of classes with base classes	6
1.1.16 Lambda capture of *this	6
1.1.17 Using attribute namespaces without repetition	6
1.1.18 Dynamic memory allocation for over-aligned data	6
1.1.19 __has_include in preprocessor conditionals	6
1.1.20 Template argument deduction for class templates	6
1.1.21 Non-type template parameters with auto type	6
1.1.22 Guaranteed copy elision	6

1.1.23	New specification for inheriting constructors (DR1941 et al)	6
1.1.24	Direct-list-initialization of enumerations	6
1.1.25	Stricter expression evaluation order	6
1.1.26	constexpr lambda expressions	6
1.1.27	Differing begin and end types in range-based for	6
1.1.28	[[fallthrough]] attribute	6
1.1.29	[[nodiscard]] attribute	6
1.1.30	[[maybe_unused]] attribute	6
1.1.31	Ignore unknown attributes	6
1.1.32	Pack expansions in using-declarations	6
1.1.33	Decomposition declarations	6
1.1.34	Hexadecimal floating-point literals	6
1.1.35	init-statements for if and switch	6
1.1.36	Inline variables	6
1.1.37	DR: Matching of template template-arguments excludes compatible templates	6
1.1.38	std::uncaught_exceptions()	6
1.1.39	constexpr if-statements	6
1.2	标准库更新	6
1.2.1	Merged: The Library Fundamentals 1 TS (most parts)	6
1.2.2	Merged: The Parallelism TS, a.k.a. “Parallel STL.”	6
1.2.3	Merged: File System TS	6
1.2.4	Merged: The Mathematical Special Functions IS	6
1.2.5	Improving std::pair and std::tuple	6
1.2.6	std::shared_mutex (untimed)	6
1.2.7	Variant	6
1.2.8	Splicing Maps and Sets	6

Chapter 1

C++ 2017 新特性

1.1 基本语言更新

1.1.1 New auto rules for direct-list-initialization

1.1.2 `static_assert` with no message

1.1.3 `typename` in a template template parameter

1.1.4 Removing trigraphs

1.1.5 Nested namespace definition

1.1.6 Attributes for namespaces and enumerators

1.1.7 `u8` character literals

1.1.8 Allow constant evaluation for all non-type template arguments

1.1.9 Fold Expressions

1.1.10 Unary fold expressions and empty parameter packs

1.1.11 Remove Deprecated Use of the `register` Keyword

1.1.12 Remove Deprecated `operator++(bool)`

1.1.13 Removing Deprecated Exception Specifications from C++17

1.1.14 Make exception specifications part of the type system

1.1.15 Aggregate initialization of classes with base classes

1.1.16 Lambda capture of `*this`

1.1.17 Using attribute namespaces without repetition

1.1.18 Dynamic memory allocation for over-aligned data