

Adding an Undefined Behavior and IFNDR Annex

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Abstract

Describe the process which will be used to write the Undefined Behavior and IFNDR Annex for the C++ standard.

Introduction

In P1705R0 it was proposed to add an undefined behavior annex to the standard. The goal was to describe each explicit core undefined behavior with at least one example. The purpose was to provide an accessible list of undefined behavior for the C++ community, clarify each undefined behavior and track the velocity of undefined behavior. Additionally, we would like to also add an annex for IFNDR cases.

Approach

For each annex the entries will be grouped in subclauses according to the clause structure of the standard. Each entry will describe a single undefined behavior or IFNDR case. For cases of implicit undefined behavior, we will first make those explicit in the main body of the text and subsequently add entries to the annex.

Each entry will have the following layout.:

- A title giving a concise summary of the issue
- Subclause with numeric cross-reference to the main standard text
- A summary of the issue in the style of a note
- An example in code demonstrating the issue

We will also be using the following criteria when writing the entries:

- No duplication of normative requirements i.e. verbs “shall”, “may”, “might” and “could” are forbidden but “can” and “could” are allowed
- We will use “incorrect” to characterize offending behavior
- Use “error” in code comments

Introduction To UB Annex

Enumeration of Core Undefined Behavior

This Annex documents undefined behavior explicitly called out in the main standard text using the following phrases: the behavior of the program is undefined, has undefined behavior, results in undefined behavior, the behavior is undefined, have undefined behavior, is undefined, result has undefined behavior. Undefined behavior that is implicit is not covered by this annex. Each entry contains a title, a numeric cross reference to the main standard text, a summary of the issue and a code example demonstrating the issue. The code examples are there to clarify the undefined behavior and will not exhaustively cover all possible ways of invoking that case.

Introduction to Ill-formed No Diagnostic Required Annex

Enumeration of Ill-formed, No Diagnostic Required

This Annex documents ill-formed no diagnostic required behavior called out in the main standard text by the following phrases: no diagnostic is required, no diagnostic required and no diagnostic shall be issued. Each entry contains a title, a numeric cross reference to the main standard text, a summary of the issue and a code example demonstrating the issue. The code examples are there to clarify the ill-formed no diagnostic required cases and will not exhaustively cover all possible ways of invoking that case.