Clause 19 (Diagnostics Library) Issues List - Version 3

Revision History


Introduction

This document is a summary of the issues identified in Clause 19. For each issue the status, a short description, and pointers to relevant reflector messages and papers are given.

Active Issues

Work Group: Library Clause 19
Issue Number: 19-002
Title: Derived exception classes in <stdexcept> are broken.
Sections: 19 Diagnostics Library [lib.diagnostics]
Status: active
Description: Kevlin Henney in c++std-lib-4925:

> As currently specified all the derived exception classes in <stdexcept> are broken. Consider:
> 
>    try
>    {
>        throw logic_error("undefined behaviour");
>    }
>    catch(logic_error &ex)
>    {
>        cerr << ex.what() << endl;
>    }
> 
> The string passed to logic_error is a temporary that is destroyed as the stack unwinds. No surprises there, except that the postcondition for all the exceptions in <stdexcept> states
> 
>    "Postcondition: what() == what_arg.data()"
> 
> Impllying an implementation of
> 
>    class logic_error
>    {
>        public:
>            logic_error(const string& what_arg) : ptr(what_arg.data()) {}
>            virtual const char *what() const { return ptr; }
>        private:
>            const char *ptr;
>    };


Clearly (I hope) string content equality rather than pointer equality was intended:

    "Postcondition: strcmp(what(), what_arg.c_str()) == 0"

As an aside, it seems that an implementation is not entitled to add any extra info (eg. "logic_error: " prefix), which in some ways is a shame.

Proposed Resolution:

Change Postcondition sections in 19.1.1 [lib.logic.error], 19.1.2 [lib.domain.error], 19.1.3 [lib.invalid.argument], 19.1.4 [lib.length.error], 19.1.5 [lib.out.of.range], 19.1.6 [lib.runtime.error], 19.1.7 [lib.range.error], 19.1.8 [lib.overflow.error], 19.1.9 [lib.underflow.error]

from: Postcondition: what() == what_arg.data()
to: Postcondition: strcmp(what(), what_arg.c_str()) == 0

Requestor: Kevlin Henney, Kevlin@two-sdg.demon.co.uk
Owner: Sandra Whitman
Emails: c++std-lib-4925.
Papers: None.

Closed Issues

Issue Number: 19-001
Title: Use and Treatment of Clause 19 Predefined Exceptions
Inconsistent
Last Doc.: N0936R1=96-0118R1
Resolution: closed, no action (Stockholm)