Proposal for C2Y
WG14 N3648

Title:	Improved language for return type vs. return value
Author, affiliation:	CFP group
Date:	2025-07-13
Proposal category:	Editorial
Reference:	N3537, N3550

Rationale:

A review of C2Y draft N3550 revealed approximately 49 uses of the expression “return value”, singular or plural. In four of those cases, the usage should be “return type” because the reference is to the prototype of the function at hand. One of those four cases is dealt with in proposal N3537. This proposal brings the other three cases into conformance with that usage. It also includes simpler language tying the “principal” function to the other functions in the family.

This change requires no implementation changes.

Suggested change:

Change to 7.12.1#1

> The header `<math.h>` declares two types and many mathematical functions and defines several macros. Most synopses specify a family of functions consisting of a principal function with one or more `double` parameters, a `double` return ~~value~~ type, or both; and ~~other~~ similar functions ~~with the same name but with~~ whose names have `f` and `l` suffixes~~, which are corresponding functions with~~ and which have `float` and `long double` parameters, return ~~values~~ types, or both.[268] …

Change to H.9#2

> Each function synopsis in 7.3 specifies a family of functions including a principal function with one or more `double complex` parameters and a `double complex` or `double` return ~~value~~ type. This subclause expands the synopsis to also include ~~other~~ similar functions~~, with the same name as the principal function but with~~ whose names have `f`*N* and `f`*N*`x` suffixes~~, which are corresponding functions~~ and whose parameters and return ~~values~~ types have corresponding real types `_Float`*N* and `_Float`*N*`x`.

Change to H.11.1#4

> Most function synopses in 7.12 specify a family of functions including a principal function with one or more `double` parameters, a `double` return ~~value~~ type, or both. The synopses are expanded to also include similar functions ~~with the same name as the principal function but with~~ whose names have `f`*N*, `f`*N*`x`, `d`*N*, and `d`*N*`x` suffixes~~, which are corresponding functions whose parameters, return values types, or both are of types~~ and which have `_Float`*N*, `_Float`*N*`x`, `_Decimal`*N*, and `_Decimal`*N*`x`~~, respectively~~ parameters, return types, or both.