

The New C Standard (Excerpted material)

An Economic and Cultural Commentary

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3.17

value

value

precise meaning of the contents of an object when interpreted as having a specific type

Commentary

For instance, the bits making up an object could be interpreted as an integer value, a pointer value, or a floating-point value. The definition of the type determines how the contents are to be interpreted.

A literal also has a value. Its type is determined by both the lexical form of the token and its numeric value.

C++

declaration
interpretation
of identifier
integer
constant
type first in list

3.9p4 *The value representation of an object is the set of bits that hold the value of type T.*

Coding Guidelines

representa-??
tion in-
formation
using

This definition separates the ideas of representation and value. A general principle behind many guidelines is that making use of representation information is not cost effective. The C Standard does not provide many guarantees that any representation is fixed (in places it specifies that two representations are the same).

Example

```

1  #include <stdio.h>
2
3  union {
4      float mem_1;
5      int mem_2;
6      char *mem_3;
7      } x = {1.234567};
8
9  int main(void)
10 {
11     /*
12     * Interpret the same bit pattern using various types.
13     * The values output might be: 1.234567, 1067320907, 0x3f9e064b
14     */
15     printf("%f, %d, %p\n", x.mem_1, x.mem_2, x.mem_3);
16 }

```

References