

Re: pure functions

Source: http://coding.derkeiler.com/Archive/C_CPP/comp.lang.c/2005-06/msg01649.html

- *From:* roberson@xxxxxxxxxxxxxxxxxxxxx (Walter Roberson)
 - *Date:* 13 Jun 2005 18:24:38 GMT
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In article <4Gjre.52\$X71.31@fed1read07>,
Anonymous 7843 <anon7843@xxxxxxxxxxxx> wrote:
>There are also "short term" pure functions like time() and ftell()
>which normally cannot be treated as pure by the compiler, but which
>are nonetheless good candidates for manually hoisting out of tight loops
>in which nothing in the loop resets the date or writes to the file.

That's an interesting idea; I'm not sure that the examples are the best ones, though.

time() deals in terms of seconds, not in terms of "dates"; any loop that operates for long enough is going to tick over to a new second. One could imagine an algorithm that sleep() until just before an action was to be taken, and then went into a loop polling time() until the crossover. (The algorithm should, of course, check that the time() is returning a valid value, for the cases where there is no real-time clock.)

ftell()... one should look at signals for this one. One cannot do much within a pure C signal handler routine, but C does not prohibit implementation extensions such as POSIX.1 . In POSIX.1, two of the routines that are considered "signal safe" (allowed to execute them inside a signal handler) are close() and write(). Both of those operate on file descriptors, not on FILE*, but if I'm interpreting correctly, close() on the file descriptor "underlying" a FILE* has an effect on the FILE*'s state.

The POSIX.1 1990 language about the connection between file descriptors and FILE* is not the clearest, so I'm not certain of the exact POSIX.1 proper behaviour in the case of close() and write() on the underlying descriptors... plausibly the FILE* level wouldn't properly catch on until the next fseek() [or until sufficient data was read to exhaust the in-memory buffer, thus calling upon the underlying read() routine that would notice the end-of-file.] We'd need someone well versed in POSIX.1 to detail this situation for us.

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I was very young in those days, but I was also rather dim.
— Christopher Priest

- *Follow-Ups:*
 - ◆ **Re: pure functions**
 - ◇ *From:* Keith Thompson

- *References:*
 - ◆ **pure functions**
 - ◇ *From:* junky_fellow
 - ◆ **Re: pure functions**
 - ◇ *From:* Malcolm
 - ◆ **Re: pure functions**
 - ◇ *From:* Chris Croughton
 - ◆ **Re: pure functions**
 - ◇ *From:* Anonymous 7843

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