Lesson 13.1 – Does Anyone Have the Time?

C has a host of time-related routines, none of which I ever talk about in the book. This stinks because getting the time or knowing the time or even displaying the current time is often an important part of most programs. I've gone by for too long!

TIME.H

The time functions in C are defined in the `TIME.H` header file for the most part and — stand back! — they're *UNIX* time functions. *Yech*! You would think that a programming language as nice as C would have it better, but no. (Compiler and operating system specific time functions are available, however.)

TIME.H contains many functions, but the one I want to show you is *time*. You might guess that *time* displays the current time. But no. Or that it displays perhaps the date and time. But no. No! No! No!

The *time* function returns the number of seconds that have elapsed since midnight, January 1, 1970. GMT. Uh-huh.

Further, the value is returned in a special `time_t` type of pointer, which you must declare in your program:

```
time_t *timepointer;
```

Even so, the number of seconds that have passed since you were 12 (or maybe not even yet born!) is useless. I mean, can you imagine all the math required to divvy that up into years, months, dates, hours and seconds? Egads!

Fortunately, there is a companion `TIME.H` function called *ctime*, which converts the `time_t` value into handy and very printable string. Time for a program!

Name: TODAY.C

```
#include <stdio.h>
#include <time.h>

int main()
{
    time_t now;

    time(&now);
    printf("It's now %s\n",ctime(&now));
    return 0;
}
```

Shift+Click here to download a copy of the `TODAY.C` source code. This program is almost utterly naked C, so it runs anywhere. I just re-compiled it under *gcc* in Linux and it worked, so everyone should be happy here.

Compile. Link. Run!

```
It's now Sat Sep 02 17:05:15 2000
```

Here's what's going on:

The `time_t now;` statement creates the `time_t` pointer variable, into which that huge number-of-seconds variable is stored. The variable is used by the *time* function, `time(&now)` to create and store the current time — I mean, number of seconds since Nixon was in the Whitehouse.

The killer is the *ctime* function inside the *printf* statement. That's what converts the number of seconds into a string you can read on the display.

There. Nothing to it.

Well, unless you just want to display the time. Or maybe you just want to display the date. If so, you have to look elsewhere for your time or date functions. Alas.

For more information on time functions in C, refer to: