

NAME

`ctime`, `localtime`, `gmtime`, `asctime`, `timezone` — convert date and time to ASCII

SYNOPSIS

```
char *ctime(clock)
long *clock;

#include <time.h>

struct tm *localtime(clock)
long *clock;

struct tm *gmtime(clock)
long *clock;

char *asctime(tm)
struct tm *tm;

char *timezone(zone, dst)
```

DESCRIPTION

Ctime converts a time pointed to by *clock* such as returned by *ftime(2)* into ASCII and returns a pointer to a 26-character string in the following form. All the fields have constant width.

```
Sun Sep 16 01:03:52 1973\n\0
```

Localtime and *gmtime* return pointers to structures containing the broken-down time. *Localtime* corrects for the time zone and possible daylight savings time; *gmtime* converts directly to GMT, which is the time UNIX uses. *Asctime* converts a broken-down time to ASCII and returns a pointer to a 26-character string.

The structure declaration from the include file is:

```
/*          @(#)time.h      2.1          */
/*
 * A pointer to this structure is
 * returned by localtime() and gmtime()
 */
struct tm {
    int          tm_sec;
    int          tm_min;
    int          tm_hour;
    int          tm_mday;
    int          tm_mon;
    int          tm_year;
    int          tm_wday;
    int          tm_yday;
    int          tm_isdst;
};
```

These quantities give the time on a 24-hour clock, day of month (1-31), month of year (0-11), day of week (Sunday = 0), year — 1900, day of year (0-365), and a flag that is nonzero if daylight saving time is in effect.

When local time is called for, the program consults the system to determine the time zone and whether the standard U.S.A. daylight saving time adjustment is appropriate. The program knows about the peculiarities of this conversion in 1974 and 1975; if necessary, a table for these years can be extended.

Timezone returns the name of the time zone associated with its first argument, which is measured in minutes westward from Greenwich. If the second argument is 0, the standard name is used, otherwise the Daylight Saving version. If the required name does not appear in a table built into the routine, the difference from GMT is produced; e.g. in Afghanistan

timezone(- (60(**4+30), 0) is appropriate because it is 4:30 ahead of GMT and the string GMT+4:30 is produced.

SEE ALSO

ftime(2)

BUGS

The return values point to static data whose content is overwritten by each call.