Subject: Re: HELP with systime()
Posted by thompson on Wed, 11 Feb 1998 08:00:00 GMT
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Mark Elliott <mark@mail.mmrrcc.upenn.edu> writes:

> Is there a way to convert a binary time value like the one
> returned by

> timeval = systime(1)

> into a date string like

> DOW MON DD HH:MM:SS YEAR ?

> I've found bin_date() but it accepts only the ascii_time format
> for input. I'd like to convert the number of seconds since 1/1/1970 into
> the month,day,year,... that it corresponds to.

There are a number of time conversion routines available from

 ftp://sohoftp.nascom.nasa.gov/solarsoft/gen/idl/time/

For example, the routine sec2utc can convert a time in seconds (ignoring leap
seconds) to calculate the Modified Julian Day (MJD) number, and the number of
milliseconds into the day. For example,

 sec = systime(1)+40587.d0*86400.d0
 utc = sec2utc(sec)

(40587 is the MJD of 1-Jan-1970, and 86400 is the number of seconds in a day.)
The routine anytim2utc can then be used to convert this into a number of
different formats. For example,

 IDL> print,utc
 {   50855   82039210}

 IDL> print, anytim2utc(utc,/ccsds)
 1998-02-11T22:47:19.210Z

 IDL> print, anytim2utc(utc,/vms)
 11-Feb-1998 22:47:19.210

 IDL> help, /structure, anytim2utc(utc,/ext)
 ** Structure CDS_EXT_TIME, 7 tags, length=14:
   YEAR   INT   1998

```
MONTH          INT          2
DAY            INT          11
HOUR           INT          22
MINUTE         INT          47
SECOND         INT          19
MILLISECOND    INT          210
```

The routine utc2dow calculates the day-of-week. For example,

```
IDL> dow = ['Sun','Mon','Tue','Wed','Thu','Fri','Sat']
IDL> print, dow(utc2dow(utc))
Wed
```

There are also facilities for converting UTC time into TAI time, and
vice-versa, with leap-seconds fully accounted for.

Bill Thompson