Subject: Re: Time convertion
Posted by Pavel A. Romashkin on Wed, 14 Mar 2001 17:09:13 GMT
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Alex Schuster wrote:
>
> Some big routine
> with many, many keywords to convert between all those formats would be
> nice :)

You mean, some *small*, perfectly working routine, preferably written by DF?...

Pavel

Subject: Re: Time convertion
Posted by davidf on Wed, 14 Mar 2001 17:44:36 GMT
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Pavel A. Romashkin (pavel.romashkin@noaa.gov) writes:

> Alex Schuster wrote:
>>
>> Some big routine
>> with many, many keywords to convert between all those formats would be
>> nice :)
>
> You mean, some *small*, perfectly working routine, preferably written by DF?...

Uh, huh. And you are offering to pay how much!?

Cheers,

David

P.S. Let's just say that if something like this doesn't
exist at either the JHUAPL library or at the NASA library,
something is *seriously* wrong with the world. :-(

By the way, I offer a 50% discount on my fees if I can
steal the program from somewhere else. :-)

--
David Fanning, Ph.D.
Fanning Software Consulting
Phone: 970-221-0438 E-Mail: davidf@dfanning.com
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: Time convertion
Posted by Liam E. Gumley on Wed, 14 Mar 2001 18:17:51 GMT
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Alex Schuster wrote:
> I have to convert some date formats, and I wonder why IDL does not give
> more support here. A common date/time format is the seconds since 1970,
> and the systime() funtion can return the current date in this format.
> Yippie! But why is there no function to convert this from/to standard
> ASCII date strings, or from/to Julian date?
>
> I found such a thing in the Astro library, st2date, input is the
> seconds-since-1970, output is year, month, day etc., and even day and
> month in ASCII notation if one likes. Great. But I did not find
> something yet to convert to seconds-since-1970. I could write it myself,
> but I guess this already had be done some dozen times. Some big routine
> with many, many keywords to convert between all those formats would be
> nice :)

http://fermi.jhuapl.edu/s1r/idl/s1rlib/time/time.html

Cheers,
Liam.
http://cimss.ssec.wisc.edu/~gumley

---

Subject: Re: Time convertion
Posted by John-David T. Smith on Wed, 14 Mar 2001 18:50:36 GMT
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Alex Schuster wrote:
>
> Hi!
>
> I have to convert some date formats, and I wonder why IDL does not give
> more support here. A common date/time format is the seconds since 1970,
> and the systime() funtion can return the current date in this format.
> Yippie! But why is there no function to convert this from/to standard
> ASCII date strings, or from/to Julian date?
>
> I found such a thing in the Astro library, st2date, input is the
> seconds-since-1970, output is year, month, day etc., and even day and
> month in ASCII notation if one likes. Great. But I did not find
> something yet to convert to seconds-since-1970. I could write it myself,
> but I guess this already had be done some dozen times. Some big routine
> with many, many keywords to convert between all those formats would be
> nice :)

Hmm... I doubt you found that in the Astro library, since I wrote it and posted it to the newsgroup back in 1998. I did use daycnv from the astro package to convert julian to calendar dates. The recent IDL-bundled "caldat" will work just as well for that now. In any case, it is oh so trivial to convert date to systime, the inverse:

st=(julday(month,day,year,hr,min,sec)-2440587.5D)*86400.0D

That's it! For instance:

```
IDL> st0=systime(0) & st1=systime(1)
IDL> d=bin_date(st0)
IDL>  st=(julday(d[1],d[2],d[0],d[3],d[4],d[5])-2440587.5D)*86400. 0D
IDL> print,FORMAT='(A,":",2D30.5)',st0,st1,st
```

Keeping in mind that systime(1) often returns GMT on many systems, whereas systime(0) returns localtime, meaning you might have several hours offset between st1 and st above. For me, st1-st=5 hours (EST).

Good luck,

JD

---

Subject: Re: Time convertion
Posted by Pavel A. Romashkin on Wed, 14 Mar 2001 18:57:18 GMT
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I have two observations about this posting, both bothered me.

JD Smith wrote:

> st=(julday(month,day,year,hr,min,sec)-2440587.5D)*86400.0D

I am not able to see HISTOGRAM in here. My news reader must require an update, since some ASCII characters got lost in transfer.

> Keeping in mind that systime(1) often returns GMT on many systems

*Often* and *Many systems* !? Isn't it something you are supposed to be able to count on? Or, you mean those systems that have a clock screwed up?

Cheers,
Pavel

---

Subject: Re: Time convertion

Posted by Wayne Landsman on Wed, 14 Mar 2001 19:30:19 GMT
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>
> Keeping in mind that systime(1) often returns GMT on many systems,
> whereas systime(0) returns localtime, meaning you might have several
> hours offset between st1 and st above. For me, st1-st=5 hours (EST).

SYSTIME() was upgraded in V5.4 so that systime(1) is supposed to return GMT
on all systems. (I believe that it used to return GMT on Windows and Unix,
but local time on VMS and MacOS.)
SYSTIME(0) always returns local time (as in earlier IDL versions), but now
one can also return GMT using the new /UTC keyword. Also, note that one
can now directly return the Julian date with the /Julian keyword.

(Universal Coordinated Time (UTC) was formerly known as Greenwich Mean Time
(GMT). )

--Wayne
Landsman
landsman@mpb.gsfc.nasa.gov

---

Subject: Re: Time convertion
Posted by tam on Wed, 14 Mar 2001 19:52:43 GMT
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JD Smith wrote:
... In any case,
> it is oh so trivial to convert date to systime, the inverse:
>
> st=(julday(month,day,year,hr,min,sec)-2440587.5D)*86400.0D
>
> That's it! For instance:
>
> IDL> st0=systime(0) & st1=systime(1)
> IDL> d=bin_date(st0)
> IDL> st=(julday(d[1],d[2],d[0],d[3],d[4],d[5])-2440587.5D)*86400. 0D
> IDL> print,FORMAT='(A,":",2D30.5)',st0,st1,st
>
...
>
> JD

How are leap seconds accounted for here? They usually cause
niggling problems if one actually needs to worry about
precision at the second level over periods of more than a
month or two. It looks like your code is ignoring them.

The biggest pain is that they are not predictable so the
code needs to access an external file, or update an
internal table periodically.

Regards,
Tom McGlynn

---

Subject: Re: Time convertion
Posted by R.Bauer on Mon, 19 Mar 2001 21:12:15 GMT
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"Liam E. Gumley" wrote:
>
> Alex Schuster wrote:
>> I have to convert some date formats, and I wonder why IDL does not give
>> more support here. A common date/time format is the seconds since 1970,
>> and the systime() funtion can return the current date in this format.
>> Yippie! But why is there no function to convert this from/to standard
>> ASCII date strings, or from/to Julian date?
>>
>> I found such a thing in the Astro library, st2date, input is the
>> seconds-since-1970, output is year, month, day etc., and even day and
>> month in ASCII notation if one likes. Great. But I did not find
>> something yet to convert to seconds-since-1970. I could write it myself,
>> but I guess this already had be done some dozen times. Some big routine
>> with many, many keywords to convert between all those formats would be
>> nice :)
>
> http://fermi.jhuapl.edu/s1r/idl/s1rlib/time/time.html

and here are some more julian seconds routines

http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_source/idl_ html/dbase/download/string2js.tar.gz
http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_source/idl_ html/dbase/download/js2string.tar.gz

There are many formats defined

e.g.:
```
;   FORMAT:         string to format the output:
;                   'ICG' = 'Y-M-D H:M:S MS'
;                   'XLS' = 'D.M.Y H:M:S'
;                   'M-D'
;                   'H:M'
;                   'H:M:S'
;                   'Y-M-D'
```

;  'M-D-Y'
;  'YMDHMS'

For further routines and licensing please look at
 http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_lib_intro.h tml

regards

Reimar

--
Reimar Bauer

Institut fuer Stratosphaerische Chemie (ICG-1)
Forschungszentrum Juelich
email: R.Bauer@fz-juelich.de
http://www.fz-juelich.de/icg/icg1/
==========
a IDL library at ForschungsZentrum Jï¿½lich
 http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_lib_intro.h tml

http://www.fz-juelich.de/zb/text/publikation/juel3786.html

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Subject: Re: Time convertion
Posted by Alex Schuster on Tue, 20 Mar 2001 14:03:58 GMT
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"Pavel A. Romashkin" wrote:

> Alex Schuster wrote:
>
>> Some big routine
>> with many, many keywords to convert between all those formats
>> would be nice :)
>
> You mean, some *small*, perfectly working routine, preferably
> written by DF?...

No, I'd prefer it to be big, very big. So I can watch it being compiled and I can think, wow, this take sa long time, there must be some many really cool great amazing routines in it! And it should accept all formats, be it one of the various string formats, or secs-since-1970, or Julian Days, Chinese years, nanoseconds-since-big-bang or whatever.

Alex
--
Alex Schuster Wonko@weird.cologne.de PGP Key available
alex@pet.mpin-koeln.mpg.de

---

Subject: Re: Time convertion
Posted by Alex Schuster on Tue, 20 Mar 2001 14:04:42 GMT
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JD Smith wrote:

> Alex Schuster wrote:

>> I found such a thing in the Astro library, st2date, input is the
>> seconds-since-1970, output is year, month, day etc., and even day and
>> month in ASCII notation if one likes. Great. But I did not find
>> something yet to convert to seconds-since-1970. I could write it myself,
>> but I guess this already had be done some dozen times. Some big routine
>> with many, many keywords to convert between all those formats would be
>> nice :)
>
> Hmm... I doubt you found that in the Astro library, since I wrote it and
> posted it to the newsgroup back in 1998. I did use daycnv from the
> astro package to convert julian to calendar dates.

Umm, right. I found it in the folder where my copy of the Astro library
resides.

> The recent
> IDL-bundled "caldat" will work just as well for that now.

Hooray! I hope it also can output various time strings... but I'm still
using IDL 5.2 :(

> In any case,
> it is oh so trivial to convert date to systime, the inverse:
>
> st=(julday(month,day,year,hr,min,sec)-2440587.5D)*86400.0D

Okay, right. Once you know that these Julian Days are, and if you don't
think about leap seconds. I already did the same, but made the mistake
of using julday(1,1,1970) instead of julday(1,1,1970,0,0,0), which gives
half a day offset. Okay, my fault, but if IDL already had such a
conversion routine, I wouldn't have to think about it, and I wouldn't be
able to make such mistakes.
Another example, why can't systime() just also output julian days, give

it one more keyword and that's it.

Reimar's link was a good tip and made things easier:
http://fermi.jhuapl.edu/s1r/idl/s1rlib/time/time.html
Many many routines converting various time and/or date strings to other
formats (of course no direct conversion to secs-since-1970).

--
Alex Schuster Wonko@weird.cologne.de PGP Key available
alex@pet.mpin-koeln.mpg.de

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