Subject: Greek and other Symbols in Coyote Graphics
Posted by David Fanning on Fri, 27 Jul 2012 20:12:23 GMT

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Folks,

As I was answering a question about Coyote Graphics this
morning, it suddenly occurred to me that I knew how to
fix one of the biggest annoyances in the Coyote Graphics
system for me. This is the problem of wanting to use
a Greek or other symbol (an Angstrom symbol, for example)
in a plot or axis title in a command that I've put into
the resizeable graphics window, cgWindow.

I can certainly specify these symbols using cgSymbol, but
the problem is that these symbols need to be evaluated
at run-time, and when you use them as keywords the value
returned by cgSymbol is hard-coded as the keyword value for the
command execution. But, since the symbol code is different
for PostScript than it is for the display, it makes it
very difficult to get PostScript output from cgWindow.
My solution was the clunky "alternative" keyword and
parameter keywords described here:

   http://www.idlcoyote.com/cg_tips/kwexpressions.php

You will be happy to hear this nonsense is a thing
of the past! :-)

This morning it occurred to me that I can use the same
"escape sequences" used by Function Graphics to specify
symbols in my Coyote Graphics routines. These escape
sequences prepend a "$\" to the symbol you want to
call with cgSymbol, and append a closing "$".

So, here is the clunky way a cgPlot command would have to be
constructed currently to display properly in a cgWindow
and in an output file with a mu and angstrom symbol:

```
cgPlot, cgDemoData(1), /Window, $
  XTitle='Length (' + cgSymbol('mu') + M)', $
  YTitle='Distance (' + cgSymbol('Angstrom') + ')', $
  ALT_KEYWORDS={xtitle:'Length (' + cgSymbol('mu', /PS) + M)', $
          ytitle:'Distance ('+ cgSymbol('Angstrom', /PS)+')'}
```

And here is the new way to do this:

```
cgPlot, cgDemoData(1), /Window, $
```

XTitle='Length (μM)', $
    YTitle='Distance ($\Angstrom$)'

Quite a bit simpler, yes? :-)

You can find an updated program here with a new ReplaceEscapeSequences
method:

   http://www.idlcoyote.com/programs/cgcmdwindow__define.pro

I'll write an article about this change shortly, but this will
work for any of the symbols available in cgSymbol:

   http://www.idlcoyote.com/idldoc/cg/cgsymbol.html

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: Greek and other Symbols in Coyote Graphics
Posted by David Fanning on Wed, 08 Aug 2012 13:38:49 GMT
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ameigs writes:

> Excellent David. Now how about subscripts and superscripts? Or is that already taken care of?

I'm not sure I understand what you are asking for. Subscripts
and superscripts can already be embedded into strings with the
normal formatting codes. Nothing about embedding Coyote Graphics
symbols in text changes that. Can you give me an example of
what you are looking for?

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/

Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: Greek and other Symbols in Coyote Graphics
Posted by ameigs on Thu, 09 Aug 2012 16:34:59 GMT
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On Wednesday, August 8, 2012 2:38:49 PM UTC+1, David Fanning wrote:
> ameigs writes:
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> David
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> David Fanning, Ph.D.
>
> Fanning Software Consulting, Inc.
>
> Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
>
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Sorry, I was being a noob and found what you mentioned above soon after posting. I have forgetten those formatting codes and was actually thinking of something like the textoidl code by Matt Craig which being tex/latex is a bit more humanly readable.

But anyways, many thanks for this addition to your wonderful coyote graphics system.

Andy

Subject: Re: Greek and other Symbols in Coyote Graphics
Posted by Russell Ryan on Fri, 17 Aug 2012 03:31:58 GMT

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On Thursday, August 9, 2012 12:34:59 PM UTC-4, ameigs wrote:
> On Wednesday, August 8, 2012 2:38:49 PM UTC+1, David Fanning wrote:
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>> ameigs writes:
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> Andy

What about time derivatives, like with a dot? For example, can you do the analogous LaTeX command: $\dot{M}$ to be dM/dt but as an M with a small dot over it? I know this is historically a very tough thing...

Russell

Subject: Re: Greek and other Symbols in Coyote Graphics
Posted by David Fanning on Fri, 17 Aug 2012 12:35:40 GMT
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rryan@stsci.edu writes:

> What about time derivatives, like with a dot? For example, can you do the analogous LaTeX command: $\dot{M}$ to be dM/dt but as an M with a small dot over it? I know this is historically a very tough thing...

Yes, you need to do typographic aerobatics to do something
like this. For me to include a symbol in cgSymbol, the symbol
has to be available as a glyph in some kind of a font that
IDL can access.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
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