Subject: IDL2MATLAB
Posted by the_cacc on Tue, 26 Feb 2002 13:02:19 GMT
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A long shot: is there an IDL to MATLAB source code translator out there ?

Subject: Re: IDL2MATLAB
Posted by thompson on Wed, 27 Feb 2002 15:09:05 GMT
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Nigel Wade <nmw@ion.le.ac.uk> writes:

> Liam E. Gumley wrote:

>> Ethan wrote:
>>>
>>
>>
>> A complicating factor is that in IDL, arrays are stored in column-major
>> order (the same as FORTRAN), while in Matlab, arrays are stored in
>> row-major order (the same as C).

> Substitute IDL for MATLAB. In IDL they are the same as in C. I can never
> remember which is column-major or row-major, but I know that using MATLAB
> multi-dimension matrices in C mex files is a real pain because of the array
> indexing difference.

Oh no, not the row-major, column-major controversy again! ;^)

Bill Thompson

Subject: Re: IDL2MATLAB
Posted by David Fanning on Wed, 27 Feb 2002 15:22:00 GMT
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William Thompson (thompson@orpheus.nascom.nasa.gov) writes:

> Oh no, not the row-major, column-major controversy again! ;^)

I've written up the er... definitive article on the subject,
for those newcomers who haven't yet enjoyed the experience.
You can find it here:

  http://www.dfanning.com/misc_tips/colrow_major.html

Cheers,

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

Subject: Re: IDL2MATLAB
Posted by Liam E. Gumley on Wed, 27 Feb 2002 22:43:51 GMT
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Nigel Wade wrote:
> Liam E. Gumley wrote:
>
>> Ethan wrote:
>>>
>>
>>
>> A complicating factor is that in IDL, arrays are stored in column-major
>> order (the same as FORTRAN), while in Matlab, arrays are stored in
>> row-major order (the same as C).
>
> Substitute IDL for MATLAB. In IDL they are the same as in C. I can never
> remember which is column-major or row-major, but I know that using MATLAB
> multi-dimension matrices in C mex files is a real pain because of the array
> indexing difference.

I'll stick by my original comments, which referred to *arrays* only (not
matrices). In IDL and FORTRAN, an array with dimensions [m cols, n rows]
is stored contiguously in memory as

(col 1, row 1), (col 2, row 1), (col 3, row 1), ... (col m, row 1),
(col 1, row 2), (col 2, row 2), (col 3, row 2), ... (col m, row 2),
(col 1, row 3), (col 2, row 3), (col 3, row 3), ... (col m, row 3),
.
.
.
(col 1, row n), (col 2, row n), (col 3, row n), ... (col m, row n)

The term "column-major" is used because the column index varies the
fastest when accessing contiguous elements of a multi-dimensional array
in memory.

Cheers,

Liam.
Practical IDL Programming
http://www.gumley.com/

Subject: Re: IDL2MATLAB
Posted by David Fanning on Wed, 27 Feb 2002 23:05:25 GMT
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Liam E. Gumley (Liam.Gumley@ssec.wisc.edu) writes:

> The term "column-major" is used because the column index varies the
> fastest when accessing contiguous elements of a multi-dimensional array
> in memory.

This is also known as "row-order", for those of you
who love confusion. :-)

Cheers,

David

--
David W. Fanning, Ph.D.
Fanning Software Consulting
Phone: 970-221-0438, E-mail: david@dfanning.com
Coyote's Guide to IDL Programming: http://www.dfanning.com/
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Subject: Re: IDL2MATLAB
Posted by Mark Hadfield on Thu, 28 Feb 2002 00:35:10 GMT
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"David Fanning" <david@dfanning.com> wrote in message
news:MPG.16e7141c7c2e3855989825@news.frii.com...

> Liam E. Gumley (Liam.Gumley@ssec.wisc.edu) writes:
>
>> The term "column-major" is used because the column index varies the
>> fastest when accessing contiguous elements of a multi-dimensional
>> array in memory.
>

> This is also known as "row-order", for those of you who love
> confusion. :-)

I think the terms "column" and "row" should be banned in reference to

---

arrays.

Mark Hadfield
m.hadfield@niwa.co.nz http://katipo.niwa.co.nz/~hadfield
National Institute for Water and Atmospheric Research

Subject: Re: IDL2MATLAB
Posted by James Kuyper on Thu, 28 Feb 2002 16:00:48 GMT
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Mark Hadfield wrote:

...

> I think the terms "column" and "row" should be banned in reference to
> arrays.

What would you substitute in their place? "first dimension" and "second
dimension", while less ambiguous, are a lot clumsier.

Subject: Re: IDL2MATLAB
Posted by David Fanning on Thu, 28 Feb 2002 16:16:26 GMT
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James Kuyper (kuyper@gscmail.gsfc.nasa.gov) writes:

> What would you substitute in their place? "first dimension" and "second
> dimension", while less ambiguous, are a lot clumsier.

I would suggest "homer" and "bart", in an attempt to
get the younger members of our group more involved.

Cheers,

David
--
David W. Fanning, Ph.D.
Fanning Software Consulting
Phone: 970-221-0438, E-mail: david@dfanning.com
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Subject: Re: IDL2MATLAB

Posted by gutmann on Thu, 28 Feb 2002 23:07:14 GMT

David Fanning <david@dfanning.com> wrote in message
news:<MPG.16e805caaf762e90989828@news.frii.com>...

> I would suggest "homer" and "bart", in an attempt to
> get the younger members of our group more involved.
>

:)

Hmmm, would this leave marge, lisa, and maggie for the 3rd,4th,5th
dimensions? Even though to the best of my knowledge Homer is the only
one who as ever actually been to the third dimension...

Subject: Re: IDL2MATLAB
Posted by Martin Downing on Tue, 05 Mar 2002 15:23:17 GMT

There was an episode with bart as an old man - so that proves the model can
cope with "Transpose"

"Ethan" <gutmann@colorado.edu> wrote in message
news:3de2e497.0202281507.36338326@posting.google.com...
> David Fanning <david@dfanning.com> wrote in message
news:<MPG.16e805caaf762e90989828@news.frii.com>...
>
>> I would suggest "homer" and "bart", in an attempt to
>> get the younger members of our group more involved.
>>
>
> :)
>
> Hmmm, would this leave marge, lisa, and maggie for the 3rd,4th,5th
> dimensions? Even though to the best of my knowledge Homer is the only
> one who as ever actually been to the third dimension...