
Subject: Re: reading dem

Posted by [davidf](#) on Wed, 30 Aug 2000 07:00:00 GMT

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Sylvain Carette (sylvainc@total.net) writes:

- > ps: I really appreciate your site and advise; its been about a mounth
- > now I follow this group to get "immersed" into idl problem and I realize
- > now that "getting started" with idl is lot more difficult than expected.

You have to be careful drawing too many conclusions from the marketing materials. IDL is -- and has always been -- a programming language. There are no real shortcuts to learning it. But I have thought several times today that you might find ENVI more to your liking.

- > So, being able to rely on a group like this whith peoples like you help
- > to feel less anxious.

Well, that's the idea. We've all been stuck and frustrated. More than once, if memory serves me correctly. But this is a pretty good group for keeping things in perspective. (Just don't mention the Table Widget.)

Cheers,

David

--

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: reading dem

Posted by [Craig Markwardt](#) on Wed, 30 Aug 2000 07:00:00 GMT

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davidf@dfanning.com (David Fanning) writes:

>

- > Second, I realize this isn't the place to be asking
- > dumb-ass questions, but you folks are s-o-o-o smart. :-)

Sorry, I don't do windows. :-)

> P.S. I *tried* to install Linux and the Corel Linux
> CD-ROM froze half-way through the installation with
> one OS in shreds and the other partly installed. Now
> all I have is a new paperweight. The installer
> reports a "problem". Ho-boy. :-(

I keep waiting for Linux to be easier to install. It's happening, but slowly.

Craig

--

Craig B. Markwardt, Ph.D. EMAIL: craigmnet@cow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response

Subject: Re: reading dem
Posted by [davidf](#) on Wed, 30 Aug 2000 07:00:00 GMT
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Craig Markwardt (craigmnet@cow.physics.wisc.edu) writes:

> The documentation is here:
> <http://rockyweb.cr.usgs.gov/nmpstds/demstds.html>

First of all, I appreciate this gentle advice and pointer. This is something I've wondered about to.
Thanks, Craig.

Second, I realize this isn't the place to be asking dumb-ass questions, but you folks are s-o-o-o smart. :-)

Does anyone know why, when I click on an Adobe Acrobat File (like the one at the link above), that the Adobe Acrobat Reader 4.0 starts up in my Windows Internet Explorer 5.0 browser and *always* shows me a blank page. :-(

I've reinstalled Explorer. I've reinstalled the Reader. I've kicked the dog, cursed my lot in life, etc. But all to no avail. If I download the Acrobat file, then open the Reader, then open the downloaded file all is well. It's a mystery.

Thanks,

David

P.S. I *tried* to install Linux and the Corel Linux CD-ROM froze half-way through the installation with one OS in shreds and the other partly installed. Now all I have is a new paperweight. The installer reports a "problem". Ho-boy. :-(

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Subject: Re: reading dem
Posted by [Craig Markwardt](#) on Wed, 30 Aug 2000 07:00:00 GMT
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Sylvain,

Part of the problem is that very few people have any direct experience with what you are trying. Some, including me, offered some general advice, hoping that would help, but reading byte-level DEM's is not exactly common knowledge. Also realize that a topic so focussed and specific as yours is not likely to pique anybody's interest. In the future you would do better to describe what you need to do at a higher level, and help us by providing documentation, like I do now.

The documentation is here:
<http://rockyweb.cr.usgs.gov/nmpstds/demstds.html>

The DEM's are digital elevation maps, and are stored in 1024 byte blocks. The first block contains a type "A" record. The next blocks contain a type "B" record which have the actual elevation data. The actual data start at offset 144 of the record (where offset 0 is the beginning); there are 1201x1201 elements stored, 146 in the first 1024-block, and then 170 in the successive 1024-blocks. Elevation values are stored as ASCII format=(I6).

The key thing to realize that all the data is in ASCII, separated by blanks. Therefore, while we could read each 1024-block in turn, it's better to just do a formatted READF. There is no need to work at the byte level, except at the beginning to get to the right file offset. Unfortunately IDL can only read 32k elements at a time, so I read a row at a time as a compromise.

pro readdem250, file, im

m = 1201L & n = 1201L ;; Really get this from Type A, element 16
im = lonarr(m, n) ;; Formally defined as INTEGER*4

```
openr, lun, file, /get_lun  
;; Skip past type A record and 144 bytes of Type B record  
point_lun, lun, 1024L + 144L
```

```
;; Read data, one row at a time  
row = im(*,0)  
for i = 0, 1200 do begin  
  readf, lun, row, format='(1201(I6))'  
  im(*,i) = row  
endfor  
free_lun, lun  
end
```

Of course I haven't tested this, but you can use this as a starting point.

Craig

P.S. If you are still interested in the block structure, then you would read the blocks like this:

```
bb = bytarr(1024)*nblocks  
readu, lun, bb
```

This avoids some extraneous STRING calls.

--

Craig B. Markwardt, Ph.D. EMAIL: craigmnet@cow.physics.wisc.edu
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Subject: Re: reading dem
Posted by [Sylvain Carette](#) on Wed, 30 Aug 2000 07:00:00 GMT
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```
<!doctype html public "-//w3c//dtd html 4.0 transitional//en">  
<html>
```

Sorry error in the listing comments: the bb, bc, bd, be, bf, bg var
hold 170 *int values* per 1040 byte chunk while ba hold 146 and bh hold
35 for a total of 1201 *int value* spread on 8*1024 byte file chunk - hope
it is more clear...

<p>Sylvain Carette wrote:

<blockquote TYPE=CITE><tt>I'm trying to get started with IDL .</tt>

[illegible]

```
<br><tt>&nbsp;reads, string(block[i+4]), be</tt>
<br><tt>&nbsp;reads, string(block[i+5]), bf</tt>
<br><tt>&nbsp;reads, string(block[i+6]), bg</tt>
<br><tt>&nbsp;reads, string(block[0:210,i+7]), bh&nbsp; ; 6 byte/value</tt>
<p><tt>&nbsp;col = [ba, bb, bc, bd, be, bf, bg, bh] ; concatenate all segment
in one profile</tt>
<br><tt>&nbsp;im[i,*] = col</tt>
<br><tt>endfor</tt>
<br><tt>imlr = bytscl(im)</tt>
<br><tt>end</tt></blockquote>
</html>
```

Subject: Re: reading dem

Posted by [Sylvain Carette](#) on Thu, 31 Aug 2000 00:36:33 GMT

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I'll guess Explorer is the culprit; try with Netscape...

Consider yourself lucky to have a brand new paperweight on your desk;
paperweight are lot more useful than a boat anchor on your desk.....

ps: I really appreciate your site and advice; its been about a mounth
now I follow this group to get "immersed" into idl problem and I realize
now that "getting started" with idl is lot more difficult than expected.
So, being able to rely on a group like this whith peoples like you help
to feel less anxious. So thanks for your work, and thanks to all of the
others who share some insight.

Sylvain Carette
VRML designer-composer

David Fanning wrote:

```
> Craig Markwardt (craigmnet@cow.physics.wisc.edu) writes:
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> --
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Subject: Re: reading dem

Posted by [Sylvain Carette](#) on Thu, 31 Aug 2000 02:08:49 GMT

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```
<!doctype html public "-//w3c//dtd html 4.0 transitional//en">
<html>
<tt>Aaaaahh... Thank you so much</tt>
<br><tt>Whithout knowing it you answered a couple of unnasked questions
(I think I have one for each page of the documentation)</tt><tt></tt>
<p><tt>Craig Markwardt wrote:</tt>
<blockquote TYPE=CITE><tt>Sylvain,</tt><tt></tt>
<p><tt>Part of the problem is that very few people have any direct experience</tt>
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```

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<http://rockyweb.cr.usgs.gov/nmpstds/demstds.html>

Sorry if my requests sound confused; they are... I'm trying not to throw all the questions floating in my head at the same time but probably it will get better as time goes. Sorry also if a bit of frustration did show up through the lines; I was getting anxious to get something done. Now already feel better...

The DEM's are digital elevation maps, and are stored in 1024 byte blocks. The first block contains a type "A" record. The next blocks contain a type "B" record which have the actual elevation data. The actual data start at offset 144 of the record (where offset 0 is the beginning); there are 1201x1201 elements stored, 146 in the first 1024-block, and then 170 in the successive 1024-blocks. Elevation values are stored as ASCII format=(I6).

The key thing to realize that all the data is in ASCII, separated by blanks. Therefore, while we could read each 1024-block in turn, it's better to just do a formatted READF. There is no need to work at the byte level, except at the beginning to get to the right file offset. Unfortunately IDL can only read 32k elements at a time, so I read a row at a time as a compromise.

I did realize that the data was in ascii but my problem was to make idl realize that...

I tried readf but could get only the value of the ascii code instead of the value itself; of course I tried to use "format=" but couldn't guess the right syntax - I think I was trying something like "format=(6(i))" so... - again, the documentation could be a lot more helpful by providing a couple of (meaningful) examples.

So I end up thinking it was not the right function especially that all the dem doc say it is a binary file and I thought that formatted input meant a real ascii file (one you can read). So I can do a lot with readf as long as I know how to express the "format" syntax. Now, where I can find a good table & rule describing formatting (I have absolutely no background in fortran - completely alien to me. I have the impression I'll need to refer to that all the time.

pro readdem250, file, im

> browser and *always* shows me a blank page. :-(

Bill doesn't like you. Actually, he doesn't like anyone.

> I've reinstalled Explorer. I've reinstalled the Reader.
> I've kicked the dog, cursed my lot in life, etc. But
> all to no avail. If I download the Acrobat file,
> then open the Reader, then open the downloaded file
> all is well. It's a mystery.

I've never got the acrobat plug in to work successfully with IE,
but dont want to swap to Linux or Netscape. If you specify "view with
application" instead of "view with browser" in the File Helper prefs
for .pdf files, IE will save the file to disk and automatically start
or hand over to the external Acrobat viewer. In terms of usability it's
not that much different a feel, and it actually works properly.

Struan

Subject: Re: reading dem

Posted by [davidf](#) on Thu, 31 Aug 2000 12:50:05 GMT

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Struan Gray (struan.gray@sljus.lu.se) writes:

> I've never got the acrobat plug in to work successfully with IE,
> but dont want to swap to Linux or Netscape. If you specify "view with
> application" instead of "view with browser" in the File Helper prefs
> for .pdf files, IE will save the file to disk and automatically start
> or hand over to the external Acrobat viewer. In terms of usability it's
> not that much different a feel, and it actually works properly.

Well, *something* like that, anyway. :-)

Thanks for these ideas. I actually had to turn "Browser
Integration" off in Acrobat, but now it is back to acting
more like what I had in mind. Thank you *very* much for this
answer to a w-a-a-y off-topic question. I knew I could count
on you guys. :-)

I think I mentioned that I am re-reading Robert Pirsig's
The Art of Motorcycle Maintenance. It is amazing to read
a book again 25 years later and see how profoundly your
ideas about life were affected by a book you can't even
remember. I felt the same way reading Walden again not

too long ago.

Anyway, last night I was reading about the various ways you can get "stuck" in a problem. One of the classic ways is asking questions that can't be answered from your current perspective of what the problem is. You get a "mu" answer. One that is neither yes or no. The hoped for response to such a question is to retreat a bit from the problem and see if you can't put it in a larger perspective.

In this case, I think I was *WAY* to eager to blame Mr. Gates and it never occurred to me that the folks who built Photoshop could possibly share some of the blame.

In that sense, at least, this seems like a proper IDL question for this group. :-)

Cheers,

David

P.S. Of course I knew you knew, Struan. That's why you have your badge. :-)

--

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Subject: Re: reading dem
Posted by [Struan Gray](#) on Thu, 31 Aug 2000 12:56:07 GMT
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David Fanning, davidf@dfanning.com writes:

> P.S. Of course I knew you knew, Struan. That's why
> you have your badge. :-)

Blimey! When did that happen?

Bursting with pride,
Struan
