Subject: Re: null array
Posted by David Fanning on Wed, 24 Sep 2003 03:04:15 GMT
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Tomson writes:

> Hi, I need a null array without any elements in it. Then elements will be
> added to it. But how to define a null array?

Matlab, I think. :-)

Cheers,

David

--
David W. Fanning, Ph.D.
Fanning Software Consulting, Inc.
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: null array
Posted by R.Bauer on Wed, 24 Sep 2003 03:21:44 GMT
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Tomson wrote:

> Hi, I need a null array without any elements in it. Then elements will be
> added to it. But how to define a null array?
>
> Best
> Tomsom

What is this? I don't use matlab.

Would you like to do something like this.

if n_elements(array) eq 0 then array=scalar else array=[array,scalar]

Or in a loop

for i=0,10 do begin
..

if i eq 0 then array=scalar else array=[array,scalar]
endfor

Reimar

--
Forschungszentrum Juelich
email: R.Bauer@fz-juelich.de
http://www.fz-juelich.de/icg/icg-i/
 === ======
a IDL library at ForschungsZentrum Juelich
 http://www.fz-juelich.de/icg/icg-i/idl_icglib/idl_lib_intro. html

---

Subject: Re: null array
Posted by Ben Panter on Wed, 24 Sep 2003 08:33:17 GMT
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Reimar Bauer wrote:
> Tomson wrote:
>
>
>> Hi, I need a null array without any elements in it. Then elements will be
>> added to it. But how to define a null array?
>>
>> Best
>> Tomsom
>
>
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>
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>
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>
> Or in a loop
>
> for i=0,10 do begin
> ..
>
> if i eq 0 then array=scalar else array=[array,scalar]
> endfor

I'm a bit worried about showing my ignorance here - but rather than have
an 'if' running on every iteration, could you not do:

a=[0.5]

for i=0,n do begin

```
  ..
endfor

a=a[1:*]
```

cutting out n if evaluations for the sake of 1 array crop?

I'll go back to my corner!

   Ben

PS: Also, would it be possible to use the function temporary?
a=temporary(a[1:*]) - would that be faster? I'm at home and not with my
IDL so can't test it yet!

Subject: Re: null array
Posted by Ben Panter on Wed, 24 Sep 2003 09:08:41 GMT
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Ben Panter wrote:
> a=[0.5]
>
> for i=0,n do begin

Of course, I meant to write:
...
a=[a,new_array]

> endfor
>
> a=a[1:*]

Cheers,

   Ben

--
Ben Panter, Edinburgh
My name (no spaces)@bigfoot which is a com.

Subject: Re: null array
Posted by Paul Van Delst[1] on Wed, 24 Sep 2003 13:52:15 GMT
View Forum Message <> Reply to Message

Ben Panter wrote:

>
> Reimar Bauer wrote:
>> Tomson wrote:
>>
>>
>>> Hi, I need a null array without any elements in it. Then elements will be
>>> added to it. But how to define a null array?
>>>
>>> Best
>>> Tomsom
>>
>>
>> What is this? I don't use matlab.
>>
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>>
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>>
>> Or in a loop
>>
>> for i=0,10 do begin
>> ..
>>
>> if i eq 0 then array=scalar else array=[array,scalar]
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>
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>
> a=[0.5]
>
> for i=0,n do begin
>   ..
> endfor
>
> a=a[1:*]
>
> cutting out n if evaluations for the sake of 1 array crop?

Yep - I do that often. Not just in IDL either.

BTW, getting back to the original question, isn't every variable that hasn't yet been
defined in an IDL procedure (an infinite number to be sure) a null array? :o\

paulv

--
Paul van Delst

Subject: Re: null array
Posted by R.Bauer on Wed, 24 Sep 2003 15:11:22 GMT
View Forum Message <> Reply to Message

Ben Panter wrote:
>
>
> Reimar Bauer wrote:
>
>> Tomson wrote:
>>
>>
>>> Hi, I need a null array without any elements in it. Then elements
>>> will be
>>> added to it. But how to define a null array?
>>>
>>> Best
>>> Tomsom
>>
>>
>>
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>>
>> if i eq 0 then array=scalar else array=[array,scalar]
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>
>
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> an 'if' running on every iteration, could you not do:
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> a=[0.5]
>
> for i=0,n do begin
> ..
> endfor
>

> a=a[1:*]
>
> cutting out n if evaluations for the sake of 1 array crop?
>
> I'll go back to my corner!
>
>   Ben
>
> PS: Also, would it be possible to use the function temporary?
> a=temporary(a[1:*]) - would that be faster? I'm at home and not with my
> IDL so can't test it yet!
>

You are right,

Reimar

--
Reimar Bauer

Institut fuer Stratosphaerische Chemie (ICG-I)
Forschungszentrum Juelich
email: R.Bauer@fz-juelich.de
 -- -------
        a IDL library at ForschungsZentrum Juelich
   http://www.fz-juelich.de/icg/icg-i/idl_icglib/idl_lib_intro. html
  == =======

Subject: Re: null array
Posted by JD Smith on Wed, 24 Sep 2003 16:17:03 GMT
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On Tue, 23 Sep 2003 20:21:44 -0700, Reimar Bauer wrote:

> Tomson wrote:
>
>> Hi, I need a null array without any elements in it. Then elements will
>> be added to it. But how to define a null array?
>>
>> Best
>> Tomsom
>
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>
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>
> Or in a loop
>
> for i=0,10 do begin
> ..
>
> if i eq 0 then array=scalar else array=[array,scalar] endfor
>
> Reimar

But this is also slow, since you reallocate the array on each iteration
(which starts to hurt when the array gets large). Far better is to
pre-allocate the array to roughly the correct size, and grow it as
necessary. Search this newsgroup for "Is there a standard 'null' array"
for a thread on this very topic.

JD

Subject: Re: null array
Posted by tomson on Thu, 25 Sep 2003 00:47:19 GMT
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Thanks everybody.

I think this method
    if n_elements(array) eq 0 then array=scalar else array=[array,scalar]
is quit good if I donot define array.

But What I want to do is to initialize several arrays which are in common
block and their length will be changed for different call and the lengths
of them may be zero. If the lengthes of them are zero, the process will be
changed. If there isnot any initialization, the array return to the main
program may be the former ones.

Best
Tomson

"Reimar Bauer" <R.Bauer@fz-juelich.de> ????
news:bkr2ls$cjvi$1@zam602.zam.kfa-juelich.de...
> Tomson wrote:
>
>> Hi, I need a null array without any elements in it. Then elements will
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> for i=0,10 do begin
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> if i eq 0 then array=scalar else array=[array,scalar]
> endfor
>
> Reimar
>
>
> --
> Forschungszentrum Juelich
> email: R.Bauer@fz-juelich.de
> http://www.fz-juelich.de/icg/icg-i/
> == ======
> a IDL library at ForschungsZentrum Juelich
> http://www.fz-juelich.de/icg/icg-i/idl_icglib/idl_lib_intro. html
>

Subject: Re: null array
Posted by David Fanning on Thu, 25 Sep 2003 01:35:19 GMT
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Tomson writes:

> But What I want to do is to initialize several arrays which are in common
> block and their length will be changed for different call and the lengths
> of them may be zero. If the lengthes of them are zero, the process will be
> changed. If there isnot any initialization, the array return to the main
> program may be the former ones.

If I understand you correctly, you may find a pointer
useful in this situation. A pointer could point to
a "null array", in the sense that it would point to
an "undefined variable":

  ptr = Ptr_New(/Allocate_Heap)
  IF N_Elements(*ptr) EQ 0 THEN Print, 'Pointer undefined' ELSE $
   *ptr = [initValue]

Cheers,

David

--
David W. Fanning, Ph.D.
Fanning Software Consulting, Inc.
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: null array
Posted by David Fanning on Fri, 26 Sep 2003 09:24:06 GMT
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JD Smith writes:

> But this is also slow, since you reallocate the array on each iteration
> (which starts to hurt when the array gets large). Far better is to
> pre-allocate the array to roughly the correct size, and grow it as
> necessary. Search this newsgroup for "Is there a standard 'null' array"
> for a thread on this very topic.

Oh, oh. I've started to write this up twice now.
Good thing I'm consistent in my naming convention
or I would be doing every project two or three times.
Does this remind you of anything? :-(

Anyway, you can find a discussion about "null arrays"
here, taken from J.D.'s excellent post on the topic.

   http://www.dfanning.com/code_tips/nullarray.html

Cheers,

David

--
David W. Fanning, Ph.D.
Fanning Software Consulting, Inc.
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: null array
Posted by Stein Vidar Hagfors H[2] on Tue, 30 Sep 2003 19:36:36 GMT
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Well, David, always pluggin' the pointers, eh?

Using pointers simply because of their ability to point to undefined
variables seems a bit overkill to me, though. A variable in itself
is just as good at representing an undefined variable... as in:

```
  if n_elements(variable) eq 0 then print,"Variable undefined" $
  else variable = [initValue]
```

And the way to "undefine" a variable is the good old

```
  dummy = temporary(variable)
```

David Fanning <david@dfanning.com> writes:
> Tomson writes:
>
>> But What I want to do is to initialize several arrays which are in common
>> block and their length will be changed for different call and the lengths
>> of them may be zero. If the lengthes of them are zero, the process will be
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>   IF N_Elements(*ptr) EQ 0 THEN Print, 'Pointer undefined' ELSE $
>   *ptr = [initValue]
>
> Cheers,
>
> David
>
> --
> David W. Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> 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

--

 -- --------------
Stein Vidar Hagfors Haugan

ESA SOHO SOC/European Space Agency Science Operations Coordinator for SOHO

NASA Goddard Space Flight Center,   Tel.: 1-301-286-9028
Mail Code 682.3, Bld. 26, Room G-1, Cell: 1-240-354-6066
Greenbelt, Maryland 20771, USA.   Fax: 1-301-286-0264
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