Subject: name a variable with number
Posted by gunvicsin11 on Tue, 04 Feb 2014 10:35:27 GMT
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Hello everyone,
How to name a variable with number, for example,
if nn=dblarr(800)
I have to save it in this way n1=nn
similarly upto n25
Please let me know if you can help me out in this regard
thanking you in advance
sid

Subject: Re: name a variable with number
Posted by on Tue, 04 Feb 2014 11:59:04 GMT
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Den tisdagen den 4:e februari 2014 kl. 11:35:27 UTC+1 skrev sid:
> Hello everyone,
> How to name a variable with number, for example,
> if nn=dblarr(800)
> I have to save it in this way n1=nn
> similarly upto n25
> Please let me know if you can help me out in this regard
> thanking you in advance
> sid

Not sure what you are asking, exactly. Naming or saving? But it seems to me that 2-dimensional arrays could somehow be useful. Like, nnn=dblarr(800,25).

Subject: Re: name a variable with number
Posted by David Fanning on Tue, 04 Feb 2014 12:16:01 GMT
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sid writes:

>
> Hello everyone,
> How to name a variable with number, for example,
> if nn=dblarr(800)
> I have to save it in this way n1=nn
> similarly upto n25
> Please let me know if you can help me out in this regard

I'm not sure what you asking to do either, but I'm pretty sure this is

NOT what you want to do. Can you explain what you want to do a bit more clearly, and tell us why you want to do it?

Cheers,

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

Subject: Re: name a variable with number
Posted by David Fanning on Tue, 04 Feb 2014 13:31:53 GMT
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sid writes:

> The main problem is, I will have a resultant array of
> n=dblarr(i,j)
> j=25,
> but i is varying say around 800 to 900.
> so i should name it in a for loop like,
> n1=n(800,1)
> n2=n(830,2)
> n3=n(840,3)
> .
> .
> .
> like this it has to go till 25.
> Finally I have to save this n1,n2,n3,....,n25 into separate files,
> like
> openw,2,'test.dat'
> printf,2,n1
> close,2
> till n25
> So I have to find a way to save in a variable which varies like n1,n2,...,n25

You want to use a list, rather than an array. The list will allow you to store vectors of various lengths, and you can then treat the list variable as if it were an array when saving the data, etc.

Cheers,

David
--
David Fanning, Ph.D.

Fanning Software Consulting, Inc.
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Subject: Re: name a variable with number
Posted by rjp23 on Tue, 04 Feb 2014 13:50:56 GMT
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On Tuesday, February 4, 2014 10:35:27 AM UTC, sid wrote:
> Hello everyone,
>
> How to name a variable with number, for example,
>
> if nn=dblarr(800)
>
> I have to save it in this way n1=nn
>
> similarly upto n25
>
> Please let me know if you can help me out in this regard
>
> thanking you in advance
>
> sid

This is probably a "bad" way of doing it but I often use "execute" to generate variable names dynamically based on the contents of other variables which I think sounds like what you want to do.

For example:

for j=0, 24 do blah=execute('n'+strtrim(j,2)+'=nn[*,j]')

This will create the 25 arrays named n0, n1, n2, etc that contain nn[0,*], etc.

I'd be interested in what David et al. this of this as I end up using it quite often (but in more complicated situations).

Subject: Re: name a variable with number
Posted by David Fanning on Tue, 04 Feb 2014 13:57:05 GMT
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rjp23@le.ac.uk writes:

> This is probably a "bad" way of doing it but I often use "execute" to generate variable names dynamically based on the contents of other variables which I think sounds like what you want to do.
>
> For example:
>
> for j=0, 24 do blah=execute('n'+strtrim(j,2)+'=nn[*,j]')
>
> This will create the 25 arrays named n0, n1, n2, etc that contain nn[0,*], etc.
>
> I'd be interested in what David et al. this of this as I end up using it quite often (but in more complicated situations).

I think in the hands of someone who knows what they are doing this can
be a powerful programming technique. I rarely see it used in those kind
of hands. :-)

Cheers,

David
--
David Fanning, Ph.D.
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Subject: Re: name a variable with number
Posted by Fabzi on Tue, 04 Feb 2014 14:09:16 GMT
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Hi,

On 04.02.2014 14:57, David Fanning wrote:
> I think in the hands of someone who knows what they are doing this can
> be a powerful programming technique. I rarely see it used in those kind
> of hands.:-)

what David means is that most experienced programmers probably never
even *needed* to create a variable dynamically.

If the technique is available, this does not mean this technique is
suitable for your problem. If you think you need X variables named
var_0, var_1, ---, var_X than the algorithm you are thinking of is
probably not the best one.

In this case, a list (for IDL8+) or a pointer array (all versions) is

probably a better solution.

For example:

var = PTRARR(25)
for j=0, 24 do var[j]=PTR_NEW(whatever_you_want_to_put_inside)

Fab

Subject: Re: name a variable with number
Posted by David Fanning on Tue, 04 Feb 2014 14:29:11 GMT
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Fabien writes:

> On 04.02.2014 14:57, David Fanning wrote:
>> I think in the hands of someone who knows what they are doing this can
>> be a powerful programming technique. I rarely see it used in those kind
>> of hands.:-)
>
> what David means is that most experienced programmers probably never
> even *needed* to create a variable dynamically.

Well, that's partly what I meant. People who know what they are doing
don't generally find they need to use this technique. I could certainly
count on one or two fingers the times I've found it necessary. But, I
deliberately left my meaning nebulous to include a more Coyote-like
meaning, too. ;-)

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
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Sepore ma de ni thue. ("Perhaps thou speakest truth.")

Subject: Re: name a variable with number
Posted by on Tue, 04 Feb 2014 14:41:47 GMT
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Den tisdagen den 4:e februari 2014 kl. 14:27:53 UTC+1 skrev sid:
> Hello sir,
>

> The main problem is, I will have a resultant array of
> n=dblarr(i,j)
> j=25,
> but i is varying say around 800 to 900.
> so i should name it in a for loop like,
>
> n1=n(800,1)
> n2=n(830,2)
> n3=n(840,3)
> .
> .
> .
> like this it has to go till 25.

I assume you mean n1=n(0:799,0), etc?

But why do you have to make each column in the 2D array into a separate variable? Isn't the data fine where it is?

> Finally I have to save this n1,n2,n3,....,n25 into separate files,
> like
>
> openw,2,'test.dat'
> printf,2,n1
> close,2
>
> till n25

This should work just as well with the original 2D array. Assume you have the lengths of the columns in an array lengths=[800,830,840,...], you could do something like:

```
for i=0,24 do begin
  openw,2,'test'+strtrim(i,2)+'.dat'
  printf,2,n[0:lengths[i]-1,i]
  close,2
end
```

Subject: Re: name a variable with number
Posted by rjp23 on Tue, 04 Feb 2014 17:28:22 GMT
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On Tuesday, February 4, 2014 2:09:16 PM UTC, Fabien wrote:
> Hi,
>
>
>
>

>
> On 04.02.2014 14:57, David Fanning wrote:
>
>> I think in the hands of someone who knows what they are doing this can
>
>> be a powerful programming technique. I rarely see it used in those kind
>
>> of hands.:-)
>
>
>
> what David means is that most experienced programmers probably never
>
> even *needed* to create a variable dynamically.
>
>
>
> If the technique is available, this does not mean this technique is
>
> suitable for your problem. If you think you need X variables named
>
> var_0, var_1, ---, var_X than the algorithm you are thinking of is
>
> probably not the best one.
>
>
>
> In this case, a list (for IDL8+) or a pointer array (all versions) is
>
> probably a better solution.
>
>
>
> For example:
>
>
>
> var = PTRARR(25)
>
> for j=0, 24 do var[j]=PTR_NEW(whatever_you_want_to_put_inside)
>
>
>
> Fab

If anyone feels the inclination to cover this in more detail it'd be appreciated as I find myself using it quite often, normally as a shortcut to repeating the same thing over and over.

For example, say I have many different models datasets where I want to interact on the data on each individual model but I also want all the datasets to be available. I typically name the data modelA_variableA, modelB_variableA, etc and then loop over by setting thisModel_variableA=modelA_variableA using the type of execute command I posted above with "modelA" and "variableA" as the strings.

Is there a better (generic) way of doing this?

Subject: Re: name a variable with number
Posted by Fabzi on Tue, 04 Feb 2014 18:00:29 GMT
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On 04.02.2014 18:28, rjp23@le.ac.uk wrote:
> Is there a better (generic) way of doing this?

I am not an expert enough, but if you are using a loop to generate variables dynamically, and then using a loop again somewhere else to read them, then you use the variables as "data holder" and this "data holder" could be anything else. You have created a variable modelB_variableA, what do you do with it afterwards? How do you check later in your code that ModelX_VariableY is available to continue processing?
This is much easier to test if you have a variable, say, ModelVar as a pointer array and check if ModelVar[X,Y] is a valid pointer, for example.

For the problem you describe, HASH() in IDL 8+ could quite adapted. For earlier versions, I guess a solution based on structures and/or pointers could work.

There is nothing "wrong" in generating variables dynamically, it just makes code difficult to understand and to debug. If you have something that works, it's probably not necessary to change your code now, I guess...

Subject: Re: name a variable with number
Posted by David Fanning on Tue, 04 Feb 2014 18:07:16 GMT
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rjp23@le.ac.uk writes:

> If anyone feels the inclination to cover this in more detail it'd be appreciated as I find myself using it quite often, normally as a shortcut to repeating the same thing over and over.

I think we are all confused about how hard-coding more variable names can be a shortcut to doing *anything* over and over again. It seems to

me to be the *last* thing you would want to do. Doing things over and over again are exactly what arrays and lists are good for.

Giving things names may be good for the soul (In the beginning was the Word, and the Word was with God, etc.), but doing it in a program just seems crazy. :-)

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
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Sepore ma de ni thue. ("Perhaps thou speakest truth.")

Subject: Re: name a variable with number
Posted by rjp23 on Tue, 04 Feb 2014 19:45:37 GMT
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On Tuesday, February 4, 2014 6:07:16 PM UTC, David Fanning wrote:
>
> I think we are all confused about how hard-coding more variable names
>
> can be a shortcut to doing *anything* over and over again. It seems to
>
> me to be the *last* thing you would want to do. Doing things over and
>
> over again are exactly what arrays and lists are good for.
>

How I use it is slightly different to the OP, maybe hence the confusion. I don't so much use it to split up data but to treat data from various sources the same way. It's pretty much the opposite of having hard-coded variable names.

e.g. It's normally when I have data in the same format from various different sources (usually different model runs) which I want to do the same thing to. Rather than have a chunk of code for each data source, to do the same thing to modelA, modelB, modelC, etc I just use execute to make thisModel=modelA within a loop and then act on each in turn.

That probably doesn't make any more sense though ;-)

Subject: Re: name a variable with number
Posted by David Fanning on Tue, 04 Feb 2014 19:51:27 GMT
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rjp23@le.ac.uk writes:

> How I use it is slightly different to the OP, maybe hence the confusion. I don't so much use it to split up data but to treat data from various sources the same way. It's pretty much the opposite of having hard-coded variable names.
>
> e.g. It's normally when I have data in the same format from various different sources (usually different model runs) which I want to do the same thing to. Rather than have a chunk of code for each data source, to do the same thing to modelA, modelB, modelC, etc I just use execute to make thisModel=modelA within a loop and then act on each in turn.
>
> That probably doesn't make any more sense though ;-)

Well, not to me, it doesn't. ;-)

In a loop like this, when I want clarity, I usually do something like
this. Is this what you mean?

```
  FOR j=0,n DO BEGIN
     thisModel = theModels[j]
     DoSomethingWith, thisModel
     ....
  ENDFOR
```

Cheers,

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