
Subject: For..Do Loop and If statements

Posted by [smnadoum](#) on Thu, 19 Jan 2017 05:18:25 GMT

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I have written a couple of for.. do loops, however, they don't work properly. Not sure what I did wrong.

1) I want to use a for..do loop and if statements to derive indices. where 'a' is greater than 5, and output the result to new variable 'b2'

```
a is INT      = Array[4, 5, 3]
b2=[a]
b2=[]
for i=0, n_elements(a) -1 do begin
  temp =a[i]
  if temp gt 5 then b2=[b2,temp]
```

2) I want to loop through the elements of d and use an if statement: if the element of d is equal to 20 then divid that element by a floating point 5, and if the element is not equal to 20 then divide it by a floating point 3.

```
d is INT      = Array[4, 5]
for i=0, n_elements(d)-1 do begin      ;if statement eq to 20 then divid by 5. ne 20 then divide by 3.
  if d(i) eq 20 then print, 20/5.
  if d(i) ne 20 then print, 20/3.
endfor
end
```

None of these statements work and I don't know why.

Subject: Re: For..Do Loop and If statements

Posted by [Helder Marchetto](#) on Thu, 19 Jan 2017 09:06:11 GMT

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On Thursday, January 19, 2017 at 6:18:27 AM UTC+1, Cheryl wrote:

> I have written a couple of for.. do loops, however, they don't work properly. Not sure what I did wrong.

>

> 1) I want to use a for..do loop and if statements to derive indices. where 'a' is greater than 5, and output the result to new variable 'b2'

>

> a is INT = Array[4, 5, 3]

> b2=[a]

> b2=[]

> for i=0, n_elements(a) -1 do begin

```

> temp =a[i]
> if temp gt 5 then b2=[b2,temp]
>
> 2) I want to loop through the elements of d and use an if statement: if the element of d is equal
to 20 then divid that element by a floating point 5, and if the element is not equal to 20 then divide
it by a floating point 3.
>
>
> d is  INT      = Array[4, 5]
> for i=0, n_elements(d)-1 do begin      ;if statement eq to 20 then divid by 5. ne 20 then divide by
3.
>   if d(i) eq 20 then print, 20/5.
>   if d(i) ne 20 then print, 20/3.
> endfor
> end
>
>
> None of these statements work and I don't know why.

```

Hi,

I think you should get a book of basic IDL programming or programming in general.

Here are some comments to your code:

```

> a is  INT      = Array[4, 5, 3]
> b2=[a] ;unnecessary: remove this statement
> b2=[]
> for i=0, n_elements(a) -1 do begin
>   temp =a[i]
>   if temp gt 5 then b2=[b2,temp]
at the end of the loop, you need an "endfor" statement

```

That should then work. However, IDL is not made for loops. The typical way to do this is to use the where function (<http://www.harrisgeospatial.com/docs/WHERE.html>):

```
b2 = a[where(a gt 5)]
```

if you're not sure if any elements of a are greater than 5, then you should use:

```

pos = where(a gt 5, cnt)
if cnt gt 0 then b2 = a[pos] else b2 = []

```

Your second example does not make much sense. 20/5. is 4 and 20/3. is 6.666... Now, you don't need to recalculate this every time in the loop. So:

```

result_one = 20/5.
result_two = 20/3.

```

```

> d is  INT      = Array[4, 5]
> for i=0, n_elements(d)-1 do begin      ;if statement eq to 20 then divid by 5. ne 20 then divide by

```

3.
> if d(i) eq 20 then print, 20/5. ;use square brackets!!! d[i]
> if d(i) ne 20 then print, 20/3. ;use square brackets!!! d[i]
; the "if" condition has also a "else" option. Meaning: "if something is eq to 20 then do this, if not (else!) do that". See http://www.harrisgeospatial.com/docs/IF___THEN___ELSE.html
> endfor
> end ; erase this line

This can also be done with the where function. Have a look at the help and try to figure it out. Let me know if you can't manage that.

Cheers,
Helder

Subject: Re: For..Do Loop and If statements
Posted by [Markus Schmassmann](#) on Thu, 19 Jan 2017 10:44:14 GMT
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On 01/19/2017 10:06 AM, Helder wrote:
> That should then work. However, IDL is not made for loops. The
> typical way to do this is to use the where function
> (<http://www.harrisgeospatial.com/docs/WHERE.html>):
>
> b2 = a[where(a gt 5)]
>
> if you're not sure if any elements of a are greater than 5, then you
> should use: pos = where(a gt 5, cnt) if cnt gt 0 then b2 = a[pos]
> else b2 = []

A small addition to Helder's answer:
if there might be elements greater than 5, you could also use:

b2 = a[where(a gt 5,/NULL)]

this avoids the use of if...then, which is rather slow in IDL

Markus

Subject: Re: For..Do Loop and If statements
Posted by [Heinz Stege](#) on Thu, 19 Jan 2017 17:43:43 GMT
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On Thu, 19 Jan 2017 11:44:14 +0100, Markus Schmassmann wrote:

> ... the use of if...then, which is rather slow in IDL
>

No, this is not true. The if...then statement is negligible in comparison to a where-statement.

Cheers, Heinz
