Subject: Re: REPLICATE with arrays
Posted by Jeremy Faden on Tue, 15 Feb 2000 08:00:00 GMT
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Vince Hradil wrote:

> I often have the need to replicate an array, but IDL's replicate only
> works with scalars. Does anyone have any tips on the most efficient,
> simplest, clearest (you choose) way to do this?
>
> e.g.
>
> I have:
> help, x
> INT = Array[3, 3]
> print, x
> 2 4 10
> 3 7 5
> 3 9 2
>
> and would like to do:
> x2 = replicate(x,2)
> help, x2
> INT = Array[3, 3, 2]
> print, x2
> 2 4 10
> 3 7 5
> 3 9 2
>
> 2 4 10
> 3 7 5
> 3 9 2
>
> I've figured out some trick for 1 and 2 dimensional arrays, but I'm
> looking for a more general strategy to use on higher dim arrays.
>
> Thanks,
>
> Vince

Vince,
Here is a somewhat simpler solution which works at least
for your example. It should also handle arrays of any dimension.
Jeremy

------ begin code -------
function replicate_array, A, n_rep
;+

```
; NAME: replicate_array
; PURPOSE: replicates an array into many copies.
; CALLING SEQUENCE: AAA= replicate_array( A,n_copy )
; INPUTS:
;   A, an array of any dimension.  Cannot be a scalar.
;   n_copy, the number of copies to make.
; OUTPUTS:
;   AAA, an array with the same dimensions of A, and an additional
;     dimension that indexes the copy number.
; RESTRICTIONS: If input array is an int, a long is returned.
Otherwise, type
;     is preserved.  Input array can not be a scalar.  Input type must
;     be a number (i.e. int, long, float, double, complex).
; EXAMPLE:
;    x= [[2,4,10],[3,7,5],[3,9,2]]
;    print, x
;    x2= replicate_array( x, 2 )
;    help, x2
;    print, x2
;
; MODIFICATION HISTORY:
;   written, Jeremy Faden, University of Iowa, February 15, 2000.
;-

  new_dim= [ size(A,/dimensions), n_rep ]
  new_star= A(*) # make_array(value=1,n_rep)
  return, reform( new_star,new_dim )
end
------- end code ---------
```

Jeremy Faden
University of Iowa
jbf@supras.physics.uiowa.edu