Subject: IDL Indexing 2D->3D
Posted by forthewynn on Wed, 26 Mar 2014 21:55:41 GMT
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Hi All,

I have a peculiar predicament that I am trying to solve...unfortunately, the nature of the problem does not allow me to google it easy, and IDL is not my main programing language.

Let's say I have a 3x3x15 array. I use the where command to find certain values in the first 'frame' (third dimension)--note, this is the main stickler, in that I can only search for these values in the first 'frame' as they are not present throughout the whole array.

So, the where command spits out three points in example: [2,3,5].

Using array_indices with the dimension of the 3x3x15 array, I get the locations of these points, like [[0,2,0],[1,0,0],[1,2,0]]. This is all fine and dandy so far.

My problem is that I need to translate these indices to the corresponding points in all of the 'frames'. In other words, I need [[0,2,0],[1,0,0],[1,2,0],[0,2,1],[1,0,1],[1,2,1],[0,2,2],[1, 0,2],[1,2,2],...through all 15 levels of the third dimension].

I have found that I can make a loop with the index being the third dimension to accomplish this, or alternatively I can make an array composed of [where command output, where command output + dimension_1*dimension_2*1, where command output + dimension_1*dimension_2*2, etc.]. But the time to complete these increases heavily as the dimensions of my original array increase (800x800x400 in the case of my project).

Thus, I am wondering if anyone might have a shortcut that can be accomplished in one statement (since IDL is usually very good with matrices) like theoretically:

```
ORIGINAL_ARRAY=FINDGEN(800,800,400) ; EXAMPLE
TEMP=WHERE(ORIGINAL_ARRAY EQ VALUE-ONLY-IN-FIRST-FRAME,CT)
TEMP_IND=ARRAY_INDICES(ORIGINAL_ARRAY,TEMP)

 DATA_ABOVE_WHERE_POINTS=ORIGINAL_ARRAY[[TEMP_IND[0,*],TEMP_I ND[1,*]],*]
```

that yields HELP,DATA_ABOVE_WHERE_POINTS: DOUBLE = ARRAY[CT,400].

Obviously the above does not work because of the way IDL indexes (this yields a [CNT,CNT] array). Thanks for viewing and I appreciate any pointers.