
Subject: Q: pointers inside of an array of structures?

Posted by [Amara Graps](#) on Wed, 16 Aug 2000 07:00:00 GMT

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Hi Folks,

I am trying to create and build a flexible data structure in IDL for a situation where we have fields of different types in a structure, and then that structure is made into an array of structures using "replicate". And I extend the array of structures by concatenating, because I don't know how many structures I need.

My question: Can a field inside of the array-of-structures be a pointer ?

For example --

I know how to flexibly extend a structure,
with each of the fields defined the same way:

Create an array of an anonymous structure

```
IDL> thisstruc = {orbit:"", len:0,freq:DBLARR(100)}
```

```
IDL> periodcube = replicate(thisstruc,1)
```

;Put values into the structure

```
IDL> periodcube(0).orbit='G2'
```

```
IDL> periodcube(0).len=50 ;to store length of array : freq
```

```
IDL> periodcube(0).freq=DINDGEN(50)
```

;Create a temporary structure like the original

```
IDL> temppperiod = thisstruc
```

;Put values into the temporary structure

```
IDL> temppperiod.orbit='G3'
```

```
IDL> temppperiod.len=75
```

```
IDL> temppperiod.freq=DINDGEN(75)
```

;Now extend it by concatenating

```
IDL> newperiodcube=[periodcube,temppperiod]
```

;Take a look

```
IDL> help, newperiodcube, /st
```

```
** Structure <89af0>, 3 tags, length=816, refs=4:
```

```
  ORBIT      STRING  'G2'
```

```
  LEN        INT      50
```

```
  FREQ       DOUBLE   Array[100]
```

```
IDL> print, newperiodcube(0).orbit, ' ', newperiodcube(1).orbit
G2 G3
IDL> print, newperiodcube(0).len, ' ', newperiodcube(1).len
    50    75
-----
```

But what about varying data lengths inside of the array of structures, for example, if my freq arrays are each a different length:

```
IDL> thisstruc = {orbit:"", freq:ptr_new()}
IDL> periodcube = replicate(thisstruc,1)

;Put values into the structure
IDL> periodcube(0).orbit='G2'
IDL> *periodcube(0).freq=DINDGEN(50)
% Unable to dereference NULL pointer: <POINTER (<NullPointer>)>.
% Execution halted at: $MAIN$
```

What am I doing wrong?

Is it possible to have pointers inside of an array of structures?

My pointer programming experiences were 15 yrs ago in a Pascal class.. it's quite possible I'm missing something big, with how the pointers work...

Thanks very much in advance,

Amara

P.S. IDL Version 5.3 (sunos sparc)

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"Never fight an inanimate object." - P. J. O'Rourke