Subject: is this a bug in IDL?
Posted by aramisgm on Tue, 16 Dec 2003 10:31:44 GMT
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OK, so I was hanging with a friend who is doing some work with satellite data. She was having trouble getting a program to compile. After fixing some bugs and rewriting some code, we got the program to run as desired. I suggested that she add a counter for data verification. This generated a small surprise and two questions. Here's the part of the program causing the fuss (please excuse the hard-coded indexing, it's "quick-and-dirty" code):

```
k=0
for i=0,8759 do begin
x=vbs(2,i)
if x gt 0.0 then k=k+1 & x=0 & vbs(2,i)=x
endfor
print, k

k=0
for i=0,8759 do begin
x=vbs(2,i)
;; version A
if x gt 0.0 then x=0 & k=k+1 & vbs(2,i)=x
;; version B
if x gt 0.0 then k=k+1 & x=0 & vbs(2,i)=x
endfor
print, k
```

1) How would you vectorize this? I tried a few things that I could remember from my work this summer, but four months of quantum mechanics wipes a lot from memory :)

2) At first, we only had version A of the second loop, which output the value k==8760 (meaning the entire data set gets zeroed out). After examining the data set and the output, I knew something weird was going on -- the negative values in the data were not being altered, so the counter was not behaving correctly. We added the first loop to see exactly how many values should be altered, yielding k==4167. We then discovered the following behavior:

Using the if marked version A generates the output
4167
8670
while the if marked version B generates
4167
4167.

Is this a bug? as far as I can tell, the statements are logically identical since an &'s behavior should never vary, so what in the guts of IDL would make these statements be different? Is there some rule kicking in here that's not so obvious but makes this behavior to be expected? Would parenthesis around the THEN block make these identical in IDL? The environment is either IDL 6 on Red Hat 9 or IDL 5.1 on Red Hat 8.1.

Thanks for any enlightenment you folks can share.
Aramis Martinez
