Subject: Re: SIGN function?
Posted by agraps on Wed, 03 Apr 1996 08:00:00 GMT
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llobet@elpp1.epfl.ch (Xavier Llobet i Sales EPFL-CRPP 1015 Lausanne CH) writes:

> Maybe today I am specially dumb, but I cannot find the IDL (version 3.6.1)
> function that gives the sign of a number (I suppose it exists!!!).

I don't know. I wrote my own, attached below. It works for a number
of cases, but there are no guarantees.

Amara
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```
function SIGN, num
;+
;NAME:
; SIGN
;
;PURPOSE:
; To compute the sign of a number. This function mimics
; Matlab's sign function.
;
;CALLING SEQUENCE:
; Result = SIGN(num)
;
;INPUTS:
; Num: Any number or array
;
;OUTPUTS:
; SIGN returns either 1, 0, or -1.
;
;MODIFICATION HISTORY:
; Amara Graps, BAER, December 1994.
; (c) copyright Amara Graps 1995, 1996.
;-

t = SIZE(num)
testtype = t(0)

IF testtype NE 0 THEN BEGIN
 ;The value num is an array.. Find the sign of ALL of the elements
 ;create same size and kind of array
 n_ele = N_ELEMENTS(t)
 CASE t(n_ele-2) OF
  2: sgn = num * 0 ;integer
```

```
 3: sgn = num * 0L ;long integer
 4: sgn = num * 0.0 ;floating
 5: sgn = num * 0.0D0 ;double floating
 ELSE: print, 'Not a good array type in sign!'
ENDCASE
copy_num= num

;neg values
indx = WHERE(copy_num LT 0)
;check for bad index
ts = SIZE(indx)
CASE 1 OF
 ts(0) EQ 0: ;no change
 ELSE: sgn(indx) = -1
ENDCASE

;positive values
indx = WHERE(copy_num GT 0)
;check for bad index
ts = SIZE(indx)
CASE 1 OF
 ts(0) EQ 0: ;no change
 ELSE: sgn(indx) = +1
ENDCASE

;zero values
indx = WHERE(copy_num EQ 0)
;check for bad index
ts = SIZE(indx)
CASE 1 OF
 ts(0) EQ 0: ;no change
 ELSE: sgn(indx) = 0
ENDCASE


ENDIF ELSE BEGIN

;t(0) = 0, scalar.. what we want

IF t(1) NE 6L then begin
 ;Not a complex scalar

 CASE 1 OF
  num LT 0: sgn = -1
  num EQ 0: sgn = 0
  num GT 0: sgn = 1
  ELSE: print, 'Not a valid number!'
 ENDCASE
```

```
 ENDIF ELSE BEGIN
  ;This is a complex scalar
  sgn = num / abs(num)
 END ;END
END

RETURN, sgn

END
```

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"Picture a massless particle."  --A Koan of Modern Physics

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