Subject: Re: Converting Doubles to Strings
Posted by Craig Markwardt on Sat, 05 Nov 2005 15:31:41 GMT
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David Fanning <david@dfanning.com> writes:
> Folks,
>
> I've run into an interesting problem. I have a double precision
> number that I wish to convert to a string (so I can put it into
> a text widget, for example). I don't know ahead of time how many
> significant digits will be in this number. The number could
> look like this 45.6, or this 123456789.123456789, or this
> -22.1234567890. If it looks like the latter number, I am
> having a very hard time converting it to a string. For example,
> this doesn't work:
>
>   IDL> v = String(-22.1234567890, Format='(D0)')
>   IDL> Print, v
>   -22.123457
>
> Is this a bug in IDL? Or am I overlooking something?

David, the "D" format (without zeroes) is probably what you want. I
have a utility routine in INPUTFORM which converts a floating point
number to a string. It tries both the G and E formats and takes the
shortest version that is still correct. See below.

Craig

```
;; Convert a floating style value to a string.  Note the conversion
;; happens twice, once as a E and once as a G.  The shortest correct
;; version of the two is used.
;;  X - number to convert, scalar or array, float or double
;;  FORMAT - optional format to use (set to '(E)' or '(D)' for max precision)
;;  DCONVERT - set this if the output should be double precision
function inputform_float, x, format, dconvert=dcon
  n = n_elements(x)
  str = string(x(*), format=format)
  sz = size(x) & tp = sz(sz(0)+1)

  ;; Sorry, there appears to be no other way to make nice looking
  ;; floating point numbers.
  str1 = string(x(*), format='(G0)')
  if tp EQ 4 then x1 = float(str1)
  if tp EQ 5 then x1 = double(str1)
  wh = where(x-x1 EQ 0, ct)
  if ct GT 0 then str(wh) = str1(wh)
  str1 = 0
```

```
  str = strtrim(str,2)

  p = strpos(str(0), 'E')  ;; Make sure at least one element is float-type
  ;; Note, the space is needed in case the string is placed inside
  ;; another expression down the line.
  if p LT 0 then begin
     if keyword_set(dcon) then str(0) = str(0) + 'D' $
     else str(0) = str(0) + 'E'
  endif
  if keyword_set(dcon) then begin
     ;; Convert from floating to double
     p = strpos(str, 'E')
     wh = where(p GE 0, ct)
     for i = 0L, ct-1 do begin
        str1 = str(wh(i))
        strput, str1, 'D', p(wh(i))
        str(wh(i)) = str1
     endfor
  endif
  ;; Construct format like (N(A,:,","))
  fmt = '('+strtrim(n,2)+'(A,:,","))'
  return, string(str, format=fmt)
end
```

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