Subject: Specifying DOUBLE precision and using WHERE
Posted by Johnny Lin on Sat, 26 Jun 1999 07:00:00 GMT
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hi folks,

i'm using WHERE to do a test for a missing value in an array of data.
the funny thing is the result of WHERE seems to change depending on
whether I use the function DOUBLE to set the type of the missing
value field (or of the data i'm testing), or whether I set it using
"d" as the exponent. is there a difference in specifying the type
of a variable using "d" vs. DOUBLE? below is a sample of 4 different
cases that illustrate what i'm describing.

thanks!

cheers,
-Johnny Lin

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print,!version
{ sparc sunos unix 5.1 Apr 13 1998}

CASE #1 (missing and data are both FLOAT):
missing=-9.96921e+36
data=randomn(-34,20)
data[where(data lt 0.1)]=missing
print,data
; -9.96921e+36 -9.96921e+36 -9.96921e+36 -9.96921e+36 -9.96921e+36
0.882273
;   0.784302   0.505769   0.271391 -9.96921e+36 -9.96921e+36
-9.96921e+36
; -9.96921e+36 -9.96921e+36 -9.96921e+36   0.280262   1.55990
-9.96921e+36
;   0.456618 -9.96921e+36
print,where(data eq missing)
;   0   1   2   3   4
9
;   10   11   12   13   14
17
;   19

CASE #2 (missing is DOUBLE using "d" exponent and data is FLOAT):
missing=-9.96921d+36
data=randomn(-34,20)
data[where(data lt 0.1)]=missing
print,data
; -9.96921e+36 -9.96921e+36 -9.96921e+36 -9.96921e+36 -9.96921e+36
0.882273
;   0.784302   0.505769   0.271391 -9.96921e+36 -9.96921e+36
-9.96921e+36
; -9.96921e+36 -9.96921e+36 -9.96921e+36   0.280262   1.55990
-9.96921e+36
;   0.456618 -9.96921e+36
print,where(data eq missing)
;   -1

CASE #3 (missing is made DOUBLE using DOUBLE fctn. and data is FLOAT):
missing=-9.96921e+36
missing=double(missing)
data=randomn(-34,20)
data[where(data lt 0.1)]=missing
print,data
; -9.96921e+36 -9.96921e+36 -9.96921e+36 -9.96921e+36 -9.96921e+36
0.882273
;   0.784302   0.505769   0.271391 -9.96921e+36 -9.96921e+36
-9.96921e+36
; -9.96921e+36 -9.96921e+36 -9.96921e+36   0.280262   1.55990
-9.96921e+36
;   0.456618 -9.96921e+36
print,where(data eq missing)
;   0   1   2   3   4
9
;   10   11   12   13   14
17
;   19

CASE #4 (missing is DOUBLE using "d" exponent and data is DOUBLE using
DOUBLE fctn.):
missing=-9.96921d+36
data=double(randomn(-34,20))
data[where(data lt 0.1)]=missing
print,data
; -9.9692100e+36 -9.9692100e+36 -9.9692100e+36 -9.9692100e+36
; -9.9692100e+36   0.88227326   0.78430188   0.50576895
;   0.27139148 -9.9692100e+36 -9.9692100e+36 -9.9692100e+36
; -9.9692100e+36 -9.9692100e+36 -9.9692100e+36   0.28026247
;   1.5598999 -9.9692100e+36   0.45661822 -9.9692100e+36
print,where(data eq missing)
;   0   1   2   3   4   9

; 10 11 12 13 14 17

; 19