Subject: Re: findng array[3] in array[3,n]
Posted by Craig Markwardt on Thu, 25 Jan 2001 17:30:05 GMT
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"tbowers" <tbowers@nrlssc.navy.mil> writes:

> If I have
>
> a=[$
> [0,1,2], $
> [3,4,5], $
> [6,7,8]]
>
> b=[3,4,5]
>
> how do I find where in a is the row vector b? The answer should
> be 1, the 2nd row of a. I've tried many
> permutations of where(), but I just don't get it. The only way I
> can get an answer is to loop through the rows till i find a match.
> What I'm really tryin' to do is to find a color in a color table,
> e.g. load RAINBOW color table, (loadct,13) then identify
> where a color is. For the color that's listed 6th in the color table
> (an almost black) that'd be the 5th row index. Like:
...
>

Your problem is that WHERE only does a 1D search. So you need to somehow convert your triplets to a single number.

Solution 1:

1. Convert your 3 BYTE values to a single LONG value:
   colorwords = long(r) + ishft(long(g),8L) + ishft(long(b),16L)
  do the same for your target, and use WHERE to find the match

  This will be fast if you need a few matches, slow if you need a ton
  of matches.

2. Search on R value alone using WHERE, then use a FOR loop to scan
   the resulting matches.

   wh = where(r EQ rtarg, ct)
   if ct GT 0 then for i = 0, ct-1 do if ...

   Probably overkill.

3. Use a Euclidean distance to find the color table entry with the
   smallest distance from you target value [rtarg, gtarg, btarg]. You

should convert R G and B to vectors of type LONG to prevent
overflow:

dist = (r-rtarg)^2 + (g-gtarg)^2 + (b-btarg)^2
wh = where(dist EQ min(dist))

This will be the most robust to small variations in the color table
(ie, if an exact match doesn't exist).

Any other ideas?

Craig

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