
Subject: Re: Need a function to multiply the elements of an array

Posted by [rlw](#) on Fri, 28 Apr 1995 07:00:00 GMT

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In article <3nm2uk\$qqq@pinot.umd.edu>, barsam@Glue.umd.edu (Barsam Marasli) writes:

|> I am looking for a routine to multiply the elements of an array.

Here is one more approach for this problem. I did some tests and found it to be roughly the same speed as the previous approaches (using logarithms) for short vectors (< 100 elements), but it is faster by about a factor of 3 for long vectors. It is about 15 times faster than a direct loop for long vectors.

```
function prod,x
; Compute product of elements of x. Returns result as double.
; R. White, 1995 April 28
n = n_elements(x)
y = double(x)
mm = 1.0d0
; takes about log3(n) passes through this loop
; 20 elements is about the right break point where the direct loop becomes
; fastest
while (n GT 20) do begin
  mval = n MOD 3
  if mval eq 1 then begin
    mm = mm*y(n-1)
  endif else if mval eq 2 then begin
    mm = mm*y(n-1)*y(n-2)
  endif
  n = n/3
  y = y(0:n-1)*y(n:2*n-1)*y(2*n:3*n-1)
endwhile
for i=0,n-1 do mm=mm*y(i)
return, mm
end
```
