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Subject: Random-access of List() progressively slower for static list

Posted by [tom.grydeland](#) on Mon, 05 May 2014 11:34:52 GMT

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Hi all,

The following snippet demonstrates very peculiar complexity in IDL 8.2.2

In the first part, exchanging active and commented-out equivalent code gives equally unsatisfactory results in the list creation phase.

List(), for all its nice properties, is not fit for (my) purpose in this version of IDL.

Regards,

Tom Grydeland, Norut

```
;;;;;;;;;;;;;; Cut here ;;;;;;;;;;;;;;;  
compile_opt idl2
```

```
N = 200000L
```

```
M = 5000L
```

```
print, format='(%"Creating list of %d elements")', N
```

```
values = List()  
; values = List(length=N)
```

```
t0 = systime(/seconds)  
for jj=0L, N-1 do begin
```

```
  ;; Nice and snappy  
  values.add, List(jj, indgen(jj mod 5 + 1), findgen(jj mod 4 + 1))
```

```
  ;; Excruciatingly slow  
  ; values[jj] = List(jj, indgen(jj mod 5 + 1), findgen(jj mod 4 + 1))
```

```
  if ~(jj mod M) then begin  
    t1 = systime(/seconds)  
    print, format='(%"Inserted %d elements, the last %d in %g seconds")', jj, M, t1-t0  
    t0 = t1  
  endif  
endfor
```

```
itot = 0L  
ftot = 0.0
```

```
;; Now see how List() deals with random access
```

```

ii = fix(randomu(seed, N) * N)
for jj = 0L, N-1 do begin
  itot += values[jj, 1, 0]
  ftot += values[jj, 2, 0]
  if ~(jj mod M) then begin
    t1 = systime(/seconds)
    print, format='(%"Processed %d elements, the last %d in %g seconds")', jj, M, t1-t0
    t0 = t1
  endif
endfor

end

```

..... Cut here .....

Typical output (limited by my impatience):

```

Creating list of 200000 elements
Inserted 0 elements, the last 5000 in 0.00215101 seconds
Inserted 5000 elements, the last 5000 in 0.348531 seconds
Inserted 10000 elements, the last 5000 in 0.346365 seconds
Inserted 15000 elements, the last 5000 in 0.346398 seconds
Inserted 20000 elements, the last 5000 in 0.343561 seconds
Inserted 25000 elements, the last 5000 in 0.345163 seconds
Inserted 30000 elements, the last 5000 in 0.344774 seconds
Inserted 35000 elements, the last 5000 in 0.345832 seconds
Inserted 40000 elements, the last 5000 in 0.346793 seconds
Inserted 45000 elements, the last 5000 in 0.345885 seconds
Inserted 50000 elements, the last 5000 in 0.347492 seconds
Inserted 55000 elements, the last 5000 in 0.34761 seconds
Inserted 60000 elements, the last 5000 in 0.347977 seconds
Inserted 65000 elements, the last 5000 in 0.349764 seconds
Inserted 70000 elements, the last 5000 in 0.354488 seconds
Inserted 75000 elements, the last 5000 in 0.354447 seconds
Inserted 80000 elements, the last 5000 in 0.354993 seconds
Inserted 85000 elements, the last 5000 in 0.355061 seconds
Inserted 90000 elements, the last 5000 in 0.355482 seconds
Inserted 95000 elements, the last 5000 in 0.355554 seconds
Inserted 100000 elements, the last 5000 in 0.354784 seconds
Inserted 105000 elements, the last 5000 in 0.355656 seconds
Inserted 110000 elements, the last 5000 in 0.35539 seconds
Inserted 115000 elements, the last 5000 in 0.356607 seconds
Inserted 120000 elements, the last 5000 in 0.356207 seconds
Inserted 125000 elements, the last 5000 in 0.356762 seconds
Inserted 130000 elements, the last 5000 in 0.42747 seconds
Inserted 135000 elements, the last 5000 in 0.356562 seconds
Inserted 140000 elements, the last 5000 in 0.356965 seconds
Inserted 145000 elements, the last 5000 in 0.357409 seconds

```

Inserted 150000 elements, the last 5000 in 0.356946 seconds  
Inserted 155000 elements, the last 5000 in 0.356669 seconds  
Inserted 160000 elements, the last 5000 in 0.356693 seconds  
Inserted 165000 elements, the last 5000 in 0.356064 seconds  
Inserted 170000 elements, the last 5000 in 0.357145 seconds  
Inserted 175000 elements, the last 5000 in 0.356812 seconds  
Inserted 180000 elements, the last 5000 in 0.35684 seconds  
Inserted 185000 elements, the last 5000 in 0.358616 seconds  
Inserted 190000 elements, the last 5000 in 0.357635 seconds  
Inserted 195000 elements, the last 5000 in 0.358785 seconds  
Processed 0 elements, the last 5000 in 0.365067 seconds  
Processed 5000 elements, the last 5000 in 2.29138 seconds  
Processed 10000 elements, the last 5000 in 5.68659 seconds  
Processed 15000 elements, the last 5000 in 10.7704 seconds  
Processed 20000 elements, the last 5000 in 24.9039 seconds  
Processed 25000 elements, the last 5000 in 37.5853 seconds  
Processed 30000 elements, the last 5000 in 46.8019 seconds  
Processed 35000 elements, the last 5000 in 55.4 seconds  
Processed 40000 elements, the last 5000 in 63.8799 seconds  
Processed 45000 elements, the last 5000 in 72.3194 seconds

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