Subject: Reading Multiple DICOM Files
Posted by Jye on Sun, 08 Mar 2009 23:02:08 GMT
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Hi Everyone,

Im currently putting together an application that needs to read the image data from numerous DICOM files, currently 900 but this will possible go up to about 2000.

ATM I have a simple FOR loop :(which steps through each file, makes an object using Robbies GDLffDICOM and then reads the images data into a matrix. The object is then destroyed and the loop repeated. This is horribly slow as you would all imagine and takes about 90sec to read all of the images.

Has anyone come across a fast way of reading numerous DICOM files? The problem would have easily been solved if only OBJARR could be used as a normal array :(

Cheers
Jye

Subject: Re: Reading Multiple DICOM Files
Posted by Mike[2] on Thu, 26 Mar 2009 13:32:54 GMT
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On Mar 8, 7:02 pm, Jye <jye.sm...@gmail.com> wrote:

> ATM I have a simple FOR loop :(which steps through each file, makes
> an object using Robbies GDLffDICOM and then reads the images data into
> a matrix. The object is then destroyed and the loop repeated. This is
> horribly slow as you would all imagine and takes about 90sec to read
> all of the images.

Jye,

Another thing that may speed this up is to use the same GDLffDICOM without destroying it between files. I do this using IDLffDICOM by calling obj->reset when I'm done with each file and obj->read (filename) to read a new file. On my machines this is very fast, including checking numerous other tags, rotating the image and inserting the slice into a predefined array. All of this is highly dependent on cpu and disk performance, so YMMV.

Mike

```
dcm = obj_new('IDLffDICOM')

xdim = *(dcm->GetValue('0028'x,'0010'x))[0]
ydim = *(dcm->GetValue('0028'x,'0011'x))[0]
tdim = 1

;; Read slice locations:
for i = 0, Nfiles-1 do begin
  dcm->reset
  var = dcm->Read(filelist[i])
  slice_locations[i] = *(dcm->GetValue('0020'x,'1041'x))[0]
endfor

;; Sort by slice location:
sorted_indeces = sort(slice_locations)
sorted_slice_locations = slice_locations[sort(slice_locations)]

slice_locations = sorted_slice_locations[uniq(sorted_slice_locations)]
zdim = n_elements(slice_locations)

;; Read image data
data = intarr(xdim, ydim, zdim, tdim)
for i = 0, Nfiles-1 do begin
  dcm->Reset
  var = dcm->Read(filelist[i])

  location = float(*(dcm->GetValue('0020'x,'1041'x))[0])

  z = where(reverse(slice_locations) eq location)

  ;; There may be a preview icon with the data, so check each slice
  ;; until I find the one that has the correct size.  I'm assuming
that
  ;; there is only one of these per file!
  dcm_ptr = dcm->GetValue('7fe0'x,'0010'x,/no_copy)
  done = 0
  j = 0
  while (not done) do begin
    slice = rotate(*(dcm->GetValue('7fe0'x,'0010'x))[j], 7)
    s = size(slice, /structure)
    if (s.dimensions[0] eq xdim) and (s.dimensions[1] eq ydim) then
done = 1
    j = j + 1
  endwhile
  data[*,*,z] = slice
endfor
```