Subject: Re: DICOM directory
Posted by Anne[1] on Wed, 15 Apr 2009 13:19:05 GMT
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On Apr 14, 5:49 pm, rstoyan...@med.miami.edu wrote:
> I have ~1000 MRI files in DICOM format from the same subject; the data
> is anonymized and the filename are 6 digit #s. I can read them
> individually, but I would like to recreate the directory structure,
> i.e. sort the files coming from the same sequence.
> Thank you

I have procedure that also sorts the files. This returns a structure containing an array of series description strings and a pointer to an array containing the corresponding filenames. A second procedure then takes this structure as an input and uses it to allow the user to select which series they want and to read the images into an IDL array. This is useful if you don't want to create new directories containing sorted files.

Eventually I am hoping to get around to posting the routines I use to re-sort dicom files into 4D images (3D series acquired over time) as this is a common task.

```
;+
; dicom_sortfiles
;@file_comments
;   Takes a series of input images and sorts them into series. </p>
;   Output is a linked list of structures. Should give same output
;   structure as ge_sortfiles
;
;@categories fileIO, DICOM


;@keyword dicomList {in} {optional} list of dicom files. If this is
not provided then dialog_pickfile promts user to select list
;@param sFileList {out} {required} {type = array of structures} n
array of n series </p>
 ;<li>{ exam_no
 ; <li>patname (string array)
;  <li>se_no (string containing series number)
;  <li>se_desc (string containing series description)
; <li> file_list (pointer to array of filenames belonging to series)}
;
;@author Anne
;@history  Updated Nov 2007 to accept filelist as a keyword
;@history modified March 2009 to check if studyID has been replaced by
an anonymizing string.
;If so then exam no is set to zero
```

```
;-
;


pro dicom_sortfiles,sFileList,dicomList=dicomList

  arrStruct={ exam_no: 0S,  $

      patname: '', $
      se_no: 0S,     $
      se_desc: '', $
      file_list: ptr_new() $
      }


  if n_elements(dicomList) eq 0 then begin
   dicomList=dialog_pickfile(/multiple, /must_exist)
  endif
  nFiles=n_elements(dicomList)

  examNo=intarr(nFiles)
  seriesNo=intarr(nFiles)
  imageNo=intarr(nFiles)

  patname=lonarr(nFiles)
  prtcl=lonarr(nFiles)

; read in arrays of examNo, seriesNo and imageNo to do initial sort
  for i = 0,nFiles-1 do begin
    im=obj_new('IDLffDICOM',dicomList[i])
    studyID=im->getvalue('0020'x,'0010'x, /no_copy)
    if ptr_valid(studyID) then begin  ; code modified to cope with
anonymised codes
      if size(*studyID[0], /type) eq 7 then begin
        examNo[i] = 0
      endif else begin
        examNo[i]= *studyID[0]
      endelse
    endif
    seriesID=im->getvalue('0020'x,'0011'x, /no_copy)
    if ptr_valid(seriesID) then seriesNo[i]=*seriesID[0]
    imageID=im->getvalue('0020'x,'0013'x, /no_copy)
    if ptr_valid(imageID) then imageNo[i]=*imageID[0]
    obj_destroy,im
    ptr_free,studyID, seriesID, imageID
  endfor

sFileList=arrStruct
```

```
examList=uniq(examNo,sort(examNo))
examList=examNo[examList] ; examList now contains sorted list of exams
present
for eIndex = 0, n_elements(examList)-1 do begin  ;step through each
exam
   currentExam = examList[eIndex]
   seriesInExam = seriesNo[where(examNo eq currentExam)]
   seriesList = uniq(seriesInExam,sort(seriesInExam))
   seriesList=seriesInExam[seriesList] ; series list now contains list
of series in current exam
   nSeries=n_elements(seriesList)
   for sIndex = 0, nseries-1 do begin  ;step through each series
    currentSeries=seriesList[sIndex]
    currentList=where((seriesNo eq currentSeries) and (examNo eq
currentExam))
    imagesInSeries = imageNo[currentList]
    orderedImageList = sort(imagesInSeries)
     currentImageFile=dicomList[currentList[orderedImageList[0]]]
    nImages=n_elements(imagesInSeries)
    arrStruct.exam_no=currentexam
    arrStruct.se_no=currentSeries
    arrStruct.file_list=ptr_new(dicomList[currentList
[orderedImageList]])

    ;read in patient name and series description from appropriate
headers
     im=obj_new('IDLffDICOM',currentImageFile)
    patname=im->getvalue('0010'x,'0010'x, /no_copy)
    if ptr_valid(patname[0]) then arrStruct.patname=*patname[0]
    seriesname=im->getvalue('0008'x,'103E'x, /no_copy)
    if ptr_valid(seriesName[0]) then arrStruct.se_desc=*seriesName[0]
    sFileList=[sFileList,arrStruct]
    obj_destroy,im
    ptr_free, patname, seriesname
   endfor
endfor

nfiles=n_elements(sFileList)
sfileList=sFileList[1:(nFiles-1)]

end
```

Best Wishes,
Anne Martel
