Subject: Re: outputting 2D arrays into a txt file
Posted by Russell[1] on Mon, 13 Feb 2012 20:08:41 GMT
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On Feb 12, 7:00 pm, Kemal Ramic <krami...@gmail.com> wrote:
> Hello guys,
> I am completely new to IDL. I have problems with outputting 2D arrays
> into a txt file. What i have to do is run the procedure a 1000 times,
> and the procedure is looking for a number of clumps hit in X-ray and
> optical area, and it goes through different inclination and azimuthal
> angle, and stores all the values into a 2D arrays, one for X-ray and
> one for Optical region. Here is my code:
>
> function satellite,clumps,nasteps,nisteps,fnamex,fnameo
>
> azi=0.0
> observer_azi=0.0
> ii=0.0
> observer_i=0.0
>
> lines_x=fltarr(nisteps+1,nasteps+1)
> lines_o=fltarr(nisteps+1,nasteps+1)
>
> ; each row has same azi
> for i=0L,nasteps-1 do lines_x[0,i+1]=(360.0/(nasteps-1))*i
> for i=0L,nasteps-1 do lines_o[0,i+1]=(360.0/(nasteps-1))*i
>
> ; each column has same inclination from -90 to 90
> for i=0L,nisteps-1 do lines_x[i+1,0]=(180.0/(nisteps-1))*i-90.0
> for i=0L,nisteps-1 do lines_o[i+1,0]=(180.0/(nisteps-1))*i-90.0
>
> for j=1L,nisteps do begin
>
> for i=1L,nasteps do begin
>
> intersect_x=fltarr(2,50)
> intersect_o=fltarr(2,600)
>
> print, 'Azimuth=', lines_x[0,i]
> print, 'Inclination=', lines_x[j,0]
>
> line_sphere_test,clumps,lines_x[0,i],lines_x[j,
> 0],intersect_x,intersect_o
> print, moment(intersect_x[0,*])
> print, moment(intersect_o[0,*])
>
> lines_x[j,i]=(moment(intersect_x[0,*]))[0]
> lines_o[j,i]=(moment(intersect_o[0,*]))[0]

```
>                print,'end of a step'
>
>         endfor
>  endfor
>
>  openw,1,fnamex
>  openw,2,fnameo
>  for j=0L,nasteps do begin
>
>         printf,1,lines_x[*,j]
>         printf,2,lines_o[*,j]
>
>  endfor
>  close,1
>  close,2
>
>  return, lines_o
>
>  end
>  and this is how i run the code 1000 times:pro run_satellite
>
>  N = 1000
>  root='datarun5_kemal'
>  nasteps=3
>  nisteps=3
>
>  for i=0,N-1 do begin
>
>         fxray=root+strtrim(i,2)+'_xray.txt'
>         fopt=root+strtrim(i,2)+'_opt.txt'
>
>         clumps=clumps_generator(1000,0.5,2,30,0.02,1.5)
>
>         test=satellite(clumps,nasteps,nisteps,fxray,fopt)
>
>  endfor
>
>  return
>  end
>
>  The problem that occurs is the way tables(arrays) are formated. First
>  it doesnt output 1000 txt files for each, but it crams them up in a
>  few, and then I cant figure out formatting at all. What i want is
>  having them, in tables where i can later go through each column, and
>  analyze data. Can somebody please help me?
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So, everything have will probably work just fine if you simply add some formatting to your data. IDL will accept both the ForTran and C-

style formats, personally I use the ForTran ones. If you're not familiar with them, here's a quick run down of the basics.

F = floating point (or double)
I = Integer (or long)
E = exponential notation (such as 4.22E+01)
X = white space

For the floats, you use the notation Fx.y where x = total number of characters (including + or - sign, and decimal point), and y = number of digits after the decimal point. So F5.3 would be a format of 4.221.

For the integers, you simply do Ix where x = number of characters (including + or - sign). So I3 would be a number like 888.

For exponential notation, you do Ex.y, where x=total number of characters (including +/- sign, decimal point, the big "E", another +/- sign for the exponent, and 2 more characters for the exponent). SO the format E10.4 would be 1.2345E+02.

For white space, you do nX, where n is the number of white spaces you want.

Suppose you have data within IDL of the form: x=1.03348475627687495d0, y=4L, z=-2.304E-03 and wnat to write them to (either a file or formatted print to the screen), you could do:

printf,lun,x,y,z,f='(F5.3,1X,I1,1X,E10.3)'

This is on the tip of the iceberg, have a look at:

http://physics.nyu.edu/grierlab/idl_html_help/files12.html#w p168597

-Russell
