IDL Tutorials

Day 4

Henry (Trae) Winter

winter@physics.montana.edu

http://solar.physics.montana.edu/winter/idl_tutorial/2003/index.html

Today's Topics

- Writing and reading to a text file
- Using the FORMAT keyword

Opening a Textfile

- First you have to open a file. This is done with some variation of the open command.
  - openr ;Opens a file to read.
  - openw ;Opens a file to write.
  - openu ;Opens a file for updates.

  Syntax:

  >openw,lun,"filename.ext", /OPTIONAL_KEYWORDS

  lun: A number or a variable containing a number for the "logical unit number". Just a way for IDL to manage files
- Important keywords
  - /APPEND ;Starts writing at the end of an existing file instead of overwriting the file.
  - /GET_LUN ;IDL assigns a number for the variable lun

Writing to a Textfile

- Once the file is open you can write to it just like writing to the screen, except you use the printf procedure

  Syntax:

  >printf, lun, “Stuff to be printed” ,”More stuff”, FORMAT=“(2A12)”

- Once your finished with the file you need to close it

  >close, lun ;Closes the file associated with lun

  >close, /ALL ;Closes all open files

Using the FORMAT Keyword

- The FORMAT keyword allows you to format the data output

Syntax:

>…, FORMAT='(5A6)'

Formats the next 5 strings with six characters each

>…, FORMAT='(3F7.3)'

Formats the next 3 numbers. 7 total digits (including a minus sign if needed, and decimal) and 3 digits past the decimal point.

>…, FORMAT='(3D7.3)'

Does the same as above except with double precision

>…, FORMAT='(2A6, 1D7.2, A5)'

The expressions in the print statement will be formatted:

First two are strings, 6 characters each.

Next expression is a double with 7 total characters and 2 past the decimal.

The last is a string with 5 characters

Reading a Textfile

- Open a file using the openr procedure
- Ascii files can be read with a wide array of procedures and functions.
- Most common is readf

  >readf,lun,var1,var2, FORMAT='(some format)'
- Once your finished with the file you need to close it, again.

Homework Assignment

- Download extract_text to your directory
- Rename it something uniq
- Put a header template on it and fill it out
- Make documentation notes about what each line does.