
Subject: Re: how read a file of complex?

Posted by [davidf](#) on Fri, 02 Jan 1998 08:00:00 GMT

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Nando Iavarone (iavarone@axpba0.ba.infn.it) provides the first interesting problem of the New Year when he writes:

> I have a data-file containing a matrix. Each element of matrix has the
> form(real part, imaginary part)[1] with each one LONG.
>
> 1) How create a matrix with structure [1] to read in a single pass the
> file?

> [Slow code clipped.]

For an m-by-n matrix of real-imaginary pairs of long integers, how about something like this:

```
FUNCTION Read_It, filename, m, n

    ; Read the data all at once.

    data = LonArr(m*n*2)
    OpenR, lun, filename, /Get_Lun
    ReadU, lun, data
    Free_Lun, data

    ; Reform to align real data in column next to imaginary data.

    colData = Reform(data, 2, m*n)

    ; Create vectors of real and imaginary values.

    real = Reform(colData[0,*])
    imag = Reform(colData[1,*])

    ; Make complex numbers out of real and imaginary parts.

    complexData = Complex(real, imag)

    ; Reformat the complex data into a matrix and return.

    RETURN, Reform(complexData, m, n)
END
```

Call this function like this:

```
myData = Read_It('mydata.dat', 300, 500)
```

I've taken more steps then necessary here (as someone is sure to point out), but I tried to give you the sense of how this might be done by taking advantage of IDL's array operations instead of loops.

Cheers,

David

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