
Tutorial 9: Importing and Exporting Data into *Mathematica*

This tutorial tells how to import and export data into *Mathematica*, which is unnecessarily difficult in *Mathematica*. Here, I input a file call FS_data.txt which is located on the "c" drive at c:\Temp\FS_data.txt.

■ Importing Data

In order to import the data, you need to properly format the text file with the correct end-of-line character and delimiter. Below is one method to properly format the text file, I use here a space delimiter with an end-of-line command after each row. There are other ways to do this properly.

- 1) In origin, export your data with comma, space option. Export as *.dat file
- 2) In MsWord, find the comma and replace them with 1 space.
- 3) Save a *.dat file in Word using "Save .txt with line". This provide the correct format for the import into *Mathematica*

The data format is two columns by n rows. I use the function OpenRead to import the data.

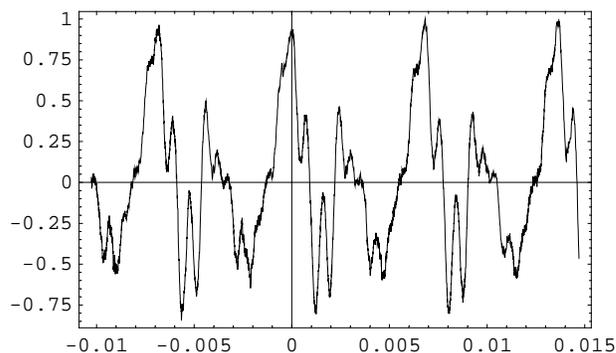
```
f = OpenRead["c:\Temp\FS_data.txt"]
data = ReadList[f, {Number, Number}];
Close[f]

InputStream[c:\Temp\FS_data.txt, 7]

c:\Temp\FS_data.txt
```

Now I can plot the data

```
ListPlot[data, Frame -> True,
PlotRange -> {All, All}, PlotJoined -> True];
```

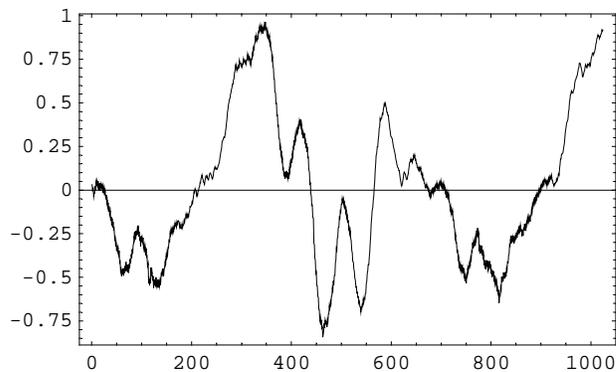


■ Separate data

Now I wish to separate the data to just plot one column

```
idata = Table[data[[i, 2]], {i, 1, 1024}];

ListPlot[idata, Frame -> True,
  PlotRange -> {All, All}, PlotJoined -> True];
```



■ Write Data to File

One can also write arrays in *Mathematica* to text files as well. Here I will write ordered pairs to a file called "intal.tx" at c:\. The first command opens the file at path "f", the second writes the data to the path, and the third command closes the path "f".

```
f = OpenWrite["c:\intal.txt", FormatType -> OutputForm]
OutputStream[c:\Intal.txt, 4]

Do[
  Write[f, FortranForm[N[Re[intλ[[i, 1]]]]],
    " ", FortranForm[Re[intλ[[i, 2]]]] ], {i, 1, num}]

Close[f]

c:\Intal.txt
```

To get proper formatting using scientific notation, I use FortranForm for the output.

? FortranForm

FortranForm[expr] prints as a Fortran language version of expr.