`GnuDisplay.m` — A Package for generating Gnuplot 3.0 input from `-Graphics-` objects of Mathematica 2.0

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1 Description

The GnuDisplay Package generates `Gnuplot 3.0` inputfiles from `-Graphics-` Objects of Mathematica 2.0. Up to now only `Line` and `Point` objects are converted and the `PlotLabel` is included. The Version is 1.0 from June 13, 1992 and public–domain. Changed versions must not be distributed without prior written permission.

Send bug reports and suggestions to `msch0073@rz.uni-hildesheim.de`.

2 How it works

The little Procedure just takes the `Line[]` and `Point[]` graphic–primitives and write them point by point in the `.pt` and `.lin` files. A little Gnuplot–Program is generated to read in these files and generate the desired output. The `PlotLabel` is also included in this file.

3 Options

With `Term -> terminalname` you select the desired terminal type as described in the Gnuplot manual. Default is `latex` (e.g. emtex, latex, eepic, fig, . . .).

The `LinesPoints -> {linestyle, pointstyle}` option chooses the plotstyles for lines and points as described is the Gnuplot–Manual.

With `Size -> {width, height}` you select the size of the resulting figure with caption in cm. Default is `{12,10}`.

With `PlotLabel -> "title"` you are able to overwrite any `PlotLabel` of the plot.

4 A short example

The Mathematica input (remember to use the filename without extension):

```
<<GnuDisplay.m;
g1=Plot[{Sin[x],Cos[x],-Sin[x]},{0,2 Pi}];
g2=ListPlot[Table[{i Pi/2,0},{i,0,4}]];
g3=Show[g1,g2,
    PlotLabel->"a little plot"];
GnuDisplay["sinplt",g3,Term->latex];
```

The gnuplot processing is quite simple. Just type `gnuplot sinplt.gnu` (You could also do this in Mathematica: `!gnuplot sinplt.gnu`). The Plot i stored in the `.plt`–File. Dont be worried about the lots of files being generated (namely `.gnu, .plt, .pt, .lin`) they are used to store the program, the Gnuplot output, the points and the lines.

The plot is included with:

```
\begin{figure}
  \begin{center}
    \input{sinplt.plt}
  \end{center}
\end{figure}
```

I didnt include a sampleplot in this release because it would have increased the size to 150kB.