Creating Graphs in LaTeX

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1. Basic Syntax

The package:

```
\usepackage{pgfplots}
\pgfplotsset{compat=1.8}
```

The syntax:

```
\begin{tikzpicture}
\begin{axis}[xlabel=...., ylabel=....]
\addplot table[x=Load, y=Efisiensi] {datayohan.dat};
\end{axis}
\end{tikzpicture}
```

The writing of data in datayohan.dat follows this format:

name1	name2
a1	b1
a2	b2

for example:

Load	Voltage
100	220
200	217

2. Syntax

```
%preambule
\usepackage{pgfplots}
\pgfplotsset{compat=1.8}

%Syntax for style 1

\begin{center}
\begin{tikzpicture}
\begin{axis}[
{xlabel=Beban (W)},
{ylabel=Voltage (V)},
/pgf/number format/.cd, use comma, 1000 sep={.}]
%comment--> to convert decimal separator in comma format
\addplot table[x=Load,y=Efisiensi] {datayohan.dat};
\node[label={95:{(1000,89.5)}},circle,fill,inner sep=2pt] at (axis cs:1000,89.5) {};
\end{axis}
\end{tikzpicture}
\end{center}
```

```
%Syntax for style 2

\begin{center}
\begin{tikzpicture}
\begin{axis}[
{xlabel=Beban [W]},
{ylabel=Efisiensi},
yticklabel=$\pgfmathprintnumber{\tick}$\,\%,
nodes near coords,/pgf/number format/.cd, use comma, 1000 sep={.},
%comment--> to convert decimal separator in comma format
legend pos=south east, %comment--> legend position
]
%title={Efisiensi Inverter dengan Pembebanan sampai dengan 1.000 W}
\addplot table[x=Load,y=Efisiensi] {datayohan.dat};
\draw [dashed] (axis cs:0, 80) -- (axis cs:1000,80);
\node[label={90:{Efisiensi di atas 80 \%}}] at (axis cs:600,60) {};
%\addlegendentry{$\eta$~inverter}
\end{axis}
\end{tikzpicture}
\end{center}
```

3. datayohan.dat

You can create (.dat) file in notepad. You can also create in excell than save as (.dat).

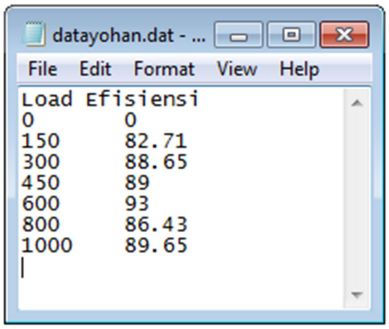
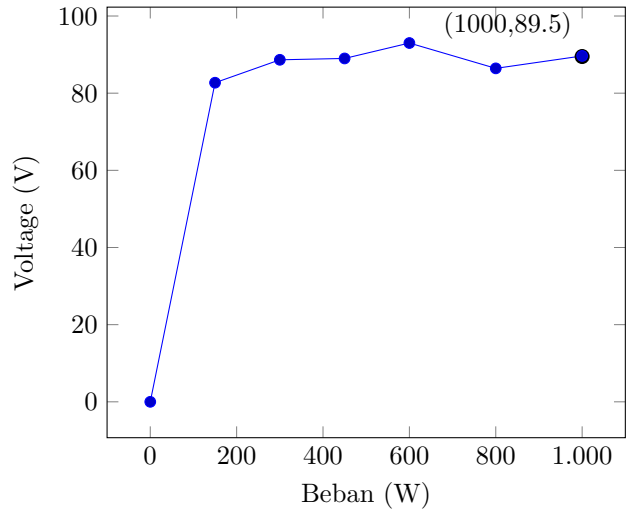


Figure 1: Data is stored in datayohan.dat

4. Results

4.1. Style 1



4.2. Style 2