A Basic and Brief Introduction to LaTeX

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1 Basic Steps

1. Select a text editor and create a standard ascii text file containing your text and the embedded LaTeX commands. Text editors supported by the Econometrics Laboratory include **vi, emacs, jove, pico**, and the Sun Open Windows **texteditor**. The filename must end in the TeX extension, **.tex**. For example, your file could be named **myfile.tex**.

2. You can compile and preview a **.tex** file at any time. To compile a TeX document, use the TeX compiler. To compile a LaTeX document, use the LaTeX compiler:

```
    % tex myfile          (for TeX documents)
or  % latex myfile        (for LaTeX documents)
```

   For purposes of this tutorial, we are using LaTeX rather than TeX . Note that both TeX and LaTeX documents use the **.tex** extension, so you have to know the specific document type and use the compilers accordingly.

   Note that the **.tex** extension is optional in the compiler command. Because TeX and LaTeX will only compile files ending in **.tex**, it is not necessary to include the extension in the command line.

3. The result of a successful compiler run is a file that contains the same name as the original LaTeX file, but now ends with a **.dvi** extension (**dvi** stands for "device-independent"). You may now preview your document, using the device-independent viewer called **xdvi**.

```
% xdvi myfile &
```

Note again that the extension is not required on the command line. The **xdvi** viewer will only operate on files ending with the **.dvi** extension.

Also note that by using the ampersand at the end of the command line, the viewing process is placed in the background, which frees your console for other commands. On the Suns, I recommend that you maintain your editing session in one window, keep another window open for compiler commands, and keep the previewer window open (or iconified). As you edit your document, you can save it in your editing window and compile in your command line window. As the file is recompiled, the viewer will update the display for you automatically.

4. When you want to print the document, use the command

```
% dvips myfile
```

   Again, the extension is not required; the **dvips** command only works on device-independent (**.dvi**) files.

5. If you are sending the file to someone or plan to upload it to a web site for viewing, then convert the file to postscript first. Postscript is a universal printer language, so anyone with a postscript printer can print a postscript file, regardless of the hardware and software that initially produced the file. Use **dvips** to produce the postscript file:

```
% dvips -o myfile.ps myfile
```

   You have probably already guessed that **dvips** stands for "device-independent postscript". The command used with the **-o** option produces a postscript file from the **.dvi** file.

   The postscript file that results is viewable in postscript viewers like **ghostview** and **pageview**. It is also printable with the Unix print command:

```
% lpr myfile.ps
```

   Note that in this case, you must specify the **.ps** extension; the **lpr** command requires the full filename.

The **lpr** and **dvips** print commands given above assume that you are using your default printer, which for most people in the Econometrics Laboratory is **lp1** in 616. If you are in the dissertation cluster, you would want to redirect your output to the printer in 614, so you would do:

```
        % dvips -Plp5 myfile
or      % lpr -Plp5 myfile.ps
```

2 A Simple Document Template

What follows can be created in an editor in your home directory and saved as a template for your basic document.

```
% A '%' character causes TeX to ignore all remaining text on the line,
% and is used for comments like this one.

\documentstyle{article}    % Specifies the default document style.
%\documentstyle[times]{article}   % Uses Times Roman font.

                           % The preamble begins here.
\title{}                   % Declares the document's title.
\author{Grace Katagiri}    % Declares the author's name.
%\date{}                   % Use this command to specify date;
                           % default is today's date.

\begin{document}           % End of preamble and beginning of text.

\maketitle                 % Produces the title.



\end{document}
```

3 Where to Go From Here

Follow-up seminars will include how to do mathematics and tables and an introduction to LaTeX2e .

In the meantime, if you want to learn about metacharacters, how to change fonts, how to do lists, how to use footnotes, or any of the other special

formatting environments, you can buy LesLie Lamport's book, *A Document Preparation System: LaTeX User's Guide and Reference Manual*, Addison-Wesley, or check out Phil Spector's great slides on LaTeX on our web site. Go to *http://elsa/eml/emlsoftware.html* and scroll down to the bottom, where you will find our tutorials.

There are also good sources for TeX and LaTeX on the web. The best is the Comprehensive TeX Archive Network (CTAN), at *http://jasper.ora.com/ctan.html*.