

# Using Sweave and Beamer, Stat 8801

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## 1 Linux

If you are using the School of Statistics Linux network, all the software you need is already installed. Use this recipe:

1. Create your file, for example `myfile.Rnw` with the `.Rnw` extension. You can use any editor you like, such as `kate` or `vim` or `emacs`.
2. First, run the `.Rnw` file through R:

```
% R CMD Sweave myfile.Rnw
```

This will create a new file called `myfile.tex`

3. If you are not using Sweave, you would have created `myfile.tex` directly. You need to convert it to a `.pdf` file using

```
% pdflatex myfile
```

4. You can view the `.pdf` file using the command:

```
% konqueror myfile &
```

As you update/change the file, `konqueror` will automatically update as well.

## 2 Windows

As usual, using Windows is (much) harder. First, you need to get the software. Once the software is installed, however, Windows is no harder than Linux.

### 2.1 Getting the software

1. Get and install a version of  $\text{T}_{\text{E}}\text{X}$ . I suggest using Miktek, <http://miktex.org/2.7/Setup.aspx>. This is a very large download, so you may prefer to borrow a CD from me. Use all the default settings. The default installation includes `beamer`.
2. Get and install the latest version of R from <http://cran.r-project.org/>. If you are installing version 2.6.1, for example, by default the program will be put in the directory `C:\Program Files\R\R-2.6.1`. Use all the default settings.
3. Start R, and enter the command

```
> install.packages("Sweave")
```

to get the Sweave package. Quit from R.

4. Here is some ikky Windows stuff. Right-click your mouse button on the desktop icon "My Computer", and select "Properties." Click on the "Advanced" tab, and then click on "Environmental Variables". On the next screen, scroll down in the list of "System variables", and highlight the variable "Path". Click on the "Edit" button. The variable value will be a very long string. You will *add the following to the end of the string*:  
;C:\Program Files\R\R-2.6.1\bin. Don't forget the initial semi-colon to separate this location from the others in the list. Also, by the time you read this the current version of R is likely to be different from R-2.6.1, so you will need to put in the correct path. Whenever you update R you must update this string as well.
5. You will need an editor. You can use Notepad, Tinn-R, or a special purpose editor such as <http://www.texniccenter.org/>. The Google search "latex editor Windows" will give you other alternatives.

## 2.2 Processing the .Rnw file or the .tex file

To convert a .Rnw file to a .tex file, open a DOS command window (e.g., From Start→Run, type cmd), change to the directory in which you have put the .Rnw file, and then type

```
> R CMD Sweave myfile.Rnw convert .Rnw to .tex  
> pdflatex myfile.tex convert .tex to .pdf
```

You can then view the .pdf file in Acrobat Reader, for example.

The editors may have buttons that will automate the pdflatex and the viewing pdf steps. I haven't figured out how to customize buttons to do the Sweave part as well.