

L^AT_EX for Math and Science

Week 5: packages

Justin Harford

October 12, 2009

Overview

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What are
packages

Installing
packages

Example
Packages

In this presentation, we will cover the following:

1 What are packages

2 Installing packages

3 Example Packages

What are packages

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Example
Packages

Packages:

- add functionality and commands
- make existent commands easier to input

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Example
Packages

A few examples would include:

- `geometry` is useful for setting page dimensions EG page size, margins etc
- `boxedminipage` enables you to put line borders around blocks of text
- `polynom` makes it easy to work out and display long division

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Now the next part

Here is how to install packages

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Many distributions offer the ability to install packages through a more automated process

Example

Downloading

Many distributions offer the ability to install packages through a more automated process

Example

- The miktex distribution under Windows has a package manager. Just call the package in a document, and if it is not found, the compiler it asks you if you would like it to install the package.

Downloading

Many distributions offer the ability to install packages through a more automated process

Example

- The miktex distribution under Windows has a package manager. Just call the package in a document, and if it is not found, the compiler it asks you if you would like it to install the package.
- TeXLive under linux has the option to install packages through apt-get and other repositories.

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Many distributions offer the ability to install packages through a more automated process

Example

but not all distributions have these options working properly

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Many distributions offer the ability to install packages through a more automated process

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So we will discuss a way that works no matter what the occasion.

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Packages

Downloading is easy!

- 1 In google type “packagename.sty”. . . the first result is usually what you want.
- 2 save the package in the tex directory (see next slide) keeping the extension .sty
- 3 using a terminal shell, run the “texhash” command over the tex directory

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finding the tex directory

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This varies from OS to OS but the thing we call a “tex tree” will tend to look something like

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finding the tex directory

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This varies from OS to OS but the thing we call a “tex tree” will tend to look something like

texmf/tex/latex

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finding the tex directory

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This varies from OS to OS but the thing we call a “tex tree” will tend to look something like

texmf/tex/latex

There is usually a **permanent directory** that your tex distribution creates upon installation and a **“temporary directory”** which you can create afterwards (used more in some distros than others).

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finding the tex directory

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finding the tex directory

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Under Mac OS X this is the home directory:

/library/texbf/tex/latex

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The permanent tex directories according to OS are:
MiKTeX under Windows:

```
C:\Program Files\MiKTeX 2.7\tex\latex
```

TeXLive under Mac OS X:

```
(/usr/local/texlive/2008/  
texmf-dist/tex/latex/graphics/graphics.sty
```

TeXLive under Linux:

```
/opt/texlive/texmf-local
```

If you cannot access any of these directories, you can put the sty file in the same directory with the tex file.

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examples

Now let's consider a few example packages.

Geometry

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Geometry is a useful package for setting page formatting such as margins.

Example

```
%for one-inch margins:  
\usepackage{geometry}  
\geometry{rmargin=1in,lmargin=1in,  
          tmargin=1in,bmargin=1in}
```

polynom

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Don't you wish you had polynom when you were in grade school ey?

$$\begin{array}{r} x - 1 \\ x^2 - x + 3 \overline{) x^3 - 2x^2 + 9x - 10} \\ \underline{- x^3 + x^2 - 3x} \\ - x^2 + 6x - 10 \\ \underline{x^2 - x + 3} \\ 5x - 7 \end{array}$$

So what does the code look like?

polynom

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Here is the code:

```
\polylongdiv{x^3 - 2x^2 + 9x - 10}{x^2 - x + 3}
```


boxedminipage

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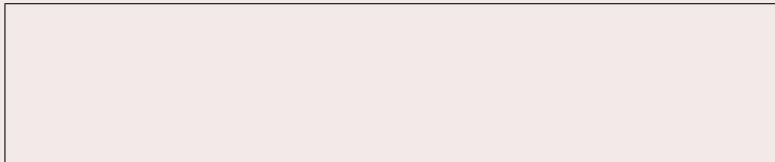
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boxedminipage

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boxedminipage?

- Have you ever wondered how we got blocks of text in this beamer to appear boxed?

boxedminipage

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boxedminipage?

- Have you ever wondered how we got blocks of text in this beamer to appear boxed?
- This is the work of none other than the package, `boxedminipage`, which we show now.

boxedminipage

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The code:

```
%preamble
\usepackage{boxedminipage}
%document
\begin{boxedminipage}{\textwidth}
Text within the box
\end{boxedminipage}
```

The obligatory argument `\textwidth` refers to the width of the box, telling the compiler to make the box width same as the text width.

boxedminipage

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With every .sty file, there is a .pdf file, from which one can find out everything there is to know about any given package. Simply googling things like “geometry.pdf”, “boxedminipage.pdf” or “envlab.pdf” will give you a manual for those packages. Try it!