Org-Mode Beamer Example

Derek Feichtinger

November 22, 2022

Outline

Topic

An alternative title page for a section

Introduction

Instructions

Look at the Org source file to learn about available options. I also added many comments explaining the usage, there.

- generating presentation notes.
- inserting a table of contents with the current section highlighted at the beginning of each section.
- configuring transparency of yet uncovered overlay elements.

Debugging

Look at the pdflatex messages in the buffer named `*Org PDF LaTeX Output*`
You may want to run the TEX compilation interactively with something like

```
pdflatex -shell-escape beamer-example.tex
```

to get the interactive LATEX shell help

Org mode version information

```
Emacs version:
GNU Emacs 28.1 (build 1, x86_64-pc-linux-gnu, GTK+ Version 3.24.33, cairo v
 of 2022-08-13

org version: 9.5.5
```

Sources and Links

- I started this example based on the Worg hosted example by Eric S. Fraga
- Basic LaTeX Beamer links
  - An introduction to Beamer (German)
  - great beamer reference card by Fabrice Niessen on GitHub.
  - nice link for choosing a theme: beamer theme matrix
  - nice example of beamer features (pure Latex)
  - Presentations using Latex - the Beamer Class by Amber Smith. Excellent introduction showing many beamer features.

A simple slide

This slide consists of some text with a number of bullet points:

- the first, very important, point!
- the previous point shows the use of the special markup which translates to the Beamer specific *alert* command for highlighting text.

The above list could be numbered or any other type of list and may include sub-lists.

A more complex slide

This slide illustrates the use of Beamer blocks. The following text, with its own headline, is displayed in a block:

Theorem (Org mode increases productivity)

- *org mode means not having to remember LaTeXcommands.*
- *it is based on ascii text which is inherently portable.*
- *Emacs!*

Tables

The size of the table font can be chosen by giving a `#+LATEX: \small` command (or `\tiny` or `\footnotesize`)

WNs	Processors	Cores/node	HS06/node	total cores	total HS06
20	2*Xeon X5560	8	118	160	2360
11	2*E5-2670 2.60GHz	16	263	176	2893
4	2*AMD 6272 2.40GHz	32	241	128	964
35				464	6217

Exporting beamer presentations

Frequently there is a need to convert a beamer presentation to MS powerpoint for sharing or contributing slides

The best solution known to me as of 2022 is

1. open the PDF using `libreoffice --impress`
2. Save as pptx
   - may need to adapt slides or copy content to another template

Topic

block environments

a block

```
\begin{block}{A block}
...
\end{block}
```

an alert block

```
\begin{alertblock}{An alert block}
...
\end{alertblock}
```

an example block

```
\begin{exampleblock}{An alert block}
...
\end{exampleblock}
```

colorbox

a block containing a colorbox

The beamercolorbox text and an Org example block

```
\begin{beamercolorbox}[shadow=true, rounded=true]{eecks}
...
\end{beamercolorbox}
```

a color box test made with inline LaTex code

Just some text.

A `fullframe` is a `frame` with an ignored slide title. `frametitle` is set to the empty string

- A headline with an `ignoreheading` environment will only have its contents displayed in the output. The heading text itself is ignored, and no heading bar is shown.

  - Contents are not inserted in any `frame` environment. It makes no sense to use this as major element for a slide.

- ignoreheading is useful as a structural element in order to again place normal text after a previous element (like a block or a column environment).

`structureenv` environment

- For highlighting text.
- To help the audience see the structure of your presentation.
- On this slide you should see that the text of the upper items is differently typeset from the bottom item in the *structureenv*.
- you need to use `ignoreheading` (like here) in order to then insert some more normal text after the structureenv.

`definition` environment

Definition (definition)

Contents of the definition

`proof` environment and revealing line by line

proof.

- Suppose p were the largest prime number.

`proof` environment and revealing line by line

proof.

- Suppose p were the largest prime number.
- Let q be the product of the first p numbers.

`proof` environment and revealing line by line

proof.

- Suppose p were the largest prime number.
- Let q be the product of the first p numbers.
- Then $q + 1$ is not divisible by any of them.

`proof` environment and revealing line by line

proof.

- Suppose p were the largest prime number.
- Let q be the product of the first p numbers.
- Then $q + 1$ is not divisible by any of them.
- But $q + 1$ is greater than 1, thus divisible by some prime number not in the first p numbers. □

numbered list over two pages (1)

1. one
2. two
3. three
4. four

numbered list over two pages (2)

Use the `[@N]` syntax to start a numbered list at a certain value.

block A

5. five
6. six
7. seven

block B

8. eight
9. nine
10. ten

long source code over two pages I

Use the `allowframebreaks` Beamer option.

```
(use-package python
  :config (progn
            ;; load my own python helper functions
            (load-file (concat dfeich/site-lisp "/my-pydoc-helper.el"))

            (defun dfeich/python-keydefs ()
              (define-key python-mode-map (kbd "<M-right>")
                'python-indent-shift-right)
              (define-key python-mode-map (kbd "<M-left>")
                'python-indent-shift-left))
            (add-hook 'python-mode-hook #'dfeich/python-keydefs)

            ;; show line numbers on the left for python
            (add-hook 'python-mode-hook 'linum-mode)

            (when (featurep 'flycheck)
              (add-hook 'python-mode-hook 'flycheck-mode))

            (use-package jedi-core
              :ensure t
              :config (progn
                        (autoload 'jedi:setup "jedi-core" nil t)
                        (add-hook 'python-mode-hook 'jedi:setup)
```

long source code over two pages II

```
(setq jedi:complete-on-dot t)
(setq jedi:server-args '("--log" "/tmp/jedi.log"
                         "--log-level" "INFO"))
(when (featurep 'company)
  (defun dfeich/python-mode-hook ()
    (add-to-list 'company-backends 'company-jedi)
    )
  (add-hook 'python-mode-hook 'dfeich/python-mode-hook)))))
```

placing text at the bottom of a page

This text is on top

This text is on the bottom

reducing font size in bullet lists

This is a workaround to have the bullet list hierarchy not suddenly produce bigger font for the lower hierarchy, if you only reset the main font.

```
#+LATEX: \footnotesize \let\small\footnotesize
```

- example
  - example
    - example
  - example
- example

Text colors

Examples for colored text (using the xcolor package): Text1 Text2 Text3 Text4 Text5
TODO: The Beamer class loads the `xcolor` package by default. By including the xcolor option `dvipsnames` in the beamer class definition, we should also be able to use those names:

```
#+LaTeX_CLASS_OPTIONS: [t,10pt,xcolor={dvipsnames}]
```

But this does not seem to work. Cyan Emerald

Topic

Highlighting text

The double @@ can be used to enclose active code. Here we use it to specify beamer code that will highlight text by specifying an overlay.
A useful feature

Highlighting text

The double @@ can be used to enclose active code. Here we use it to specify beamer code that will highlight text by specifying an overlay.
A useful feature

Lists

For the first list we use an `#+ATTR_BEAMER: :overlay +-` specification.
It acts like `\begin{itemize}[<+->]`. So, it will cause the list items to appear one after the other.

- item 1

For the second list we classify each line by angular brackets to explicitely define the order of revealing each item.

- item 1

Lists

For the first list we use an `#+ATTR_BEAMER: :overlay +-` specification.
It acts like `\begin{itemize}[<+->]`. So, it will cause the list items to appear one after the other.

- item 1
- item 2

For the second list we classify each line by angular brackets to explicitely define the order of revealing each item.

- item 1
- item 3

Lists

For the first list we use an `#+ATTR_BEAMER: :overlay +-` specification.
It acts like `\begin{itemize}[<+->]`. So, it will cause the list items to appear one after the other.

- item 1
- item 2
- item 3

For the second list we classify each line by angular brackets to explicitely define the order of revealing each item.

- item 1
- item 2
- item 3

Basic revealing of blocks using BEAMER_act

First Block

- this is visible from the beginning

Basic revealing of blocks using BEAMER_act

First Block

- this is visible from the beginning

Second Block

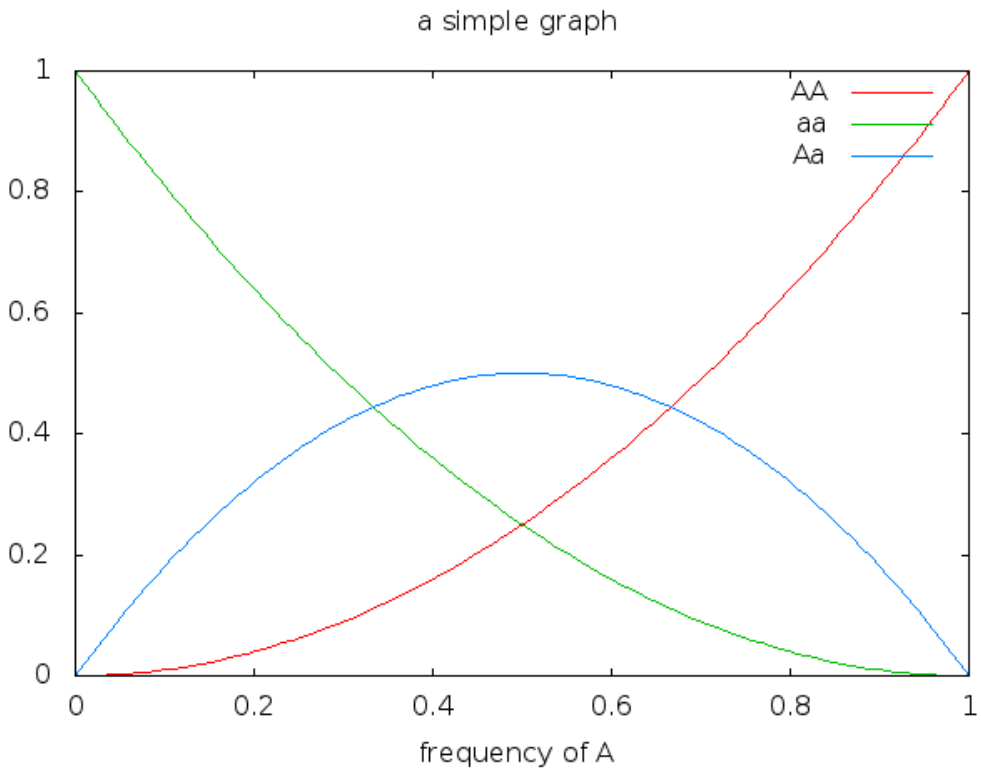
- and this one is revealed afterwards by using the BEAMER_act keyword in the PROPERTIES section.

revealing a picture

A picture will be uncovered next

revealing a picture

A picture will be uncovered next



Explicitely defining the transparancy of covered text

First Block

- this is visible from the beginning

Explicitely defining the transparancy of covered text

First Block

- this is visible from the beginning

Second Block

- this is initially invisible since we used `\setbeamercovered{invisible}` for this frame
- then it is revealed again using the BEAMER_act keyword in the PROPERTIES section.

different transparency setting and default overlay

First Block

this is visible from the beginning. Note that we specified another transparency compared to the previous slide.

Second Block

Initial visibility defined by `\setbeamercovered{transparent=30}`.

Third Block

And a third block

different transparency setting and default overlay

First Block

this is visible from the beginning. Note that we specified another transparency compared to the previous slide.

Second Block

Initial visibility defined by `\setbeamercovered{transparent=30}`.

Third Block

And a third block

different transparency setting and default overlay

First Block

this is visible from the beginning. Note that we specified another transparency compared to the previous slide.

Second Block

Initial visibility defined by `\setbeamercovered{transparent=30}`.

Third Block

And a third block

dynamic transparency setting and default overlay

First Block

this is visible from the beginning. We defined `\setbeamercovered{highly dynamic}` so that other blocks are slowly getting less transparent.

Second Block

a second block

Third Block

And a third block

Fourth Block

And a fourth block

dynamic transparency setting and default overlay

First Block

this is visible from the beginning. We defined `\setbeamercovered{highly dynamic}` so that other blocks are slowly getting less transparent.

Second Block

a second block

Third Block

And a third block

Fourth Block

And a fourth block

dynamic transparency setting and default overlay

First Block

this is visible from the beginning. We defined `\setbeamercovered{highly dynamic}` so that other blocks are slowly getting less transparent.

Second Block

a second block

Third Block

And a third block

Fourth Block

And a fourth block

dynamic transparency setting and default overlay

First Block

this is visible from the beginning. We defined `\setbeamercovered{highly dynamic}` so that other blocks are slowly getting less transparent.

Second Block

a second block

Third Block

And a third block

Fourth Block

And a fourth block

plain text between two blocks

block 1

The first block

plain text between two blocks

block 1

The first block

A plain text paragraph. I only managed to get the right uncovering behavior by using `#+LATEX: \onslide<2->` in front of the paragraph.

plain text between two blocks

block 1

The first block

A plain text paragraph. I only managed to get the right uncovering behavior by using `#+LATEX: \onslide<2->` in front of the paragraph.

block 2

The second block

Topic

Summary

- org is an incredible tool for time management
  - it is also excellent for composing documents
- Beamer is a very powerful LaTeX package for presentations
- the combination is unbeatable: Org Beamer
  - ease of composing slides fast and being able to use all the other Org features
  - though, it takes a bit of a learning curve and examples to copy from

Appendix

SOME BACKUP SLIDES. The Appendix will not be listed in the table of contents.

Backup slide 1

Some backup info

Backup slide 2

These details are not part of the main talk.