Fantytooltips demo

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What can you find in this file?

- Demo (math fiction) which shows how the cooperation between preview and fancytooltips package can be used to insert popup previews for equations, theorems and definitions into a presentation – see for example Figure 1 (move the mouse to the blue mark).
- Explanation how we achieved this behaviour.
- Simple howto.

Demo: Definitions

Definition 2.1 (Excellent number)

Let n be positive integer. The number n is said to be *excellent*, if the last digit of the number α defined by the relation

$$\alpha = n^2 + \int_0^{2\pi} \sin x \, \mathrm{d}x \tag{1}$$

equals 1.

(Note that from (1) it follows that α is integer, see 2.)

Definition 2.2 (Happy number)

Let n be positive integer. The number n is said to be *happy*, if the last digit of the number n equals 1.

Demo: Example and comments

Example 2.3

The number 1 is both happy and excellent. The number 129 is excellent but not happy. This follows immediately from the Definitions 2.1 and 2.2.

Fancytooltips comment

Put the mouse pointer to the graphical symbol following definitions numbers. You will see the definitions again. We can also refer to equation, like this: (1) (note that you see the whole enclosing definition, not only the equation). Note that the same reference has been used on previous slide and the tooltip has not been attached, since the reference to (1) on the previous page is at the same page as its target.
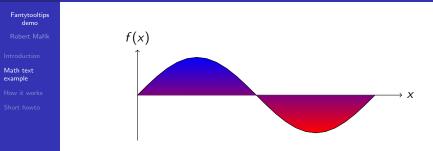
Demo: A picture

Figure: Sine curve

On one of the previous slides (in Definition 2.1) we defined *excellent* number in terms of the number α defined by relation (1). Below we introduce a simple characterization in Theorem 2.5.

Demo: Newton–Leibniz theorem

Theorem 2.4

Let $f(x)$ be integrable in the sense of Riemann on $[a, b]$. Let $F(x)$ be a function continuous on $[a, b]$ which is an antiderivative of the function f on the interval (a, b). Then

$$\int_a^b f(x)\mathrm{d}x = [F(x)]_a^b = F(b) - F(a)$$

holds.

Demo: Integral term equals zero

Remark 1

It is easy to see that

$$\int_0^{2\pi} \sin x \, \mathrm{d}x = 0. \tag{2}$$

Really, direct computation based on Newton-Leibniz Theorem 2.4 shows

$$\int_0^{2\pi} \sin x \, \mathrm{d}x = [\cos x]_0^{2\pi}$$
$$= \cos(2\pi) - \cos 0$$
$$= 0.$$

(see also Figure 1)

Demo: Main result

Theorem 2.5 (Characterization of excellent numbers)

The positive integer n is excellent if and only if the last digit of the number n is either 1 or 9.

Fancytooltips comment

Since we used `\label{def:excellent-number}` in the Definition 2.1, we can insert a tooltip to the word excellent by using command `\tooltip{excellent}{def:excellent-number}`. In this case the tooltip is activated by hovering the text, not the soap. This is the default behavior of fancytooltips.

Demo: Corollary

Theorem 2.6 (Relationship between happy and excellent numbers)

Each *happy* number is *excellent*.

Fancytooltips comment

The "happy" tooltip is created by
`\tooltip*{happy}{def:happy-number}`. The starred version
causes that the active button is not attached to the text, but is
attached to the mark. The "excellent" tooltip is created by
`\tooltip{excellent}{def:excellent-number}` and hence, the
blue soap is inactive and the text active.

How it works

- We compile the presentation in an ordinary way to get correct labels and references.
- We compile the presentation with preview package and extract displayed equations, theorems, definitions and floats (tables and figures).
- We create a new document which contains those parts extracted in the previous step, which have a label inside.
- We compile the presentation again with redefined `ref` macro. This macro inserts the popup using fancytooltips package.

How to create a presentation with pdfLATEX

Creating tooltips is easy. Simply follow these steps.

- Create presentation with your favorit presentation package, such as web, pdfscreen or beamer.
- Insert

  \usepackage[inactive]{fancytooltips}

  before \begin{document} and

  \FancyHook

  after \begin{document}.
- Use the script fancy-preview to compile the presentation again, i.e. if your file is filename.tex run

  bash fancy-preview filename

  either in Linux terminal or inside MSYS on Windows.
- You may want to customize the script fancy-preview (colors, options for fancytooltips, etc.)

How to create a presentation with dvips

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How it works

Short howto

- This work-flow should still work with dvips, but has been not tested, since it requires Acrobat Professional which is not available on author's platform (Linux). Moreover, the compilation cannot be done automatically, due to the post-processing in Acrobat. You are encouraged to try it by yourselves. Report success of problems to the authors email, please.
- Basically follow the instructions for pdfLaTeX users.
- You have to customize the script `fancy-preview`
  - Replace `pdflatex` by `latex`
  - Add commands which convert `minimal.ps` into `minimal.pdf`
  - Extract the number of pages of the file `minimal.pdf` and pass it as an argument to the fancytooltips package. (You may use `pdftk` or `pdflatex` for this task.)
- Remember that you have to post-process the resulting ps file as described in manual for fancytooltips package.

That's all.

Any problem? Send a *minimal example* to the author of the package.