Abstracts without papers

Using TeX For Educational Publishing

Hans Hagen

It is no secret that we started using TeX to typeset educational materials: it shaped ConTeXt. Currently we still use TeX for projects that relate to education. Although we see a shift to more web based education we also see that print is in high demand for proper reading as well as examination. In this presentation I will show some of our current usage of TeX, for instance in XML to PDF workflows and PDF assembling workflows.

TeX and the art of course maintenance

Lucien Lemmens

A course can be considered as a collection of of elements that are connected and depend on each other. If you change something in element A, it has consequences for element B. References to material outside the notes – software-distributions, wiki-books, websites – generate changes that are outside the control of the maintainer of the course. Others are made by the author: correction of typos, rephrasing, using other examples etc. If not well organized these changes can be very time consuming and have unexpected consequences – adding a few lines in a text can spoil the layout.

Using for instance a 'statistics course' as an example, the structure of the elements in the course: data, math → algorithm → figure, implies a connection between elements in the notes: table, formula → code → graphics. A change in the elements of the course implies a change in the notes.

For the statistical analysis the open source realization of the S-language R is used. Change in the data, keeping the math unchanged, results in changes in the code and the graphics. Giving the changed files the same name after one has archived the files that will be changed, LaTeX and ConTeXt have respectively the packages and the commands to deal with these changes smoothly. When tables are involved LaTeX has an advantage due to the exportation properties of R. A little bit of coding in R allows that the exported table can be read by ConTeXt directly.

A change in the references requires a better organization. The `log-file` gives the indication that something is missing but leads almost always to a time consuming procedure to get the references correct. A hidden file that shows the connections requires discipline to make but once it exists, it improves the maintenance of the notes considerably. Two examples will be shown and discussed: the first one is a report, made by a student, in LaTeX and R, by a student, on a simulation. The second one is a subsection of my notes, typeset using ConTeXt on a course on data-analysis.

LaTeX for students, teachers and researchers — some remarks

Zofia Walczak

As we all know TeX was designed more than 30 years ago. Throughout the years TeX spread over three different groups of people – scientists, school teachers and, as a consequence, students.

The major group of TeX users is mathematicians as it was created specially for them. At present there is a wide range of TeX users. I will show some examples how LaTeX can be useful for different purposes in different domains.

TeX at The Open University

Jonathan Fine

The Open University is the UK's leading provider of distance learning. Since 1992 it has used TeX for the production of mathematics and upper-level physics courses. It is used to produce custom authored course-book, assignment booklets, exams and supplementary materials. Most of these materials are printed commercially, in two or four colours.

This talk will give a survey of the past, present and future use of TeX at the OU.

TeXworks: Lowering the entry barrier to the TeX world

Jonathan Kew

A brief presentation of the TeXworks project to tell and show what it is, and a report on the current status.

Typesetting lyrics with ConTeXt

Vyatcheslav Yatskovsky

My workflow includes getting lyrics from the Web, printing them on separate sheets of paper, inscribe guitar chords (harmony) and binding into a "songbook". While most artists prefer MS Word or plain text formats, I found ConTeXt best suitable for my task for the following reasons:

□ output formatting is consistent and rich, and this comes with almost no efforts comparing to WYSIWYG editors;

□ marking a lyrics with keywords like verse, chorus, solo, etc, clarifies its structure and makes the song much easier to memorize and perform.

I will be glad to explain the environment internals, show my workflow, and demonstrate the collection of 150+ neatly formatted pdfs.

Rejoining the mainstream
Jonathan Fine

Much has changed in the world of publishing and communication since the release of TEX in 1982. TEX was rapidly adopted by mathematicians and physicists as a much-loved document preparation system, although with a steep learning curve. It is also used in other specialist areas, such as technical documentation and database publishing.

Since the 1990s computer power and networking has grown many times, as has use of computers. IBM has been replaced by Microsoft as the dominant commercial force in computing, which is now in turn challenged by Google. People are looking to the internet, particularly the Web, for information, services and solutions.

Although TEX remains mainstream for mathematical content, as open-source software it has slipped, and its Web presence is weak. In 2009 TUG was rejected by Google as a mentoring organisation for their Summer of Code. TEX-related websites are somewhat dated and developer communities isolated, compared to the organisations that were accepted.

This talk presents recent work and proposals aimed at helping TEX and related software return to the mainstream of document processing.
1. On-line documentation for TEX, LATEX and ConTEXt
2. Social networking :
    1. Mathematical content
    2. TEX development and support
3. Typesetting:
    — Web service
    — Shared objects and callable functions
4. Standards:
    1. LATEX syntax and XML
    2. Mathematical content and MathML
    3. Unicode (and X TEX)

A comparison of free PDF libraries
Martin Schröder

One of the reasons for the success of pdf TEX is the quality of the PDF inclusion, which uses code from XPDF. Over the last years a number of (free) PDF libraries and tools have been developed. I will show some of these and compare them.

Playing with font features
Hans Hagen

In this presentation we will explore what OpenType features are, what they do, or don't do, where they succeed or fail. I will use an interactive tool that ships with the ConTEXt distribution. One of the objectives of this presentation is to make users aware that OpenType is great but that one needs to be aware of limitations, potential side effects and that while installation and usage has become easier a somewhat greater knowledge is expected with respect to what they make possible.

Dynamic font features
Hans Hagen

In ConTEXt MkIV we have several ways to enable Open-Type features. In base mode we use TEX's core methods, while in node mode we do everything in Lua. Both are static methods in the sense that the set of features to be applied is associated with a font instance. Instead of these (or on top of these) you can use dynamic features. This method has several variants and these will be discussed in this presentation cq. tutorial. I will show what they do as well as present the user interface to them. When time permits I will also give a demonstration of yet another mechanism, tagged font strategies. This method is used in the Oriental TEX project.

SVG support in MetaPost 1.200
Taco Hoekwater

Since version 1.110, Metapost has an alternative backend. Besides the ability to create Encapsulated PostScript, it is now also possible to create Scalable Vector Graphics output. This talk shows some examples of this new backend and also highlights a few related extensions to Metapost that have been added in version 1.200.

Licensing of the TEX Gyre family of fonts
Jerzy Ludwichowski

URW++ Design and Development, the well-known font foundry, which in 1996 donated the so-called basic 35 PostScript Type 1 fonts to the public under both the GNU Public License (GPL) and Aladdin Free Public License (AFPL), has on 22nd June 2009 agreed to release the same fonts under the LATEX Project Public License (LPPL).

This presentation will explain the significance of URW's decision for the TEX community, with special emphasis on the TEX Gyre font family.

Math fonts: Notes from the trenches
Bogusław Jackowski

About a year ago, a math fonts expedition was organised by TEX LUGs. After a brave beginning, however, the offensive is now stuck in its trenches. Nonetheless,

optimistic signs of the future victory are more and more apparent.

The necessary background information and the available technical data will be given along with the layout of the plans for the imminent math fonts offensive.

Handwriting fonts, METAFONT and OpenType
Karel Píška

The fonts cover handwriting scripts used in Czech, Armenian and Georgian schools. METAFONT, Type 1 and OpenType solutions are presented. Different techniques applied in METAFONT and OpenType, especially for inclusion of numerous connections between letters or various glyph modifications, will be compared.

The original METAFONT Czech font slabikar was created by Petr Olšák; other fonts have been produced by the author. The fonts could be used for educational purposes.

Secrets of a TEX distribution: ConTEXt minimals
Mojca Miklavec & Arthur Reutenauer

What does it take for a packaging system to follow the fast pace of the ever-improving ConTEXt? The 'new' ConTEXt minimals are an attempt at an answer.

Now the successor to the first 'minimal distribution' that was available as zip files from the Pragma web site, it ships all the necessary files in a single structure: the ConTEXt core of course, with its TEX and Lua code and its support scripts, but also third-party modules that can be retrieved upon desire since we aim at modularity; and, more importantly, the distribution also includes all the necessary binaries for the most popular architecture, in a sufficiently new version: Mark IV always needs a very recent version.

This latter point was one of the major incentives to create a new distribution; another one was the desire to avoid downloading big archive files when only a few source files were modified: in order to achieve that, we now use the rsync protocol, together with a minimal setup script on Unix systems, including Mac OS, and an install wizard for Windows, written by Vyacheslav Yatskovsky.

PPCHTEX revisited
Hans Hagen

About 15 years ago I wrote a module for typesetting chemical structure formulas: PPCHTEX. The next few years it evolved and stabilized pretty well. The only extension till now has been that MetaPost replaced the PicTEX graphics but still PicTEX was used to position the lot. Although not commonly known, the fact that at that point ConTEXt had a Dutch user interface while PPCHTEX was kind of generic is one of the reasons why ConTEXt now has multiple user interfaces and became useable for those who didn't like Dutch.

Triggered by a question at the ConTEXt mailing list I decided to freeze the MkII version and played a bit with the code. I quickly concluded that it was about time to reprogram the lot for MkIV and get rid of the dependency on PicTEX. In this workshop for ConTEXt users I will demonstrate how we can combine the power of TEX, MetaPost and Lua to make quite efficient and compact modules that otherwise demand quite some auxiliary code.

New structures in ConTEXt
Hans Hagen

Most of the structure related code in ConTEXt has been rewritten and uses Lua extensively for housekeeping. This step finalized the move of all multipass data to Lua. As we carry more state information around, we can also more conveniently support for instance multipass XML. In this presentation I will show where information ends up and in what way future versions will provide users with access to additional information.

Upcoming spacing mechanisms
Hans Hagen

One of the complications with vertical spacing is that the more a macro package provides, the more interference between structural components is possible. There is only so much one can do about it, especially because TEX is not that good at looking back. In MkIV we will have a revisited vertical spacing model, one that eventually will replace the existing model.