SIGPLAN EC Activities: LaTeX Support for Proceedings

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HAVE YOU NOTICED THAT OUR CONFERENCE PROCEEDINGS ARE INFECTED WITH BOLD, CAPITAL LETTERS? If so, you are not alone. The bold capitals come from the "new" LaTeX class file that ACM has required since November, 1999. When I was first asked to use this class file, which is called `acm_proc_article-sp.cls`,[1] I became very unhappy. I have lots of company; many SIGPLAN authors have objected to the new LaTeX class. The Executive Committee hopes to answer the objections by commissioning a LaTeX class especially for SIGPLAN. This column explains what's wrong with the ACM class, how we might fix things, and what you can do to influence the outcome.

SIGPLAN authors have identified many problems with ACM's LaTeX class.

- The ACM class wastes space. A paper that was twelve pages in the old style requires a full thirteen pages in the new style.
- Footnotes are difficult to distinguish because they are typeset in the same size as the main text.
- Mathematical symbols in headings can be typeset incorrectly.
- Support for multiple authors is poor. For example, when there are multiple authors from the same institute, it is difficult to put a single affiliation for all. It is difficult to make the ACM class handle papers that have more than three authors.
- The code for the ACM class violates many rules of LaTeX implementation. One result is that the class breaks existing LaTeX code. Another is that it requires significant expertise and effort to use anything other than the "`abbrev`" bibliography style. A third is that the class permits a page break between a section heading and the relevant text; many SIG members have complained about a lonely section heading at the bottom of a page.
- The only documentation for the class is a sample file. This file fails to cover some common situations, such as how to insert the copyright notice requested by the printers.
- The fonts for the title and author are too big and too dark.
- Paragraphs following headers are indented. Correct practice is to typeset the first paragraph of each section flush left.
- There is too little space around section headings and too much space between paragraphs and before enumeration lists.
- Section titles set in large, bold capitals are less readable then mixed case, and LaTeX does an especially bad job breaking lines of text in all caps.

In sum, the new ACM class is ugly. Everyone agrees this judgment is subjective, but many SIG mem-

[1] There are two variations: `acm_proc_article-sp.cls` and `sig-alternate.cls`. Both are reviled.

bers have made it all the same. Some members use stronger language, such as "stunning disgrace."

It is difficult to reconstruct the history of the ACM class. Many SIG members conjecture that the class was developed to make a paper formatted by LaTeX look just like a paper formatted by Microsoft Word. Because the people who might know have left ACM, we don't know the truth of this conjecture. We do know, however, that SIGPLAN's authors overwhelmingly prefer the appearance of LaTeX to the appearance of Word—just flip through any SIGPLAN proceedings. Because many SIGPLAN authors do use LaTeX, it makes sense to have a LaTeX class that readers, authors, and ACM can all be happy with.

It is tempting simply to tweak an existing LaTeX class, but that idea may not be the best for SIGPLAN.

- The old class, which served us well for many years, is not compatible with LaTeX 2_ε.
- The problems in ACM's current class are too pervasive to be solved by small tweaks.
- The current standard LaTeX classes lack special features that ACM needs, such as copyright and conference codes.

A better idea is to hire a qualified professional to develop a new LaTeX class. Such a professional should not only be a LaTeX expert but should also know something about document design. If you can suggest such a professional, or if you are such a professional, the Executive Committee would love to hear from you; please write `sigplan-latex@acm.org`.

Since we plan to hire a professional designer, we should give that designer a clear statement of our needs. To develop this statement, we would like to involve those who will be most affected by the outcome: the authors and readers of papers published in SIGPLAN proceedings. This column lists some guidelines, but we are developing a longer, more detailed list online at `http://liz.eecs.harvard.edu/cgi-bin/sigplan-wiki.pl?LatexClass`. Anyone who is interested can come to this site and help.

To open the discussion, I have developed some initial guidelines.

1. We cannot and should not force all authors to format their work the same way. We should therefore make it easy for authors to depart from some of the ACM guidelines while still using the SIGPLAN class. This way the authors can get their pet formatting without being completely on their own, and the resulting papers will adhere to most of the guidelines. When choosing defaults, the designer should remember that the needs of the readers are more important than that the needs of the authors, which in turn are more important than the low-level details of the current standard.

2. The SIGPLAN class should address the problems noted above. For example, it should be easy to handle multi-author papers. It should be easy for readers to distinguish footnotes from main text. There should be comprehensive documentation, not just sample files.

3. Fonts and so on must look good and natural together. Because many papers in our community are heavily mathematical, the default font families should look good with TeX's standard mathematics fonts. The class designer should provide reasonable support for authors who want to use font families other than the default.

   Spacing must be carefully crafted to look good, make the document readable, and allow for maximum technical content per page.

4. Many readers find that an author-date citation format (Pettis and Hansen 1991) is more helpful and informative than a simple numbered reference [7]. The SIGPLAN class should serve such readers and the authors who cater to them.

5. The SIGPLAN class should support the life cycle of a conference paper. Every paper starts out as a "submission." After submission it may be on a web page as "submitted to *Conference*;" if accepted it may be promoted to a "preprint." The "final" version appears in the proceedings, after which an author may wish to provide a "reprint."

   Each of these stages has its own requirements. For example, a "final" version must appear in

nine-point font without page numbers. A "submission," however, should appear in a larger font, so the program committee won't go blind, and it should have page numbers, so reviewers can use them when making comments. A "reprint" should not only have page numbers; it should have the page numbers used in the proceedings. All these variations should be easily supported by the SIGPLAN LaTeX class.

6. Markup should adhere to LaTeX standards where they exist (e.g., for identifying multiple authors). The SIGPLAN class will need additional, nonstandard markup for identifying such information as conference, copyright code, copyright words, keywords, categories, and subject descriptors. It might be pleasant to provide macro support for conferences regularly sponsored by SIGPLAN, e.g., so `\popl{2002}` can expand to "Conference Record of the 29th ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages."

7. The implementation of the new class must be consistent with standard LaTeX 2_ε internals. To simplify future maintenance, the implementation of the new class should reuse existing standard LaTeX code when it is reasonable to do so.

8. Many of ACM's current guidelines seem low-level and arbitrary. Why, for example, should an email address be set two points larger than an affiliation but in the same font? Why not at the same size but in a monospaced font? The specification for proceedings is silent on such questions. As we develop a new design, it would be courteous to our readers, and especially to our authors, to provide a rationale for it.

Obviously these guidelines are just a starting point. Not even the members of the Executive Committee agree on all the details, let alone anyone else. We expect to discuss and refine the guidelines during the Spring. If you are a SIGPLAN author, reader, or member, we encourage you to participate in the discussion at `http://liz.eecs.harvard.edu/cgi-bin/sigplan-wiki.pl?LatexClass`. We are also interested in suggestions about whom to hire; getting a topnotch document designer and LaTeX implementor could make a huge difference. We hope to reach consensus and hire a designer at the next meeting of the Executive Committee, which is scheduled to be held at PLDI in mid-June. Ideally, the resulting class will be useful not just for SIGPLAN but for all of ACM. Please let us know your needs.

Norman Ramsey is currently Assistant Professor of Computer Science at Harvard Univeristy. His research emphasizes low-level languages and tools. He is especially focused on the C-- project (see `www.cminusminus.org`*).* *He thanks the many SIGPLAN members who complained, without which this column would have been impossible.*