Resources

Book Review: An Italian guide to LaTeX

Marisa Luvisetto and Massimo Calvani

Claudio Beccari. *LaTeX — Guida a un sistema di editoria elettronica*. Milano: Editore Ulrico Hoepli Milano, 1991. ix + 399 pp. ISBN 88-203-1931-4

When we were asked by the *TUGboat* editor to write a report on a book in Italian on LaTeX, we thought: "Gosh, it's a rat". So, it was with a lot of curiosity that we opened the parcel with the book and started going through it. Despite our prejudices,[1] we must admit that our first reaction was very positive. Then we carefully read the book and, to say it briefly, our opinion is that it is a very good book, perhaps not recommended for a novice (we would rather suggest *An introduction to LaTeX* by Michael Urban), but a book where all LaTeX commands are described in detail and, what is very important, with a lot of examples. The main drawback for wide diffusion of the book is that it is written in italian, but at the same time it is a pleasure to finally have a book in italian on LaTeX.

LaTeX, Guida a un sistema di editoria elettronica by Claudio Beccari is a complete guide to the use of LaTeX for most scientific users and a good starting point for professional typesetting.

The book has a very good logical layout, not in the style of a school book but as a manual for a demanding user. Chapter 1 contains a nontrivial description of the typesetting process and an introduction to TeX and LaTeX. A confrontation between TeX and LaTeX philosophy is also included.

Chapter 2 is a tutorial description of LaTeX and it is sufficient for non-professional users who produce short documents and articles. What we feel is missing is a suggestion at the very beginning of the book for the novice to go directly to Chapter 2 and to read it thoroughly before trying any test.

Chapter 2 is very well organized and reflects the structure of the whole book. In fact each subsection of Chapter 2 is analyzed in deeper detail as a stand-alone chapter with nearly the same title as the subsection. Here we find that subsections of Chapter 2 and chapter titles exactly the same would more closely show the logical connection of the material.

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[1] Editor's note: The authors work mainly with macros of their own devising.

The book gives valuable information on the typesetting process (e.g. a complete description of the usage of the period as a punctuation mark) and the inner working of LaTeX, with exhaustive lists of parameters, usage, values, suggested values related to document type, and the like.

Chapters 3 and 4 contain a detailed description of commands for text and maths. They end with notes about composition rules and conventions, but we feel that such notes should be placed more effectively by themselves eventually in an appendix at the end of the book.

Chapter 5 contains a detailed description of all LaTeX environments. Command descriptions are followed by examples to clarify the concepts especially in complex cases such as boxes. Warnings and advice on good composition and the way to avoid errors are presented at difficult points throughout the book. More real life examples are probably needed in the array and tabular environments.

Chapter 6 on figures and Chapter 7 on macro definitions are very complex and surely not for the novice. They are a good starting point for the expert, but obviously this is a very difficult part of the typesetting process and would need a book on its own.

Chapter 8 contains a detailed description of LaTeX document styles. It is a valuable source of information on LaTeX parameters and usage especially for book composition, for which important descriptions on styles, page settings, etc., are given.

Chapter 9 and Appendix C give complete information on fonts, size, types, file names, and the like. A table of magnification values (i.e., correspondence between mag and resolutions like 1000 == 300, 1200 == 360, etc.) is missing. This information would be very useful together with a list of which fonts are stored in the local installation, thus making it possible to choose from the provided magnifications. Also error messages and debugging tools are probably treated too briefly, but this is a problem with all TeX/LaTeX books we have used.

Appendix D contains a brief description of italian grammar rules that are used to create italian hyphenation patterns.

The book contains a good bibliography and a fair cross-reference index. The index has the usual shortcomings we found in most books, i.e., sometimes the page written in the index does not contain the specified item, but in general the information is useful and well organized. What we find strange, however, is the author's decision not to include the full mathematical command set in the index.

A last remark regards the book as a whole. Typing errors are frequent even if neither disturbing nor misleading. This problem arises because the usual editorial step was skipped by the publisher, as the author has explained, probably due to a relatively informal policy related to electronic publishing in Italy.

To sum up, the global impression is very positive. This is a basic book for LaTeX not only because it is the only one in italian but also for its deep insight into LaTeX and the complete explanation of many complex mechanisms in TeX and LaTeX and the lot of examples; it is a book that should not be lacking in the library of any more than trivial LaTeX user and one that surely deserves an english translation. Hopefully this book will fill a gap in the literature of electronic publishing in Italy and will give rise to a series of such books in our schools and Universities.

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Book reviews

Nico Poppelier

LaTeX for Everyone, Jane Hahn, first edition, Personal TeX Inc. 1991, softbound, 346 pages

Writing a book is hard work. It can also be rewarding work — if the readers are satisfied with the book. In comparison, writing a review about a book is easy: in a few paragraphs you criticize what it tooks years to write. Nevertheless, the readers deserve an honest review, so I won't hide the fact that in my opinion the first book reviewed here is less than what it could have been. This book, *LaTeX for Everyone* by Jane Hahn, is published by Personal TeX, Inc. (PTI), and will replace *LaTeX: A Document Preparation System* by Leslie Lamport in the PC-TeX packages that PTI sells.

Surely, Lamport's book leaves a lot to be desired as an introductory book. For this purpose, you need a book with a clear expository style, a sufficient number of examples and well designed exercises. On the surface, it looks as if *LaTeX for Everyone* could have been such a book, since it has a clear 'if you want this, do that' way of explaining, it has summaries at the end of all sectional units, and lots of exercises.[1] Unfortunately it falls short of being a good introduction: it shows structural flaws, it contains a substantial number of mistakes, and it explains several parts of LaTeX confusingly or not at all.

Structure

Chapter 2 introduces the basic commands of LaTeX, and it also tells you how to adjust line spacing, margins, paragraph indentation, and footnote spacing; I will come back to this in a minute.

Chapter 3 is an odd mixture of things: it explains about document styles, typefaces and typeface sizes, sectioning commands, symbolic references, hyphenation, lists, formulas, accents, and headers and footers.

Chapter 4 deals with mathematics, but the environments for displayed equations were treated in chapter 3. Chapter 5, *Rows and Columns*, discusses `tabbing`, `tabular`, `array` and `eqnarray`. There are two problems with this arrangement of material.

1. The information on mathematical formulas is spread over three chapters.

2. `array` is used in chapter 4 on pages 93 and 99, but is not explained until later on, on page 128.

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[1] I should add that the answers to the exercises are given in small print below the questions.

Chapter 6, *Customization*, treats page and line breaks, centering, vertical and horizontal space, lengths and boxes. This is followed by a chapter on floating objects and one on preparing large documents. In my view, chapter 6 should have been put after chapters 7 and 8, and combined with parts from chapter 3 in a chapter on influencing the layout.

Chapter 7 contains a lot of useful information about floating tables and figures, but it could have been written more concisely I think. And, like other authors of books on LaTeX — see some of my earlier reviews — Ms. Hahn does not clarify what `table` and `figure` are, namely 'envelopes' for floating figures and tables.

Furthermore, the book contains seven appendices. Appendices A and B, on user-defined commands and counters respectively, contain lots of useful information with instructive examples. Appendix C, on style parameters, is also a nice appendix, but it lacks the page-layout and list-layout diagrams, which are by now familiar to most LaTeX users.

Appendix D treats the `picture` environment. Appendix E, *Errors*, is a particularly good appendix, with lots of examples. I missed one thing in this appendix: what happens when you forget the required argument of `\begin{thebibliography}`?

Appendix F gives examples in the form of question and answer, and is one of the best parts of the book!

Appendix G 'discusses' SLiTeX in twelve (sic!) lines. The page on which it is printed can just as easily be torn out of the book, since all it tells the reader is that SLiTeX is a program similar to LaTeX, designed for creating slides, and with commands different from those of LaTeX. If the reader wants to know more, he or she is advised to print and read `slides.tex` and `local.tex`.

Finally, the index is awkward to work with: all environments must be looked up under the main entry 'environment', and all commands under the main entry 'commands'. Strangely, the entry 'commands' is followed by 'captions', 'center', 'comment', ... [2] My preference would be to list, e.g., 'picture' environment between 'picture' and 'placement', as in the LaTeX User's Guide, or to have a separate command index.

My main criticism is that the structure of *LaTeX for Everyone* does not reflect the philosophy behind

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[2] Probably because the index was generated as explained on pages 194–197 of the book — see further on.

LaTeX — like most other books on LaTeX unfortunately. Chapters 2–4 of *LaTeX, a Document Preparation System* by LaTeX's creator Leslie Lamport mostly explain about those features of LaTeX that are related to logical structure of a document. Only in chapter 5 does he discuss those features that are more related to the visual structure of a document.

By contrast, Ms. Hahn continually mixes structure commands with layout commands.

An example: in almost every chapter Ms. Hahn introduces a command that accepts the `\\` command, and every time she explains what `\\[...]` does. If she had moved this to a separate appendix on layout changes, this would reflect the philosophy of LaTeX, and it would make the exposition much clearer.

Another one: in section 3.10.1 she gives this example

```
\begin{itemize}
\item [$\heartsuit$] potatoes
\item [$\heartsuit$] celery
\item [$\heartsuit$] frying chicken
\item [$\heartsuit$] milk
\end{itemize}
```

immediately after she has introduced the `itemize` environment. First of all, this can be done much simpler with a `\renewcommand` of `\labelitemi`. Secondly, this sort of example really belongs in a separate chapter on layout changes.

Errors

This review column does not provide the space required for an extensive summary of all errors in *LaTeX for Everyone*. Instead, I will mention a few interesting ones.

1. The author confuses the document style `book` with the abstract class of documents that can be called 'book'. Furthermore, to confuse the reader she introduces a new term, 'style guide', as a synonym for 'document style'. She also confuses LaTeX with its standard document styles (pages 69–70)

2. On page 42 she calls TeX's 'usual' typeface, Computer Modern, Times Roman.

3. On page 88: 'A super- or subscript that is an English word should be set in roman type'. Is this not the case for mathematical texts in French or Dutch?

4. An explanation of `*{n}{cols}` is missing in all places where `tabular` is treated (pages 127 and 288).

5. 'You should get into the habit of typing names as follows: ... `J.~S.~Bach`' (page 142). Not

true, since it depends on the particular typographical convention one uses: in common usage the space between 'J.' and 'S.' is omitted.

6. A table in section 6.6 suggests that LaTeX does not understand the following units of length: dd, cc, bp and sp, which the basic TeX program, and therefore LaTeX, an extension, understands.

7. In section 6.7, the author uses \makebox to get an alignment!

8. On page 164, Ms. Hahn writes that

```
\oddsidemargin=0in
\textwidth=6.5in
```

results in a right margin of 1 inch. This happens sometimes, but only if you use American letter size paper!

9. The 'default order of preference' for figure placement is [bthp]', according to the author, which is wrong, since this default is given by the document style, for example [tbp] in article.

10. On pages 194–197 Ms. Hahn suggests producing an index by sorting the entries in the .idx file in your editor, manually changing the \indexentry commands into \item and so forth, and then combining multiple entries into one. I find this appalling advice, with index programs such as MakeIndex available.

11. Similarly, in section 8.5 there is no mention of BibTeX.

12. The command \setlength is discussed in the main text, whereas \newcommand, \renewcommand and \newenvironment are treated in the appendices. In my view, the latter are more important, because they make typing easier or can clarify the structure of a document. A separate appendix on layout changes would be an appropriate place to discuss \setlength.

13. A discussion of \newtheorem is completely missing.

Besides this, Ms. Hahn sometimes suggests bad typography. For example a tall formula, an integral in display style, in text. Shouldn't authors of books on TeX keep traditional typographical rules of thumb in mind?

Conclusion

On the whole, LaTeX for Everyone is an unsatisfactory book. It has the potential of becoming a good book, in a revised edition, if the structural flaws are solved and all the errors are removed.

The author considers math LaTeX's strongest feature, a position I disagree with strongly: its main merit is document structuring. Math is a TeX feature, and LaTeX does not *add* new math capabilities: it presents them in a structured and sometimes more user-friendly way. If Ms. Hahn had recognized the key role of document structuring in LaTeX, she would probably have written a different book.

A final remark: the publisher chose to have the book produced from 2000 dpi camera-ready copy, which is the high quality output a book on TeX, made by TeX deserves. Unfortunately, the typeface Computer Modern was used, and the layout is the standard book style. That TeX can produce 'masterpieces of the publishing art',[3] using other fine typefaces and a layout created by a professional designer, is shown too rarely — an exception is Victor Eijkhout's recent book *TeX by Topic*.

Practical SGML, Eric van Herwijnen, first edition, Kluwer Academic Publishers 1990, softbound, 307 pages

'A review of a book on SGML in the columns of *TUGboat*?' some of you may wonder. What does SGML have to do with TeX? Well, nothing, but since the term SGML has surfaced often in *TUGboat* and on the TUG conferences the past years,[4] I thought a review of an SGML book could be worthwhile.

Practical SGML is one of the best books on SGML currently available. To be absolutely honest, there are not many books on SGML — yet — but this book is the only one so far with 'many helpful hints and ideas on developing SGML, applications and discussions of the current software written to be conforming to the ISO standard', as is written in the foreword of the book. This is indeed a book about practical SGML!

The book is divided into three parts. Part I, *Getting started with SGML*, is an introduction to SGML. It explains what a document type definition or 'DTD' is, what the role of the DTD in the processing of the document is, and what steps are necessary to create and process an SGML document.

Part II is intended for document managers or programmers, and explains SGML in more depth.

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[3] The last line of the last chapter of *The TeXbook*.

[4] See for example the proceedings of the 1991 TUG conference.

Some of the topics discussed in this part are: formal aspects of the language SGML, distinguishing data characters from markup, and the reference concrete syntax.

Part III is about SGML implementations and should be read by everyone who has to install and maintain an SGML software system. Mr. van Herwijnen discusses what components are usually found in such a system, how to create SGML documents, how to convert SGML documents into documents that can be processed, for instance to get output on paper, or in order to store information in a database. He also gives some examples of SGML parsers.

The book also contains five appendices. Appendix A contains the answers to the exercises in the book. In appendix B Mr. van Herwijnen tells how he wrote *Practical SGML* using SGML, and in appendix C he even gives the complete document type definition for his book.

Appendix D is a short appendix, in which the author gives common SGML definitions for use with TeX. Finally, appendix E contains useful advice on how to read the ISO standard (8879) in which SGML is defined.

At the end of the book we find a glossary and an index, and throughout the book the author gives lots of valuable references to existing literature on SGML and related topics.

Mr. van Herwijnen is leader of the text processing section at CERN, the European Laboratory for Particle Physics in Geneva, Switzerland. SGML is one of the important tools in the text processing section at CERN, which probably explains the high quality of *Practical SGML*: it was written by someone who has extensively used SGML in practice. Since no prior knowledge of text processing or publishing is required to understand what is written in *Practical SGML*, I can highly recommend it to anyone who is interested in this subject.

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Book review: *TeX by Topic* [1]

Philip Taylor

Perhaps I have been unlucky, but my experience of 'alternative' [3] TeX books so far has been rather depressing; in general, they have been badly designed, poorly typeset, and overburdened with errors. It was, therefore, with some trepidation that I agreed to review Victor Eijkhout's *TeX by Topic*. Let me say straight away that on the most significant of these factors — the number of errors — *TeX by Topic* is way ahead of the crowd. I will return to the design and typesetting later in this review.

TeX by Topic is a reference manual to the TeX language, arranged as its title suggests by topic. It makes no pretence to being an introduction to TeX, plunging straight in to the four-level hierarchy ('eyes', 'mouth', 'stomach' and 'bowels') of the TeX processor on page 1. By far the majority of the book is concerned with an explanation of each and every TeX control sequence — primarily those present in IniTeX, but also including those which Victor regards as forming a part of the core of the Plain format (and which are therefore present in the majority of other formats, such as LaTeX, as well). Unlike *The TeXbook*, the index by command makes no differentiation between true TeX primitives and those provided only by the Plain format; there is, however, a glossary of true TeX primitives. There is also an index by topic, and a comprehensive bibliography composed of some fifty entries. The structured nature of the text becomes apparent on a closer inspection of the indexes, where single references outweigh multiple by approximately $100 : 1$.

Each chapter of the book deals with one particular TeX topic: fonts, boxes, modes, numbers and so on; in some cases, a topic is split across several chapters: for example, paragraphs are treated as composed of a start, an end and a shape, each being afforded a chapter of its own. This treatment is highly beneficial: the TeX *aficionado* will be able to tell just from the table of contents in which

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[1] *TeX by Topic: A TeXnician's Reference*: Eijkhout, V; 1991. Published by Addison-Wesley at £24-95[2] (U.K.), ISBN 0-201-56882-9. 307pp, two indexes. Midway between Foolscap 4to and Super Royal 8vo.

[2] Addison-Wesley (U.K) *refused* to quote an American price, despite being told this information was required for a book review

[3] By 'alternative', I mean other than from the hand of the Master...

chapter any given aspect of TeX is most likely to be treated. The less practised reader may choose instead to consult the index by topic, or even the index by command if the exact meaning of one or more commands is sought.

The format of almost every chapter is the same: each chapter commences with a very brief discussion of the topic treated (essentially an abstract), and then lists the control sequences relevant to that topic. Then follows an introduction to the topic, followed by a detailed discussion of each aspect of the topic in individual sections. Each control sequence listed at the beginning is discussed at some point in the text, although there is no attempt to force the book into the format of an encylopædia: an individual control sequence *may* form a section or subsection in its own right, or it may be discussed in a wider context. This treatment makes the book more readable (at least, for those like myself who actually *enjoy* reading deeply technical matter while lying in bed late at night), although admittedly at some expense to its functionality as a pure work of reference. The compromise is a happy one, and few will have cause to berate the author for lack of consistency. References to the topic which have appeared in other publications are usually deferred to the end of a chapter, and one notes that the author is not averse to self-citation (however, the self-citations form only ten per cent of the bibliography, so other authors need not feel slighted; Knuth, by comparison, forms just over twenty per cent).

In assessing the accuracy of such a highly technical work, one has two choices: either read the entire text like a hawk, searching for infelicities, no matter how small, wherever they occur, or use certain well-known features of the subject which have historically caused the greatest number of errors in previous texts. In assessing *TeX by Topic*, I have attempted to use both techniques. So far as I can tell, the book is *almost* error-free: the treatment of (for example) \afterassignment is excellent, and makes it quite plain that only one token can be saved in this way; a subsequent use while the first is still pending will override the first. Similarly the treatment of \aftergroup makes it plain that *its* effect is cumulative. In dealing with \futurelet, Victor emphasises that it causes \catcode staticisation of the 'peeked-at' token: this point is so poorly understood, and the cause of so many problems in attempts at the advanced use of \futurelet, that documenting this 'feature' is essential; I am very pleased to see that it is afforded a paragraph in its own right.

Perhaps one might criticize the fact that Victor does not point out that \afterassignment *transcends* the group structure — i.e. an \afterassignment performed within an inner group, and not 'used' within that group by an assignment, will be used whenever the next assignment *does* take place, even if the token which has been saved has gone out of scope. This is, however, nit-picking: the technical accuracy is excellent. (I think I found one serious flaw in the whole book, and a few lesser infelicities; for example, on page 70, Victor asserts that \hfilneg (\vfilneg) is equivalent to \hskip (\vskip) 0 cm minus 1 fil; I would assert that it is equivalent to \hskip (\vskip) 0 cm plus -1 fil, which is entirely different.)

The treatment of terminal-# in a parameter list follows the party line, in stating that the open brace which follows forms a part both of the parameter list and of the replacement text; this explanation, which is essentially the same as that given in *The TeXbook*, has never seemed entirely satisfactory to me (even though it is factually true), and I would have preferred to see the simple statement that a terminal-# in a macro parameter list requires that the macro and its parameters, when used, *be followed by a brace-delimited token list*. The statement is inaccurate, but leads, I believe, to a more rapid understanding of the whole *raison d'être* of terminal-#. One can always go on to explain that, of course, TeX can't check for the matching close-brace at that point, but at least the opening brace is required and checked for. The example which Victor has chosen makes use of this very feature.

The content is well-chosen: Victor takes as examples for discussion many of the more obscure features of the Plain format (for example, \newif), and gives a very lucid explanation both of their implementation and of their inner workings; I remember only too well asking the combined readers of *TeXhax* for just such a lucid explanation of \newif during my exploratory years with TeX, and getting no response... The treatment of spaces is admirably comprehensive, with clear differentiation between *[one] optional space[s]* and TeX's *being in state S* ('skipping spaces').

The proof-reading is to a very high standard; there are again a few infelicities (for example, on page 296 the column headed \mathcode should actually read \delcode), but these do not detract from the usefulness of the text, not are they sufficiently numerous to perturb the eagle-eyed reader. The hexadecimal values given in the tables which appear at the end of the text should be treated with a degree of scepticism: Knuth himself has been known

to vacillate about the 'correct' value for some of the more arcane maths delimiters, and they may continue to fluctuate for a while. For reasons which are not at all clear, Victor collates "2200 *after* "2203 on page 295; I suspect this was a rare oversight.

The grammar and usage are unexceptionable; there is a strange ambiguity as to whether the book is written for an American or a British audience, with 'centre' invariably spelled in accordance with <Br.E> usage, whilst 'mathematics' is invariably abbreviated to 'math' (<Am.E>), where <Br.E> would have 'maths'. (I still can't pronounce the former of these variants; it always sounds to me as if I'm lisping!). Victor concurs with the authors of the *Algol-68 Report*[4] in treating the plural of 'formula' as 'formulas' rather than 'formulæ'. There is a rather strange usage of 'treat' in the opening paragraphs of the preface, leading the reader to expect the archaic 'treat of', but instead leading to no preposition at all.

It is perhaps unfortunate that reviewers of books on typography and typesetting can no longer allow themselves the luxury of commenting solely on the content — it is almost *de rigeur* to pass judgement on the design and typography of the text as well, even though this may well have been without the control of the author; in the present work, for example, the typographic design is attributed to Merry Obrecht.

Whilst from a content point of view the book can hardly be faulted, the design and typesetting do not, in the opinion of the present reviewer, do it justice. Such criticisms are, of course, highly subjective, unlike those of the accuracy or otherwise of the text; book design is by its very nature a highly personal and individual art-form, and it would be a foolish reviewer indeed who insisted that any particular element of a design was categorically right or wrong. None the less, the design cannot be completely ignored, and the following remarks are therefore offered as one person's view, rather than as facts cast in stone...

Ignoring the received wisdom that underlining is an artifact of typewritten text, and has no place in typeset material, section headings and subsection numbers have both been underlined; this obsession with printed lines also manifests itself in the design of each opening chapter page, where a vertical and horizontal rule (forming an enormous,

horizontally-elongated, letter 'L') serve to set off the title of the chapter from the other material on the page. The title and half-title pages echo this design, but duplicate and offset a second copy of both rules to form two nested 'L's. In the running heads, white space and a forward slash separate the section number from the current section name.

The placement of page numbers is rather less than felicitous on the opening chapter pages; on the first such page, for example, a black rule about 8 pt high and 1.5 pt wide appears at the bottom of the left margin parallel to the last line of the page, and for a long time I thought this was a change bar reflecting some improvement from an earlier edition. Only after several readings did I notice that this was a first edition... In all, the design is rather too fussy and *avant garde* for this reviewer.

The book is set in Baskerville and Gill Sans, and the general impression of the main text is that it is under-inked. I have to hand an issue of *Baskerville*[5] typeset in Baskerville at 1270 dpi; the visual density of the type is significantly greater, and one wonders the printers were perhaps a little parsimonious in their use of ink (but see below). Whilst the main text just holds together, the slightly smaller font used on the title page and occasionally elsewhere breaks up badly: there are two distinct discontinuities in both lower- and upper-case 'O', and one in upper-case 'C', although, rather intriguingly, there is a single line of nine-point text in the colophon, which is otherwise entirely in ten point, which reads: *Printed in Great Britain by Mackays of Chatham plc*: in this line, the lower-case 'o' does not break up. One wonders if (a) Mackays added this line to the plate themselves, and (b) whether, in fact, the bromides were to blame for the apparent under-inking rather than the printers... The back cover suffers from the classic under-kerning of the TeX logo which seems to occur whenever professional typesetters are entrusted with the task of reproducing it.

The typesetting conventions of the main text may cause the aware reader some hesitation: en-dashes, set off by the space of the line, have been used where em-dashes might otherwise be expected. When a TeX control sequence occurs as a part of a section heading, the necessity to drop temporarily into the lower-case characters of a teletype-like font interrupts the continuity of an otherwise entirely upper-case Gill Sans heading; the interruption is less disturbing in the subsection headings, which are themselves in mixed-case, but there appears to have been no attempt to match for visual density.

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[4] *Report on the Algorithmic Language ALGOL 68*: Wijngaarden, A. van, Mailloux, B.J., Peck, J.E.L. & Koster, C.H.A; 1969. Offprinted from *Numerische Mathematik*, 14, 79–218 by Springer-Verlag.

[5] The Annals of the U.K. TeX Users' Group

The best point of the typesetting/design is its consistency: first paragraphs are *never* indented, and *almost* all pages are exactly full, even at the expense of an occasional widow or orphan (<Am.E> 'club-line'). The use of Baskerville ensures a highly legible text.

In summary, I have absolutely no hesitation in recommending this book, not only for the *cognoscenti*, but also for the more casual TEX user who finds that the rather less formal but more didactic nature of *The TEXbook* renders it somewhat less than ideal as a work of reference. It seems unlikely that many would choose to learn TEX solely by a study of *TEX by Topic* (after all, even the *Algol-68 Report*, which must rank as one of the most comprehensive language definitions ever written, is accompanied by the less formal but infinitely more readable *Informal Introduction*), but once past the initial learning stage, few would fail to derive benefit from easy access to a copy of *TEX by Topic*. Its accuracy puts most of its competitors (well, to be honest, it doesn't have any *real* competitors) to shame, and its usefulness is without doubt. It will join *Computers & Typesetting: Vols. A–E* [6] and *Another Look at TEX* [7] as essential reference material on my TEX shelf. I am reliably informed that *Un petit livre de TEX* [8] should join these three, but I haven't yet had the opportunity to see a copy, and I've just received *TEX by Example* [10] but am not yet in a position to pass judgement. . .

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[6] *Computers & Typesetting: Vols. A–E*: Knuth, D.E; 1984–. Published by Addison-Wesley in both case-bound (A–E) and soft-bound (A & C) editions. The canon.

[7] *Another Look at TEX*: Bechtolsheim, Stephan von; 1987. Pre-print copy. Rumoured to be appearing as a multi-volume work by a real publisher (and under another title) 'real soon now'.

[8] *Un petit livre de TEX*:[9] Seroul, Raymond; 1989. Published by InterEditions, Paris. ISBN 2-7296-0233-X.

[9] Published in translation as *A Beginner's Book of TEX*: Seroul, Raymond & Levy, Silvio; 1991. Published by Springer-Verlag. ISBN 0-387-97562-4.

[10] *TEX by Example*: Borde, Arvind; 1992. Published by Academic Press at £13·00 (U.K.), $19·95 (U.S.). ISBN 0-12-117650-9 (A.P. were *much* more helpful in quoting American prices. . .)

A TEX Macro Index

David M. Jones

The TEX community is blessed with a plethora of publicly-available macros; a decade's worth of experience is available from a series of archives throughout the world. The hitch, of course, is that there is no systematic catalogue of these macros, so the vast majority of TEX users remain unaware of their existence. Frequently, the only recourse a user has is to cast a message upon the electronic waves and hope that some useful information makes its way back from the depths. For TEX users without access to such electronic forums, the situation is even bleaker.

With this in mind, I decided to compile an index of TEX macros. The scope of the Index includes all macros that are available via anonymous ftp or mailserver or some similar mechanism. Priority is given to the major archives (Aston, Stuttgart, SHSU and ymir). The Index covers a variety of packages, including plain TEX, eplain, LATEX, $\mathcal{AMS}$-TEX, $\mathcal{AMS}$-LATEX, LA$\mathcal{MS}$-TEX, γTEX and *TEXT1*. Commercial packages are included only if the information is supplied to me by the vendor.

A minimal useful index entry consists of the following fields:

Name The name of the macro package, usually the name of the file containing it.

Description A short (1–3 line) description of what the package does.

Keywords A list of keywords to facilitate searching for special-purpose macros, as well as to help describe the macros. A glossary of keywords is included.

Archives A list of archives where the package can be found. Whenever possible, the home location of the package is identified and marked with an asterisk.

Whenever possible or appropriate, the following information is also included:

Author The name and address (preferably electronic) of the author of the package.

Latest Version The date and/or version number of the latest release of the package.

Supported Whether or not the package is officially supported, that is, whether the author wants to receive bug reports and/or comments on the package.

See also A list of other packages with similar features.

Note Any additional information which seems pertinent.

As examples, here are two representative entries from the draft of the Index.

Name: btxmac.tex
Description: Provides support for using
    BIBTEX with plain TEX.
Keywords: plain TEX, BIBTEX, bibliography
Author: Karl Berry and Oren Patashnik
    ⟨opbibtex@cs.stanford.edu⟩
Supported: yes
Latest Version: v0.99j, 14 Mar 1992
Archives: labrea*, ymir

Name: longtable.sty
Description: LATEX style option defining a
    multi-page version of tabular.
Keywords: LATEX, array, tabular, page
Author: David Carlisle
    ⟨carlisle@cs.man.ac.uk⟩
Supported: yes
Latest Version: v3.1, 6 Apr 1992
Archives: shsu*
Note: Documentation requires Mittelbach's
    doc.sty.
See Also: supertab.sty

The current draft of the Index (dated June 1, 1992) has approximately 600 entries. I hope to increase that to 1000 by the end of June, when I plan to release the Index to the general public by making it available by anonymous ftp and mail server. Beginning in July at the Annual TEX Users Group Meeting, the Index will also be distributed through TUG. In the meantime, I'll be contacting the authors of macro packages and requesting their help in verifying the information I have. If you have written a macro package that you think should be mentioned in the Index, please contact me (preferably by electronic mail) at the address below.

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Names of control sequences

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1 Introduction

In the 'Lollipop' format that I wrote, first to typeset my ph.d. thesis, then to set my book 'TEX by Topic' (Addison-Wesley 1992), I try to move away a bit from the ordinary TEX syntax. For instance, declaring a \newskip register, and setting the value of it are done using only one command, with the syntax

```
\Distance:UnitQuad=12pt
\Distance:parindent=UnitQuad
```

The first command here declares a skip register \UnitQuad, and initializes it to 12pt; the second takes the csparindent and sets it to the value of \UnitIndent.

In order to perform these actions correctly, we should be able to distinguish

1. whether a control sequence is already defined (\parindent) or not (\UnitQuad), and

2. whether a string is the name of a control sequence (UnitQuad) or a litteral string (12pt).

Both problems are really the same, as we shall see below.

2 Messing with \csname

The matched pair of control sequences \csname and \endcsname can be used to construct control sequences out of arbitrary characters. Ordinarily, names of control sequences are limited to letters only (or, to be more precise, to characters of category 11), but in between these two commands any character can appear. Macros and other expandable commands are also allowed, as long as they will ultimately expand to characters.

For instance

```
\csname a:b\endcsname
```

expands to a control sequence with a colon in the name, and

```
\csname \ifhmode h\else v\fi skip\endcsname
```

expands to either \hskip or \vskip.

A useful property of \csname is that if you form the name of a control sequence that has no definition (that is, it is no primitive, register, macro, or otherwise defined), the result is equivalent to \relax. Thus