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Letters et alia
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To the Editor:

I wonder how much serious interest there is amongst TUGboat readers in radically simplifying and speeding up the capture and presentation of complex mathematical text. I have designed an unexpected 'mutation' of the standard Qwerty keyboard which, in mock-up form, allowed—with generous allowance for making and correcting mistakes—simulating the capture of a standard book page full of equations with double levels sub/super-scripts, fractions, differentials and integrals, etc., in a few seconds over twelve minutes. Commercial typesetters estimate at least thirty minutes would be needed even on the most sophisticated equipment presently available. I have also found new and unexpected principles for displaying several typesizes and typefaces in an immediately and exactly recognisable way (without using graphics) that help increase error awareness. The speed of the keyboard comes from its physical design, rather than other 'tricks'; people quite inexperienced in typesetting have remarked how easy it is to use and set complex work that would have completely puzzled them beforehand—it is good for use by relatively unskilled people.

I would like to set up production for several kinds of units if there is sufficient interest of a serious nature. However, until the advent of TEX the worldwide interest in special maths terminals has been minuscule; it is now uncertain, but probably greater. That is why I would like to hear of interest from TUGboat readers.

There are several useful units in mind. An "Idiot Keyboard" for those well versed in TEX, that merely generates editable code and/or TEX code as a direct output; a "Semi-Intelligent Keyboard", basically an 'Idiot Keyboard' with a video output and able to interact with a host; an "Intelligent Keyboard", with a monitor and two floppy discs, able to read editable code and generate TEX code from that, and assistance facilities (e.g., spelling as well), also interacting with a host; a "Realistic Display Maths Terminal", having the performance of an 'Intelligent Keyboard', but giving realistic display of maths, that is also fully editable on screen (no coding shown) and showing typefaces and sizes in an immediately recognisable way, also assistance facilities and interaction with a host; a "T&M Host" also having a "Realistic Position Maths Display" (graphics) and a proofing printer. A 'Realistic Position Maths Display' terminal would allow any maths office typist (or perhaps any other) easily to set the most complex material and automatically generate and edit TEX code, for example.

I would very much like to hear from people who have a real interest in such units and/or systems. The nature of the response to this enquiry will very much determine whether there is significant interest. Items would be expected to give substantial savings in salaries of dedicated programmers, and compare well with currently available equipment.

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FORMATTING A BOOK WITH TEX: EXPERIENCES AND OBSERVATIONS
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In January of 1980 I was hired by Professors Harold Abelson and Andrea diSessa of MIT to format a book they had written: *Turtle Geometry, The Computer as a Medium for Exploring Mathematics.* They had used a computer to write and edit the book—the text was stored on-line—and they wanted me to use TEX to produce the final formatted copy. In part, they hoped that using a computer formatter would be cheaper than traditional typesetting. However, they were also interested in the experiment of publishing a computer-formatted book, and curious about the ways that computer formatting systems could change the relationship between authors and publishers, giving an author more control over a book.

When I was hired, I didn't know anything about TEX, or about book publishing. In the process of formatting the book (which took more than a year) I learned a lot about TEX, about the problems associated with book-quality formatting, and about the interaction of computer formatters with the world of book publishing. This article is an attempt to record my experiences formatting *Turtle Geometry* and some thoughts I have had concerning computer formatters in general. I hope that information will be useful to other people who are trying to format large documents, such as books, using computer formatters. I will try to talk about general problems I encountered rather than about the details of how I fixed each problem. Also, I will try to be as simple as possible—you won't need to know anything about TEX to read this article.