

Papers, Abstracts, and Resumes

Papers, Abstracts, and Résumés

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1 Goals of Documents

Documents like these are usually created for the following goals:

- Information transmittal
- Not to distract
- Accuracy
- Leave a good impression

To judge whether or not these goals will be met, we should consider how the document(s) will be handled.

- Will it only be read by the addressee or receiver?
- Will it be copied and/or transmitted (like FAX)?
- What do you know about the readers?
- Is there a specified, desired, or suggested format?
 - ? Microsoft experience when interviewing IBM, ...
- Is there a real advantage for an optional format?
 - ? GPA, GPA in major, GPA on last two years, or ?

How are most technical reports and proposals read? They are often read first in overview and then in detail:

- Title page — cover letter in some cases
- Table of contents
- Introductory section or statement of problem.

Then a jump to:

- Summary and/or concluding section(s).
- Additional sections as needed to understand the complete document.

Today's technology has enabled us to use the best of presentation methodology in everyday documents. Another way of saying that, a few years ago graphic — typographic — excellence was too expensive for documents that were not made in many copies.

However, too many of the *kludges* and traditions of the typewriter have made it into common use in today's word processing and desk top publishing activities.

Too many documents are laden with features that are appropriate for advertisements and other lies. Some of these are based on simple ignorance or sloppiness. Others are intentional and I refer to these as *Charlie the Tuna syndrome*.

2 Quality Indicators — Formatting

The **writer** is the most important. Use good English, appropriate vocabulary, check spelling, and use reviewers. If the reader does not question several (many) aspects, *then find a critical reviewer!*

Kerned fonts are good. Proportionally spaced fonts are a necessity! Peruse this table:

To	JAVA	Ford	WA
To	JAVA	Ford	WA

Ligatures will usually be nearly invisible. Civil engineers study effluent and we don't care what the first engineering was. Æsop's fables were nice to read too. In German there are words where the ß is preferred, like Straße.

Quoting. I say, "We learned how to quote in the first grade!" Too many users of word processors and desk-top-publishing are too lazy to "learn how to do it properly" and slovenly use the double-prime.

Exporting of *smart-quotes* from editors like WORD and Notepad is a problem. Hyphenation can be too.

Nested quotes is the *only* place that one should use 'single quotes.'

Format quotes that are two or more lines in length like:

A document prepared by using a computer should not evoke a response of *gee how did you do that* but should receive a compliment like that is interesting information. — Edward Tufte

Dashes. There are four different dashes:

Symbol	Name	Use
-	hyphen	hyphenation
—	minus	mathematics
–	en-dash	as in pages 5–12
—	em-dash	punctuation

There is a fifth dash, a *word ellipsis*. It is used like eng—ing.

Headlines — and footlines — should be used in many cases.

Lists should be formatted as hanging indents. The common types are bulleted, enumerated, and textual description labels. All three types are common in this document. These are the \LaTeX names for the list types, the author uses different names.

Control of hyphenation, widows, and orphans; depth of table of contents; aids to creation of tables of contents and figures; aids to creating an index; . . .

A number of fonts should be available. Selection and changes among fonts should be consistent and not excessive.

Bold fonts for a few words for emphasis.

Italic fonts for emphasis, foreign words, . . .

Slanted fonts for document titles in references **not underlining!**

Monospace fonts are used for filenames, acronyms, computer messages, code fragments, and other geeky items.

Sans serif can be used for effect, even in a whole document.

Floats. Floats are graphic elements that are bigger than a few characters and should be kept as a solid unit and not broken across pages. There are some limits and exceptions.

The most common ones are tables and figures. It is common in books and theses to have an additional table of contents for these two.

In the computing professions we have further problems of this type. One of the most common is blocks of code. Some editors/publishers will not allow it except for exceptional circumstances.

3 Fonts

Fonts usually are — should have been — created for a specific purpose. In spite of this they are often used for other purposes and the quality of the document suffers. It may not be noticed by the casual reader. You should have at least some familiarity with the differences and intended uses.

For example, roman fonts are the most common for those of us whose language is based on a Latin alphabet. Italics and bold typefaces are modified versions to be used for specific purposes, namely emphasis, see the quote from Tufte on page 4.

Many documents have been done using the wrong fonts. For example we can write things with a mathematical intent:

Ax=b	<i>A x = b</i>	Ax=b	<i>Ax = b</i>
1024x640	<i>1024x640</i>	1024x640	1024 × 640
1024X640	<i>1024X640</i>	1024X640	

The following lines should raise some questions and discussion:

Abcdefghijklmnopqrstuvwxyz

Abcdefghijklmnopqrstuvwxyz

arctan

arc tan

arctan

The moral of the story is there is no substitute for care. Wizards and assumptions can help. Automatic has limited value.

Fonts for prose should have a set of glyphs (characters) that are appropriate for your English, history, and similar textbooks. As a result there is little or no need for { } () < > \$ and a number of other symbols. If it is also to be used for Spanish, it needs the ¡ and ¢ marks. The quotes and accents for the German, Czech, and French languages are different.

Donald Knuth designed the native fonts for T_EX/L^AT_EX based on a common commercial font for a now bygone typesetter. His initial goal was to enable easy typesetting of prose, mathematics, and codes — I said easy, not trivial or automatic. He created fonts for prose, fonts to reflect a keyboard, and fonts for mathematics.

The people at Adobe went through a similar process in designing their fonts that are the *de facto* standard today. Knuth's and Adobe's fonts (and most others) are different from the 7-bit ASCII character set. The latter is not a font, but does reflect 95 characters. Why 95?

Knuth's fonts having 128 characters aids in 7-bit transmissions— maybe he had some other reasons too. However, T_EX handles fonts that have up to 256 characters, 256², 256³, and 256⁴ characters. That limit is safer than the 255.255.255.255 network limit.

What adjective(s), adverb(s) and/or nouns would you use to describe a document with a paragraph like this?

At the close of the first World War, when I was a student at Cornell, I took a course called English 8. My professor was William Strunk Jr. A textbook required for the course was a slim volume called The Elements of Style, whose author was the professor himself. The year was 1919. The book was known on campus in those days as “the little book,” with the stress on the word “little.” It had been privately printed by the author.

Awful and hard to read!

A document like this?

At the close of the first World War, when I was a student at Cornell, I took a course called English 8. My professor was William Strunk Jr. A textbook required for the course was a slim volume called The Elements of Style, whose author was the professor himself. The year was 1919. The book was known on campus in those days as “the little book,” with the stress on the word “little.” It had been privately printed by the author.

Silly

A document like this?

At the *close* of **the** first World War, *when* I was **a student** at Cornell, I took *a course* called English 8. **My professor** was William Strunk Jr. A *textbook required* for the **course was** a slim volume called *The Elements of Style*, whose author was the professor *himself*. The year **was 1919**. The book was known on campus in those days as “the little book,” with the stress on the word “little.” It had been privately printed by the author.

A ransom note.

4 WYSIWYG or Markup

An assumption that is valid for a large number of us is that the author is the same person as the keyboarder. This was not true a couple of decades ago but it is becoming common. Data entry and document specification by dictation are probably the most common exceptions today.

The most common reason given for the use of markup languages is the emphasis on structure and content, **not** formatting. The author's thought processes should not be interrupted with formatting decisions (or spelling dictionary inadequacies).

All spell checkers are limited/limiting but the paper clip is unique. The emphasizing a word that may be misspelled is bad. It interrupts the thought process of the writer and probably trains the writer to avoid words where it may be the word processor is wrong.

4.1 WYSIWYG

This acronym comes from the first letters of What You See Is What You Get. I believe a better description is *What You See Is Approximately What You'll Get, Sometimes*. When reading a screen it is a different environment. The resolution is approximately like 200 dpi and there is a shroud around the textual window (less with the new flat panels) that is unlike the margins of the paper.

Besides, WYSIWYG is **not!** It is an oxymoron in an acronym.

I have been sent or seen many documents and presentations in the past year that were not what the author intended or had seen on the last machine. Typically:

- Different dingbat fonts for bullets in PowerPoint.
- Different size fonts causing slides to be unreadable. Paragraphs that overlap.
- Blank lines within a paragraph.
- Line breaking failing.

Some of these problems are caused by the user but the interface design also causes much of it. The main problem with the interface is that too many *local settings* can affect expert users without their being aware of them.

4.2 Markup

Many of you have at least had a cursory introduction to a markup language for the web, HTML. We will be using one oriented to making readable scientific documents.

The user of markup languages can be just as ineffective a user as the WYSIWYG user can be. However, I believe that a few features of a markup language can lead to more effective document creation.

A good environment for the creation of documents will have the equivalent of *top-down* program design. This is called *outline editing*. Here is an example:

After creating the structure of the document reflected by the title, author, . . . , add phrases to indicate the paragraphs that will indicate the content. Flesh out the content by completing the paragraphs.

Valuable documents will be reused and republished. When this happens there will often be different document formats and therefore different text widths. Thus, the value of knowing the line breaks is nullified.

4.3 I will not!

I often have requests like:

Dr. Childs:

I am having trouble getting started. Please send me an example of a good XYZ from a previous semester so I can see what I should . . .

These request are usually polite and sincere. However, it is **your** writing I am wanting to see and your practicing it is for your benefit.

Write! Read! Rewrite! Get others to read!

5 Formatting, Layout, ...

Think! You must use defaults in some cases and should **not** in others. In this course the first level decisions have been made by me. In the resumes and other writing you do, you will often have made decisions.

Decisions, rules, considerations:

1. structure, content
2. outline it
3. think about it and select appropriate fonts, paper size, margins, and spacing
Sometimes you do not have a choice, as in this class.
4. L^AT_EX article, book, and report classes; WORD defaults for a technical writing paper; wizard defaults?
5. floats, figures, tables
6. do not underline
7. usually turn off the aligned right margin
8. bold and italic for emphasis, not complete sentences
9. mono fonts for `a:command.com` (filenames) and computer messages
10. Use a good formatting system and make wise formatting choices. For technical documents (your resume is one):
 - List environments and other hanging indents.
 - In *some* cases, phrases not sentences.
 - A paper document is not a screen document.
11. Use the best printer available.

6 Summary

Know who, what, and why about the destination of your document. Write and edit accordingly. Think.

- Think about it and select appropriate fonts, paper size, margins, and spacing.
- Be accurate!
- Give yourself your best chance! Do not detract!
- Use technology wisely but don't misuse it!
- Use a good formatting system, effectively.
- Turn off the aligned right margin, usually.
- Use your text or Strunk and White, ... Know S&W, Zobel!
- Get others to read your work, critically!
- Tape it to the wall and look at it from varying distances.

7 Résumés

These are my choices based upon lots of reading [1, 4] and discussions with hiring college graduates. There are several parts common to resumes.

Name and address: You may include a permanent address if you are young, single, and a real candidate for graduate school.

Your name is **the first line**.

Include an email address. If you use `billy_bob@acm.org` then that has permanence implied. I recommend using `tamu` addresses while looking for that first job. I strongly discourage `hotmail`, `yahoo`, and others that have so many spammers.

If you are already on your own, then one address is fine and the question of “permanent or parent address” does not arise.

Objective: **Yes** for COOP or Internship.

Maybe when you are still looking for that first position.

Always if their guidelines suggests or requires it.

Never unless it is required for the second, third, . . . job.

Keywords: Not a bad idea. Maybe major and minor?

Education: This is important for fresh graduates but later it will become less important. With a college degree, high school has become irrelevant. Do not include anything from high school unless you have some great leadership items. Expected date and degree are expected.

- You **and all your classmates** have taken programming, data structures, analysis of algorithms, architecture, OS, and software engineering (+ more for each degree).
Discuss your uniqueness, electives, . . .
- Create a portfolio of your best term/**team** projects.
They are probably more interested in documentation than code.
- What did you do in ACM/IEEE, . . . Were you there when your interviewer spoke? Describe the last three programs in the organization.
- Other Colleges? Deemphasize in most cases!

Experience: COOP and internships are great. Details of most other experience is generally a detraction unless you worked for several years with a previous degree. For example:

- Your own company.
- Working for your family.
- Lifeguard.
- Flipping hamburgers.

I earned $nn\%$ of my college expenses through COOP, scholarships, various jobs, and loans.

Skills: Overlaps education and keywords. Be careful with this because “the most important thing you should get out of college is an education (not a list of short term skills.)”

Awards and activities: Activities were mentioned in education. RHA, Corps (maybe), and ACM/IEEE leadership are good.

Dates: I believe in them for your situation. Some of the professionals say no, (I think that applies to the second and third jobs.) **Your resume** changes each semester. Reverse chronological is preferred.

Picture: Never! Make sure that potential employers can peruse your WWW resume without *having* to go by your picture.

References: Do **not** include them on your resume. That is assumed anyway. Put it on your resume only if you cannot think of another use of ink.

- Ask the references first. Keep them informally up to date as to who may call.
- Always have a list available.
- Customize your list for each possible industry.

Summary of Resume Tips

1. Use enough keywords but do not overuse
2. Descriptions — concrete, not vague
3. Concise and truthful
4. At least two versions
 - (a) for people
 - (b) for computers, scanners, ...
5. Length should be appropriate
consider your education and experience
6. Order: Name and contact information, (objective,) education, experience, ...

8 Technology (hype! hype!)

- Should I use a word processor, desk top publishing, typesetting, laser printer, ... ?
- Should I use a spell checker?
- Should I use a grammar checker?
- Should I use colored printing?
- Should I use colored paper?
- What kinds of graphics should I use?
- Is a picture worth a thousand words?
- Should I create an index?
- Should I put it in a binder?
- Others?

Reading maketh a full man; conference a ready man;
and writing an exact man. — Francis Bacon

What is written without effort is in general read
without pleasure. — Samuel Johnson

The reason this letter is long is that I did not have time
to write a short one. — Blaise Pascal

How not to get lost in the complexities of our own
making is still computing's core challenge.
— Edsger Dijkstra

One way of improving efficiency is by restricting the
power of the language. — C.A.R. Hoare

The need for more elaborate man/machine interaction
can certainly be enhanced by designing more
incomprehensible systems. — Edsger Dijkstra

FORTRAN should be learned from bathroom walls.
— Alan Perlis

References

- [1] Davis, Ken, “Keep your faults to yourself”, The Bryan-College Station Eagle, pp. C6, June 17, 1998.
- [2] Manual of Style, University of Chicago Press, 1982.
- [3] Dupré, Lyn, BUGS in Writing, (Reading, MA: Addison-Wesley Longman) 1998.
An entertaining book about errors in writing. It is formatted in an unusual form with a large default font and ubiquitous font changes to make points. It is about *writing* and not about *formatting*.
- [4] “How to create the ideal scanable resume,” Intel Corp., 1996.
- [5] Donald E. Knuth, Computer Modern Typefaces, (Reading, MA: Addison-Wesley Longman) 1986.
- [6] Knuth, Donald E. *et.al.*, “Mathematical Writing”, MAA Notes, Number 14, Mathematical Association of America, 1989.
This may not be easily available, but it gives a lot of insight about how one should consider another’s reading.
- [7] Donald E. Knuth, Digital Typography, Center for the Study of Language and Information, Stanford University, Stanford, Calif., 1999.
Similar to [8]. Your reading of this should convince you that the computational tasks in producing graphic excellence in literary works is not trivial.
- [8] Richard Rubinstein, Digital Typography: An Introduction to Type and Composition for Computer System Design, (Reading, MA: Addison Wesley) 1988.

This is a book for techies. Again, it offers insight into the cognitive aspects and how technical/hardware decisions may affect the resulting products.

- [9] William Strunk Jr. and E.B. White, *The Elements of Style*, (New York: Macmillan) 3rd ed., 1979.

A classic! It is tiny and should be read again every few years to simply remind oneself of what you are doing on a daily basis, not just by rote.

- [10] Edward R. Tufte, *The Visual Display of Quantitative Information*, (New Haven: Graphics Press) 1983.

This book (and the next one) are already classics. If you ever have the opportunity to hear Professor Tufte speak, do not pass it up. He is entertaining and at the same time his talks are loaded with information. He gives guidelines when graphics are better than tables and *vice versa*.

- [11] Edward R. Tufte, *Envisioning Information*, (New Haven: Graphics Press) 1990.

- [12] Webster's New Collegiate Dictionary, (Springfield, MA; Merriam) 1977.

Feel free to substitute most common dictionaries. Many of us do not remember that there is often a nice 10 page summary of writing in these common books.

Abstracts exist to "sell" your work, and they could thus be compared to the "executive summary" of a business resume: an official briefing on what is most important about your research. Or the "gist" of your research. With the majority of academic transactions being conducted online, this means that you have even less time to impress readers—and increased competition in terms of other abstracts out there to read. With that in mind, follow these suggestions when structuring and writing your abstract, and learn how exactly to put these ideas into a solid abstract that will captivate your target readers. Before You Start Writing Your Abstract. Decide which type of abstract you need to write. All abstracts are written with the same essential objective: to give a summary of your study. An informational abstract is like a mini-paper. Its length ranges from a paragraph to 1 to 2 pages, depending on the scope of the report. Aim for less than 10% the length of the full report. Summarize all aspects of the report, including purpose, method, results, conclusions, and recommendations. There are no graphs, charts, tables, or images in an abstract. Similarly, an abstract does not include a bibliography or references. Highlight important discoveries or anomalies. It's okay if the experiment did not go as planned and necessary to state the outcome in the abstract. Here is a good f