

Several writing errors occurred almost universally in the submissions of three team members' "application notes" assignment. It is likely, therefore, that these problems are prevalent among the submissions of the class at large. The errors and their remedies are:

1. **Improper scope.** Before writing a technical document, it is important to answer the question "What is the purpose of this document?". An application note, for example, is usually a small document describing a specific topic like "Modifications to the XYZ 2206 Electroencephalogram Processor for Subnanovolt (Wolverine) Brainwaves." An application note is usually written for a professional colleague, or for the consumer of a product. In the former case, for example, the document should be readable by an engineer who may wish to perform the task or solve the problem several years in the future, independently of any "current" project. Many of this semester's app note submissions contained statements which assumed that the reader was intimately familiar with a particular project like "If we stand any chance of detecting a Wolverine brainwave in our project, the capacitors have to be changed in the filter." This assumes that the reader knows what "our project" and "the capacitors" and "the filter" mean. Ten years from now, this may mean nothing to someone who accesses your tech note. Out of context, these phrases might not even mean anything to your current supervisor or a company executive.
2. **Improper "audience" and style.** This issue is related to item 1. Every piece of writing has an "audience," the intended readership for the document. In turn, the intended audience will determine the "style" of the writing. The app note submissions that prompted this document, for example, were very inconsistent in this regard. Some were written for other team members, others for a venue like a "hobby magazine," and still others had no definable audience at all. Before writing, it is important to answer the question "Who is going to read this document?", and to adopt an appropriate style, level of technical detail, etc. When in doubt, it is better to adopt a formal style that adheres to the rules of English grammar, punctuation, etc. If an article is clearly intended for internal (company) use, and your company has a "casual" culture, you might use a style that is more "colloquial," and may even take certain liberties with grammatical rules. Always err on the side of formality, clarity, and professionalism. This leads to the next issue.
3. **Some common stylistic and grammatical errors.** Here are some tips related to common errors made in the app notes which prompted this document (in no particular order):
 - 3.1. Do not use contractions in formal writing (don't can't, etc.).
 - 3.2. Do not end sentences in prepositions. Instead of "Sockets Are Us makes the best platform to put the chip in." write "The best platform for chip installation is produced by Sockets Are Us."
 - 3.3. Spell out numbers less than 10 unless they are measurements (i.e., unless they have units attached to them).
 - 3.4. Use a consistent format for units. For example, do not randomly use "V," "Volts," and "volts" in the document.

- 3.5. Never begin a sentence, let alone a paragraph, with a conjunction (and, or, so, etc.).
 - 3.6. Avoid the use of first and second person in formal writing. For example, instead of “We then have to read our value from our counter.” Say “The value of the counter must then be read.” (passive voice).
 - 3.7. Do not use colloquial language or slang. Instead of “We’ll just go with the flow and use the 10 kOhm resistor because it won’t break the bank like the fibrillated googlewazer.” say “The 10 kOhm resistor is much less costly than the fibrillated googlewazer, and a negligible change in the cutoff frequency results from its use in the design.”
 - 3.8. Do not include statements with no information or imprecise information. Example: “The XYZ widget is very popular because it’s small and cheap, and we like it a lot.”
 - 3.9. Similarly, avoid redundancy. Your boss and the executives who will read your document are busy and do not want to read unnecessarily long documents. Sparingly use phrases like “As we discussed in Section 2 above,…”
 - 3.10. Avoid stating “beliefs,” “feelings,” and “predictions” which have no substantiation or basis in fact. Examples: “We believe that this new design will work really well and that the project will be a big success.”, or “I feel that the XYZ widget is the best on the market.”
 - 3.11. Do not trivialize your own work. Example: “The task is a very simple matter of making a trivial calculation and popping the chip in the slot.”
 - 3.12. Do not anthropomorphize inanimate objects. Instead of writing “When the capacitor sees 10 mV, it changes the flag bit to high.”, write “When the potential across the capacitor reaches 10 mV, the flag bit is set high.”
4. **Proofread your work!** Nothing looks less professional than a document filled with spelling errors, missing words, sentence fragments, missing figures, etc.

--jd 4/15/03