

Expectations and Corrective Ideas

CSC-215 Chapter 2

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1 Introduction

2 Chapter 2, the Instruction Set Architecture (ISA)

2.1 Expectations

A short list of expectations written before reading any papers.

1. *Be on time*: 'nuff said
2. *MLA format*: based on
<https://www.mla.org/>, or
<https://owl.english.purdue.edu/owl/resource/747/01/>, or
an example from https://owl.english.purdue.edu/media/pdf/20090701095636_747.pdf
3. *Length*: body of the paper, 2 - 4 pages
4. *Content*: specifications about the ISA, including:
 - (a) reduced instruction set computer (RISC), or complex instruction set computing (CISC),
 - (b) number of instructions,
 - (c) number and type of memory addressing modes,
 - (d) number of operands per instructions,
 - (e) operand escape patterns (if applicable).
5. *References*: correctly formatted and relevant to what was written.

2.2 Collective corrective measures

An unordered list of things that need corrective action. My experience has shown that the same types of things happen over and over again. So I could write the same comments over and over again, or I could refer the reader to a list of corrective items. It puts more work on the reader, less work on me, and the list is comprehensive at the end for all to use. The list grows as new things are found.

This is the list:

1. Use your software to create a Table of Contents, don't do it by hand.

2. This chapter should be about the ISA, less about the CPU. They are related, but this chapter's focus is the ISA.
3. Less of the "touchy, feely" stuff.
4. Light on ISA related information (RISC, CISC, number of instructions, addressing modes, etc.)
5. Be consistent when capitalizing acronyms (Arm \neq ARM).
6. Light on page count.
7. List of Figures and List of Tables should show the captions for their appropriate entities.
8. If Tables and Figures are used (and I encourage you to use them), then they must be mentioned in the text. Otherwise they are just so much visual interference.
9. Need to watch page numbers in the TOC and other front matter. A page number of "0" is hard to understand.
10. Need to watch justification, particularly right justification. Different text/word processing programs do things differently. Really simple programs can have large spaces between words. These spaces make it hard to read.
11. Not all sentences need to start with the word "The" and many times it can be dropped.
12. Depending on which authoritative source you use; tables and figures have different locations for their captions. In all cases, the caption should be on the same page as the thing it associated with.
13. Unless you are doing double sided pages for a book, figures and tables should be horizontally centered.
14. Include chapter and section headings in the body of the text.
15. Front matter include the Table of Contents, List of Tables, List of Figures, etc., before the body of the paper.
16. Look at what you are submitting, and see if it reflects the best you can do.

2.3 Additional guidelines and hints

Things that came about after reading the submissions:

1. Tables and figures are good. If you find one that is good then:
 - (a) Give it a caption so I know what I am looking at.
 - (b) Reference it in the text, otherwise why is it there.
 - (c) Include it in the list of tables or figures.
 - (d) If you didn't create it, then give credit to the creator.
 - (e) The table/figure and its caption should be "connected" on the page. Preferably centered, or justified away from the binding, but together.
2. Table of Contents, List of Figures, List of Tables are good. Have the software create them. Don't do them by hand. Review them to make sure they look OK.
3. Either save the document as a PDF, or print as a PDF, but look at it to see if it reflects well on you.
4. Spell check, spell check, spell check. Realize that just because a word isn't in your dictionary that it is wrong (see wold and grunted), and just because it passes spell check doesn't mean it is correct (see told and tolled).
5. For me, I write it, I leave it rest, and I read it from back to front.
6. If you use an abbreviation, define it before you use it.
7. There are many different page number styles in a document. The front matter should be roman and the body should be Arabic starting at 1.
8. MLA has specifications about page number placement and format.

3 Conclusion

The main thing to focus on in this chapter is the "shape" of the instructions that your CPU uses. These instructions will have some sort of structure to them, some number of different ways to address memory, some mix of different operands per instruction, and so on. Issues about "endiness" have already been decided by the ISA architects, things about pipelining have already been decided by the CPU architects, and so on. You are reporting about the results of those decisions, vice discussing the pros and cons of the different ways it could have been done.

Some people included images showing sample instruction formats, and that is good. Some people still look as if they are creating their Table of Contents (including sections, tables, and figures) by hand, rather than having their word processor software create them.