

An advice on writing and presenting
(A pseudo-) Report for the “Software Languages” Seminar’
— Continuously Under Construction —
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Abstract. This document is written more or less in the style of an assumed report for the Seminar “Software Languages”. (Everything that is said here can be equally applied to the so-called pro-seminar, which is part of the Bachelor curriculum. Basically, pro-seminars are less advanced than seminars. For instance, resources are typically assigned to students and do not need to be broadly researched by them. Also, a pro-seminar contribution cannot be truly expected to define and follow a ‘research question’.) The somewhat special subject of this report is to give advice on writing and presenting in ditto seminar.

1 Introduction

Generally, this seminar (series) is about “software languages” (SL) and hence it combines elements of software engineering, modelling, programming languages, linguistics, formal specification, and programming theory; see a recent discussion of some relevant fields and terminology [2].

Each particular edition of the SL seminar focuses on a specific topic within the broader area of SL. (For instance, an edition may focus on programming-language usage [3] or natural language aspects in programming [4].) The present notes provide some general advice on the reporting and presentation obligations of the seminar’s participants. These notes are meant to be generic with regard to the particular theme of a specific seminar edition.

That is, the purpose of these notes is to help student participants writing their reports and preparing their presentations. These notes complement the meetings and consultations.

Road-map

In §2, advice on the report part of the seminar is provided.

In §3, advice on the presentation part is provided.

These notes are summarized in §4.

2 Advice on the report

Much has been written and said about scientific writing. A report for this seminar is a small exercise in scientific writing. Hence, seminar participants are *strongly encouraged* to gain basic understanding of scientific writing. For instance, seminar participants may consult a resource such as [7,1]. Unfortunately, the syllabus of Koblenz seminars does not plan for education on scientific writing, neither does any other obligatory course. Hence, seminar participants are bound to consult a designated book or online resource, and to work closely together with the prof to get a reasonable result.¹ The following notes try to get seminar participants off the ground.

2.1 Organization of the report

As far as reports for the seminar are concerned, we assume a rather simple organization. A report would be spending about 10-25 pages in Springer's LNCS style to describe the research work carried out.

Reports should use close 10 pages if there are not any substantial illustrations. Reports can use up to 25 pages, but **a higher page count does not imply a better grade**—potentially it may negatively affect the grade. However, illustrations are strongly encouraged, if they truly illustrate the subject at hand. So seminar participants are welcome to exhaust a 25 pages limit with useful illustrations included.

A report would have a title and an abstract. The purpose of an abstract is to properly summarize the report: use 50-200 words, typically 100-150 words.

A report consists of an introduction, several technical sections, possibly a related work section, and a conclusion section. See below for more details.

2.2 The importance of the introduction

A report should start with an *introduction section* which motivates the subject of the report, possibly states one or more *research questions*, typically provides some background material (if such material is not placed in a subsequent, designated section or an appendix), lists *contributions* of the report, and describes the organization of the rest of the report. Judgement of all submitted work may be biased by the introduction.

If there is any ingredient that is critical to an excellent completion of the seminar, then this is the formulation of a *research question*. By default (for such a short report/paper that is meant here), the research question should be identified in the introduction section. The challenge is here to formulate a question that performs well in all of the following dimensions: a) concise and clear; b) informed and nontrivial; c) operationally intelligent and verifiable; d) meaningful to the rest of the text.

¹ Here is another resource on writing and giving talks: <http://research.microsoft.com/en-us/um/people/simonpj/papers/giving-a-talk/giving-a-talk.htm>.

2.3 The technical sections

After the introduction, there can be any number of *technical sections*. These sections constitute the core (“technical meat”) of the report. The style of these technical sections very much depends on the subject and the chosen sources as well as the assumed style of presentation.

As there are many different styles, and we do not want to discuss them here at length. The best advice may be to leverage the corpus of consulted research papers and to try approximating the style of one of them. The prof wants to help on this matter—during the consultations and otherwise.

2.4 The concluding section

After the technical sections, the report should be concluded by a final section. Typically, such a section contains bits of summary, discussion, interpretations, open problems or future work, and vision. This may be a good place for the student to show that he or she has outgrown the view of one or two specific papers and can usefully operate in a broader research context. Again, an excellent student would make a serious effort to connect several research papers and research directions in a comprehensible, informative, and cross-indexing manner.

2.5 Literature references

One important element of scholarly writing is to make appropriate use of citations. For instance, in the introduction section, one needs to provide *contextual citations* so that the overall context of the research effort at hand is clarified. One may also quickly mention some more technical sources as a means to prepare for the more detailed parts of the report. Throughout the paper, one uses *technical citations* for two major purposes: (i) to give credit to any reused content; (ii) to substantiate claims. In the conclusion of the report, one uses *visionary citations* to connect to subjects that were not but cut be covered, or that are worth being mentioned otherwise.

Seminar participants must prove that they use advanced means of locating prior work. The ACM Digital Library and the DBLP service are particularly suited to search for scientific publications on topics of the SL seminar.

Every edition of the SL seminar is unique, but here are some general pointers for research on software languages; again, every edition of the SL seminar may draw from additional sources, as it should be evident from the seminar edition’s design. Thus:

- SLE—Software Language Engineering
- ASE—Automated Software Engineering
- ICPC—International Conference on Program Comprehension
- POPL—Principles of Programming Languages
- OOPSLA—OO Programming, Systems, Languages, and Applications
- MODELS— Model Driven Engineering Languages and Systems

- WCRE—Working Conference on Reverse Engineering
- ICSM—International Conference on Software Maintenance
- MSR—Mining Software Repositories
- PLDI—Programm Language Design and Implementation
- PPDP—Principles and Practive of Declarative Programming
- VL/HCC—Symposium on Visual Languages and Human-Centric Computing

There are also various journals on similar themes that may provide seminal and archival content for the seminar work.

2.6 Abstraction is king, not page count

There is no use in reproducing or condensing one specific paper (or a series of strongly connected papers). Any reasonable seminar report must exercise abstraction; it must study a subject from an individual point of view with an original research question in mind. A reasonable seminar report involves (3+) different pieces of scholarly work and integrates them in the presentation.

3 Advice on the presentation

This section provides another example of what should be called a technical section. Again, in such sections, the author works out the technical details (say, meat) of all research work. There can be any number of such sections. One should think hard about organization principles to make up the appropriate number of sections and subsections.

This section briefly talks about the presentation part of the seminar. Just as in the case of scientific writing, there exists online or published advice on “how to give a good talk”, perhaps even in seminar-like circumstances [6,5]. Giving good talks is extremely difficult, but also very rewarding. Speakers should sure to do some amount of reflection before they go into your talk. Some rules of thumb follow:

- Finalizing the slides the night before is perhaps Ok, but one should start thinking of the talk way ahead of time. Otherwise, the presentation may likely to be boring or stressful and sends the audience to sleep. Speakers should not waste the precious cycles of the audience! As an aside, the available time should be perfectly leveraged by the talk: not more, not less.
- One should not confuse writing with talking. One should not think of the talk as a way to present the paper in a condensed style. Instead, one should design the talk in a way that its structure and style maintains the attention of the audience and keeps up with the audience’s abilities. One should use the talk to get people interested in the subject. One should motivate the audience to read more about the subject in the report that is advertised by the presentation.

- One should not waste time on outlines; they are often totally useless at the time they are shown. One should focus on motivation from the first slide on. One should make good use of illustrations and simplify matters. One should not try to tell every detail, but to select some interesting details and make clear what else could be discussed or is included into the paper.
- Seminar talks should be interactive. Hence, clarifying questions should be admitted.

4 Concluding remarks

These notes are supposed to be useful as is, but further efforts may be needed to convey all witness and intentions. For the time being, the author asks the seminar participants and other readers to work with what is available and the quoted resources. Everyone is welcome to suggest revisions for these notes.

References

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