Guidelines for the SWT-SWL-B Report

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Winter Semester 2016/17

Language

The report shall be written in English or German.

Format

The report shall be printed on A4 paper, use a double-sided, single-spacing page format with reasonable margins (at least 15mm and at most 30mm to the left and right) and employ font *Computer Modern* or *Times* in size 12pt. All pages shall be numbered.

Structure & Content

The report's structure shall be the one of this document. In particular, the report shall contain a title page, a table of contents, a list of figures, all sections and subsections of this document, a bibliography, and an appendix with the final product backlog. Further appendices may be added as needed.

In the sequel, the expected content of each section is summarized in italics. It is strongly recommended that you use this document's LaTeX sources as a template for your group's report.

Expected Number of Pages

The report shall be 30–50 pages *of text* in length. This excludes the title page, the table of contents, the table of figures, the bibliography, all appendices and the Ehrenwörtliche Erklärung, as well as all figures, diagrams and code excerpts/listings.

Figures & Diagrams

Each figure, diagram or code excerpt/listing/table shall be easily readable and have a number and caption that also appears in the list of figures/tables. See Figure 1 and Table 1 as examples.

Figure 1: Example figure.

Table 1: Example table

Section number	1	2	3	4	5	6
Expected. no. of pages	2–3	6–12	5–8	10–15	4–7	3–5

References

Citations shall be marked in square brackets by an alphanumeric author-year system, e.g., [**?**, **?**] and [**?**]. Make sure that all sources are referenced properly and all bibliography entries are complete.

Ehrenwörtliche Erklärung

All group members shall sign the *Ehrenwörtliche Erklärung* (Declaration of Proper Academic Conduct) on the report's last page.

Please do not forget to justify in your report all technical and non-technical aspects of your group's conduct of the software development project.

Universität Bamberg

Report

SWT-SWL-B Software Engineering Lab

Winter Semester 2016/17

Group A

Frank Keßler	1742945	SoSySc/4
Andreas Köllner	17420191	AI/7?
Jan Martin	1796943	AI/5
Simon Meyer	1785554	WI/5
Tobias Schwartz	1738195	SoSySc/6

Supervisor: Prof. Dr. G. Lüttgen

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Contents

List of Figures

List of Tables

1. Project Organization

(Approx. 2–3 pages of text.) Andreas

1.1. Goal of the Software

Describe the goal (purpose / advantage / measurement) of the software.

1.2. Organisation of the Group

Document the software development approach employed by your group and how the work was split between the group's members. For each group member, state their main responsibilities, the artefacts principally produced by her or him, and the overall work time (in hours) she or he contributed to the project. Use the following table:

Table 2: Distribution of work

Name	Responsibilities	Principal Artefacts	Work Time
⋮	⋮	⋮	⋮

1.3. Project Blast-off

Describe the activities and outcomes of the project blast-off, e.g., a stakeholder map, a context diagram, a glossary, or a project risk analysis (as taught in the module SWT-FSE-B).

2. Requirements

(Approx. 6–12 pages of text.) Frank

Document and analyse the software's functional requirements, non-functional requirements and development constraints. In particular, state whether a requirement is derived from the project brief, is an assumption made by your group, or has been added by the client. You may apply any documentation and analysis technique taught in module SWT-FSE-B or from the requirements engineering literature, including techniques based on user stories, use cases and prototyping. Properly reference and justify all employed techniques.

This section shall also include a table containing an overview of all user stories. Use Table 3 as a template, and order the stories regarding their ID (story number). Name the source of the story: project brief (PB), the client (C), or other sources. You can use the stories' name+ID in the sequel to refer to a certain story.

Table 3: List of user stories

ID	Name	Size	Source	Sprint
⋮	⋮	⋮	⋮	⋮

3. Architecture & Design

(Approx. 5–8 pages of text.) Tobias

Describe both the architecture and the design of your software. Illustrate its architecture and design using appropriate UML diagrams. Motivate its architecture and design in the light of design principles and possible alternatives. Also highlight any use of architectural patterns and design patterns. Pay special attention to justifying all design decisions taken.

4. Realization

4.1. Sprint Overview

(Approx. $\frac{1}{2}$ page of text.)

Give a brief overview of each sprint, including the sprint's underlying vision.

4.2. Sprint No. 1

(Approx. 2–3 pages of text.)

Sprint Planning

State the goal of and the user stories chosen for this sprint (sprint backlog). Detail the tasks that your group derived from each user story, and provide the names of the team members allocated to each task.

Noteworthy Development Aspects

Describe and justify the development approach taken and the artefacts produced in this sprint (e.g., prototypes). State any peculiarities of this sprint, such as peculiarities regarding (i) adopted development practices, (ii) encountered obstacles, (iii) questions that arose and needed clarification possibly from the client, or (iv) important aspects regarding — or changes to — your software architecture, your algorithms or your techniques applied to solve a technical problem.

Sprint Review

Describe the product increment produced in this sprint. Compare the achieved increment with the sprint goal and the user stories that were chosen for this sprint. Give a brief summary on your group's retrospective, including changes to the product backlog and also to the development process and/or techniques that you installed after the sprint in order to overcome any identified obstacle.

4.3. Sprint No. 2

(Approx. 2–3 pages of text.)

Sprint Planning

Noteworthy Development Aspects

Sprint Review

4.4. Sprint No. 3

(Approx. 2–3 pages of text.) Jan

Sprint Planning

Noteworthy Development Aspects

Sprint Review

4.5. Sprint No. 4

(Approx. 2–3 pages of text.)

Sprint Planning

Noteworthy Development Aspects

Sprint Review

4.6. Sprint No. 5

(Approx. 2–3 pages of text.)

Sprint Planning

Noteworthy Development Aspects

Sprint Review

5. Quality Assurance

(Approx. 4–7 pages of text.)

Describe and justify the different quality assurance techniques that your group has applied alongside the project's conduct, including the INVEST criteria for the user stories, SMART criteria for the tasks derived from user stories, unit tests for your code, and others. Illustrate your approach to quality assurance by giving relevant examples for each employed technique. Finally, do not forget to evaluate your software's interfaces (including the GUI).

6. Project Review

(Approx. 3–5 pages of text.) Simon

6.1. Development Process

How well did your group's development process work, and why? Did the process change between sprints? In addition, compare and contrast the SCRUM process as practised by your group to (i) 'the' textbook SCRUM process [?] and (ii) the other software development processes presented in module SWT-FSE-B. Could your group's development process be improved, and by which means?

6.2. Team Work

How well did your team work together? Was the distribution of work and the communication among team members effective? Was the communication with the client effective?

6.3. Lessons Learned

What would you change if you could re-start the project, regarding the employed techniques, the conduct of the project and any other matters that you consider relevant? What should stay the same?

A. Product Backlog

*Insert the final product backlog that includes **all** user stories of your project (cf. front and back sides of your story cards). Order the stories in the backlog regarding the sprint in which they were completed.*

Stories completed in Sprint 1

Include stories that were completed in the first sprint.

Stories completed in Sprint 2

Include stories that were completed in the second sprint.

Stories completed in Sprint 3

Include stories that were completed in the third sprint.

Stories completed in Sprint 4

Include stories that were completed in the fourth sprint.

Stories completed in Sprint 5

Include stories that were completed in the fifth sprint.

Not completed Stories

Include stories that were not completed by the end of the project.

Other Stories

Include here stories that were split or combined and do not appear above.

B. Additional Material

If needed, insert any additional material, e.g., larger diagrams or longer excerpts of source code, in this and possibly further appendices. Properly reference all appendices from the report's main part.

Ehrenwörtliche Erklärung

Alle Unterzeichner erklären hiermit, dass sie die vorliegende Arbeit (bestehend aus dem Projektbericht sowie den separat abgelieferten digitalen Werkbestandteilen) selbständig verfasst und keine anderen als die angegebenen Quellen und Hilfsmittel benutzt haben.

- Frank Keßler

Ort/Datum Unterschrift

- Andreas Köllner

Ort/Datum Unterschrift

- Jan Martin

Ort/Datum Unterschrift

- Simon Meyer

Ort/Datum Unterschrift

- Tobias Schwartz

Ort/Datum Unterschrift