Lehrstuhl Softwaretechnik & Programmiersprachen
Fakultät Wirtschaftsinformatik & Angewandte Informatik

Report

SWT-SWL-B
Winter Semester 2021/22

Team Name

Dehom Melissa Pereira Gnassingbe
Student Number: 1234567
Degree Course/Semester: SoSySc/4

Patrick Willibald Haas
Student Number: 1234567
Degree Course/Semester: SoSySc/4

Aaron Joachim Hißting
Student Number: 1234567
Degree Course/Semester: SoSySc/4

Oleksandr Huba
Student Number: 1234567
Degree Course/Semester: SoSySc/4

Thomas Max Kretschmann
Student Number: 1870356
Degree Course/Semester: SoSySc/4

Sabir Mammadov
Student Number: 1980078
Degree Course/Semester: SoSySc/6

Supervisor: Prof. Dr. Gerald Lüttgen
Version: 14.11.2021

Report Guidelines

This report template is available in LaTeX from the SWT Lehrstuhl's information page on the VC. You are strongly encouraged to use this LaTeX template as it adheres to the formatting and structuring requirements.

Language

You are encouraged to write your report in English, but you may also write in German.

Format

Your report shall be printed on A4 paper, use a double-sided, single-spacing page format with reasonable margins (between 15mm to 30mm to the left and right), and use 12pt Computer Modern *or* Times *fonts. All pages shall be numbered, and all sections shall begin on the right-hand page.*

Structure & Content

Your 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, an appendix with the final product backlog, and a signed Ehrenwörtliche Erklärung. Further appendices may be included as needed.

For each section of this report template, its approximate weighing on the report mark is provided, followed by a brief description of what is expected. Note that your report will be marked alongside your digital submission. Please discuss the expectations of your report with your supervisor, as well as the effort you should spend on the report versus the digital submission, if applicable.

Expected Length

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., [SB01, Coh04] and [Knu84]. Make sure that all sources are referenced properly and all bibliography entries are complete.

Ehrenwörtliche Erklärung

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

Submission

Sign the Ehrenwörtliche Erklärung (declaration of proper academic conduct) on the last page of your hardcopy report, and submit your report as instructed on the project module's VC page.

No marks will be awarded to submissions made after the deadline.

The report has to be handed in as hardcopy, stapled (not in a folder and not in any other cover; a large stapler is available in the General Office) at the General Office (Sekretariat) of the Lehrstuhl SWT (WE5/03.013; opening hours: Tue–Fri: 9:00–11:00, and open until 12:00 midday on 09 February 2022). For large reports that cannot be stapled properly, you may ask the Sekretariat to bound the report.

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

Contents

List of Figures

List of Tables

1 Project Organization

Approximate weighing on mark: *10%*
Approximate expected report length: *2–3 pages of text*

1.1 Goal of the Software

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

1.2 Organization of the Team

Document the software development approach employed by your team and how the work was split between the team's members. For each team member, state their main responsibilities, the artefacts principally produced by them, and the overall work time (in hours) they contributed to the artefact. Use the following table:

Table 2: Distribution of work

Name	Responsibilities	Principal Artefacts	Work Time
John Doe	Design, Architecture	Architecture Diagram, Design Principles, Design Patterns	60h
Jane Doe	Implementation, Test	Statistic Visualisation Controller & Logic, JUnit Tests	45h
⋮	⋮	⋮	⋮

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 Requirement

Approximate weighing on mark: *15%*
Approximate expected report length: *6–12 pages of text*

Document and analyze 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 team, 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.

3 Architecture & Design

Approximate weighing on mark: *20%*
Approximate expected report length: *5–8 pages of text*

Describe and justify 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 and justify any use of architectural patterns and design patterns. Pay special attention to detailing your database schema, and justify all design decisions taken.

4 Realisation

4.1 Sprint Overview

Approximate weighing on mark: *25%*
Approximate expected report length: $\frac{1}{2}$ *page of text*

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

4.2 Sprint No. 1

Approximate expected report length: *2–3 pages of text*

4.2.1 Sprint Planning

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

4.2.2 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.

4.2.3 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 team'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

Approximate expected report length: *2–3 pages of text*

4.3.1 Sprint Planning

4.3.2 Noteworthy Development Aspects

4.3.3 Sprint Review

4.4 Sprint No. 3

Approximate expected report length: *2–3 pages of text*

4.4.1 Sprint Planning

4.4.2 Noteworthy Development Aspects

4.4.3 Sprint Review

4.5 Sprint No. 4

Approximate expected report length: *2–3 pages of text*

4.5.1 Sprint Planning

4.5.2 Noteworthy Development Aspects

4.5.3 Sprint Review

4.6 Sprint No. 5

Approximate expected report length: *2–3 pages of text*

4.6.1 Sprint Planning

4.6.2 Noteworthy Development Aspects

4.6.3 Sprint Review

5 Quality Assurance

Approximate weighing on mark: *15%*
Approximate expected report length: *4–7 pages of text*

Describe and justify the different quality assurance techniques that your team 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, normal form criteria for the database schema, 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) and the data model.

6 Project Review

Approximate weighing on mark: *10%*
Approximate expected report length: *3–5 pages of text*

6.1 Development Process

How well did your team's development process work, and why? Did the process change between sprints? In addition, compare and contrast the SCRUM process as practised by your team to (i) 'the' textbook SCRUM process [SB01] and (ii) the other software development processes presented in module SWT-FSE-B. Could your team'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?

References

[Coh04] M. Cohn. *User Stories Applied: For Agile Software Development.* Addison-Wesley, 2004.

[Knu84] D. E. Knuth. *The TEXbook.* Addison-Wesley, 1984.

[SB01] K. Schwaber and M. Beedle. *Agile Software Development with Scrum.* Prentice-Hall, 2001.

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.*

A.1 Stories Completed in Sprint 1

Include stories that were completed in the first sprint.

A.2 Stories Completed in Sprint 2

Include stories that were completed in the second sprint.

A.3 Stories Completed in Sprint 3

Include stories that were completed in the third sprint.

A.4 Stories Completed in Sprint 4

Include stories that were completed in the fourth sprint.

A.5 Stories Completed in Sprint 5

Include stories that were completed in the fifth sprint.

A.6 Not Completed Stories

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

A.7 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.

	Full name of Student 1
Matrikelnummer	Name
Ort, Datum	Unterschrift

	Full name of Student 2
Matrikelnummer	Name
Ort, Datum	Unterschrift

	Full name of Student 3
Matrikelnummer	Name
Ort, Datum	Unterschrift

	Full name of Student 4
Matrikelnummer	Name
Ort, Datum	Unterschrift

Full name of Student 5	
Matrikelnummer	Name
Ort, Datum	Unterschrift

Full name of Student 6	
Matrikelnummer	Name
Ort, Datum	Unterschrift