Linnéuniversitetet
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Thesis Manager

Requirement Document

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1. Introduction

This section will give an overview of requirement engineering document. Also, this document aims to describe and provide a list of abbreviations and definitions.

1.1 Purpose

This document aims to describe all functional and nonfunctional and requirements of the Thesis Management System. This is the first version of the Requirement Engineering document and this will be used as a reference for design and development ahead. This document will also be viewed by the development team, currently company staff and other stakeholders of the system. This is used to make sure all the stakeholders of the system will have a complete and clear understanding of all requirements of this system.

1.2 Scope

The ‘Thesis Manager’ is a web-based system that helps students, supervisors and coordinators to manage thesis activities at Linnaeus University for the department of Computer Science. The system does NOT assist in the creation of thesis. The application will digitalize the activities related to submission and reviewing the thesis and makes the processes involved more clear.

1.3 Definitions, acronyms, and abbreviations

- LNU: Linnaeus University.
- CS: Computer Science.
- F-U: Functional requirements of the user.
- F-ST: Functional requirements of the student.
- F-SU: Functional requirements of the supervisor.
- F-C: Functional requirements of the coordinator.
- F-R: Functional requirements of the reader.
- F-O: Functional requirements of the opponent.
- F-A: Functional requirements of the system administrator.
- F-GV: Functional requirements of the government.
- N-U: Non-functional requirements of the user.
- N-ST: Non-functional requirements of the student.
- N-SU: Non-functional requirements of the supervisor.
- N-C: Non-functional requirements of the coordinator.
- N-F: Non-functional requirements of all feedbacks.
- N-O: Non-functional requirements of the opponent.
- N-A: Non-functional requirements of the system administrator.
- N-SY: Non-functional requirements of the entire system.

2. Stakeholders

Name	Description	Responsibility
Swedish Government (Ministry of Education and Research)	Board of the government that manages educative legislation.	Provide legislation that standardizes the educative system in Sweden.
LNU Board	Board of members in charge of the university.	Are appointed by the government. Responsible of the university faculties.
LNU Faculty of Technology	Board of members in charge of the Faculty of Technology.	Responsible of the university departments.
LNU CS Department	Board of members in charge of the courses and programs in computer science.	Responsible for the university courses and programs.
LNU CS Thesis coordinator	Head of the final thesis course project.	Coordinate, manage and grade the thesis projects.
LNU CS Thesis supervisor	Member of the CS department that follows a group of students during their thesis course.	To look after, inspect and give feedback to the group of students under his supervision.
LNU CS senior students	Students with a passing grade in 90hp in CS.	To complete the assignment required to pass the thesis course.
System administrator	LNU staff working in the administration office.	Managing users in the system.
Software engineer	Company technical staff.	Developing and maintaining the system.

3. Preliminary Requirements

In this section, we will show a list of preliminary requirements produced by the team in the first research of the project. This requirement list will be analysed and may change and be refined during the process of development.
The requirements are organized by stakeholders.

3.1 Functional Requirements

User

F-U1. A user must be able to login into the system.
F-U2. A user must be able to log out of the system.

Student

F-ST1. A student must be able to submit a project description.
F-ST2. A student must receive a pass or fail grade for any project description.
F-ST3. After receiving a fail grade for the project description and before the deadline for the project description, a student must be able to submit another project description.
F-ST4. After receiving a passing grade for a project description, a student must be able to re-submit a project plan before the deadline for the project plan.
F-ST5. After receiving a passing grade for a project description, a student must be able to suggest a supervisor before the deadline for the project plan.
F-ST6. After receiving a fail grade for the project plan and before the deadline for the project plan, a student must be able to submit another project plan.
F-ST7. At the deadline of the project plan, if a student has not received a passing grade for the project plan, he/she can only see an exception message for the project plan and cannot access the functionalities of the system anymore.
F-ST8. After receiving a passing grade for a project plan, a student can submit his/her report during the permitted time slot.
F-ST9. A student must be able to view any submitted feedback on his/her report.
F-ST10. A student must be able to submit a final report during the permitted time slot.

Supervisor

F-SU1. A supervisor must be able to view the list of supervision requests from students each accompanied by a project plan.
F-SU2. A supervisor must be able to accept or reject a supervision request.
F-SU3. A supervisor must be able to give feedback to a project plan.
F-SU4. A supervisor must be able to view the evaluation of a project plan by the coordinator and, if passed, submit a final confirmation.
F-SU5. A supervisor must be able to view her students' reports and submit her assessment on them.

Coordinator

F-C1. A coordinator must be able to set deadlines for submitting project description, project plan, report, final report, bidding for reports by readers, feedback for report by readers, final evaluation for final report by readers, feedback for project plan by

supervisor, confirmation of supervision by supervisors, project report assessment by supervisors and feedback for report by opponents.

F-C2. A coordinator must be able to extend any previously set deadline.

F-C3. A coordinator must be able to assign Fail or Pass grades to project descriptions.

F-C4. A coordinator must see a list of all submitted project plans and their status: 1. Whether or not their requested supervisor has submitted feedback on them. 2. Whether or not he/she has confirmed the supervision.

F-C5. For any submitted project plan that has received feedback and an accepted answer from the respective supervisor, the coordinator must be able to submit a Pass or Fail grade.

F-C6. A coordinator must see a list of readers who have bid for a report and be able to accept or reject each bid.

F-C7. A coordinator must see a list of people who can be an opponent for a project. He/she must be able to assign opponents to any report that has been assigned readers.

F-C8. A coordinator must see a list of reports that have received final evaluation and be able to assign a grade to them.

Reader

F-R1. A reader must see a list of reports and be able to bid for as many of them as desired.

F-R2. A reader must see a list of reports assigned to him/her and be able to submit feedback before the deadline.

F-R3. A reader must see a list of final reports assigned to him/her and be able to submit a final evaluation before the deadline.

Opponent

F-O1. An opponent must see a list of reports assigned to him/her and be able to submit feedback for them before the deadline.

System Administrator

F-A1. A system administrator must be able to add new users to the system.

F-A2. A system administrator must be able to assign the role to users.

Government

F-GV1. The system has to follow the actual educative legislation.

3.2 Non-Functional Requirements

User
N-U1. A user will be automatically logged out if inactive for 30 minutes.

Student
N-ST1. A student can submit a Project Description only once per attempt.
N-ST2. A student should be able to submit a Project Description before the deadline.
N-ST3. A student can only submit a project description if there is not already a project description from that student waiting for a grade.
N-ST4. A student can not submit another project description after receiving a passing grade for a previous project description.
N-ST5. A student can only submit files in "zip" or pdf formats.
N-ST6. A student can only submit a project plan after receiving a passing grade on the project description.
N-ST7. After receiving a passing grade for a project description, a student must be able to suggest a supervisor before the deadline for the project plan.
N-ST8. A student can only submit a report before the deadline.
N-ST9. A student can only submit a report once.
N-ST10. A student can only submit a report after receiving a passing grade on the project plan.
N-ST11. A student can only submit a final report before the deadline.
N-ST12. A student can only submit a final report once.
N-ST13. A student cannot submit a final report before receiving feedback from the supervisor.
N-ST14. A student cannot submit a final report before receiving feedback from the readers.
N-ST15. A student cannot submit a final report before receiving feedback from the opponent.

Supervisor
N-SU1. A supervisor must be able to confirm the thesis proposal if it received a pass result.
N-SU2. A supervisor must be able to accept or reject a supervision request.

Coordinator
N-C1. The status that the coordinator sees of the submitted project plans' should include the supervisors' feedbacks and the supervision confirmation.
N-C2. The grade on the project plan must be a pass or fail grade.
N-C3. The coordinator can grade the project plan after it received positive feedback from a supervisor.
N-C4. The reply on the bid can be accepted or rejected.
N-C5. The report should have readers before assigning opponents.
N-C6. The grades on the final reports must be on the range from A to F.

Functional

N-F1. The feedback on the reports should be sent before the deadline.
N-F2. The final evaluation of the final reports should be sent before the deadline.

Opponent
N-O1. The feedback on the reports should be sent before the deadline.

System Administrator
N-A1. The roles that the system administrator can assign are student, supervisor, coordinator, opponent and reader.

System
N-SY1. The system should be testable.
N-SY2. The system must be a web application.
N-SY3. The system back-end must be created in Java.

4. Requirements Analysis

In order to analyse the requirements, we investigated the following questions for each requirement:

1. Premature design; does the requirement include a premature design or implementation information?
2. Combined requirements; could the description of a requirement be broken down into several different requirements?
3. Unnecessary requirements; is the requirement 'gold plating'? That is a cosmetic addition to the system which is not really necessary.
4. Use of non-standard hardware; does the requirement mean that non-standard hardware or software must be used?
5. Conformance with business goals; is the requirement consistent with the business goals defined in the introduction to the requirements document?
6. Requirements ambiguity; is the requirement ambiguous, i.e., could it be read in different ways by different people?
7. Requirements realism; is the requirement realistic given the technology which will be used to implement the system?
8. Requirements testability; is the requirement testable, that is, is it stated in such a way that test engineers can derive a test which can show if the system meets that requirement?
9. Requirement categorization; is the requirement categorized correctly?

The objective of this section is to improve the requirements by studying them in deep. The information gathered in this research, that is shown in the matrix below, will be used to create new and refined requirements.

4.1 Requirement analysis matrix

Code	Requirements Questions								
	1	2	3	4	5	6	7	8	9
F-U1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
F-U2	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
F-ST1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
F-ST2	Ok	Fail	Fail	Ok	Ok	Ok	Ok	Ok	Ok
F-ST3	Ok	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Fail
F-ST4	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Fail

F-ST5	Ok	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Fail
F-ST6	Ok	Ok	Fail	Ok	Fail	Ok	Ok	Ok	Fail
F-ST7	Ok	Fail	Fail	Ok	Fail	Fail	Ok	Ok	Fail
F-ST8	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Fail
F-ST9	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
F-ST10	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Fail
F-SU1	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Ok
F-SU2	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
F-SU3	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
F-SU4	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Fail
F-SU5	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Ok
F-C1	Ok	Ok	Ok	Ok	Ok	Fail	Ok	Ok	Ok
F-C2	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
F-C3	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Fail
F-C4	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Fail
F-C5	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Fail
F-C6	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Fail
F-C7	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Fail
F-C8	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Ok
F-R1	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Ok
F-R2	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Fail
F-R3	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Fail
F-O1	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok	Fail
F-A1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
F-A2	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
F-GV1	Ok	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok
N-U1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

N-ST1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-ST2	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-ST3	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-ST4	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-ST5	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-ST6	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-ST7	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-ST8	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-ST9	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-ST10	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-ST11	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-ST12	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-ST13	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-ST14	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-ST15	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-SU1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-SU2	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-C1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-C2	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-C3	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-C4	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-C5	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-C6	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-F1	Ok	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok
N-F2	Ok	Ok	Fail	Ok	Ok	Ok	Ok	Ok	Ok
N-O1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-A1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

N-SY1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-SY2	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
N-SY3	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

5. Refined requirements

This is the list of requirements produced after going through requirements analysis.

5.1 Functional requirements

F-U1. A user must be able to login into the system.
F-U2. A user must be able to log out of the system.

F-ST1. A student must be able to submit a project description.
F-ST2. A student must be able to view the grade on the project description.
F-ST3. A student must be able to re-submit the project description.
F-ST4. A student must be able to submit a project plan.
F-ST5. A student must be able to re-submit the project plan.
F-ST6. A student must be able to submit a supervisor request.
F-ST7. A student must be able to submit a report.
F-ST8. A student must be able to view any submitted feedback on the project description.
F-ST9. A student must be able to submit a final report.
F-ST10. A student must be able to view the grade of the final report.
F-ST11. A student must be able to view any submitted feedback on the project plan.
F-ST12. A student must be able to view any submitted feedback on the report.

F-SU1. A supervisor must be able to view incoming supervision requests from students.
F-SU2. A supervisor must be able to view the project description submitted by a student requesting supervision.
F-SU3. A supervisor must be able to reply to a supervision request.
F-SU4. A supervisor must be able to give feedback to a project plan.
F-SU5. A supervisor must be able to view the evaluation of a project plan by the coordinator.
F-SU6. A supervisor must be able to view her students' reports.
F-SU7. A supervisor must be able to submit her assessment on a student's report.

F-C1. A coordinator must be able to set a deadline for any submission.
F-C2. A coordinator must be able to change any deadline.
F-C3. A coordinator must be able to see a list of all submitted project plans.
F-C4. A coordinator must be able to see all the submitted project plans' status.
F-C5. A coordinator must be able to submit a grade on the project plan.
F-C6. A coordinator must be able to see a list of readers who have made a bid for a report.
F-C7. A coordinator must be able to assign readers to reports.
F-C8. A coordinator must be able to see a list of people who can be an opponent for a report.
F-C9. A coordinator must be able to assign opponents to any report.
F-C10. A coordinator must be able to see the list of the final reports that have received the final evaluation.
F-C11. A coordinator must be able to assign a grade to a submitted final reports.

F-C12. A coordinator must be able to assign a grade to a submitted project description.
F-C13. A coordinator must be able to view submitted project descriptions.
F-C14. A coordinator must be able to view submitted project plans.
F-C15. A coordinator must be able to view submitted final reports.
F-C16. A coordinator must be able to see a list of all submitted project description..

F-R1. A reader must be able to see a list of reports.
F-R2. A reader must be able to bid for as many reports as desired.
F-R3. A reader must be able to see a list of reports assigned to him/her.
F-R4. A reader must be able to submit feedback on the report.
F-R5. A reader must be able to see a list of final reports assigned to him/her.
F-R6. A reader must be able to submit a final evaluation of the final reports.

F-O1. An opponent must be able to see a list of reports assigned to him/her.
F-O2. An opponent must be able to submit feedback on the reports.

F-A1. A system administrator must be able to add new users to the system.
F-A2. A system administrator must be able to assign roles to users.

5.2 Non-functional requirements

N-U1. A user should be automatically logged out if inactive for a time.
N-U2. A user can only log in with a matching username and password.
N-U3. A password can only contain alphanumerical characters.
N-U4. A username can only contain alphanumerical characters.
N-U5. A password must contain at least 6 characters.
N-U6. A user can only submit files in ‘zip’ or ‘pdf’ formats. (old **N-ST5)**

N-ST2. A student can only submit a project description if the deadline has not passed.
N-ST3. A student can only submit a project description if there is not already a project description from that student waiting for a grade.
N-ST4. A student can not submit another project description after receiving a passing grade for a previous project description.
N-ST6. A student can only submit a project plan after receiving a passing grade on the project description.
N-ST7. After receiving a passing grade for the project description, a student must be able to suggest a supervisor before the deadline for the project plan.
N-ST8. A student can only submit a report before the deadline.
N-ST9. A student can only submit a report once.
N-ST10. A student can only submit a report after receiving a passing grade on the project plan.
N-ST11. A student can only submit a final report before the deadline.
N-ST12. A student can only submit a final report once.
N-ST13. A student cannot submit a final report before receiving feedback from the supervisor.

N-ST14. A student cannot submit a final report before receiving feedback from the readers.
N-ST15. A student cannot submit a final report before receiving feedback from the opponent.
N-ST16. A student can only submit a project plan before the deadline.
N-ST17. A student can only submit one file per submission.
N-ST18. A student can only submit a report once.

N-SU2. A supervisor must be able to accept or reject a supervision request.

N-C1. The status that the coordinator sees of the submitted project plans' should include the supervisors' feedbacks and the supervision confirmation.
N-C2. The grade on the project plan must be a pass or fail grade.
N-C3. The coordinator can only grade the project plan after it received feedback from a supervisor.
N-C5. The report should have readers before assigning opponents.
N-C6. The grades on the final reports must be on the range from A to F.
N-C7. The grade of the project description must be either pass or fail.

N-O1. The feedback on the reports should be sent before the deadline.

N-A1. The roles that the system administrator can assign are student, supervisor, coordinator, opponent and reader.

N-SY1. The system should be testable.
N-SY2. The system must be a web application.
N-SY3. The system back-end must be created in Java.

6. Traceability Table

Requirement	Requires	Constraints	Specifies
F-U1	F-A1		
F-U2	F-U1, F-A1		
F-ST1	F-U1		
F-ST2	F-U1, F-ST1, F-C12		
F-ST3	F-U1, F-ST1, F-C12		
F-ST4	F-U1		
F-ST5	F-U1, F-ST4, F-C5		
F-ST6	F-U1		
F-ST7	F-U1		
F-ST8	F-U1, F-ST1, F-C12		
F-ST9	F-U1		
F-ST10	F-U1, F-C11		
F-ST11	F-U1, F-SU4, F-C5		
F-ST12	F-U1, F-SU8, F-R4, F-O2		
F-SU1	F-U1, F-ST6		
F-SU2	F-U1, F-SU1, F-ST1		
F-SU3	F-U1, F-SU1		
F-SU4	F-U1, F-SU3, F-ST4		
F-SU5	F-U1, F-SU3, F-ST4, F-C5		
F-SU6	F-U1, F-SU3, F-ST7		

F-SU7	F-U1, F-SU7		
F-C1	F-U1		
F-C2	F-U1, F-C1		
F-C3	F-U1, F-ST4		
F-C4	F-U1, F-C3		
F-C5	F-U1, F-ST4		
F-C6	F-U1, F-R2		
F-C7	F-U1, F-R2, F-C6		
F-C8	F-U1, F-ST7		
F-C9	F-U1, F-C8		
F-C10	F-U1, F-R6		
F-C11	F-U1, F-R6		
F-C12	F-U1, F-C13		
F-C13	F-U1, F-C16		
F-C14	F-U1, F-C3		
F-C15	F-U1, F-C10		
F-C16	F-U1, F-ST1		
F-R1	F-U1, F-ST7		
F-R2	F-U1, F-R1		
F-R3	F-U1, F-C7		
F-R4	F-U1, F-R3		
F-R5	F-U1, F-ST9, F-C7		
F-R6	F-U1, F-R5		
F-O1	F-U1, F-C9		
F-O2	F-U1, F-O1		
F-A1	F-U1		
F-A2	F-U1, F-A1		
N-U1	F-U1, F-U2		

N-U2			F-U1
N-U3		F-U1	
N-U4		F-U1	
N-U5		F-U1	
N-U6		F-ST1, F-ST3, F-ST4, F-ST5, F-ST7, F-ST9	
N-ST2		F-ST1, F-ST3	
N-ST3		F-ST1, F-ST3	
N-ST4		F-ST1, F-ST3	
N-ST6		F-ST4, F-ST5	
N-ST7			F-ST6
N-ST8		F-ST7	
N-ST9		F-ST7	
N-ST10		F-ST7	
N-ST11		F-ST9	
N-ST12		F-ST9	
N-ST13		F-ST9	
N-ST14		F-ST9	
N-ST15		F-ST9	
N-ST16		F-ST4, F-ST5	
N-ST17		F-ST1, F-ST3, F-ST4, F-ST5, F-ST7, F-ST9	
N-ST18		F-ST7	
N-SU2			F-SU3
N-C1			F-C4
N-C2			F-C5
N-C3		F-C5	

N-C5		F-C9	
N-C6			F-C11
N-C7			F-C12
N-O1		F-O2	
N-A1			F-A2
N-SY1	N/A	N/A	N/A
N-SY2	N/A	N/A	N/A
N-SY3	N/A	N/A	N/A

7. Requirement classification

7.1 Tag descriptions

Tag	Classification	Description
SYS	System	Requirements that affect the entire system such as performance or reliability requirements.
UI	User interface	Requirements that are concerned with user interaction.
DB	Database	Requirements that are concerned with the data managed by the system.
SEC	Security	Requirements that are concerned with the integrity and safety of the system and data.
COM	Communications	Requirements that are concerned with the external communication facilities in the system.

7.2 Classification table

Requirement	Classification
F-U1	UI, DB, SEC
F-U2	UI, DB, SEC
F-ST1	UI, DB, SYS
F-ST2	UI, DB
F-ST3	UI, DB, SYS
F-ST4	UI, DB, SYS
F-ST5	UI, DB, SYS
F-ST6	UI, DB, SYS
F-ST7	UI, DB, SYS
F-ST8	UI, DB
F-ST9	UI, DB, SYS
F-ST10	UI, DB

F-ST11	UI, DB
F-ST12	UI, DB
F-SU1	UI, DB
F-SU2	UI, DB
F-SU3	UI, DB
F-SU4	UI, DB
F-SU5	UI, DB
F-SU6	UI, DB
F-SU7	UI, DB
F-C1	UI, DB
F-C2	UI, DB
F-C3	UI, DB
F-C4	UI, DB
F-C5	UI, DB
F-C6	UI, DB
F-C7	UI, DB
F-C8	UI, DB
F-C9	UI, DB
F-C10	UI, DB
F-C11	UI, DB
F-C12	UI, DB
F-C13	UI, DB
F-C14	UI, DB
F-C15	UI, DB
F-C16	UI, DB
F-R1	UI, DB
F-R2	UI, DB
F-R3	UI, DB

F-R4	UI, DB
F-R5	UI, DB
F-R6	UI, DB
F-O1	UI, DB
F-O2	UI, DB
F-A1	UI, DB, SYS
F-A2	UI, DB, SEC
N-U1	UI, SEC
N-U2	UI, DB, SEC
N-U3	UI, DB, SEC
N-U4	UI, DB, SEC
N-U5	UI, DB, SEC
N-U6	UI, DB, SYS, SEC
N-ST2	UI, DB, SYS
N-ST3	UI, DB, SYS
N-ST4	UI, DB, SYS
N-ST6	UI, DB, SYS
N-ST7	UI, DB
N-ST8	UI, DB, SYS
N-ST9	UI, DB, SYS
N-ST10	UI, DB, SYS
N-ST11	UI, DB, SYS
N-ST12	UI, DB, SYS
N-ST13	UI, DB, SYS
N-ST14	UI, DB, SYS
N-ST15	UI, DB, SYS
N-ST16	UI, DB, SYS
N-SU2	UI, DB

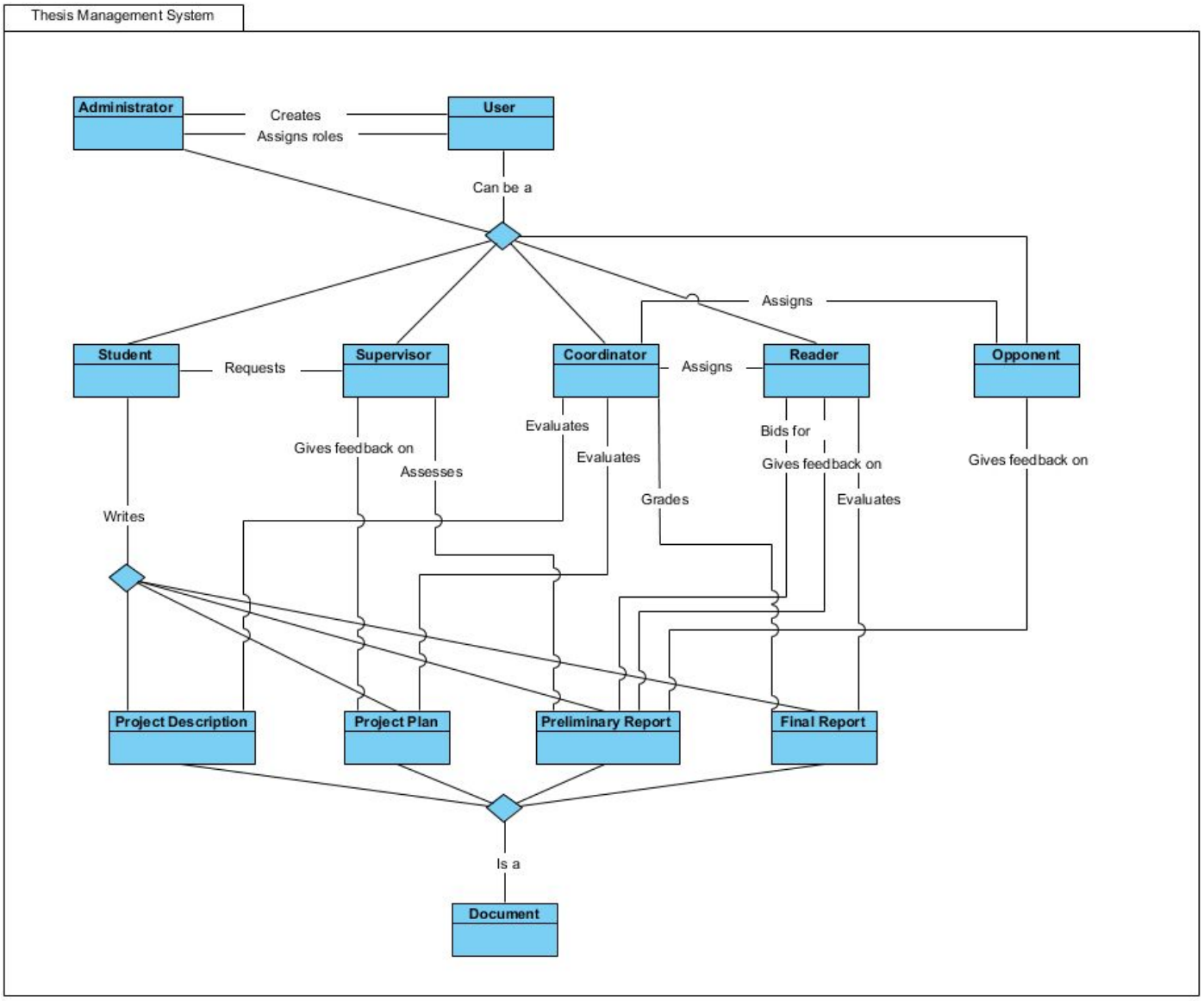
N-C1	UI, DB
N-C2	UI, DB
N-C3	UI, DB
N-C5	UI, DB
N-C6	UI, DB
N-C7	UI, DB
N-O1	UI, DB
N-A1	UI, DB, SEC
N-SY1	UI, DB, SEC, SYS, COM
N-SY2	UI, DB, SEC, SYS, COM
N-SY3	UI, DB, SEC, SYS, COM

8. Test Cases

All the test cases will be included in a separate document called “Test Cases Document.pdf”.

9. UML diagrams

9.1 Domain model diagram



9.2 Use case diagram