

Title of the Project here

Project Team

Student Name 1 19P-1234
Student Name 2 19P-1234
Student Name 3 19P-1234

Session 2018-2022

Supervised by

Supervisor Name

Co-Supervised by

Dr. Supervisor Name



Department of Computer Science

**National University of Computer and Emerging Sciences
Peshawar, Pakistan**

June, 2022

Student's Declaration

We declare that this project titled "*Title of the Project here*", submitted as requirement for the award of degree of Bachelors in Computer Science, does not contain any material previously submitted for a degree in any university; and that to the best of our knowledge, it does not contain any materials previously published or written by another person except where due reference is made in the text.

We understand that the management of Department of Computer Science, National University of Computer and Emerging Sciences, has a zero tolerance policy towards plagiarism. Therefore, We, as authors of the above-mentioned thesis, solemnly declare that no portion of our thesis has been plagiarized and any material used in the thesis from other sources is properly referenced.

We further understand that if we are found guilty of any form of plagiarism in the thesis work even after graduation, the University reserves the right to revoke our BS degree.

Student Name 1

Signature: _____

Student Name 2

Signature: _____

Student Name 3

Signature: _____

Verified by Plagiarism Cell Officer

Dated:

Certificate of Approval



The Department of Computer Science, National University of Computer and Emerging Sciences, accepts this thesis titled *Title of the Project here*, submitted by Student Name 1 (19P-1234), Student Name 2 (19P-1234), and Student Name 3 (19P-1234), in its current form, and it is satisfying the dissertation requirements for the award of Bachelors Degree in Computer Science.

Supervisor

Supervisor Name

Signature: _____

Co-Supervisor

Dr. Supervisor Name

Signature: _____

Coordinator of FYP

FYP Coordinator

National University of Computer and Emerging Sciences, Peshawar

Dr. Head of Computer Science Department

HoD of Department of Computer Science

National University of Computer and Emerging Sciences

Acknowledgements

Your acknowledgments here

Student Name 1

Student Name 2

Student Name 3

Abstract

Briefly state the (1) research problem, (2) methodology, (3) key results, and (4) conclusion. Generally, abstracts are between 150 and 200 words—roughly 10-15 sentences.

Contents

1	Introduction	1
1.1	my section	1
1.1.1	my subsection	2
2	Review of Literature	3
3	Project Vision	5
3.1	Problem Statement	5
3.2	Business Opportunity	5
3.3	Objectives	5
3.4	Project Scope	5
3.5	Constraints	5
3.6	Stakeholders Description	5
3.6.1	Stakeholders Summary	5
3.6.2	Key High Level Goals and Problems of Stakeholders	5
4	Software Requirements Specifications	7
4.1	List of Features	8
4.2	Functional Requirements	8
4.3	Quality Attributes	8
4.4	Non-Functional Requirements	8
4.5	Use Cases/ Use Case Diagram	8
4.6	Sequence Diagrams/System Sequence Diagram	8
4.7	Test Plan (Test Level, Testing Techniques)	8
4.8	Software Development Plan	8
4.9	Wire-frames	8

4.10	UI Screens	8
5	Iteration Plan	9
6	Iteration 1	11
6.1	Domain Model/ Class Diagram	11
6.2	Component Diagram	11
6.3	Layer Diagram	11
6.4	Structure Chart	11
6.5	Flow Diagram	12
6.6	Data Flow Diagram (DFD)	12
6.7	Data Dictionary	12
6.8	Activity Diagram	12
6.9	Network Automata/ Graphs or State Machine	12
6.10	Call Graph or Sequence Diagram	12
6.11	Interaction Overview Diagram	12
6.12	Schema Design/ ER Diagram	12
6.13	Data Structure Design	12
6.14	Algorithm Design	12
6.15	Development Phase	13
6.15.1	Unit Test	14
6.15.2	Suites or Test Cases	14
6.16	Maintainable Phase	14
6.16.1	CI/ CD	14
6.16.2	Deployment Diagram	14
6.16.3	System-Level Test Suites, Test Cases	14
6.16.4	SVN or GitHub (Optional)	14
6.16.5	Configuration/ Setup and Tool Manual (Optional)	14
7	Iteration 2	15
7.1	Domain Model/ Class Diagram	15
7.2	Component Diagram	15

7.3	Layer Diagram	15
7.4	Structure Chart	15
7.5	Flow Diagram	16
7.6	Data Flow Diagram (DFD)	16
7.7	Data Dictionary	16
7.8	Activity Diagram	16
7.9	Network Automata/ Graphs or State Machine	16
7.10	Call Graph or Sequence Diagram	16
7.11	Interaction Overview Diagram	16
7.12	Schema Design/ ER Diagram	16
7.13	Data Structure Design	16
7.14	Algorithm Design	16
7.15	Development Phase	17
7.15.1	Unit Test	18
7.15.2	Suites or Test Cases	18
7.16	Maintainable Phase	18
7.16.1	CI/ CD	18
7.16.2	Deployment Diagram	18
7.16.3	System-Level Test Suites, Test Cases	18
7.16.4	SVN or GitHub (Optional)	18
7.16.5	Configuration/ Setup and Tool Manual (Optional)	18
8	Iteration 3	19
8.1	Domain Model/ Class Diagram	19
8.2	Component Diagram	19
8.3	Layer Diagram	19
8.4	Structure Chart	19
8.5	Flow Diagram	20
8.6	Data Flow Diagram (DFD)	20
8.7	Data Dictionary	20
8.8	Activity Diagram	20

8.9	Network Automata/ Graphs or State Machine	20
8.10	Call Graph or Sequence Diagram	20
8.11	Interaction Overview Diagram	20
8.12	Schema Design/ ER Diagram	20
8.13	Data Structure Design	20
8.14	Algorithm Design	20
8.15	Development Phase	21
8.15.1	Unit Test	22
8.15.2	Suites or Test Cases	22
8.16	Maintainable Phase	22
8.16.1	CI/ CD	22
8.16.2	Deployment Diagram	22
8.16.3	System-Level Test Suites, Test Cases	22
8.16.4	SVN or GitHub (Optional)	22
8.16.5	Configuration/ Setup and Tool Manual (Optional)	22
9	Iteration 4	23
9.1	Domain Model/ Class Diagram	23
9.2	Component Diagram	23
9.3	Layer Diagram	23
9.4	Structure Chart	23
9.5	Flow Diagram	24
9.6	Data Flow Diagram (DFD)	24
9.7	Data Dictionary	24
9.8	Activity Diagram	24
9.9	Network Automata/ Graphs or State Machine	24
9.10	Call Graph or Sequence Diagram	24
9.11	Interaction Overview Diagram	24
9.12	Schema Design/ ER Diagram	24
9.13	Data Structure Design	24
9.14	Algorithm Design	24

9.15 Development Phase	25
9.15.1 Unit Test	26
9.15.2 Suites or Test Cases	26
9.16 Maintainable Phase	26
9.16.1 CI/ CD	26
9.16.2 Deployment Diagram	26
9.16.3 System-Level Test Suites, Test Cases	26
9.16.4 SVN or GitHub (Optional)	26
9.16.5 Configuration/ Setup and Tool Manual (Optional)	26
10 Implementation Details	27
11 User Manual	29
12 Conclusions and Future Work	31
References	33

List of Figures

List of Tables

Chapter 1

Introduction

State (1) the purpose of the investigation, (2) the problem being investigated, (3) the background (context and importance) of the problem (citing previous work by others), (4) your thesis and general approach, and (5) the criteria for your study's success [1].

- the purpose of the investigation
- the problem being investigated
- the background (context and importance) of the problem (citing previous work by others)
- your thesis and general approach
- the criteria for your study's success

1.1 my section

alkkjsf alksdjf lakssjfd lajfd lkasjf dlkasj sfdlkajs fldkjasldf jlaskdfj alkjaslkfjalkssjflkajsd-
dfk alkjaslkfjalkssjflkajsdflk alkjaslkfjalkssjflkajsdflk alkjaslkfjalkssjflkajsdflk alkjaslkf-
jalkssjflkajsdflk alkjaslkfjalkssjflkajsdflk alkjaslkfjalkssjflkajsdflk alkjaslkfjalkssjflkajsd-
flk alkjaslkfjalkssjflkalk alkjaslkfjalkssjflkajsdflk alkjaslkfjalkssjflkajsdflk alkjaslkfjalkssjflka-
jsdfk alkjaslkfjalkssjflkajsdflk alkjaslkfjalkssjflkajsdflk alkjaslkfjalkssjflkajsdflk alkjaslk-

Chapter 2

Review of Literature

A literature review is a survey of scholarly sources on a specific topic. It provides a critical overview of current knowledge, allowing you to identify relevant theories, methods, and gaps in existing research.

Note: Each student should cite at least 15 latest (state-of-the-art) papers not older than the previous five years from the current date. For a source selected, adopt the following nomenclature to explain each of them:

Introduction The introduction should clearly establish the focus and purpose of the literature review.

Body The body should contain a summary and critical evaluation of each source, focusing on the research design and conclusion.

Conclusion: In your conclusion, you should summarize the key findings you have taken from the literature and emphasize their significance to your topic.

There must be a tabular analysis of the research papers.

Chapter 3

Project Vision

This chapter should have the following information in it.

3.1 Problem Statement

3.2 Business Opportunity

3.3 Objectives

3.4 Project Scope

3.5 Constraints

3.6 Stakeholders Description

3.6.1 Stakeholders Summary

3.6.2 Key High Level Goals and Problems of Stakeholders

Chapter 4

Software Requirements Specifications

This chapter will have the functional and non functional requirements of the project.

4.1 List of Features

4.2 Functional Requirements

4.3 Quality Attributes

4.4 Non-Functional Requirements

4.5 Use Cases/ Use Case Diagram

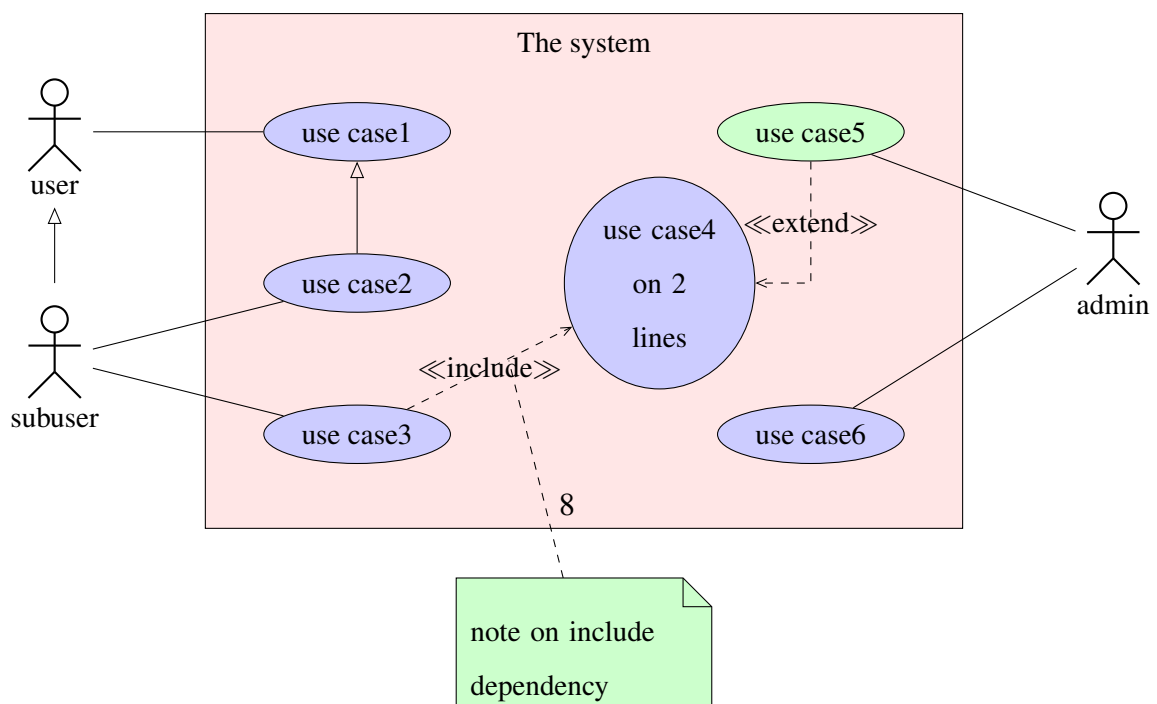
4.6 Sequence Diagrams/System Sequence Diagram

4.7 Test Plan (Test Level, Testing Techniques)

4.8 Software Development Plan

4.9 Wire-frames

4.10 UI Screens

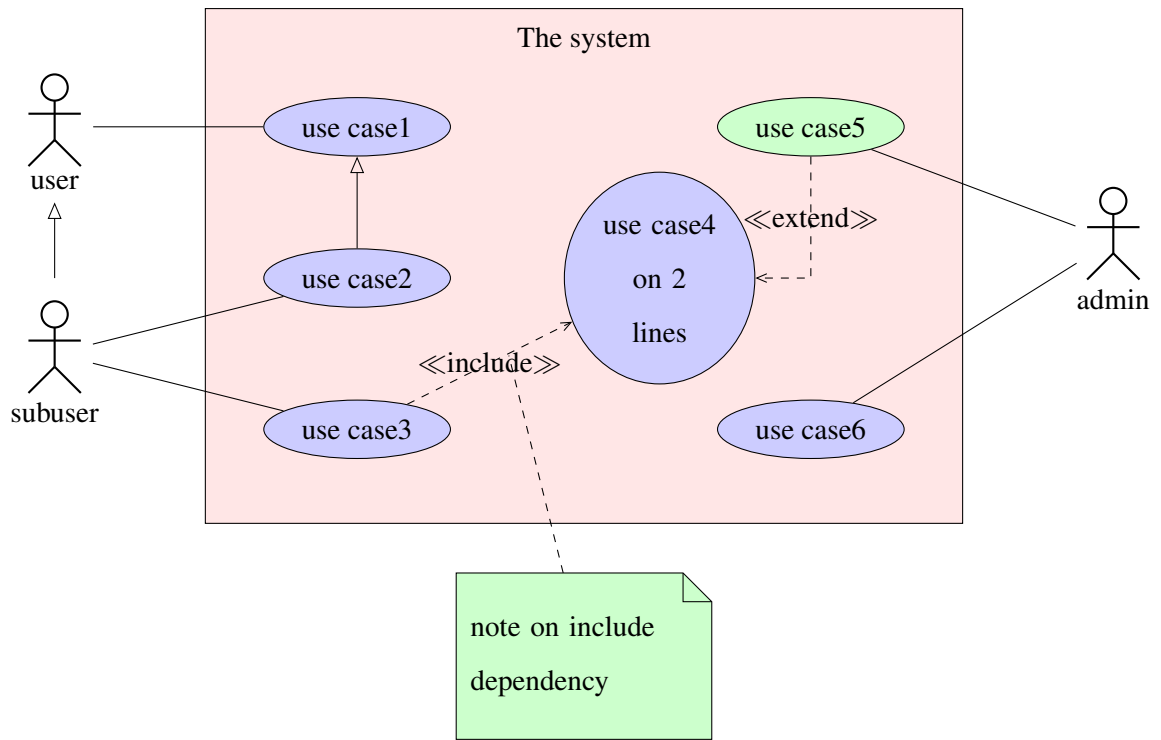


Chapter 5

Iteration Plan

This chapter is used to describe the iteration plan of the project. How will try project proceeds to complete all the requirements. The chapter will guide about the modules of the project and development of those modules. In this chapter students are required to discuss the plan of execution of the project in terms of phases:

- Midterm FYP 1
- Final FYP 1
- Midterm FYP 2
- Final FYP 2



Chapter 6

Iteration 1

The first iteration is expected to be completed by the midterm of the FYP-1. This chapter will have some of the artifacts based on system design. The requirements analysis section is same for all the systems while the design may vary. There may have two types of designs the structural design or Behavior Design. First section is for the structural design.

structural design

6.1 Domain Model/ Class Diagram

6.2 Component Diagram

6.3 Layer Diagram

6.4 Structure Chart

Behavior Design

6.5 Flow Diagram

6.6 Data Flow Diagram (DFD)

6.7 Data Dictionary

6.8 Activity Diagram

6.9 Network Automata/ Graphs or State Machine

6.10 Call Graph or Sequence Diagram

6.11 Interaction Overview Diagram

For all above designs

6.12 Schema Design/ ER Diagram

6.13 Data Structure Design

Any information

6.14 Algorithm Design

Any information

6.15 Development Phase

Comments, Naming Conventions, Static Analysis of Code, etc.,

6.15.1 Unit Test

6.15.2 Suites or Test Cases

6.16 Maintainable Phase

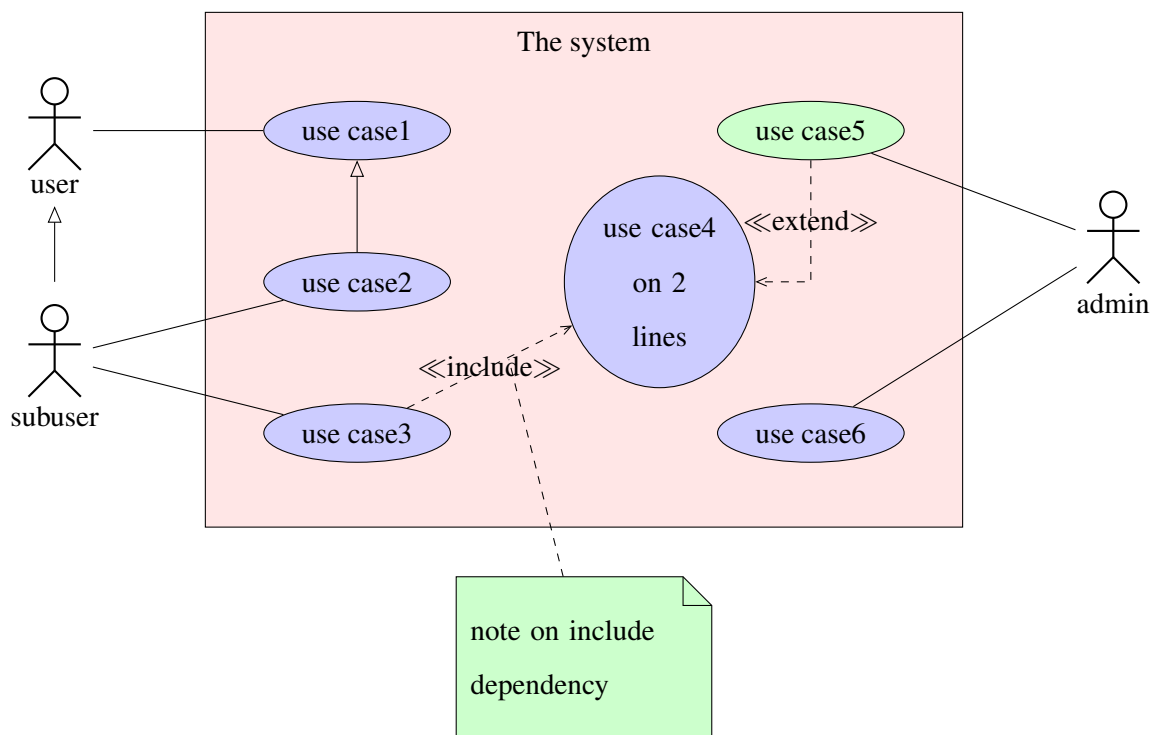
6.16.1 CI/ CD

6.16.2 Deployment Diagram

6.16.3 System-Level Test Suites, Test Cases

6.16.4 SVN or GitHub (Optional)

6.16.5 Configuration/ Setup and Tool Manual (Optional)



Chapter 7

Iteration 2

The first iteration is expected to be completed by the final of the FYP-1. This chapter will have some of the artifacts based on system design. The requirements analysis section is same for all the systems while the design may vary. There may have two types of designs the structural design or . First section is for the structural design.

structural design

7.1 Domain Model/ Class Diagram

7.2 Component Diagram

7.3 Layer Diagram

7.4 Structure Chart

Behavior Design

7.5 Flow Diagram

7.6 Data Flow Diagram (DFD)

7.7 Data Dictionary

7.8 Activity Diagram

7.9 Network Automata/ Graphs or State Machine

7.10 Call Graph or Sequence Diagram

7.11 Interaction Overview Diagram

For all above designs

7.12 Schema Design/ ER Diagram

7.13 Data Structure Design

Any information

7.14 Algorithm Design

Any information

7.15 Development Phase

Comments, Naming Conventions, Static Analysis of Code, etc.,

7.15.1 Unit Test

7.15.2 Suites or Test Cases

7.16 Maintainable Phase

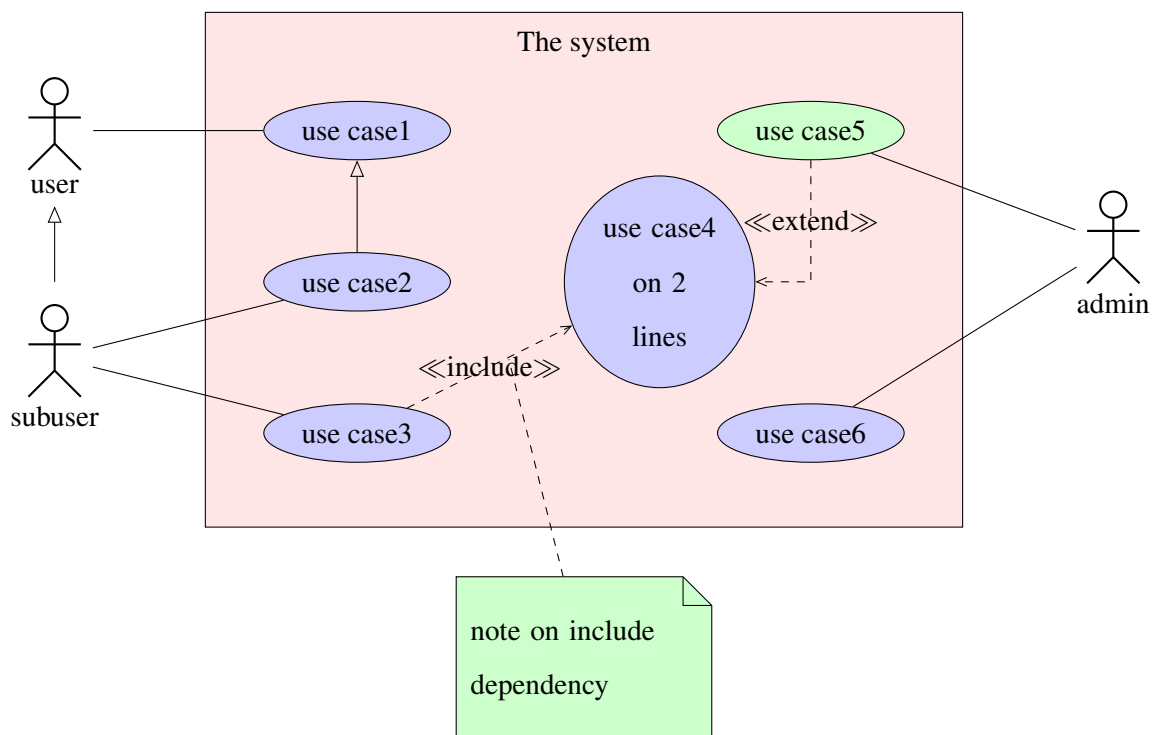
7.16.1 CI/ CD

7.16.2 Deployment Diagram

7.16.3 System-Level Test Suites, Test Cases

7.16.4 SVN or GitHub (Optional)

7.16.5 Configuration/ Setup and Tool Manual (Optional)



Chapter 8

Iteration 3

The first iteration is expected to be completed by the midterm of the FYP-2. This chapter will have some of the artifacts based on system design. The requirements analysis section is same for all the systems while the design may vary. There may have two types of designs the structural design or . First section is for the structural design.

structural design

8.1 Domain Model/ Class Diagram

8.2 Component Diagram

8.3 Layer Diagram

8.4 Structure Chart

Behavior Design

8.5 Flow Diagram

8.6 Data Flow Diagram (DFD)

8.7 Data Dictionary

8.8 Activity Diagram

8.9 Network Automata/ Graphs or State Machine

8.10 Call Graph or Sequence Diagram

8.11 Interaction Overview Diagram

For all above designs

8.12 Schema Design/ ER Diagram

8.13 Data Structure Design

Any information

8.14 Algorithm Design

Any information

8.15 Development Phase

Comments, Naming Conventions, Static Analysis of Code, etc.,

8.15.1 Unit Test

8.15.2 Suites or Test Cases

8.16 Maintainable Phase

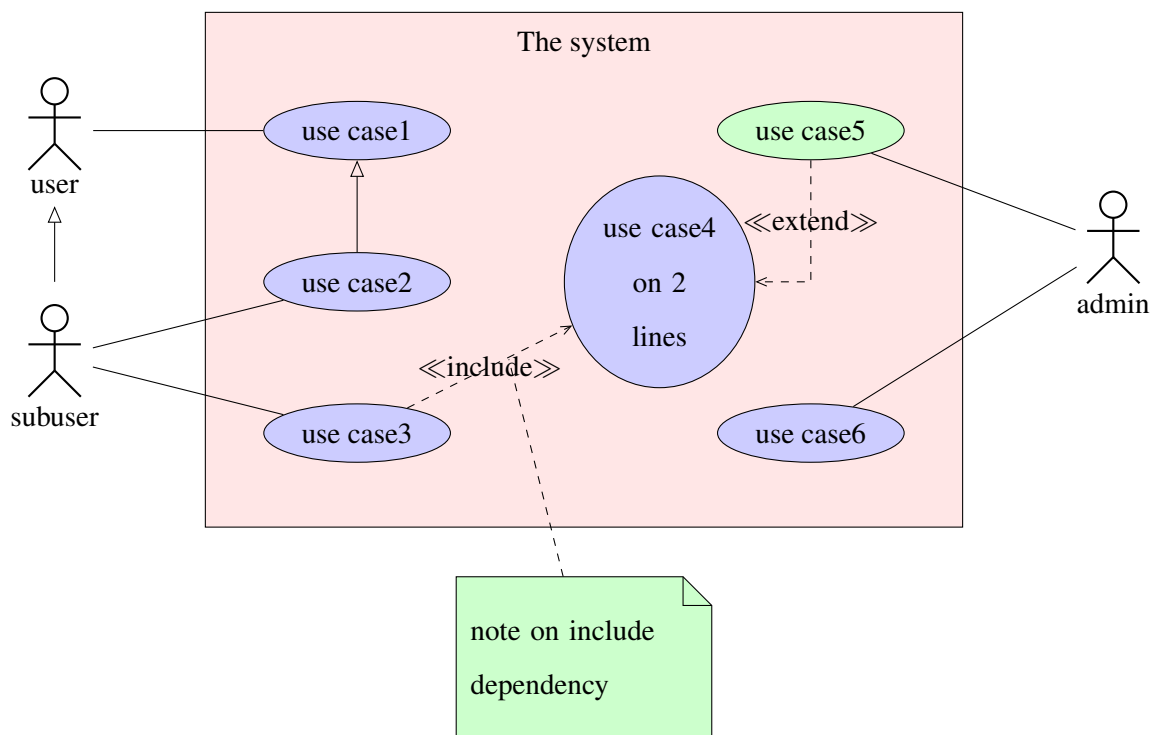
8.16.1 CI/ CD

8.16.2 Deployment Diagram

8.16.3 System-Level Test Suites, Test Cases

8.16.4 SVN or GitHub (Optional)

8.16.5 Configuration/ Setup and Tool Manual (Optional)



Chapter 9

Iteration 4

The first iteration is expected to be completed by the final of the FYP-2. This chapter will have some of the artifacts based on system design. The requirements analysis section is same for all the systems while the design may vary. There may have two types of designs the structural design or . First section is for the structural design.

structural design

9.1 Domain Model/ Class Diagram

9.2 Component Diagram

9.3 Layer Diagram

9.4 Structure Chart

Behavior Design

9.5 Flow Diagram

9.6 Data Flow Diagram (DFD)

9.7 Data Dictionary

9.8 Activity Diagram

9.9 Network Automata/ Graphs or State Machine

9.10 Call Graph or Sequence Diagram

9.11 Interaction Overview Diagram

For all above designs

9.12 Schema Design/ ER Diagram

9.13 Data Structure Design

Any information

9.14 Algorithm Design

Any information

9.15 Development Phase

Comments, Naming Conventions, Static Analysis of Code, etc.,

9.15.1 Unit Test

9.15.2 Suites or Test Cases

9.16 Maintainable Phase

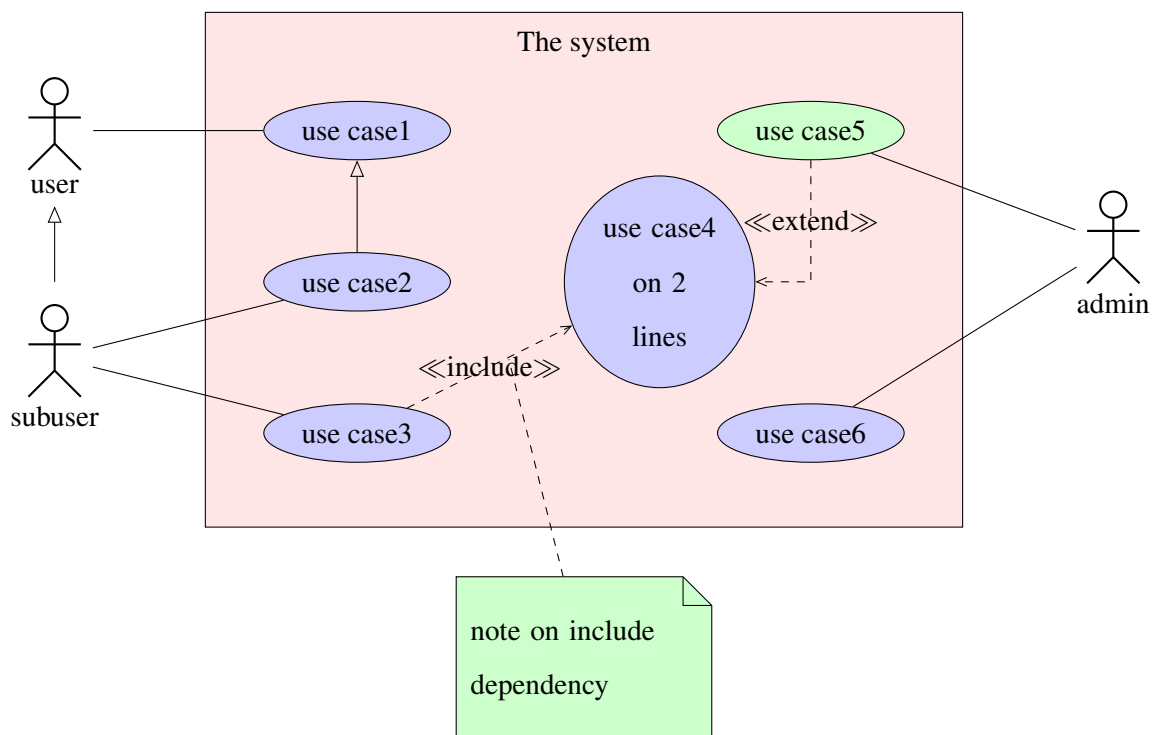
9.16.1 CI/ CD

9.16.2 Deployment Diagram

9.16.3 System-Level Test Suites, Test Cases

9.16.4 SVN or GitHub (Optional)

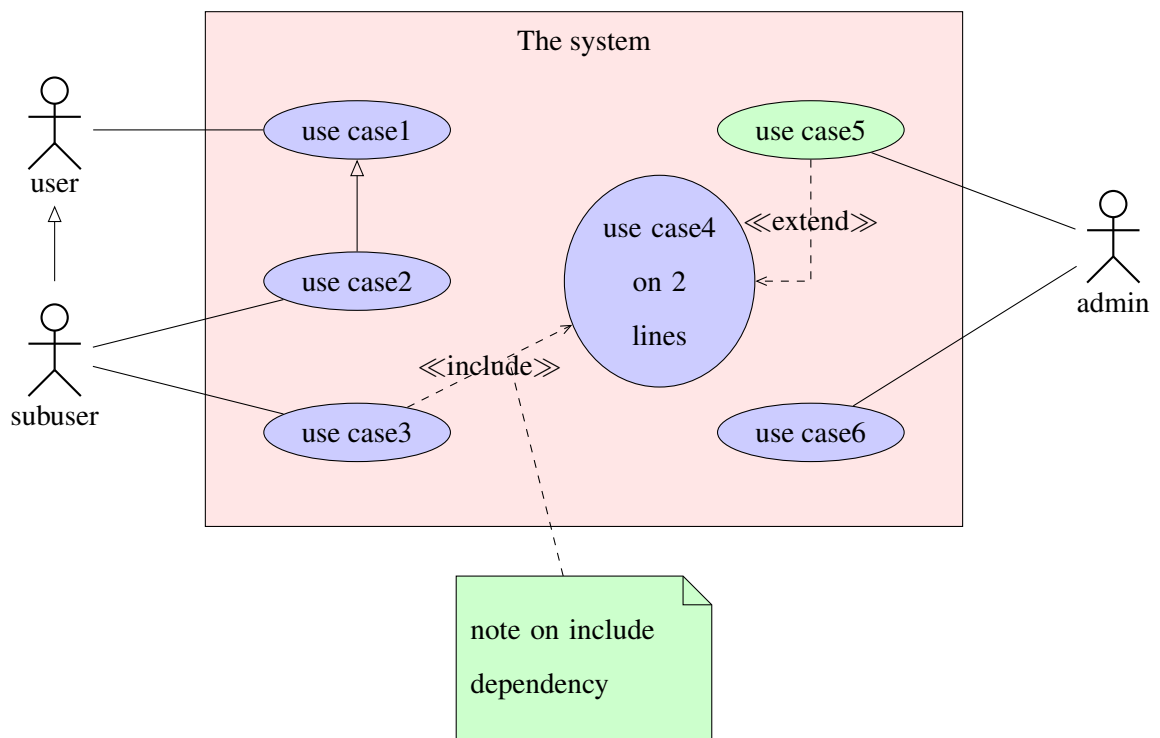
9.16.5 Configuration/ Setup and Tool Manual (Optional)



Chapter 10

Implementation Details

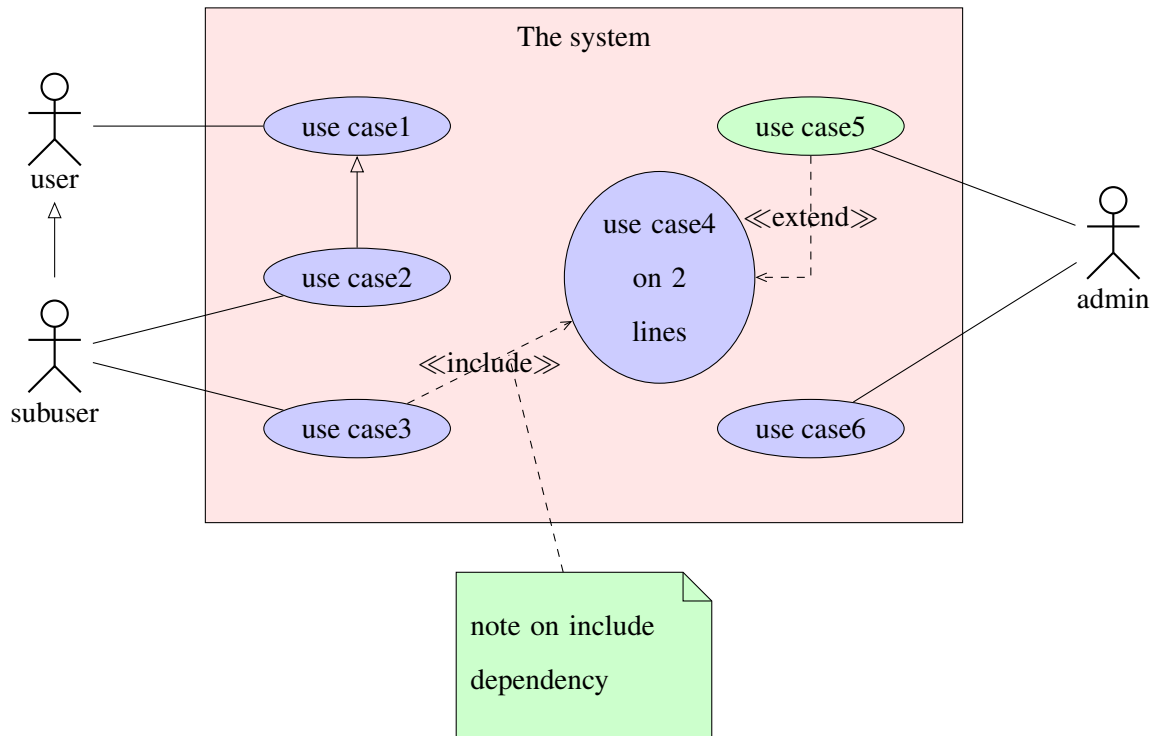
not the programming code but the algorithmic and procedural details especially related to the hidden/ backend algorithms that are not covered in the design



Chapter 11

User Manual

This chapter will have the user manual.



Chapter 12

Conclusions and Future Work

conclusions here

Bibliography

- [1] A Kolyshkin and S Nazarovs. Stability of slowly diverging flows in shallow water. *Mathematical Modeling and Analysis*, 2007.