Wisdom at the source of the Blue Nile

Bahir Dar University

Bahir Dar Institute of Technology

Faculty of Computing

Requirement Analysis Document (RAD)

for

Industrial project on[Your Project title here]

Submitted to the faculty of computing in partial fulfillment of the requirements for the degree

of Bachelor of Science in [your program of study here]

Group members

	Name	**IDNumber**
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____

Advisor ፡ _____

[Year]

Bahir Dar University, Bahir Dar Institute of Technology

Declaration

The Project is our own and has not been presented for a degree in any other university and all the sources of material used for the project have been duly acknowledged.

| ----------------------------------- | --- |
Name	**Signature**
Name	**Signature**
Name	**Signature**
Name	**Signature**
Name	**Signature**
Name	**Signature**

Faculty: Computing

Program: _____

Project Title: _____

This is to certify that I have read this project and that in my supervision and the students' performance, it is fully adequate, in scope and quality, as a project for the degree of Bachelor of Science.

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Nameof Advisor   **Signature**

Examining committee members	signature	Date
1. Examiner1	_____	....
2. Examiner2	_____	....

It is approved that this project has been written in compliance with the formatting rules laid down by the faculty.

Roles and Responsibilities of the Group Members

Fill the following role assignment matrix and put a tick mark(√) under each member in line with each task to indicate who has participated in carrying out the activities to produce the draft deliverable for discussion to the group so that they will discuss on the issue and come to consensus. Finally each group member will well understand the entire work of the project by sharing experiences among the colleagues.

List of Tasks	List members		
	Student1	Student 2	Student3
Task1			
Task2			
Task3			
Task4			
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Acknowledgment

List of acronyms

Write Expand form of abbreviations and short hand notations.

List of Figures

Generate a list of figures used in the document with their figure sequence by indicating their page number

List of Tables

Generate a list of tables used in the document with their table sequence by indicating their page number

Table of Contents

Abstract

Write the executive summary of the work done in the project

Chapter One: Introduction

1.1 Background

Describe the project area you are working on. For example, if you are working on a title called "Online Banking for ABC Company", then you write about Online banking in general. In addition, write about the organization for which you develop the system. Based on the previous title, this is about ABC Company.

Some basic information about:

- Background of the organization (Year of establishment, location, number of employees, organizational structure, etc.)
- Mission, vision and core values of the organization for which you are going to develop the new system, etc. …
- Basic information about the business process to be automated

1.2 Statement of the problem

Discuss on the gap and list in a descriptive way the problems in the existing system. In the statement of the problem, you identify the problems that exist in the current system the organization uses and list them down. Also discuss about the effects of the problems on the company's operations.

1.3 Objectives

Write the objective of your project i.e. what you want to achieve at the end of the project. This is written as general objective and specific objective that help to achieve the general objective. For the previous title, the general objective would be developing an online banking system for ABC Company.

1.3.1 General Objective

Write a statement which describes a result that will be achieved within your project. It should be specific, measurable, achievable, and realistic and time bounded.

1.3.2 Specific Objectives

Write Specific objectives which are broken down from the general objective. They should also specific, measurable, achievable, and realistic and time bounded.

1.4   Methodology

1.4.1   Requirement gathering methods

Under methodology, you discuss how you gather user requirements (interview, observation, document analysis, etc.). After requirement gathering, you have to structure the requirements and develop software models. So you should also specify how you model the system (OO, or structured approach) and why you chose that approach. Finally, you can list out the tools you use for the project especially software tools (the database type you use, the programming language you use, the UML modeling tools, etc.).

List and describe the methods you used to collect requirements. This might include Interview, questionnaire, document analysis, literature review, focus group discussion etc. Requirement gathering methods, requirement modeling (Structured vs object oriented) and tools used should clearly presented.

1.4.2   Analysis and design Methodology

Specify:

- the method you used as to whether Structured   or object oriented analysis and design methodology
- Tools to be used for analysis and design.

1.4.3   Implementation Methodology

Specify software development tools that you will use to create, debug, maintain, or support programs and applications. (The programming language, DBMS, application server, reporting tool, etc)

1.5   Feasibility

Write about the feasibility of your project in terms of economic benefit, technical knowledge required to implement the system, and the time available for the project.

- Economic feasibility
- Technical feasibility
- Time feasibility

1.6   Beneficiaries or significant of the project

Describe the benefits to be obtained as a result of deploying the developed system. This can be described by categorizing the different users and stakeholders who will have a direct or indirect opportunity to contact with system. Specify the significance of your project. What are effects of the project on the company or other company's in general. What is its contribution to the project area?

1.7 Limitations of the project

Write the scope of your project. To what extent your system solves the problem of the organization. Generally, the services, the deliverability you have to accomplish in the given time, the limitation of your projects.

- List and describe the issues you might have encountered as challenges/constraints which hinder you from fully achieving your plan in your project
- Clearly indicate the activates left undone due to these constraints or any other factors as the standard expected in the project

1.8 Scope of the project

Here specify the boundary of the system by writing list of business processes or subsystems to be implemented and the services they can provide.

1.9 Organization of the project

Here, write the comprehensive summary of the works in the project through briefly describing what is covered each chapter.

Chapter Two: System features

2.1 The Existing System

This section describes the current system of the organization as it is. This could be describing the activities they perform, how they handle information, and the drawbacks of doing operations as in similar way as things are done in the current system.

- Describe how the existing system functions (be it is manual, semi –automated, automated) how the people working there processes their daily operations.
- Describe the excising system how it works in detail step by step

2.2 Proposed System

Brief description of the proposed solutions for the problems mentioned in the statement of the problem is need to state clearly.

2.3 Requirement Analysis

2.3.1 Functional requirement

List all requirements of the system. Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind. You may provide a short description of the feature/requirement and indicate whether it is of High, Medium, or Low priority. Label the requirements like FREQ-1, FREQ-2, and FREQ-3….etc.

2.3.2 System Use case

2.3.2.1 Use case Diagram

Show the functionality of your system using use case diagram and how the actors interact with the system. Also show use case reusability by including <<include>>, <<extend>>, and <<inherit>> relationships between use cases. The requirements specified in section 2.3.1 should be modeled using use case diagram.

2.3.2.2 Use Case documentation

This section should include a use case documentation by showing use case number, name, actor, description, pre-condition, post condition, priority, basic course of action and alternate course of actions.

In the basic course of action and alternate course of action, you have to indicate the user interface and the business rule if needed.

2.3.3   Business Rule Documentation

Write relevant business rules for the system which will include (Identifier, name, description and reference, revision history).Business rules: Write the rules used by the organization currently. In the online banking case, this could be the interest rate allowed for saving account, the maximum amount of money that someone can withdraw at a time, interest rate for loan, etc. Generally, they are the rules by which the business is governed.

2.3.4   User Interface prototype

User interface requirements should be gathered with a prototype approach here and aligned with system use case documentation that shows the user interaction with the system. It should be labeled and referenced in the use case documentation.

2.3.5   State chart diagram

Draw state chart diagram for each class showing the states the object (class) passes through in its life. This models the how objects change from one state to another and when the change happens.

2.3.6   Activity Diagram

Draw activity diagrams to show the operations/activities performed by use cases to achieve their functionality. Activity diagrams are drawn for each use case. Show the visual representation of activities/processes for use cases or methods or business processes.

2.3.7   Sequence diagram

Sequence diagrams should be drawn for each use case to show how different objects interact with each other to achieve the functionality of the use case. Show how objects operate with one another and in what order (chronological) to respond to the actors.

2.3.8   Analysis Class Model

Model Classes with their attributes, methods, relationship, multiplicity and Role

2.3.9   Logic model

Algorithm/Pseudo code for each process

2.4 Non functional requirement

Specify the technical requirements (performance, reliability, security, etc.) for your system.

2.5 System Requirement

2.5.1 Hardware requirements

Write the specification of the hardware devices such as CPU, RAM, hard disk and other relevant hardware devices needed for successful deployment.

2.5.2 Software requirements

Write the specification of the set of software such as operating system, browser, plug-ins or whatever software product and versions required running the developed system.

2.6 Key abstraction with CRC analysis

Identify the concepts and things that are important for the system and draw CRC card for them .This helps to identify the objects the system deals with and how they collaborate/interact with each other. This evolves into a class diagram of your system when you create a class diagram for the new system.

2.6.1 Conceptual modeling: Class diagram

Create a class diagram that will be the building block the system you will develop. Class diagrams should show the objects the system is comprised of and how they are interrelated.

2.6.2 Identifying change cases

Change cases are used to describe potential modifications requirements to the system. You describe the potential change to your existing requirements, indicate the likeliness of that change occurring, and indicate the potential impact of that change.

2.6.3 User Interface Prototyping

Create a user interface prototype and include in the analysis document. This may help to gather more requirements from users or show how the system works. You can create the prototype using UI prototyping tool.

References

Include the list of relevant literatures referenced in this document so readers can easily find that you've cited. (Use Standard style of writing a reference)

Appendices

The following items can be attached as necessary
- Sample of Working forms which are taken from the business to be automated

- Questionnaire and interview questions used during requirement gathering

- pictures /photos relevant to the project work