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Higher Institute of Computer Science of Kef

Final Study Project Report

Presented for the purpose of obtaining

Bachelor's degree in Software Engineering and Information Systems

By

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myOrg – Intelligent Association Management Solution

Professional Supervisor : **Aymen Touihri** Association President

Academic Supervisor : **Akrem Kefi** Maître Assistant

Completed at Bina Association

Année Universitaire 2024 - 2025

Professional Approval

I authorize the student to submit their internship report for the purpose of a defense.

Professional Supervisor, **Mister Aymen Touihri**

Association President

Signature and Stamp

Academic Approval

I authorize the student to submit their internship report in preparation for a defense.

Academic Supervisor, **Mister Akrem Kefi**

Maître Assistant

Signature

Dedication

With profound gratitude, I dedicate this work to :

My Professional Supervisor, **Mister Aymen Touihri**, for his invaluable guidance, mentorship, and unwavering support throughout this journey. His expertise and encouragement have been instrumental in shaping this project.

My Academic Supervisor, **Mister Akrem Kefi**, whose insightful feedback, academic rigor, and patience have significantly elevated the quality of my work and deepened my understanding of the field.

My beloved family, whose unconditional love, endless encouragement, and countless sacrifices have made it possible for me to pursue my dreams. Your belief in me has been my greatest source of motivation.

My dear friends, who have stood by me through challenging times, offered their support when needed, and celebrated every small victory along the way. Your friendship has made this journey truly meaningful.

All who have contributed to my growth, personally and professionally - your influence is woven into the fabric of this work.

Hamdi Belhaj

Acknowledgments

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I am grateful to be part of the Bina Association team alongside Mr. Aymen Touihri, where we collaboratively developed the concepts and requirements for this intelligent management solution. I would also like to express my appreciation to Mr. Nidhal Othmen, administrative assistant, whose valuable information and support contributed significantly to the project's development and implementation.

Hamdi Belhaj

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Liste des abréviations

- **GISI** = Génie Informatique des Systèmes Industriels
- **GLSI** = **G**énie **L**ogiciel et **S**ystèmes d'**I**nformation
- **GTR** = Génie des Télécommunications et Réseaux

General Introduction

Context and Importance

In today's rapidly evolving digital landscape, non-profit organizations and associations face increasing challenges in efficiently managing their administrative operations while adhering to complex regulatory requirements. The digitization of association management processes has become not just a convenience but a necessity for enhancing operational efficiency, ensuring compliance with legal obligations, and improving collaboration among team members. This digital transformation is particularly crucial in Tunisia, where associations must navigate specific regulatory frameworks while striving to maximize their social impact with limited resources.

Project Overview

Bina Association for Media and Development, a Tunisian non-profit organization, recognizes this need and has identified an opportunity to develop a comprehensive solution that addresses these challenges. Under the leadership of Mr. Aymen Touihri, the association's president, Bina seeks to not only enhance its internal operations but also create a solution that could potentially benefit the broader association ecosystem in Tunisia. The "myOrg – Intelligent Association Management Solution" project aims to develop a web-based platform that centralizes and optimizes the management of association activities according to Tunisian legal requirements. This platform will streamline project organization, administrative tasks, and financial management while providing user-friendly tools adapted to the specific needs of associations. By integrating artificial intelligence capabilities through a dedicated chatbot, the solution will further enhance user experience by providing intelligent assistance for administrative tasks, meeting planning, and decision-making processes.

Key Objectives

The primary objectives of this platform encompass several essential aspects of association management. The system aims to digitalize member work management, creating a more efficient workflow for all association members. It will automate recurring tasks such as meeting scheduling and regulatory requirements, freeing up valuable time for more strategic activities. The platform will improve collaboration through interactive tools that facilitate communication and information sharing among members. Financial management will be digitalized, covering invoices, tax withholding, monthly declarations, and contributions, ensuring compliance with Tunisian regulations. Additionally,

the solution will centralize data with secure access protocols, providing authorized users with immediate access to critical information. Finally, the platform will optimize project tracking and traceability, enabling better monitoring of progress and outcomes for all association initiatives.

Report Structure

This report is structured to provide a comprehensive overview of the project development process. Following this introduction, we will first present the general context of the project, including a detailed analysis of the association management challenges and the specific needs identified during the requirements gathering phase. Next, we will explore the technical specifications and architecture of the solution, detailing the technological choices and implementation approach. Subsequently, we will describe the development process, including the methodologies employed and the various phases from initial planning to final result. The report will then present the achieved results, highlighting the key features implemented and their business value. Finally, we will conclude with a reflection on the project outcomes, lessons learned, and potential future enhancements for the myOrg platform.

Chapitre 1

Project Background

Plan

1.1 Introduction

This chapter provides a general overview of the project context, detailing the environment in which the "myOrg – Intelligent Association Management Solution" is being developed. We will explore the challenges faced by associations in Tunisia regarding administrative management and explain how digital transformation can address these issues through innovative software solutions tailored to the unique needs of non-profit organizations.

1.2 Host Organization Presentation

1.2.1 Overview of Bina Association for Media and Development

Bina Association for Media and Development is a Tunisian non-profit organization that works at the intersection of human rights, civic inclusion, and social innovation. The association is dedicated to supporting media development and civic engagement initiatives throughout Tunisia. Located in Tunis at Bureaux 22 Residence Zarrad Avenue De La Bourse Lac 2, the association operates under the leadership of :

— Mr. Aymen Touihri, President

— Mr. Badis Belguith, Treasurer

— Mr. Hamdi Belhaj, General Secretary

Since its establishment, Bina has been committed to enhancing civic participation and media development in Tunisia through various community-focused programs.

Figure 1.1 shows the logo of Bina Association for Media and Development.

Figure 1.1 : Bina Association Logo

1.2.2 Main Solutions and Activities

Bina Association primarily focuses on several key areas including media development, civic engagement, and capacity building for other associations. The organization conducts various activities such as training workshops, community outreach programs, and collaborative projects aimed at enhancing the capabilities of civic organizations. These activities align with their mission to support development

in the media sector while promoting best practices in association management. Through these initiatives, Bina has established itself as a valuable contributor to Tunisia's civil society ecosystem.

1.3 Project Presentation

1.3.1 Project Context

This project has been undertaken as part of the final study project at the Higher Institute of Computer Science of Kef, under the academic supervision of Mr. Akrem Kefi, Maître Assistant in the Computer Science and Web Department. The work was carried out during an internship at Bina Association from January 15, 2025, to May 17, 2025, where I collaborated directly with Mr. Aymen Touihri, who provided professional guidance throughout the development process. This project represents a real-world application of software engineering principles to solve practical challenges in the non-profit sector.

1.3.2 Problem Statement

Associations in Tunisia face significant challenges in managing their administrative operations while complying with complex regulatory requirements. Current management processes are often manual, fragmented, and time-consuming, leading to inefficiencies, potential compliance issues, and limited collaboration capabilities. Specifically, Bina Association and similar organizations struggle with :

— Manual tracking of member activities and contributions

— Complicated and error-prone financial management processes

— Difficulty in ensuring compliance with Tunisian association regulations

— Limited tools for effective project management and team collaboration

— Lack of centralized document management systems

— Inefficient communication channels between association members

— Challenges in generating required regulatory reports and documentation

1.3.3 Analysis of Existing Solutions

Currently, most Tunisian associations rely on a combination of general-purpose tools that are not specifically designed for association management, such as :

Tableau 1.1 : Analysis of Existing Solutions

Solution Type	Limitations
Spreadsheet Applications	Limited collaboration features, no automation, prone to errors, difficult to maintain as data grows
Generic Project Management Tools	Not adapted to association-specific needs, lack integration with Tunisian regulatory requirements
Paper-based Systems	Time-consuming, difficult to search, risk of loss, no real-time collaboration
Generic Document Management	No specific features for association workflows, limited integration capabilities
Financial Software	Not tailored to non-profit accounting needs and Tunisian tax regulations for associations
Communication Tools	Fragmented across multiple platforms, no integration with project management

These existing approaches result in fragmented information, duplication of effort, compliance risks, and reduced operational efficiency, ultimately limiting the impact potential of associations.

1.3.4 Proposed Solution

The proposed solution is "myOrg – Intelligent Association Management Solution," a comprehensive web-based platform specifically designed for Tunisian associations. This platform will integrate :

— A user-friendly interface built with React.js for optimal user experience

— A robust backend system using Django framework for secure data management

— Automated administrative workflows tailored to association requirements

— Financial management tools compliant with Tunisian regulations

— Project and task management capabilities with tracking, reporting, and collaborative features

— Structured member management system designed to comply with Tunisian association law requirements

— Automated meeting planning tools with agenda creation and report generation capabilities

— Document management with controlled access based on user roles

— **Legal Knowledge AI Assistant** : A specialized chatbot powered by artificial intelligence that provides guidance on Tunisian association law, particularly the "Décret-loi n°2011-88 du 24 septembre 2011." This legislation governs associations in Tunisia and contains complex regulatory

requirements that many organization leaders struggle to interpret and implement correctly. The chatbot will :

— Provide instant answers to questions about legal compliance requirements

— Interpret specific articles of the law in plain language

This solution addresses the identified problems by centralizing information, automating routine tasks, ensuring regulatory compliance, and facilitating effective collaboration among association members. The platform aims to revolutionize how Tunisian associations operate by significantly reducing administrative burden and enhancing organizational effectiveness.

1.4 Work Methodology

1.4.1 Overview of Software Development Methodologies

Software development methodologies provide structured approaches to the development process, ensuring that projects are completed efficiently, with high quality, and within scope. Common methodologies include Waterfall, Agile, Scrum, Kanban, and DevOps, each with its own strengths and suitable application contexts. These methodologies differ in their approach to requirements gathering, development cycles, testing, and project management.

1.4.2 Waterfall Methodology Implementation

For this project, we have chosen to implement the Waterfall methodology, a linear and sequential approach to software development. This choice was made based on the well-defined requirements, clear project scope, and predetermined timeline of our project.

The Waterfall methodology involves distinct phases that are completed in sequence :

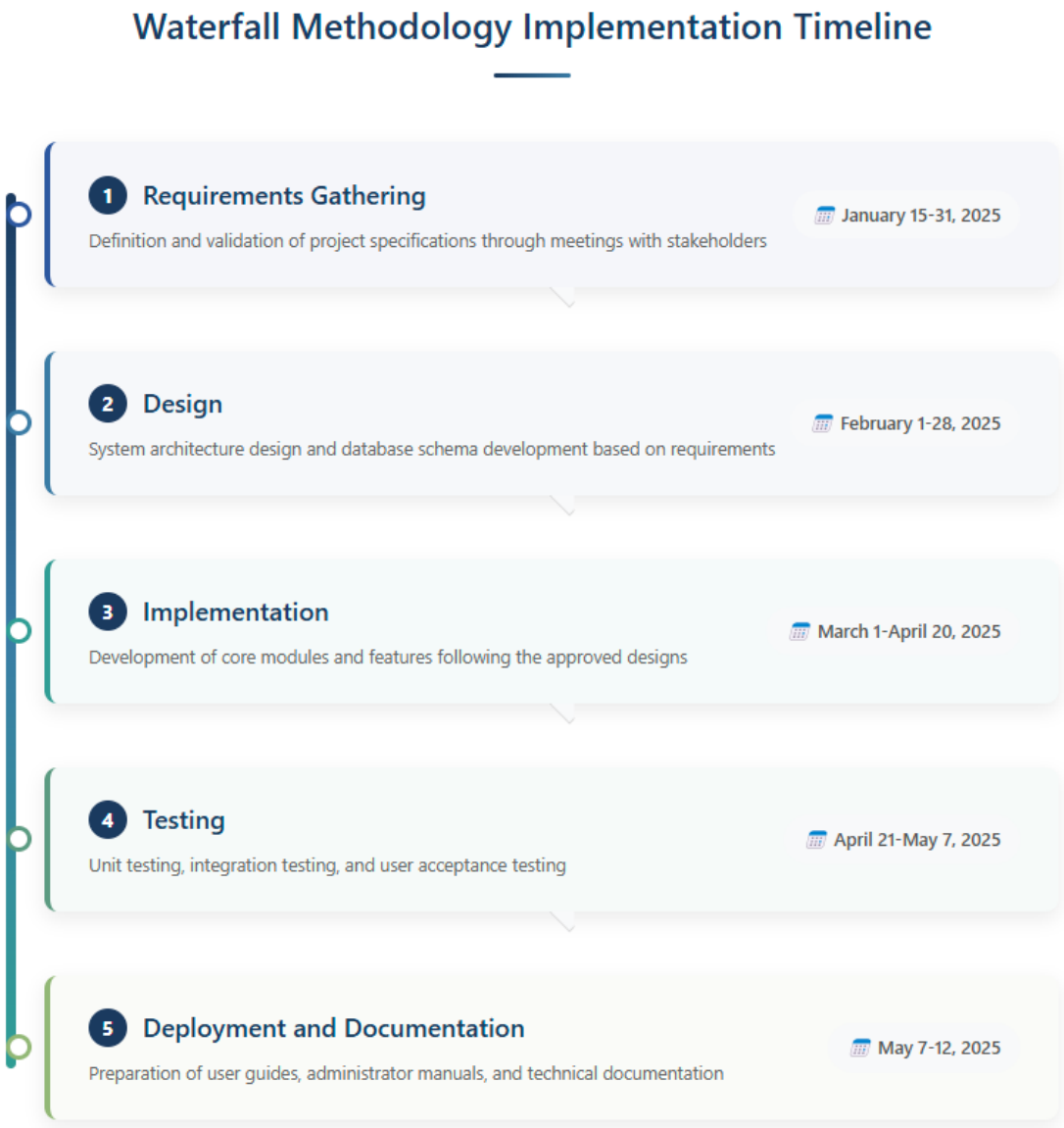
— **Requirements Gathering** (January 15-31, 2025) : Definition and validation of the project specifications through meetings with Bina Association stakeholders. This phase included interviews with association leaders to identify key pain points and requirements for the platform.

— **Design** (February 1-28, 2025) : System architecture design and database schema development based on the identified requirements. This phase included creating wireframes, defining the technology stack, and planning the system's components and their interactions.

— **Implementation** (March 1-April 20, 2025) : Coding of core modules and features following the approved designs. The development process prioritized the most critical functionalities first, including user authentication, member management, and the legal knowledge assistant.

— **Testing** (April 21-May 7, 2025) : Thorough testing of all components to ensure functionality and performance. This included unit testing, integration testing, and user acceptance testing with Bina Association members to gather feedback.

— **Deployment and Documentation** (May 7-12, 2025) : Preparation of comprehensive user documentation, including user guides, administrator manuals, and technical documentation for future maintenance and updates.



This methodology provides several advantages for our project, including clear milestones, comprehensive documentation, and a structured approach that ensures all requirements are addressed before implementation begins. The well-defined nature of association management processes makes the Waterfall approach particularly suitable for this project. Additionally, the limited timeline and resources available for this final study project make Waterfall an appropriate choice compared to more iterative methodologies.

1.5 Conclusion

This chapter has provided an overview of the project background, including a presentation of Bina Association for Media and Development, the problems faced by associations in Tunisia regarding administrative management, the limitations of existing solutions, and our proposed comprehensive platform. We have also outlined our choice of the Waterfall methodology for the project development process, highlighting its suitability for this specific context.

The "myOrg – Intelligent Association Management Solution" represents an innovative approach to solving the administrative challenges of Tunisian associations, with special emphasis on legal compliance through its AI-powered assistant for interpreting and implementing the requirements of Décret-loi n°2011-88. By integrating modern web technologies with domain-specific knowledge of association management and Tunisian regulatory requirements, the platform aims to significantly enhance the operational efficiency and effectiveness of civil society organizations.

The following chapter will detail the technical specifications and requirements analysis for the "myOrg – Intelligent Association Management Solution," laying the foundation for the design and implementation phases of this innovative association management platform.

Chapitre 2

Analyse et spécification des besoins

Plan

Introduction

Introduction partielle, qui annonce le contenu.

2.1 Identification des acteurs du système

2.2 Identification des besoins

2.2.1 Besoins fonctionnels

Citez les besoins fonctionnels ici...

2.2.2 Besoins non fonctionnels

Citez les besoins non fonctionnels ici...

2.3 Diagramme des cas d'utilisation

2.4 Identification des scénarios

2.5 Diagramme de GANTT théorique

Conclusion

Conclusion partielle ayant pour objectif de synthétiser le chapitre et d'annoncer le chapitre suivant.

Chapitre 3

Conception et choix technologiques

Plan

Introduction

Introduction partielle, qui annonce le chapitre.

3.1 Conception détaillée

Les diagrammes + descriptions textuelles

3.1.1 Diagramme des classes

3.1.2 Diagramme des séquences

3.2 Conception architecturale

architecture physique...

3.3 Choix technologiques

technologies à utiliser pendant la réalisation...

Conclusion

Conclusion partielle ayant pour objectif de synthétiser le chapitre et d'annoncer le chapitre suivant.

Chapitre 4

Réalisation

Plan

Introduction

Introduction partielle, qui annonce le contenu.

4.1 Choix techniques

4.2 Travail réalisé

4.3 Planning réel du projet

Conclusion

Conclusion partielle ayant pour objectif de synthétiser le chapitre et d'annoncer le chapitre suivant.

Conclusion générale

Rappel du contexte et de la problématique.

Brève récapitulation du travail réalisé et de la soultion proposée.

La taille de la conclusion doit être réduite, une page de texte tout au plus. Il est important de souligner que la conclusion ne comporte pas de nouveaux résultats ni de nouvelles interprétations.

Le plus souvent, la conclusion comporte :

- un résumé très rapide du corps du texte ;
- un rappel des objectifs du projet ;
- un bilan professionnel qui indique clairement les objectifs annoncés dans l'introduction et en particulier ceux qui n'ont pu être atteints. Il présente et synthétise les conclusions partielles ;
- un bilan personnel qui décrit les principales leçons que vous tirez de cette expérience sur le plan humain ;
- les limites et les perspectives du travail effectué.

Annexes

Annexe 1. Exemple d'annexe

Les chapitres doivent présenter l'essentiel du travail. Certaines informations-trop détaillées ou constituant un complément d'information pour toute personne qui désire mieux comprendre ou refaire une expérience décrite dans le document- peuvent être mises au niveau des annexes. Les annexes, **placées après la bibliographie**, doivent donc être numérotées avec des titres (Annexe1, Annexe2, etc.).

Le tableau annexe 1.1 présente un exemple d'un tableau dans l'annexe.

Tableau annexe 1.1 : Exemple tableau dans l'annexe

0	0
1	1
2	2
3	3
4	4

Annexe 2. Entreprise

La figure annexe 2.1 présente le logo entreprise.

Figure annexe 2.1 : Logo d'entreprise

ملخّص

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كلمات مفاتيح : الرجاء عدم تجاوز الخمس كلمات

Résumé

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Abstract

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