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Ministry of Higher Education
and Scientific Research

University of Sfax
National School of Electronics
and Telecommunications of Sfax



Engineer in :
Data and Decisional Systems
Engineering

Option :
Data science

Summer Internship Report

Presented at

National School of Electronics and Telecommunications of Sfax

in order to obtain the

**National Engineering Diploma in :
Data and Decisional Systems Engineering**

**Option:
Data Science**

by

Khadija Kriaa

Project Title

Presented on: dd/mm/yyyy



Acknowledgements

I would like to express my sincere gratitude to everyone who contributed to the success of my summer internship at **Union Internationale de Banques (UIB)**.

First and foremost, I would like to thank my internship supervisor, **Mr. Moez Bouassida**, for his guidance, availability, and valuable advice throughout this internship. His support and constructive feedback greatly contributed to the successful completion of this work and to the development of my technical and professional skills.

I would also like to thank the entire **UIB team** for their warm welcome, support, and for providing me with a stimulating professional environment. The opportunity to work on a project involving **Artificial Intelligence, Natural Language Processing, and Retrieval-Augmented Generation (RAG)** allowed me to put my academic knowledge into practice while gaining valuable insight into the application of these technologies in the banking sector.

I am equally grateful to the professors and academic staff of **ENET'Com, University of Sfax**, for the knowledge and skills they have provided throughout my engineering studies, which formed an important foundation for this internship.

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LIST OF ABBREVIATIONS

AAA Aaa Aaa Aaa

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CCC Ccc Ccc Ccc



General Introduction

The rapid development of Artificial Intelligence (AI) and Natural Language Processing (NLP) is transforming the way organizations manage, access, and exploit information. In sectors where large volumes of documents are continuously produced, the ability to retrieve relevant information quickly and accurately has become increasingly important. The banking sector is a particularly relevant example, as financial institutions must manage a large number of internal documents, regulations, procedures, and circulars that contain essential information for their employees.

In this context, **Union Internationale de Banques (UIB)** relies on internal circulars and regulatory documents to communicate updates, rules, and procedures to its employees. These documents may contain a significant amount of structured and unstructured information, making manual information retrieval time-consuming and sometimes difficult. Providing employees with an intelligent system capable of understanding their questions and retrieving the relevant information from these documents can therefore improve both accessibility and efficiency.

Recent advances in Large Language Models (LLMs) have opened new possibilities for developing intelligent question-answering systems. However, relying solely on an LLM may lead to inaccurate or unsupported responses, particularly when dealing with private and domain-specific information. **Retrieval-Augmented Generation (RAG)** addresses this limitation by combining information retrieval with language generation. Relevant passages are first retrieved from a knowledge base and then provided to the language model as contextual information, enabling it to generate answers grounded in the organization's documents.

The objective of this summer internship was therefore to contribute to the development of an **AI-powered banking assistant for UIB employees**, capable of answering questions

about internal circulars and banking procedures. The project involved several stages, including the extraction and preprocessing of information from PDF documents, document chunking, semantic embedding, vector storage, information retrieval, and the integration of an intelligent agent for generating context-aware responses. Particular attention was also given to the evaluation of the system in order to assess the relevance and reliability of the retrieved information and generated answers.

This internship provided an opportunity to apply concepts related to Artificial Intelligence, Natural Language Processing, information retrieval, and Large Language Models in a real-world banking environment. It also allowed me to gain practical experience in designing and implementing an end-to-end AI system while understanding the challenges associated with processing sensitive, domain-specific information.

This report presents the work carried out during the internship. It first introduces the host organization and the context of the project. It then presents the analysis of the existing problem and the proposed approach. The following chapters describe the different stages of the system, from document processing and knowledge-base construction to retrieval, agent implementation, and evaluation. Finally, the report discusses the results obtained, the challenges encountered, and possible directions for future improvements.

General Context and Problem Definition

1.1 INTRODUCTION

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Table 1.1: Table Title

Country List		
Country Name or Area Name	ISO ALPHA 2 Code	ISO ALPHA 3
Afghanistan	AF	AFG
Aland Islands	AX	ALA
Albania	AL	ALB
Algeria	DZ	DZA
American Samoa	AS	ASM
Andorra	AD	AND
Angola	AO	AGO

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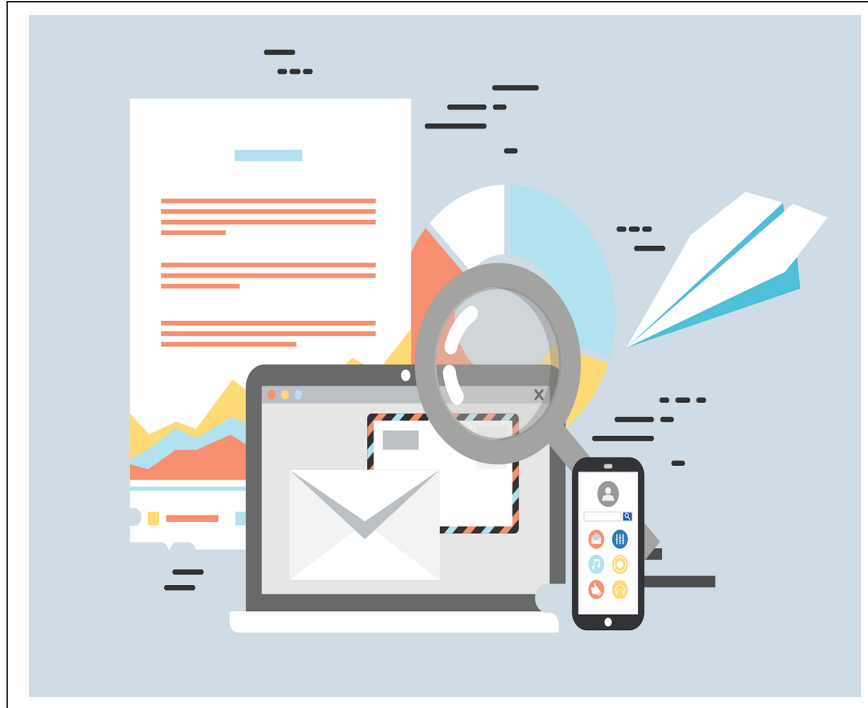


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Chapter

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CHAPTER 2 TITLE

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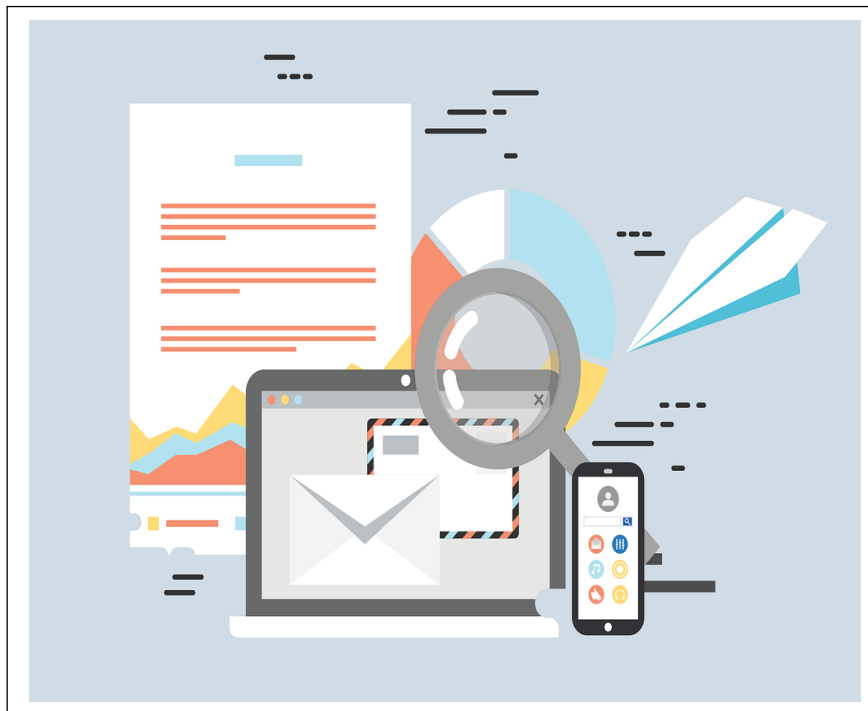


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GENERAL CONCLUSION

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<https://www.farnell.com/datasheets/1682209.pdf>



APPENDICES

A.1 APPENDIX 1 TITLE

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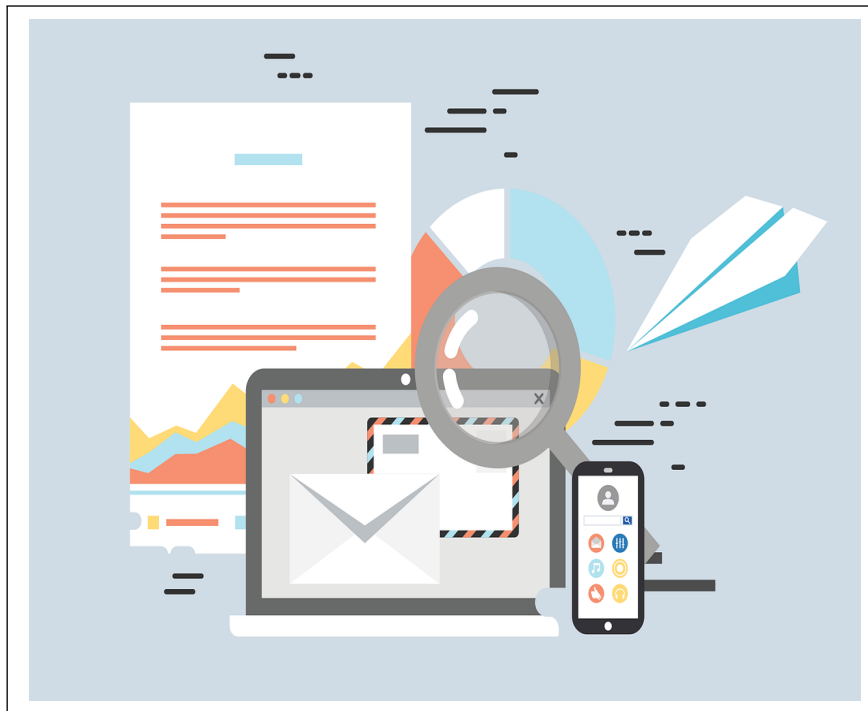


Figure A.1: Figure title of appendix 1

A.2 APPENDIX 2 TITLE

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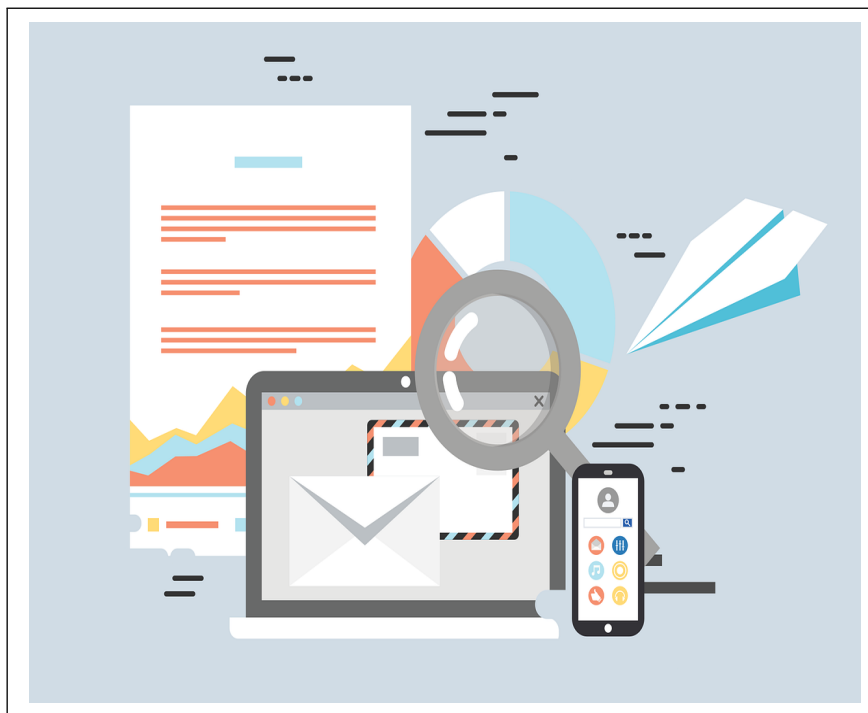


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PROJECT TITLE

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