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**THESIS**

To obtain the diploma of *state engineer's*

Field: Computer Science

Specialty: Système d'Information et Web (SIW)

**Theme**

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**Design and Implementation of a Decision-Support  
System for NAMLATIC Hotel Reservation  
Company**

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**Presented by:**

Boulma Dacine Youssra

Mimouni Wafaa

Submission Date : **July, 2023** In front of the jury composed of

Mr. Mohammed KECHAR

Supervisor

Mrs.Hanae NAOUM

President

Mr.Samir AWAD

Examiner

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*-Wafaa & Dacine*

## DEDICATION

*I dedicate this modest work to:*

*To the woman who suffered without letting me suffer, who spared no effort to make me happy, my adorable mother, thank you for everything.*

*To the man who helped me become who I am today, my dear dad Fateh, may God keep and protect him.*

*To my brothers Abdellah, Younes, and specially to my dearest sister Fatoum.*

*All my family members, aunts, uncles, my lovely grand mother and my friends who give me love, hope and liveliness. A very big thank you.*

*My colleagues at school Imene, Djihene, Manel, Ines, Khaoula and Hinda Thank you for the excellent moments spent throughout these five years, the atmosphere and the cultural exchanges.*

*Words are not enough to express all the good I feel! Just Thank you !!!*

**- Wafaa**

## DEDICATION

*I dedicate this modest work to:*

*To the memory of my beloved grandmother and father, who are no longer with us,*

*To my mother, aunt, and brothers Aghiles, Youcef and Juba for their constant presence, encouragement, and support throughout my journey,*

*To my lovely cousins Alya and Dassyne,*

*To my dear friends, especially Kenza, who have played a crucial role in my journey. Their unwavering support and genuine friendship have been a blessing. I am grateful for their care and friendship,*

*Last but certainly not least, to Amine, who has been my unwavering support throughout every challenge and triumph. Your constant presence has provided me with strength. Having you by my side has made all the difference.*

***-Dacine***

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## ABSTRACT

This project focuses on the implementation of a business intelligence (BI) system and an interactive dashboard for Namlatic, an online hotel reservation platform. The main objective is to enhance decision-making by providing actionable insights through in-depth data analysis. The project includes data collection and integration from various sources, data modeling, and the design and development of the interactive dashboard. Technologies utilized include Python for data generation, Talend for data integration, PostgreSQL for Data Warehouse management, and React.js for creating responsive user interfaces. The system enables users to explore data, access key statistics, generate reports, and visualize information in a user-friendly manner. Future perspectives include expanding functionality, incorporating predictive analytics, and enhancing system performance and scalability.

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### **Mots clés :**

Business intelligence, data warehouse, ETL (Extract, Transform, Load), dashboard, data analysis, decision-making, data integration, data visualization.

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## ملخص

يتناول هذا المشروع إنشاء نظام لاتخاذ القرارات ولوحة معلومات تفاعلية لشركة ناملاتيك، وهي منصة لحجز الفنادق عبر الإنترنت. الهدف الرئيسي هو تحسين عملية اتخاذ القرارات من خلال توفير معلومات قابلة للتطبيق بناءً على تحليل شامل للبيانات. يشمل المشروع جمع ودمج البيانات من مصادر مختلفة، ونمذجة البيانات، وتصميم وتطوير لوحة المعلومات التفاعلية. تشمل التقنيات المستخدمة استخدام لغة Python لتوليد البيانات، وأداة Talend لدمج البيانات، ونظام إدارة قواعد البيانات PostgreSQL لإدارة بيانات مستودع البيانات، ومكتبة React.js لإنشاء واجهات مستخدم تفاعلية. يتيح النظام للمستخدمين استكشاف البيانات، والحصول على إحصاءات رئيسية، وإنشاء تقارير، وتصور المعلومات بطريقة سهلة الاستخدام. تشمل الآفاق المستقبلية توسيع الوظائف، ودمج التحليل التنبؤي، وتحسين أداء النظام وقابليته للتوسع.

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كلمات مفتاحية : المعلوماتية القرارية، مستودع البيانات، ETL (استخراج، تحويل، تحميل)، لوحة المعلومات، تحليل البيانات، اتخاذ القرار، دمج البيانات، تصور البيانات.

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Ce projet porte sur la réalisation d'un système d'informatique décisionnelle (BI) et d'un tableau de bord interactif pour Namlativ, une plateforme de réservation d'hôtels en ligne. L'objectif principal est d'améliorer la prise de décision en fournissant des informations exploitables basées sur l'analyse approfondie des données. Le projet comprend la collecte et l'intégration des données provenant de différentes sources, la modélisation des données, la conception et le développement du tableau de bord interactif. Les technologies utilisées incluent Python pour la génération de données, Talend pour l'intégration des données, PostgreSQL pour la gestion des données du Data Warehouse, et React.js pour la création d'interfaces utilisateur réactives. Le système permet aux utilisateurs d'explorer les données, d'obtenir des statistiques clés, de générer des rapports et de visualiser les informations de manière conviviale. Des perspectives d'avenir comprennent l'expansion des fonctionnalités, l'intégration de l'analyse prédictive et l'amélioration de la performance et de l'évolutivité du système.

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**Mots clés :**

Informatique décisionnelle, entrepôt de données, ETL (Extraction, Transformation, Chargement), tableau de bord, analyse de données, prise de décision, intégration de données, visualisation de données.

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