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COMPUTER SCIENCE DEPARTMENT

Theme:

**Design and implementation of a desktop application for
managing employee affairs and calculating salaries
(practical case: Directorate of commerce of laghouat)**

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Thanks to God and his guidance, and the dedication of my parents who spare no effort in supporting me and ensuring my success. Their continuous sacrifices for my well-being have been a pillar of strength throughout this academic journey. I am so grateful for my supportive family whose encouragement has been a constant source of motivation. To my fiancée, Your unwavering support has been my anchor throughout this journey. This achievement is as much yours as it is mine, a testament to the strength of our love and your endless encouragement. Forever grateful. To my colleague Ali BENTOUATI, whose tireless cooperation played a pivotal role in the completion of this work.

[Noureidine Oussama CHOUARANI]

whom it may concern, In the quiet moments of reflection and collaboration, I have found purpose and meaning. My contributions may be few in words, but they carry the weight of conviction and insight. I dedicate myself to endeavors that push boundaries and strive for excellence. Together, we have shaped this project with diligence and determination, each contribution a thread in the fabric of our shared success. To my esteemed colleagues and mentors, your guidance has been invaluable. To my family, your unwavering support fuels my aspirations. Let this work stand as a testament to our collective efforts and commitment to knowledge

[Ali BENTOUATI]

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ABSTRACT

The complexity of coordination in the personnel department and salary calculation within Directorate of Trade in Laghouat requires significant progress in the IT field and innovative solutions to improve the quality of service and efficient management.

The fundamental objective of this software is to establish efficient human and financial resources management within the Laghouat Commerce Department. By integrating advanced features such as accurate personnel data tracking, automatic salary calculation, and detailed reporting, this system aims to provide decision-makers with the tools necessary to make informed and strategic decisions. During the design phase, I utilized UML diagrams, and in the development process, I employed netbeans with JavaFX language for programming and Scene Builder with XML language for designing. Additionally, I utilized WampServer for local database management using MySQL.

By proactively responding to current coordination and management challenges, this software positions itself as an essential lever to improve the quality of service and optimize the management of personnel affairs in a constantly evolving professional environment.

Keywords:

Desktop Application , UML diagrams,
netbeans, JavaFX, Scene Builder, XML,
MySQL, WampServer

La complexité de la coordination au sein du département du personnel et du calcul des salaires au sein du direction du Commerce de Laghouat nécessite des avancées significatives dans le domaine des technologies de l'information et des solutions innovantes pour améliorer la qualité du service et la gestion efficace.

L'objectif fondamental de ce logiciel est d'établir une gestion efficace des ressources humaines et financières au sein du Département du Commerce de Laghouat. En intégrant des fonctionnalités avancées telles que le suivi précis des données du personnel, le calcul automatique des salaires et la génération de rapports détaillés, ce système vise à fournir aux décideurs les outils nécessaires pour prendre des décisions informées et stratégiques. Pendant la phase de conception, j'ai utilisé des diagrammes UML, et dans le processus de développement, j'ai employé Netbeans editeur avec langage JavaFX pour la programmation et Scene Builder avec langage XML pour la conception. De plus, j'ai utilisé WampServer pour la gestion locale de la base de données avec MySQL.

En répondant de manière proactive aux défis actuels de coordination et de gestion, ce logiciel se positionne comme un levier essentiel pour améliorer la qualité du service et optimiser la gestion des affaires du personnel dans un environnement professionnel en constante évolution.

Mots-clés:

Application de bureau, Diagrammes UML, netbeans, JavaFX, Scene Builder, XML, MySQL, WampServer

ملخص

تتطلب تعقيدات تنسيق قسم الموظفين وحساب الرواتب داخل مديرية التجارة بالأغواط تقدماً كبيراً في مجال تكنولوجيا المعلومات وحلول مبتكرة لتحسين جودة الخدمة وإدارة فعالة. الهدف الأساسي لهذا البرنامج هو تأسيس إدارة فعالة للموارد البشرية والمالية داخل مديرية التجارة بالأغواط. من خلال دمج ميزات متقدمة مثل تتبع البيانات الدقيق للموظفين وحساب الرواتب التلقائي وتقديم تقارير مفصلة، يهدف هذا النظام إلى تزويد صناع القرار بالأدوات اللازمة لاتخاذ قرارات مستنيرة واستراتيجية. خلال مرحلة التصميم، استخدمت مخططات لغة النمذجة الموحدة، وخلال عملية التطوير، استخدمت برنامج نيت بينز باستعجافا اف اكس للبرمجة وسين بيلدر باستعمال لغة اكس ام ال للتصميم. بالإضافة إلى ذلك، استخدمت وامب سيرفر لإدارة قاعدة البيانات المحلية باستخدام مايكل . من خلال الاستجابة بنشاط للتحديات الحالية في التنسيق والإدارة، يتمثل هذا البرنامج كرافعة أساسية لتحسين جودة الخدمة وتحسين إدارة شؤون الموظفين في بيئة مهنية متطورة باستمرار.

الكلمات الرئيسية:

تطبيق سطح المكتب، مخططات لغة النمذجة الموحدة، نيت بينز، جافا اف اكس، سين بيلدر، اكس ام ال، مايكل، وامب سيرفر

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CHAPTER 1

GENERAL INTRODUCTION

The Laghouat Commerce Directorate, under the Ministry of Commerce, plays a crucial role in coordinating commercial activities in the Laghouat sector with the Ministry itself. Many organizations implement systems for the human resources department, specifically designed to meet their needs as well as those of the accounting department. However, coordination between these two departments is non-existent, leading to slower operations, duplicate tasks, lack of task scheduling, and wasted time.

In this context, we designed an office application that allows human resources and accounting employees to manage operations between them. Our app provides accurate information including job promotions, maternity leave terms, delegation and placement decisions, demarcation decisions, resignation decisions, employment certificates, and job declarations.

To meet the specific needs of collaborators, we combined Scene Builder for the interface and NetBeans for the code, as well as Wamp Server for the database.

This project is divided into three chapters: The first, entitled *General Information on the Commerce Directorate of Laghouat*, aims to present the different notions and concepts linked to the Commerce Directorate. The second chapter, entitled *Software Design*, will focus on the identification of functional requirements and the identification of stakeholders. Additionally, it will present use cases in the form of scenarios and detailed sequence diagrams, as well as a class diagram to model the static aspect of our application. In the last chapter, titled

Implementation and Deployment, we will explain the steps of building the desktop application, where we will present the implementation of the application.

Related Work

As for related works, there are several in the market, but they are specific in their functionality, either managing the human resources department or managing the accounting department. Examples of such applications include gieniSof and Jawda application. This gives our application an advantage in the market, as it is also advanced in terms of ease of use, user interface, and coordination between the two departments.

We will conclude this thesis with a general conclusion, to summarize the main points of the work carried out and propose some future improvements.

2.1 Introduction

The Laghouat Trade Directorate plays a crucial role in ensuring the implementation of all decrees and legislative and regulatory texts related to prices and trade. This chapter looks at the importance of the trade direction and these objectives .[12]

2.2 The definition of the Directorate of Commerce

The Directorate of Commerce of Laghouat is an administrative entity responsible for regulating and promoting commerce in the Laghouat region. It is tasked with implementing government policies related to trade,

ensuring compliance with commercial regulations, and supporting the development of local commerce. The Directorate of Commerce of Laghouat plays a crucial role in supervising commercial activities, promoting exports, and protecting consumers.

The human resources management and payroll department within the Directorate of Commerce of Laghouat is responsible for the effective management of the organization's personnel. This includes recruitment, training, performance evaluation, management of leaves and absences, as well as resolving employee-related issues.

This department is also responsible for calculating and processing employee salaries and benefits, ensuring they are properly compensated

and in accordance with current compensation policies.

2.3 The challenges of the Laghouat Trade Directorate

The world of smartphones is not very different from what exists in the desktop world, because there are also in the mobile world applications based on different operating systems such as iOS, Windows Phone and Android. So logically each system has its own applications and programming language.

2.3.1 Human Resources Department:

The HR department in the Commerce Directorate of Laghouat faces challenges primarily related to coordination and communication with the payroll department.

One major issue is the lack of timely and accurate communication regarding new hires, terminations, or changes in employee information. This results in payroll discrepancies, as the payroll team may not be informed promptly about updates in staff status or salary adjustments. Consequently, payroll processing is delayed, and employees may experience frustration due to payment errors or delays.

2.3.2 Payroll Department:

On the other hand, the payroll department encounters its own set of issues. One significant problem is the absence of timely and complete information from the HR department.

Without updated and accurate employee data, payroll calculations become prone to errors. Additionally, the payroll team may not receive timely notifications regarding changes in salary structures, promotions, or bonuses, leading to inaccuracies .

in payroll processing and dissatisfaction among employees who expect timely and correct payments. This lack of communication also hampers the department's ability to forecast and manage financial resources effectively.

2.4 Organizational Chart of the Directorate of Commerce of Laghouat

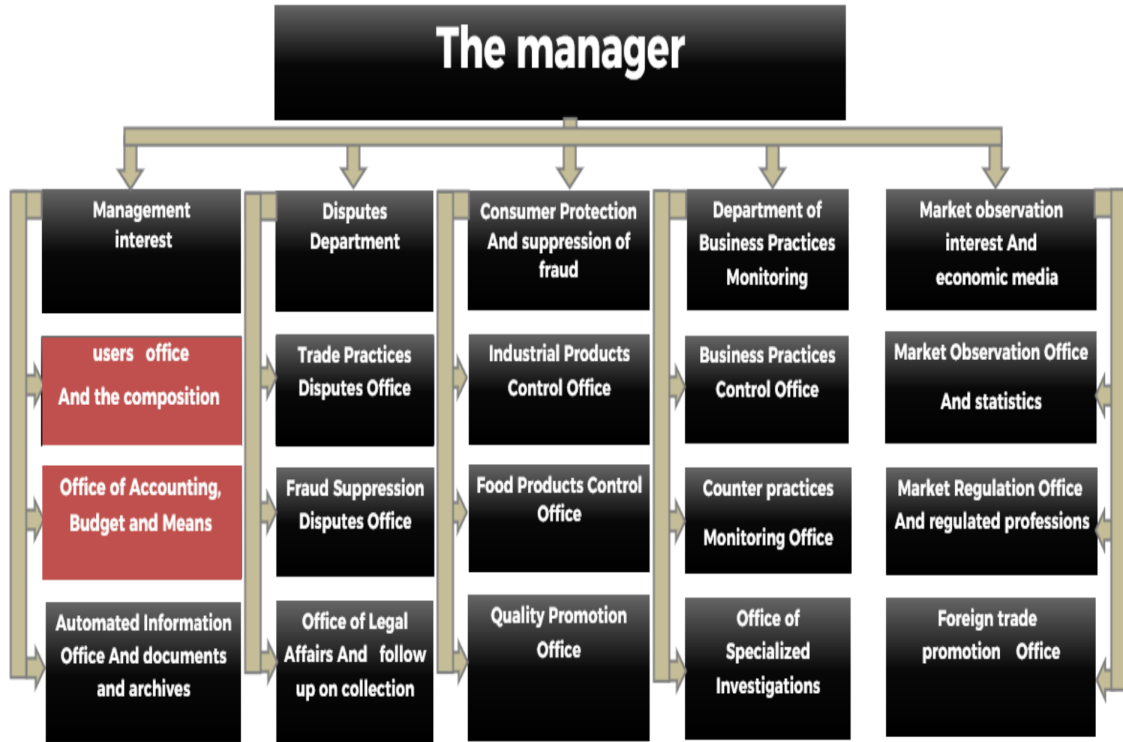


Figure 2.1: Organizational Chart

2.5 Conclusion

In conclusion, The Directorate of Commerce of Laghouat is a key entity in regulating and promoting regional commerce, ensuring the implementation of government policies and consumer protection. However, challenges persist, particularly in terms of coordination between the human resources and payroll departments, which can result in errors and delays in salary processing. Addressing these issues is crucial to ensure efficient management and optimal employee satisfaction.

3.1 Introduction

Designing a desktop application for the Laghouat Trade Directorate is crucial in the development process. This key step involves defining the overall architecture of the application, identifying essential functionalities, and developing the necessary diagrams and models for its realipics/ In this part of our thesis, we will discuss in detail the design phase of our application, focusing on the UML (Unified Modeling Language) Unified Modeling Language (UML) is a standard notation for modeling real-world objects as a first step in designing an object-oriented system. Its notation is derived from and unifies the notations of three object-oriented design and analysis methodologies.[1] We will start by discussing the motivations that led us to choose UML as the modeling method for our application. Next, we will present the different UML diagrams that we used in our design process, including the class diagram, the use case diagram, and the sequence diagram.

3.2 UML

3.2.1 Definition



UML, short for Unified Modeling Language, is a standardized modeling language consisting of an integrated set of diagrams, developed to help system and software developers for specifying, visualizing, constructing, and documenting the artifacts of software systems, as well as for business modeling and other non-software systems.[1]

3.3 Design Tools

3.3.1 StarUML



StarUML is an open-source UML (Unified Modeling Language) modeling software that can often replace expensive commercial software such as Rational Rose or Together. It is easy to use, requires minimal system resources, and supports UML 2, making it an excellent option for getting acquainted with modeling.[3]

3.4 Class Diagram

3.4.1 definition

A class diagram is a UML diagram type that describes a system by visualizing the different types of objects within a system and the kinds of static relationships that exist among them. It also illustrates the operations and attributes of the classes.

They are usually used to explore domain concepts, understand software requirements and describe detailed designs.[7]

3.4.2 Model

Figure 2.2 represents the class diagram of our system.

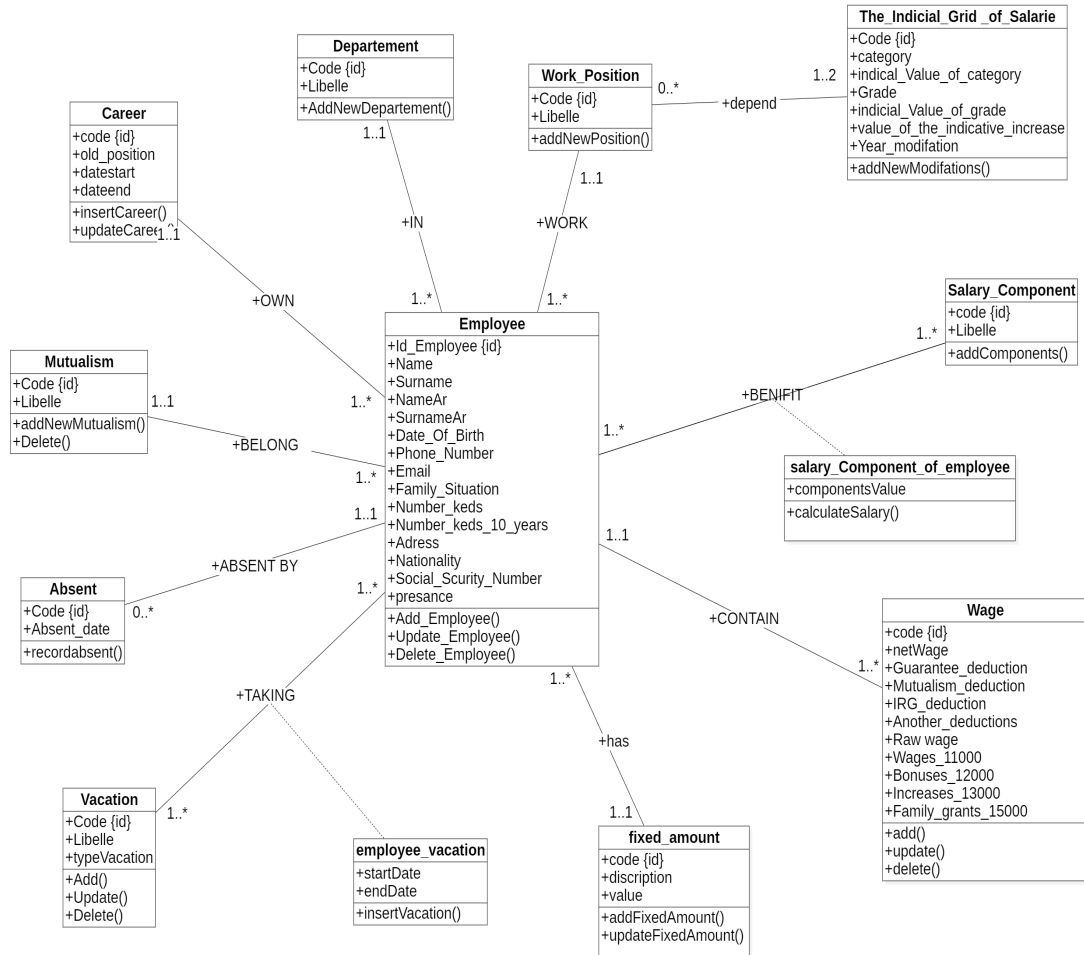


Figure 3.1: The Class Diagram[14]

3.5 The Use case Diagram

3.5.1 definition

A Use Case Diagram is defined as a graphical representation of the interactions between users (actors) and a system. It illustrates the various ways in which users interact with a system to achieve specific goals or tasks. [4]

3.5.2 Model

Figure 2.3 represents the use case diagram of our system.

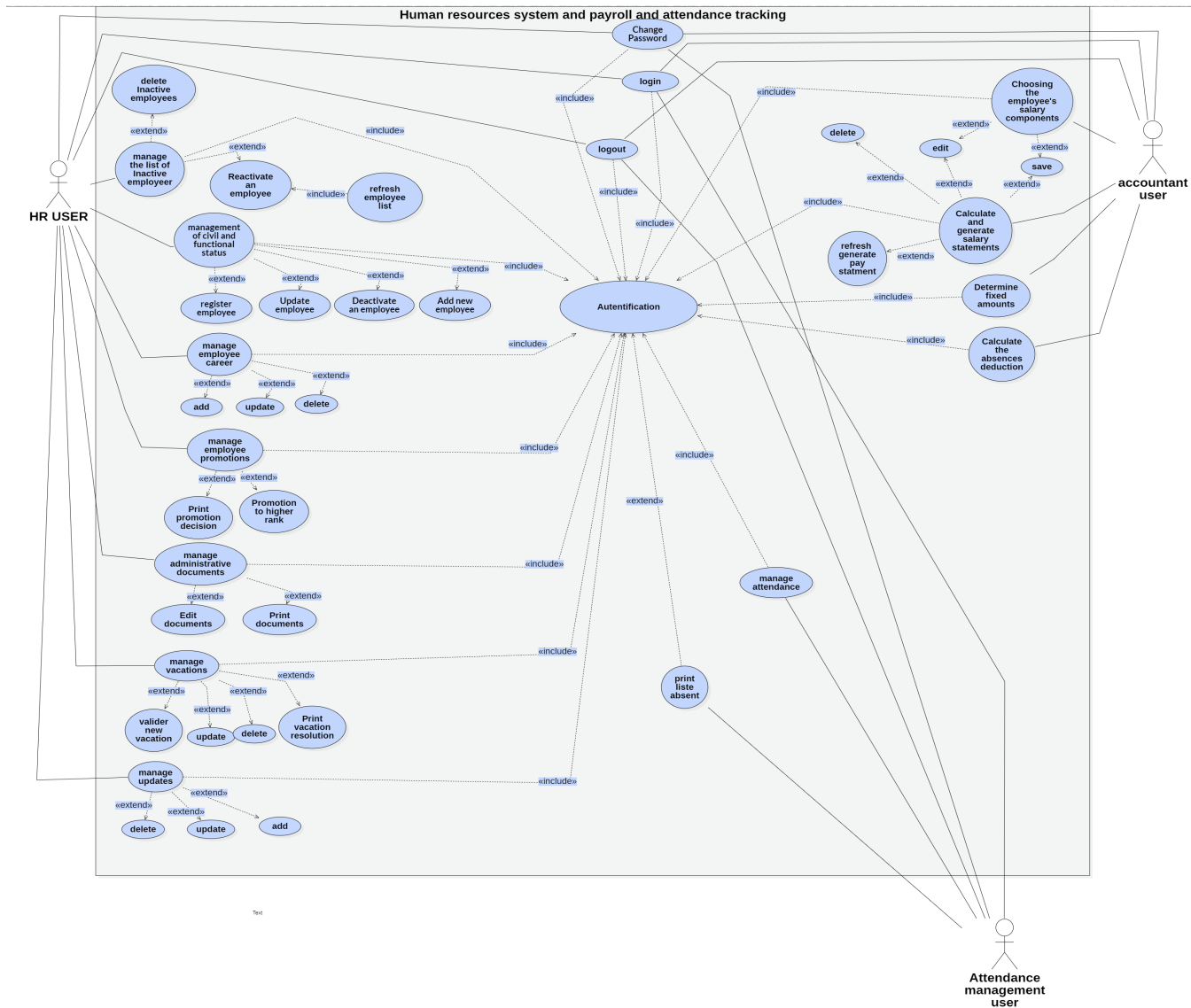


Figure 3.2: The Use case Diagram[14]

3.6 Sequence Diagram

3.6.1 definition

A sequence diagram simply depicts the interaction between the objects in a sequential order i.e. the order in which these interactions occur. We can also use the terms event diagrams or event scenarios to refer to a

sequence diagram. Sequence diagrams describe how and in what order the objects in a system function. [5]

3.6.2 Models

Figure 2.4 represents the authentication sequence diagram. Figures 2.6 and 2.5 represent the bus tracking sequence diagram.

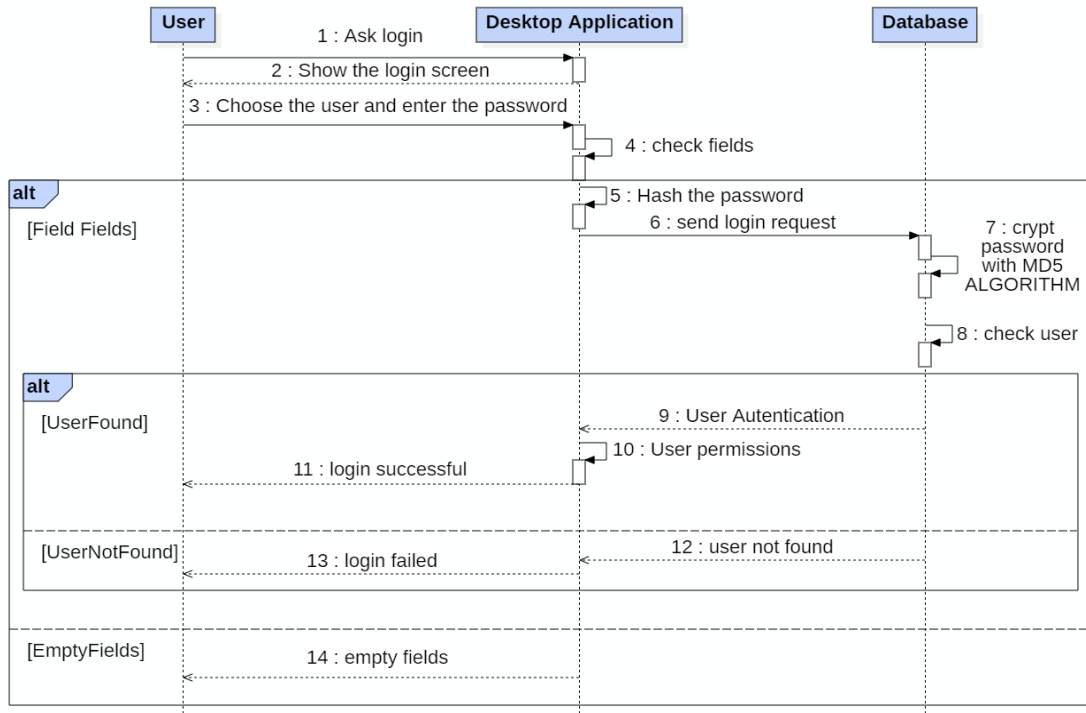


Figure 3.3: sequence Diagram : login[14]

Short description:

The user clicks on the program icon to use it, and the login screen appears. The user selects the username and enters the password. The program then checks the inputs, with two possibilities: either one or both inputs are empty, in which case an error message appears indicating that fields are empty; or the fields are correctly filled.

The program then hashes the password using a hash code algorithm and sends the information to the database for comparison. The database hashes the password again using the MD5 algorithm and performs the comparison.

Here, there are two possibilities: either the user informations are incorrect, and an error message is returned to the program, which then

displays a message on the screen indicating that the user information is invalid; or the information matches, in which case a successful authentication message is sent to the program, which then directs the user to the appropriate interface based on their access , and a 'successfully authenticated' message appears on the screen.

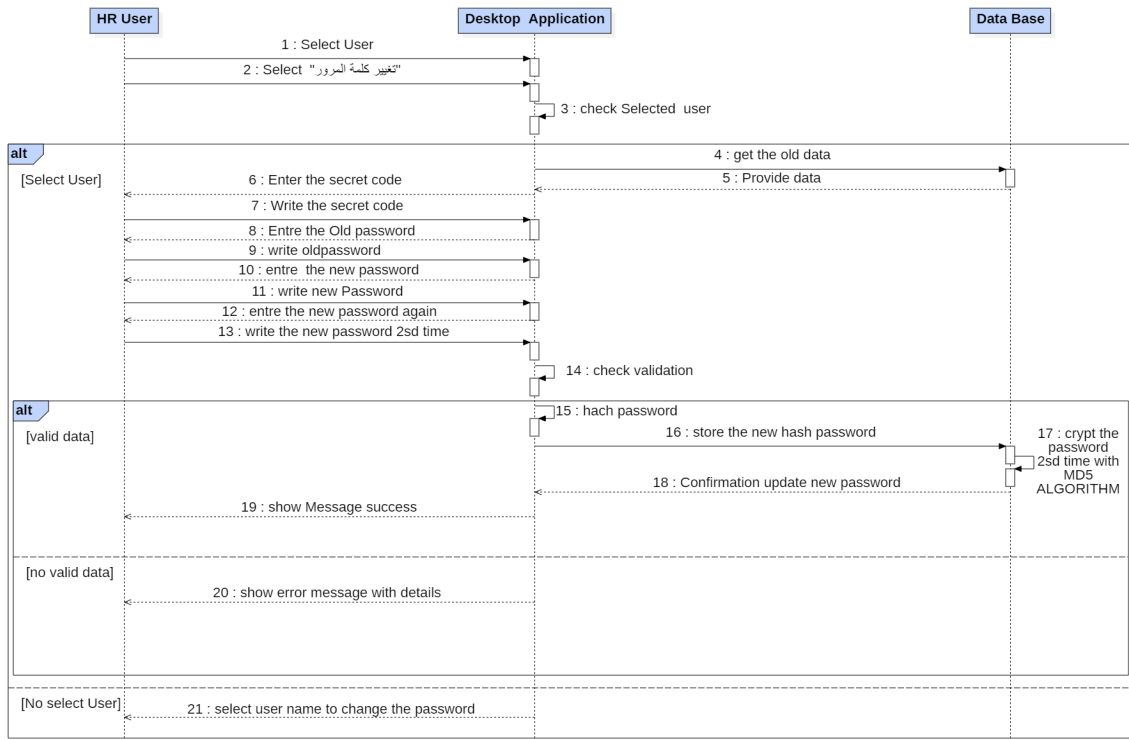


Figure 3.4: sequence Diagram : new password[14]

Short description:

o change the password, select the username and click on the 'Change Password' option.

The program checks if a user has been selected, with two possibilities: if no user is selected, an error message is displayed indicating that no user has been selected; if a user is selected, the old user information is retrieved for comparison.

The user is asked for the security code and the old password, and then to enter a new password and confirm it. Upon clicking 'Save,' the program checks the validity of the information.

There are two possibilities: if the entered information is invalid, an error message with details is displayed; if the information is valid, the new password is encrypted using a hashing algorithm and exported to the

database, which then encrypts it again using the MD5 algorithm and saves it.

A confirmation message for the successful password change is returned, and a 'password changed successfully' message is displayed on the screen.

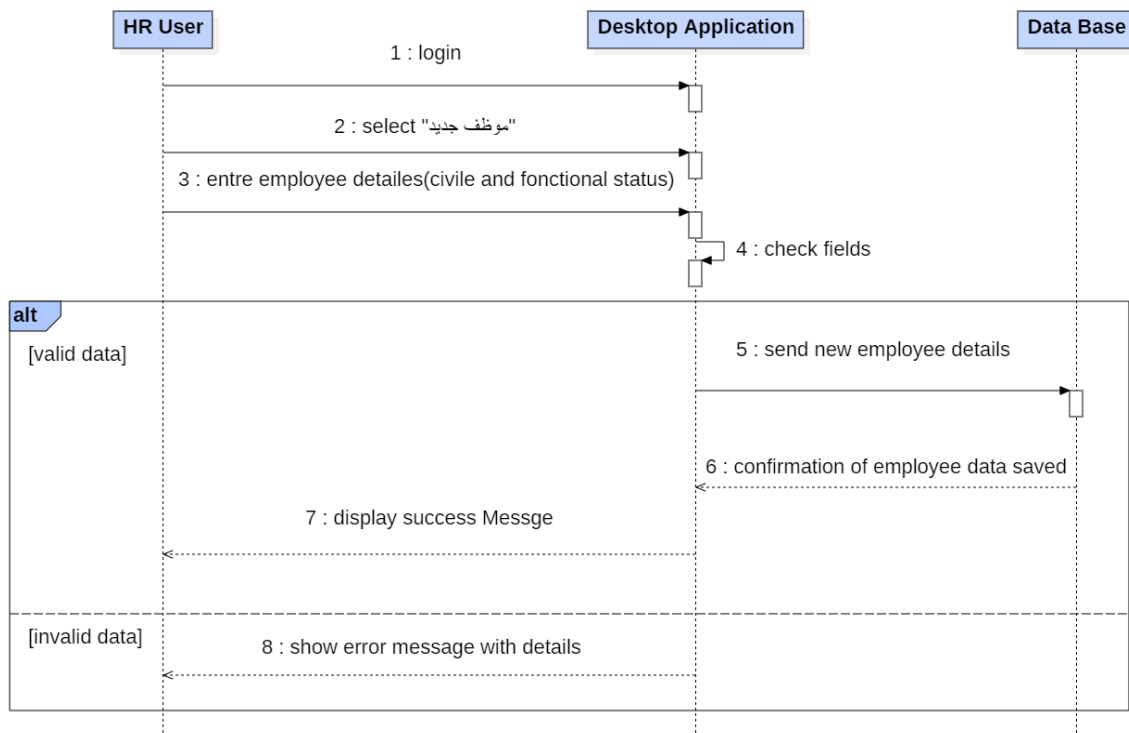


Figure 3.5: sequence Diagram : new employee[14]

Short description:

To register a new employee, authentication is first performed, followed by clicking on the 'New Employee' option and filling in the new employee's personal and professional information. Upon clicking 'Save,' the program checks the validity of the inputs. There are two possibilities: first, if any input is incorrect or empty, an error message appears providing details about the error; second, if all the information entered is correct, the program exports the information to the database for storage.

The information is saved, and a confirmation message is returned from the database. The program then displays a 'successfully saved' message

on the screen.

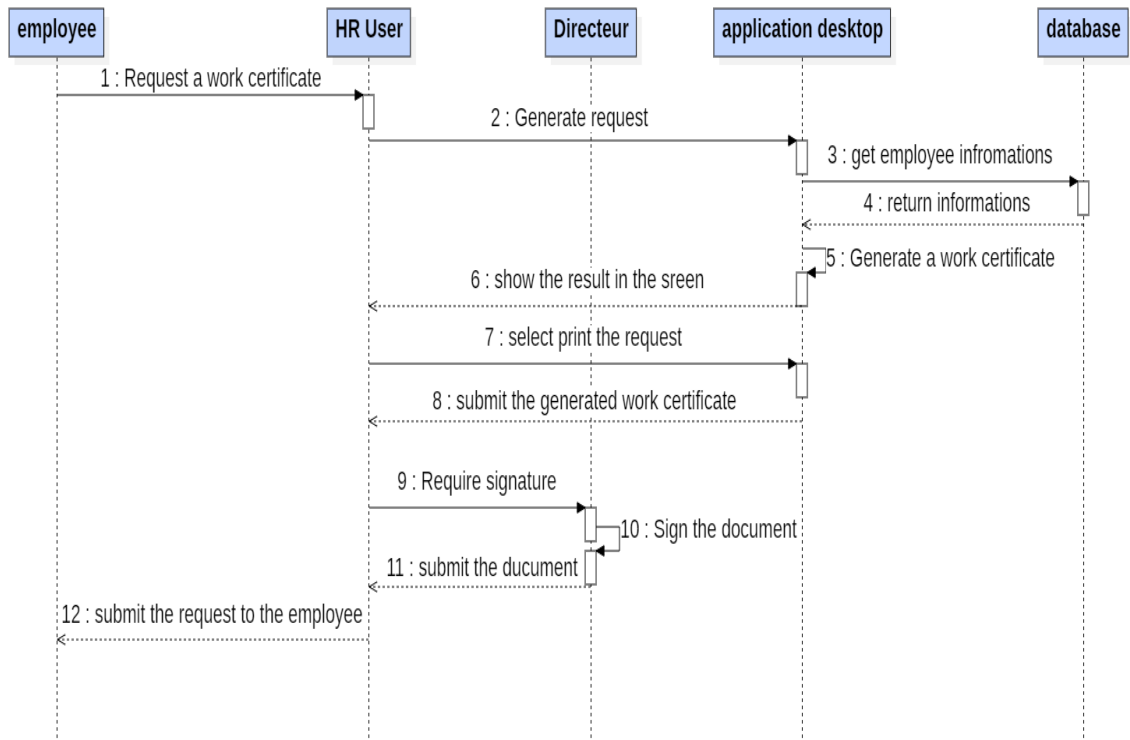


Figure 3.6: sequence Diagram : Work certification[14]

Short description:

The employee submits a request for a work certificate to the human resources user. The user begins by generating the request, searching for the employee, and reviewing their information stored in the database. The program then generates the work certificate and displays it on the screen. The user then clicks on the print option, and the program prints the document. The HR user presents it to the manager for signature. The manager signs it and returns it to HR user, who then finally presents it to the employee.

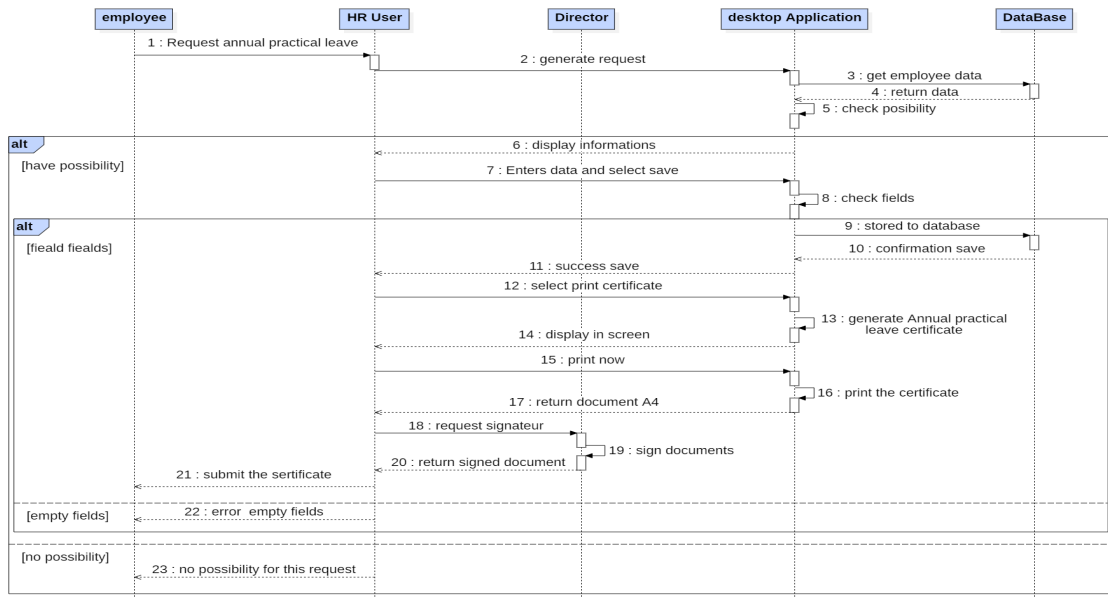


Figure 3.7: sequence Diagram : annual leave certificate[14]

Short description:

To request an annual leave certificate, the employee approaches the human resources office user. The user first authenticates the application and then checks the employee's status by retrieving their information from the database to assess the possibility of taking leave. There are two possibilities: first, if the employee has no available leave days because they have exhausted them, the program will display a message indicating that leave cannot be taken; second, if there are remaining leave days, the program will display the remaining days, and the user enters information about the leave, such as the type of leave, start date, and end date, and saves the information in the database. The program checks the entered information, with two possibilities: if the information is incorrect, an error message with details is displayed; if the information is correct, it is saved in the database, and a 'successfully saved' message is displayed. The user then clicks on the 'Print Leave Certificate' option. The program generates the certificate and displays it on the screen. The user confirms and prints the certificate, which is then presented to the manager for signature. The manager signs it and returns it to the user, who then gives it to the employee.

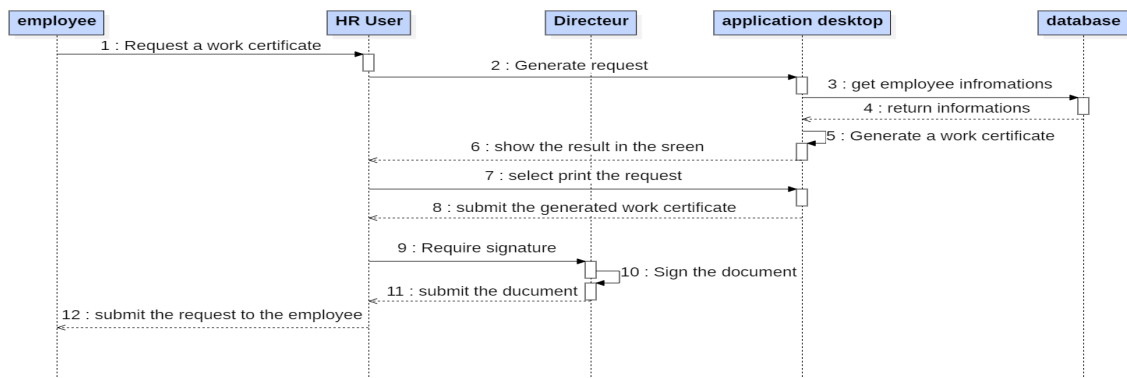


Figure 3.8: sequence Diagram :payrol statment [14]

Short description:

When an employee requests a salary statement, they approach the accounting and payroll user. The user accesses the program to calculate the salary after retrieving the information from the database. The program generates the employee's salary and displays it on the screen. The accountant user clicks the 'Save' button to store the information in the database archive and a 'successfully saved' message is displayed. The accountant user then selects the 'Print Salary Statement' option. The program generates the salary statement and displays it on the screen. The accountant user confirms the request and prints it. The printed statement is presented to the manager for signature. The manager signs it and returns it to the accountant user, who then presents it to the employee.

3.7 conclusion

In this chapter, we first introduced the purpose of the system and explored the concept of the term UML and its usefulness.

We introduced our analysis and design steps by detailing the various appropriate UML diagrams that are essential to our project.

In the next chapter, which will be the final stage of our project, we will focus on the investigation and implementation stage to develop the application.

4.1 Introduction

In this chapter, we implement our application using the Java programming language with NetBeans IDE, javaFX and WampServer for database management, and the LaTeX markup language for text processing.

4.2 The Java programming environment



Java is an object-oriented language designed to meet the diverse requirements of modern software development. It benefits from a vast library that makes it easy to create graphical interfaces, develop multithreaded applications, and facilitate communication between computers, among other tasks. Java's applications range from animating an HTML page with an applet to running complex applications over the Internet, such as discussion forums, database sharing, and games. Finally, Java is increasingly found in embedded systems.[6]

4.3 JavaFx environment



JavaFX is a Java library and a GUI toolkit designed to develop and facilitate Rich Internet applications, web applications, and desktop applications. The most significant perk of using JavaFX is that the applications written using this library can run on multiple operating systems. [8]

4.4 Netbeans IDE



NetBeans is an Integrated Development Environment (IDE) for Java, released as open source by Sun in June 2000 under the Common Development and Distribution License (CDDL). In addition to Java, NetBeans also supports various other languages, such as Python, C, C++, XML, and HTML. It includes all the features of a modern IDE (colored editor, multi-language projects, refactoring, graphical interface editor, and web page editor). [13]

4.5 Definition of SceneBuilder



SceneBuilder is a graphical editing tool that enables developers to build and edit Graphical User Interfaces (GUIs) for JavaFX applications visually and without writing any code. It helps accelerate the development process of JavaFX applications by providing an intuitive and user-friendly interface for designing graphical interfaces quickly and efficiently, allowing developers to focus on the logic and core functionalities of their applications without worrying about visual details. [10]

4.6 Definition of XML(eXtensible Markup Language)



XML stands for eXtensible Markup Language. It is a flexible text format originally designed to meet the challenges of large-scale electronic publishing. XML is a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable. [11]

4.7 Definition of WampServer



WampServer is a Windows web development environment that allows you to create web applications with Apache2, PHP, and a MySQL database. It also includes PHPMyAdmin and SQLLiteManager for managing your databases more easily. WampServer provides a platform for developing and testing web applications on a local machine before deploying them to a live server.[9]

4.8 Definition of MYSQL



MySQL is an open-source relational database management system (RDBMS) that uses Structured Query Language (SQL) for accessing, managing, and manipulating databases. It is widely used for web database applications and is known for its reliability, scalability, and ease of use.[2]

4.9 Presentation of the application



Figure 4.1: splash[14]



Figure 4.2: Start Application[14]



Figure 4.3: Login[14]



Figure 4.4: newpassword[14]



Figure 4.5: Personal information interface[14]



Figure 4.6: Professional information interface[14]



Figure 4.7: Promotions interface[14]



Figure 4.8: Documents interface[14]



Figure 4.9: Leave management interface[14]

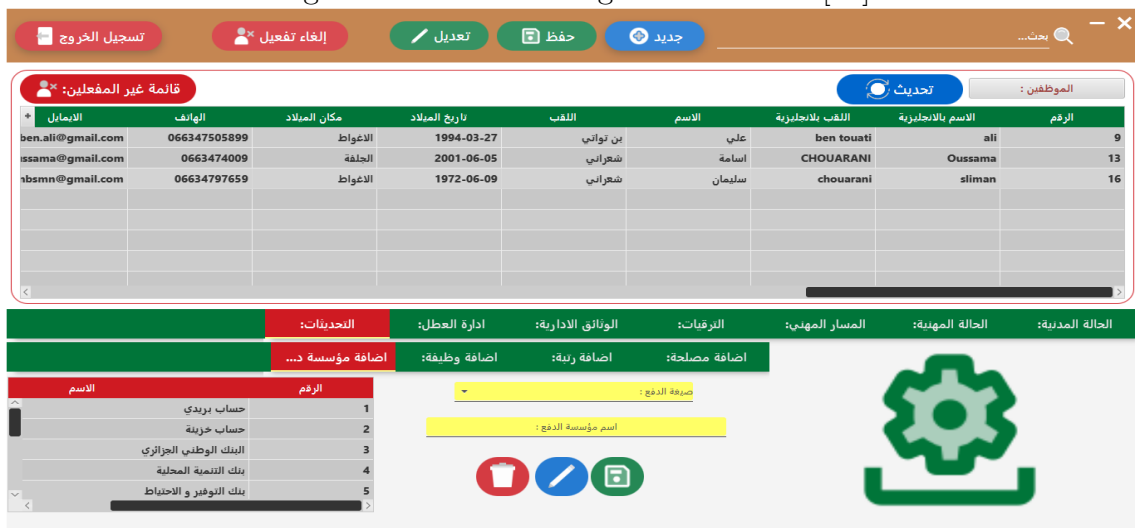


Figure 4.10: Update interface[14]

الرقم	الاسم بالانجليزية	اللقب بالانجليزية	الاسم	اللقب
9	ali	ben touati	علي	بن تواتي

Figure 4.11: Interface for inactive employees[14]

وزارة التجارة وترقية الصادرات
المديرية الولائية للتجارة بالأغواط
رقم م.ت/ 2024

شهادة عمل

نحن المدير الولائي للتجارة لولاية الأغواط نشهد بأن:

السيدة(ة): شعراتي سليمان
المولود(ة) بـ: 1972-06-09
مكان العمل: المديرية الولائية للتجارة بالأغواط
الوظيفة: مفتش رئيسي للمنافسة
تاريخ التنصيب: 2024-05-02 الى يومنا هذا

سلمت هذه الشهادة لاستعمالها في حدود ما يسمح به القانون .

Figure 4.12: work Certification[14]

الضمان الاجتماعي
SECURITE SOCIALE

وكالة :
مركز الدفع :

شهادة العمل والاجر ATTESTATION DU TRAVAIL ET DE SALAIRE

هوية رب العمل
IDENTIFICATION DE L'EMPLOYEUR

Nom et Prénoms المديرية الولائية للتجارة وترقية الصادرات بالأغواط
ou رقم المحرط
Raison sociale : مديري التجارة و ترقية الصادرات بالأغواط
Adresse حي الولام - الأغواط

هوية الأجير
IDENTIFICATION DU SALARIE

Noms : الاسم
Prénoms اللقب
Né(e) le : تاريخ الازدياد
à يوم شهر سنة
Adresse : العنوان
Profession : المهنة

المعلومات الضرورية لدراسة الحقوق
RENSEIGNEMENTS NECESSAIRES POUR L'ETUDE DES DROITS

Figure 4.13: Work and wage certificate[14]

تسجيل الخروج

الأجر الشهري: مكونات الراتب: المبالغ الناتجة: خصومات الغياب: بيان بالدفع:

مرتبات شهر: ماي 2024

الإشيف حسب الشهر والسنة: تم

سلك مناصب الشغل: الموظفين الدائمين

الرقم	الاسم	اللقب	الحالة العائلية	رقم الضمان الاجتماعي	نوع الوظيفة	طريقة الدفع	مؤسسة الدفع	المفتاح	رقم الحساب
9	علي	بن تواتي	م ب 4/2/2	5767677546786	دائم	بنك	البنك الوطني الجزائري	97	66666689090
13	اسامة	شعراني	م 5/0/5	07986989869869	دائم	بنك	بنك البدر	12	187538773888
16	سليمان	شعراني	أ 0/0/0	9785789589759875	دائم	بنك	البنك الخارجي الجزائري	12	78595959859

الرقم	الموظف	رأس	ح	رج	الصافي	م	إ	ص	د	إ	م	م	م	م	م	م
4	بن تواتي علي	698	4/2/ع	786666666	67358.51	400.00	7800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	شعراني اسامة	821	5/0/ر	785387538	150755.52	0.00	52301.00	2300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	شعراني سليم...	400	0/0/أ	875978595	50173.58	400.00	2330.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

مكونات الراتب:	المبالغ الناتجة:	خصومات الغياب:	بيان بالدفع:
الأجر القاعدي: 31410.0	الزيادة الاستدلالية: 12825.0	تعويض السكن: 1300.0	
علاوة المنطقة: 1500.0	تعويض الخطر: 0.0	تعويض م و تعويضه: 0.0	
تعويض الأرقام الفضائية: 0.0	تعويضات الأوقات: 15900.0	الأجر الوحيد: 0.0	
تعويضات المشاركة: 15084.0	تعويضات الاداري: 14300.0	تعويض المسؤولية: 0.0	
تعويض التمثيل: 0.0	16969.5	الأجر الخاص: 88318.5	
الضمان الاجتماعي: 7948.66	خيرية الدخل الشامل: 7800.0	الانقطاعات الانشائية: 0.0	
انقطاعات الغياب: 4811.32	انقطاع من التسريح: 0.00	مجموع الانقطاعات: 20959.99	
		الأجر الصافي: 67358.51	

Figure 4.14: Wages calculation and management interface[14]

القيم المستوية: طباعة

الجمهورية الجزائرية الديمقراطية الشعبية

وزارة التجارة و ترقية الصادرات
مديرية التجارة و ترقية الصادرات
لولاية الاغواط

كشف الراتب

الاسم و اللقب: شعراني اسامة
الرتب: مهندس دولة رئيسي / مدير
الدرجة: 1 ب
الصف: 3
الحالة العائلية: متزوج 5/0
رقم الضمان الاجتماعي: 07986989869869

3919+588.0
2024-04-04
12/78538753877388885

المبالغ الشهرية	المبالغ السنوية	مكونات الراتب
74461.0	893532.0	الأجر القاعدي
11172.0	134064.0	الخبرة المهنية
2695.0	32340.0	علاوة المنطقة
0.0	0.0	علاوة السيارة
42816.5	513798.0	تعويض التمثيل
7389.0	88668.0	تعويض خاص شهري للمنصب
42816.5	513798.0	تعويض المسؤولية
42816.5	513798.0	تعويض خاص بالإنزام

Figure 4.15: Payroll Statement (Yearly)

تسجيل الخروج

الأجر الشهري: مكونات الراتب: المبالغ الناتجة: خصومات الغياب: بيان بالدفع:

التعويضات و المنح:

الأجر القاعدي: العبرة المهنية: الزيادة الاستدلالية: تعويض السكن: تعويض المنطقة: المنح العائلية: الاجر الوحيد: تعويض منحة جراحية تعويضية:

تعويض الخطر: تعويض التمثيل: 50.0% تعويض الارام الفضائي: 50.0% تعويض جرافي للدورية: 0.0% تعويض شخص خاص للمنصب: 20.0%

تعويض الخدمات الفنية المشتركة: 0.0% تعويض الخدمات الادارية المشتركة: 0.0% تعويض دعم النشاط الاداري: 0.0% تعويض المسؤولية: 50.0%

الانقطاعات و الضرائب:

ضريبة الدخل الشامل: 9.0% انقطاع صندوق الضمان الاجتماعي: 9.0% انقطاع التعاضدية: انقطاع صندوق التقاعد المسبق: 1.0% انقطاعات الغياب: انقطاعات اخرى:

الرقم	رقم لاموظف	الاجر القاعدي	الخبرة المهنية	الزيادة الاستدلالية	تعويض السكن	تعويض المنطقة	تعويض جرافي لادو...	نسبة	تعويض الخطر	نسبة	منحة تعويضية جرا...	نسبة	تعويض التمثيل	نسبة	تعويض الارام الي...
13	علي	1	1	0	0	1	0	0.0	0	0.0	0	1	0.5	1	

الرقم	الاسم	اللقب	الحالة العائلية	رقم الضمان الاجتماعي	نوع الوظيفة	طريقة الدفع	مؤسسة الدفع	المفتاح	رقم الحساب
9	علي	بن تواتي	م ب 4/2/2	5767677546786	دائم	بنك	البنك الوطني الجزائري	97	66666689090
13	اسامة	شعراني	م 5/0/5	07986989869869	دائم	بنك	بنك البدر	12	187538773888
16	سليمان	شعراني	أ 0/0/0	9785789589759875	دائم	بنك	البنك الخارجي الجزائري	12	78595959859

Figure 4.16: Interface for determining employee salary components[14]

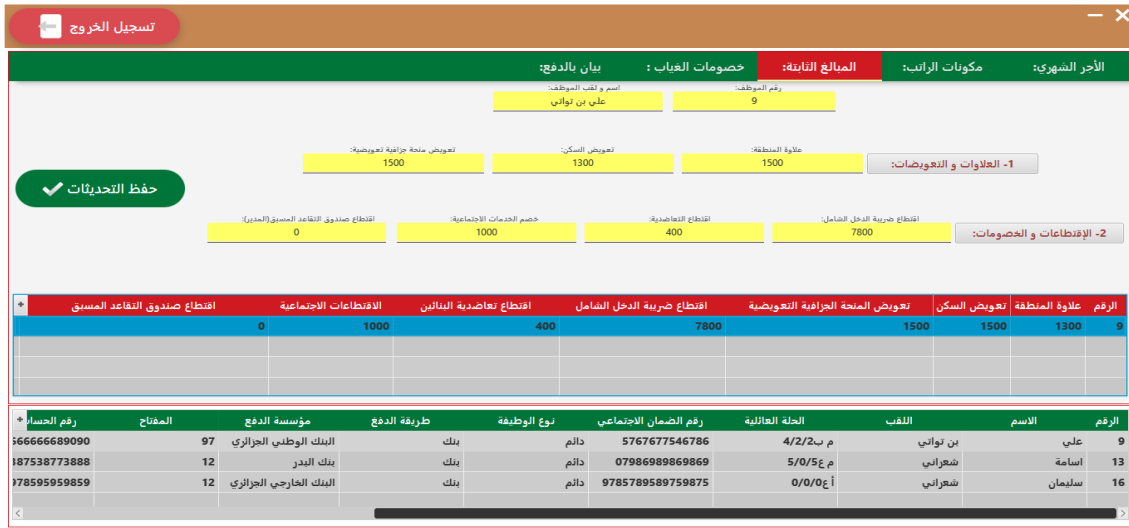


Figure 4.17: Interface for determining fixed amounts in the employee’s salary[14]

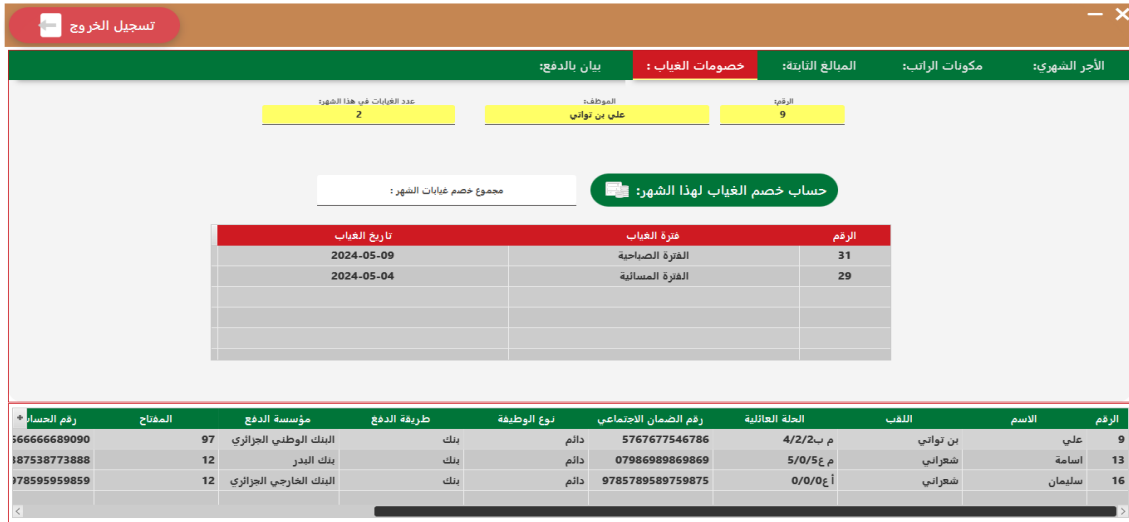


Figure 4.18: Interface for determining and calculating the employee’s absence deduction[14]



Figure 4.19: Statement of transfer of wages to employees[14]



اسم الموظف	لقب الموظف	الرقم
علي	بن توائي	9
اسامة	شعراني	13
سليمان	شعراني	16

Figure 4.20: Attendance recording interface[14]



تاريخ الغياب	فترة الغياب	الموظف	الرقم
2024-05-09	الفترة الصباحية	بن توائي علي	31
2024-05-09	الفترة الصباحية	شعراني اسامة	32
2024-05-09	الفترة الصباحية	شعراني سليمان	33
2024-05-04	الفترة المسائية	بن توائي علي	29
2024-05-04	الفترة المسائية	شعراني اسامة	30

Figure 4.21: Absence archive interface for employees[14]

4.10 Conclusion

In this chapter, we presented the implementation phase by explaining the languages used in the development and the different working environments that were used in this project and finally we presented the main interfaces of the system.

CHAPTER 5

CONCLUSION AND FUTURE PERSPECTIVES

The program represents a management software for the Human Resources and Finance departments, marking a significant digital advancement in national institutions, particularly within the Directorate of Commerce of El Oued Province. This program has provided a qualitative leap in coordinating work between the two departments, facilitating operations, and increasing employee productivity, thereby enhancing the institution's standing and presenting a reputable image in the professional community.

Key achievements of this program include:

1. **Ease of use:** New employees can easily utilize the program without difficulty.
2. **Coordination between departments:** Updates such as promotions are processed seamlessly between departments, ensuring immediate access to updates by the other department.
3. **Automatic payroll calculation:** Salaries are automatically calculated based on each employee's data, eliminating calculation errors for new employees.
4. **Editing administrative documents within the program:** Users have permission to edit documents as required in each case.
5. **Attendance tracking:** The program features an interface for tracking attendance during morning and evening shifts.

- 6. Longevity of the program:** Future modifications can be added without the need for reprogramming, as this was considered during its initial development.

In conclusion, this program serves as evidence of the potential for developing the digital aspect of national institutions through the implementation of a management program that seamlessly integrates multiple processes, enabling employees to deliver better performance to elevate the institution and contribute to economic growth.

Future prospects include:

- Integration of the program with a website enabling direct communication between traders and the institution, and allowing citizens to report traders violating the law, thus assisting the anti-fraud department in monitoring the local market.
- Management of commercial records and facilitation of operations during trader summons to inquire about violations, and tracking information for each trader, enhancing the institution's ability to regulate the market as required.

By adopting these forward-looking perspectives, continuous growth, adaptation, and remaining relevant and effective in the evolving landscape of managing national institutions can be ensured.

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