جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة واسط
كلية التربية للعلوم الصرفة
قسم علوم حاسوب

Human Resources

نظام ادارة موارد بشرية

المشروع مقدم الى كلية التربية

للعلوم الصرفة / جامعة واسط / قسم الحاسوب

نيل شهادة البكالوريوس في علوم الحاسوب كجزء من متطلبات

من قبل الطالب :

محمود شمران عذيب

أشراف الدكتور :

اسم المشرف

بسم الله الرحمن الرحيم

((هُوَ الَّذِي بَعَثَ فِي الْأُمِّيِّينَ رَسُولًا مِّنْهُمْ يَتْلُو عَلَيْهِمْ آيَاتِهِ وَيُزَكِّيهِمْ وَيُعَلِّمُهُمُ الْكِتَابَ وَالْحِكْمَةَ وَإِن كَانُوا مِن قَبْلُ لَفِي ضَلَالٍ مُّبِينٍ))

صدق الله العظيم

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الإهـــــــــداء

إلى من شجعني على المثابرة طوال عمري، إلى الرجل

الأبرز في حياتي

(والدي العزيـز)

إلى من بـــــها أعلو، وعليها أرتكز، إلى القــــــلب

المعطاء

(والدتي الحـبيبة)

إلى من بذلوا جهدًا في مساعدتي وكانوا خيرَ سندٍ

(إخـــواني وأخواتي)

إلى أسرتي إلى أصدقائي وزملائي ....

إلى كل من ساهم ولو بحرف في حياتي الدراسية.....

إلى كل هؤلاء: أهدي هذا العمل، الذي أسال الله تعالى

أن يتقبله خالصًا....

شكر وتقدير

Abstract

We have implemented the (**Human Resources System**) and its protection in government and private departments at the application level and aims to facilitate the process of storing the organization's data for its employees and to facilitate the process of data entry, review and modification,

Getting rid of paper files that are prone to damage and that are tiring in storage, preservation, data entry and search within them.

The ability to arrange data by date and search easily and smoothly.

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Chapter One

Introduction

1-1. Introduction:-

Developed societies today live in the era of information technology that adopts modern communication systems through Satellites, and information processing systems associated with computers. Information systems are It is the advanced use of information technology. Information systems play a crucial role in the development of modern business facilities, as they provide all the information The appropriate timely for the various administrative levels, in order to support all administrative tasks and functions in addition to improving and developing the movement of communications and the flow of information between those levels. Information systems security represents the protection of the availability of its resources, components and data, and work on their confidentiality and integrity. Systems security is considered one of the necessary pillars in protecting individuals and organizations from damages resulting from shortcomings Security, where both individuals and organizations depend on the performance of their information systems by ensuring their security in ways that are accurate, convenient, and reliable. A clear example of information systems security is what can be seen in hospital information systems Human resources, traffic or air navigation control systems, nuclear power plants and others. Security tends to maintain the effectiveness and efficiency of information systems, and to assure an appropriate level of availability and confidentiality

safety, as well as facilitating their development and use by the individuals concerned.

1-2. Research problem:-

Many government departments, private companies and universities suffer in managing employee data as a result of technological development and the emergence of computers and as a result of the lack of manual systems in dealing with data and the huge cost that users spend in terms of time and effort to access and deal with data, it was necessary to keep pace with this development by moving to computerized systems to solve the problems faced by manual systems.

1-3. Research importance:-

The project helps in managing all employee data, tracking their status, actions, rewards, penalties, daily attendance and departure processes, and managing all employee data by entering new data, modifying it, and deleting data with user permissions, meaning that the program manager needs to be arrested to allow the employee to use the application.

1-4. Search Objective:-

Ease of use without unnecessary obstacles The use of the program is very easy and does not require special experience or high skill, any employee can use it.

1-5. System idea:-

The beauty of the program and its simple and elegant form is one of the reasons for the creation of many human resource management systems that are characterized by complexity and difficulty in use and many problems and errors that appear at the employee who is used, but here the situation is different because of its high potential in management.

1-6. Similar Research:-

1) Human resource management and performance 2003:

Abstract

The study of human resource management (HRM) has been invigorated by the promise that there is a best-practice, high-involvement management (HIM) that can guarantee superior organizational performance. None the less, there remain concerns that contingency theory still rules, that is, that the fit between the human resource systems and their context, and particularly the organization's business strategy, is all important and, thus, that HIM will only outperform other systems in certain circumstances. In the 1990s, there has been a spate of research that has sought to test whether HIM is indeed universally relevant. This paper reviews these studies. The paper first introduces the conceptual dimensions of the debate concerning HRM and performance. This shows that the issues go beyond a simple competition between universalism and contingency theory. There are more complicated hypotheses linking human resource practices beneath the surface of the recent literature. The second part of the paper overviews the studies in the light of these hypotheses, revealing that they present an uneven picture. Firstly, there are conceptual differences underlying the studies and, secondly, the results vary between them, and the effects of HIM vary between performance measures even in particular studies. Though a fair number of the studies claim to support universalism, their claims are not always unequivocally supported by their research evidence, and it is premature to conclude in its favor. If anything, there is more

support for the 'lean production' argument that stresses the interaction effect between HIM and total quality management on performance.

2-Human Resource Management System HR - KDAWFor K.D.A. Weerasinghe 2013

In an organization HRM is involved in managing the human resources with a focus on expanding customer base that gives profit to the company.HRM has much broader scope on attracting, selecting, retaining, developing, and utilization of human resource in order to achieve both individual and organizational objectives. As a whole HRM is very crucial for the whole function of an organization because it assist organization to create loyal employees, who are ready to offer their best to make organization success. The solution presented within covers all the aspects from application to retirement of an employee. K.D.A. Weerasinghe & Co.,(Pvt)Ltd, a leading Civil Engineering Company in Sri Lanka was established in 1987 by a team of highly qualified and experienced professionals. It was incorporated on 31st May 1991 as a private limited liability company in Sri Lanka. KDAWs? vision is to be a leading and dynamic Sri Lankan Construction Enterprise with global reach. Through the successful completion of projects, the company has emerged as a well-established one in the field of Civil Engineering in Sri Lanka. The presented system covers all the aspects of the Company. It handles the functions such as handling available vacancies of the Company, schedule interviews, selecting applicants through interviews, maintaining up-to-date employee information, record available training programs, maintaining employee training details, maintaining employee leave details and evaluate employee performance to support the future management decision making process. The software process model of the project is Rational Unified Process (RUP) which is comprehensive and iterative approach to software development. Object Oriented System Analysis and Design Methodology (OOSADM) is used to model the system. Unified Modeling Language (UML) diagrams are used to draw the blueprints of the system. The system is implemented using Microsoft Visual Studio.NET 2008 IDE and implemented language is VB.NET and the backend of the system is

Microsoft SQL Server 2005. With the implemented Human Resource Management System, the company is now in a position to obtain high-level, quick and efficient human resource functionalities. This enables the increasing of the productivity of employees and the company as a whole.

3-Human Resource Management 2010

Trust the authoritative resource for human resource management to offer the most current look at HR and its impact on today's organizations with both new and thoroughly updated cases and today's most recent examples--90 percent of which are from 2006 and beyond. Mathis/Jackson's HUMAN RESOURCE MANAGEMENT, Thirteenth Edition, is the most trusted resource and best-selling HR solution for preparing future or currently practicing HR professionals. Updated, strong academic coverage, including the latest 2009 HRCI outline, ensures this edition addresses all major topics for professional examinations (PHR, SPHR) given by the Human Resource Certification Institute (SHRM). The latest HR research and a wealth of new and proven learning features in every chapter demonstrate how HR impacts organizational strategy. Reorganized and streamlined topics examine emerging trends in technology, globalization, and HR Metrics, as well as other developments impacting the practice of HR today. A complete package of teaching and learning resources, including new Course Mate online learning tools, helps today's aspiring professionals prepare for career and future HR success.

4-Human Resource Management System For Sri Lanka Railways 2014

Human Resource is the most important resource of an organization/department. Human Resource Management (HRM) is one of the business function as well as one of the management function. Successes of the other functions depend on success of the HRM function. Today some organizations/departments/Ministries are carrying out their human resource functions manually which causes a high cost of operation. The proposed system is a Human Resource Management

System for Sri Lanka Railways (SLR) which is one of the leading departments in Sri Lanka operated since 1864. Currently the railway department is having a manual system for handling human resource activities. The existing manual system is inherent with many shortcomings and constraints thereby a lot of money and time waste. HRM provides a method for maintaining up to date information about employees, thereby increasing the accuracy of the relevant information. Training requirements, leave applications, etc can be maintained online within the system, thereby providing a better overall picture of the railway department human resources status. Provide benefit to the staff (such as timely access to information) that would be help to motivate them, thereby increasing the quality of their work. The software process model of the project is Rational Unified Process (RUP), which is comprehensive and iterative approach to software development. Object Oriented System Analysis and Design Methodology (OOSADM) are used to model the system. Unified Modelling Language (UML) diagrams are used to draw the blueprints of the system. The system is implemented by using Microsoft Visual Studio.NET 2010 IDE and implemented language is VB.NET. The backend of the system is Microsoft SQL Server 2008. With the implemented Human Resource Management System, the department is now in a position to obtain high-level, quick and efficient human resource functionalities. HRM also helps to reduce high paper cost. This enables the increasing of the effectiveness and efficiency of the department as a whole.

5-Databse HR Model 2020

The computer program is designed to store and process all information about employees. Functionality of the computer program: storage of necessary documents (Job Descriptions, Curriculum Vitae (CV), etc.), employee job history and work experience, automatic CV generation, online reports for quick search of employees by experience in clinical trials (phases, therapeutic area), creating a hierarchical structure of the company, social interaction in the company: statuses, company news, personal and corporate calendars.

Chapter Two

VB.NET & SQL

2-1 VB.NET: -

Visual Basic, originally called Visual Basic .NET (VB.NET), is a multi-paradigm, object-oriented programming language, implemented on .NET, Mono, and the .NET Framework. Microsoft launched VB.NET in 2002 as the successor to its original Visual Basic language, the last version of which was Visual Basic 6.0. Although the ".NET" portion of the name was dropped in 2005, this article uses "Visual Basic [.NET]" to refer to all Visual Basic languages released since 2002, in order to distinguish between them and the classic Visual Basic. Along with C# and F#, it is one of the three main languages targeting the .NET ecosystem. As of March 11, 2020, Microsoft announced that evolution of the VB.NET language has concluded.

Microsoft's integrated development environment (IDE) for developing in Visual Basic is Visual Studio. Most Visual Studio editions are commercial; the only exceptions are Visual Studio Express and Visual Studio Community, which are freeware. In addition, the .NET Framework SDK includes a freeware command-line compiler called vbc.exe. Mono also includes a command-line VB.NET compiler.

Visual Basic is often used in conjunction with the Windows Forms GUI library to make desktop apps for Windows. Programming for Windows Forms with Visual Basic involves dragging and dropping controls on a form using a GUI designer and writing corresponding code for each control.

2-2 Variables:

A variable is nothing but a name given to a storage area that our programs can manipulate. Each variable in VB.Net has a specific type, which determines the size and layout of the variable's memory; the range of values that can be stored within that memory; and the set of operations that can be applied to the variable.

2-3 Loops:

There may be a situation when you need to execute a block of code several number of times. In general, statements are executed sequentially: The first statement in a function is executed first, followed by the second, and so on. Programming languages provide various control structures that allow for more complicated execution paths. A loop statement allows us to execute a statement or group of statements multiple times and following is the general form of a loop statement in most of the programming languages –

2-4 Loop Type Description

Do Loop It repeat the enclosed block of statements while a

Boolean condition is True or until the condition becomes

True. It could be terminated at any time with the Exit Do

Statement For...Next It repeats a group of statements a specified number of

times and a loop index counts the number of loop iterations as the loop executes.

For Each...Next

It repeats a group of statements for each element in a

collection. This loop is used for accessing and

manipulating all elements in an array or a VB.Net collection.

- While... End While It executes a series of statements as long as a given

- condition is True.

- With... End with It is not exactly a looping construct. It executes a series

- of statements that repeatedly refer to a single object or

- structure.

- Nested loops You can use one or more loops inside any another

- While, For or Do loop.

2-5 Arrays

An array stores a fixed-size sequential collection of elements of the same type. An array is used to store a collection of data, but it is often more useful to think of an array as a collection of variables of the same type. All arrays consist of contiguous memory locations. The lowest address corresponds to the first element and the highest address to the last element.

For example,
1. Dim intData(30) ' an array of 31 elements
2. Dim strData(20) As String ' an array of 21 strings
3. Dim twoDarray(10, 20) As Integer 'a two dimensional
4. array of integers
5. Dim ranges(10, 100) 'a two dimensional array

2-6 Functions and Sub

A procedure is a group of statements that together perform a task when called. After the procedure is executed, the control returns to the statement calling the procedure. VB.Net has two types of procedures −
1- Functions
2- Sub procedures or Subs
Note: Functions return a value, whereas Subs do not return a value

2-7 SQL Server: -

Structured Query Language (SQL) is a standardized programming language that is used to manage relational databases and perform various operations on the data in them. Initially created in the 1970s, SQL is regularly used not only by database administrators, but also by developers writing data integration scripts and data analysts looking to set up and run analytical queries.

The term *SQL* is pronounced *less-Kew-ell* or *sequel*.

SQL is used for the following:

- modifying database table and index structures;

- adding, updating and deleting rows of data; and

- retrieving subsets of information from within relational database management systems (RDBMSes) -- this information can be used for transaction processing, analytics applications and other applications that require communicating with a relational database.

SQL queries and other operations take the form of commands written as statements and are aggregated into programs that enable users to add, modify or retrieve data from database tables.

A table is the most basic unit of a database and consists of rows and columns of data. A single table holds records, and each record is stored in a row of the table. Tables are the most used type of database objects, or structures that hold or reference data in a relational database. Other types of database objects include the following:

- **Views** are logical representations of data assembled from one or more database tables.

- **Indexes** are lookup tables that help speed up database lookup functions.

- **Reports** consist of data retrieved from one or more tables, usually a subset of that data that is selected based on search criteria.

Each column in a table corresponds to a category of data -- for example, customer name or address -- while each row contains a data value for the intersecting column.

Relational databases are relational because they are composed of tables that relate to each other. For example, a SQL database used for customer service can have one table for customer names and addresses and other tables that hold information about specific purchases, product codes and customer contacts. A table used to track customer contacts usually uses a unique customer identifier called a *key* or *primary key* to reference the customer's record in a separate table used to store customer data, such as name and contact information.

SQL became the de facto standard programming language for relational databases after they emerged in the late 1970s and early 1980s.

2-8 SQL standard and proprietary extensions

An official SQL standard was adopted by the American National Standards Institute (ANSI) in 1986, with the International Organization for Standardization (ISO) adopting the standard in 1987. New versions of the SQL standard are published every few years, the most recent in 2016.

ISO/IEC 9075 is the ISO SQL standard developed jointly by ISO and the International Electrotechnical Commission. The standard way of referring to an ISO standard version is to use the standards organizations -- ISO/IEC -- followed by the ISO standard number, a colon and the publication year. The current ISO standard for SQL is ISO/IEC 9075:2016.

Both proprietary and open source RDBMSes built around SQL are available for use by organizations. SQL-compliant database server products include the following:

- Microsoft SQL Server

- Oracle Database

- IBM Db2

- SAP HANA

- SAP Adaptive Server

- Oracle MySQL

- open source PostgreSQL

Some versions of SQL include proprietary extensions to the standard language for procedural programming and other functions. For example, Microsoft offers a set of extensions called Transact-SQL, while Oracle's extended version of the standard is Procedural Language for SQL. Commercial vendors offer proprietary extensions to differentiate their product offerings by giving customers additional features and functions. As a result, the different variants of extended SQL offered by vendors are not fully compatible with one another.

2-9 SQL commands and syntax

SQL is, fundamentally, a programming language designed for accessing, modifying and extracting information from relational databases. As a programming language, SQL has commands and a syntax for issuing those commands.

SQL commands are divided into several different types, including the following:

- **Data Definition Language (DDL)** commands are also called *data definition commands* because they are used to define data tables.

- **Data Manipulation Language (DML)** commands are used to manipulate data in existing tables by adding, changing or removing data. Unlike DDL commands that define how data is stored, DML commands operate in the tables defined with DDL commands.

- **Data Query Language** consists of just one command, SELECT, used to get specific data from tables. This command is sometimes grouped with the DML commands.

- **Data Control Language** commands are used to grant or revoke user access privileges.

- **Transaction Control Language** commands are used to change the state of some data -- for example, to COMMIT transaction changes or to ROLLBACK transaction changes.

SQL syntax, the set of rules for how SQL statements are written and formatted, is similar to other programming languages. Some components of SQL syntax include the following:

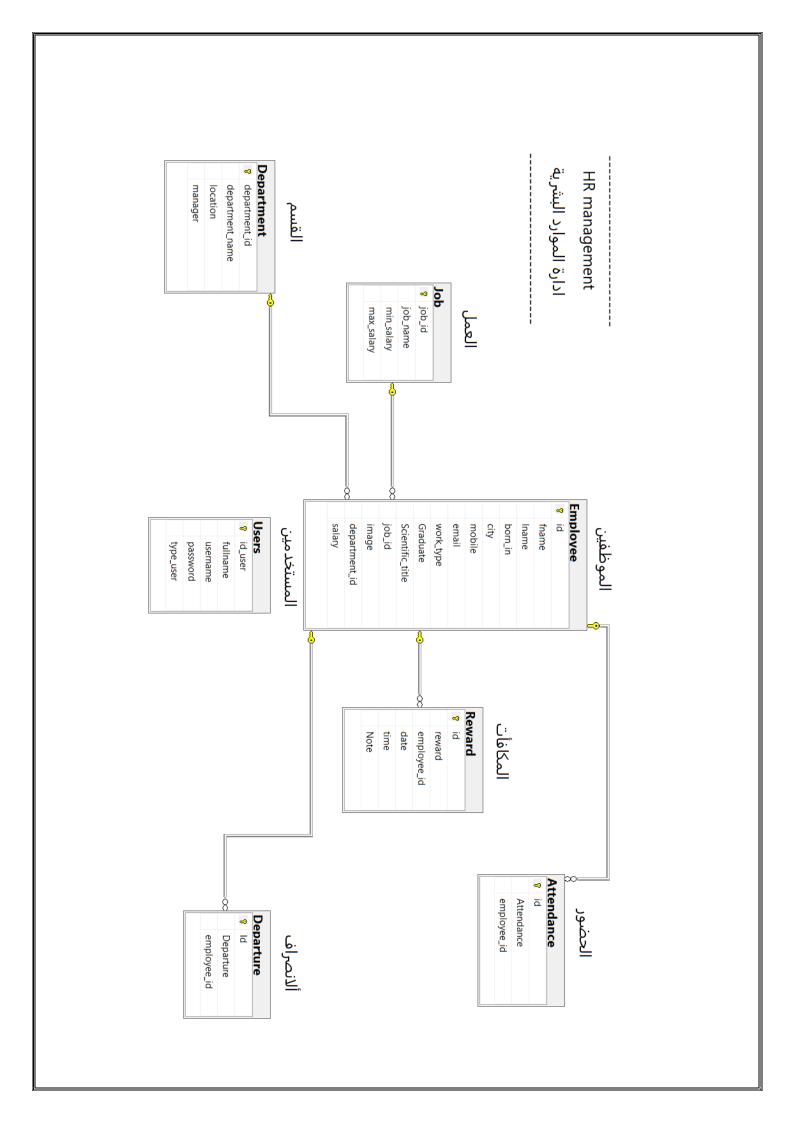- SQL statements start with a SQL command and end with a semicolon (**;**), for example:

SELECT * FROM customers;

This SELECT statement extracts all of the contents of a table called customers.

Chapter Three

Database

قاعدة البيانات

HR management
إدارة الموارد البشرية

Department
القسم
- department_id
- department_name
- location
- manager

Job
العمل
- job_id
- job_name
- min_salary
- max_salary

Employee
الموظفين
- id
- fname
- lname
- born_in
- city
- mobile
- email
- work_type
- Graduate
- Scientific_title
- job_id
- image
- department_id
- salary

Users
المستخدمين
- id_user
- fullname
- username
- password
- type_user

Reward
المكافآت
- id
- reward
- employee_id
- date
- time
- Note

Attendance
الحضور
- id
- Attendance
- employee_id

Departure
الأنصراف
- Id
- Departure
- employee_id

3-1. Users:

It is the table responsible for storing user data and the login process.

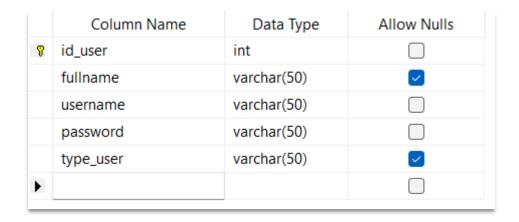|	Column Name	Data Type	Allow Nulls
🔑	id_user	int	☐
	fullname	varchar(50)	☑
	username	varchar(50)	☐
	password	varchar(50)	☐
	type_user	varchar(50)	☑
▶			☐

Figure 1 - Users

3-2. Employee:

All employee data and personal information such as employee number, employee name, father's name, phone, housing, e-mail, university degree, births, employee photo, salary, and date of addition are stored.

	Column Name	Data Type	Allow Nulls
🔑	id	int	☐
	fname	varchar(50)	☑
	lname	varchar(50)	☑
	born_in	int	☑
	city	varchar(50)	☑
	mobile	varchar(50)	☑
	email	varchar(50)	☑
	work_type	varchar(50)	☑
	Graduate	varchar(50)	☑
	Scientific_title	varchar(50)	☑
	job_id	int	☑
	image	image	☑
	department_id	int	☑
	salary	float	☑
			☐

Figure 2 - Employee

3-3. Reward：

All rewards that occur are stored in the program such as employee number, date and reason for reward.
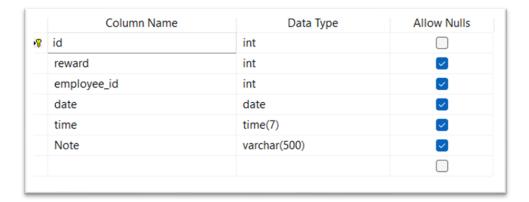

Figure 3 - Reward
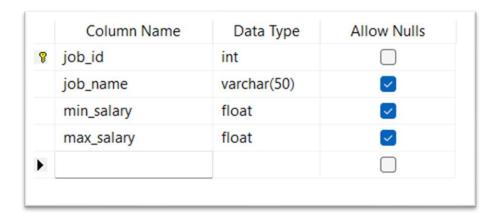
3-4. Job: store information about job.

Figure 4 - Job

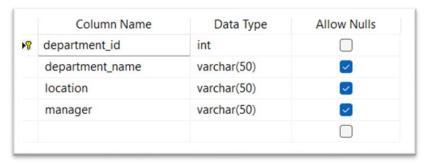## 3-5. Department: store information about department .

Figure 5 - Department

3-6. Departure:

To store the departure time of employee with the employee number and a date separated from the time so that the system can display data by date.
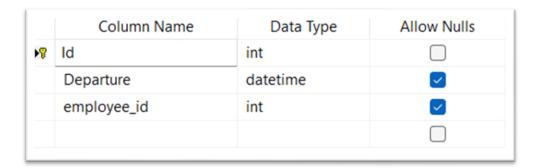
Column Name	Data Type	Allow Nulls
Id	int	☐
Departure	datetime	☑
employee_id	int	☑
		☐

Figure 6 - Departure

3-7. Attendance:

To store employee attendance time with the employee number and a date separated from the time so that the system can display data by date.
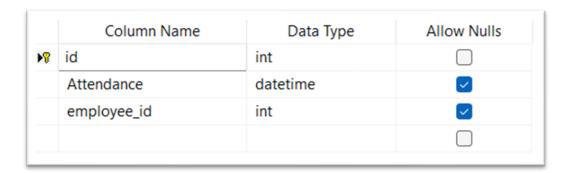
Column Name	Data Type	Allow Nulls
id	int	☐
Attendance	datetime	☑
employee_id	int	☑
		☐

Figure 7 - Attendance

Chapter Four

Design & implementation

4-1. Splash Screen:

It is the first window that appears when the program is running. It contains a Progress Bar, which is a counter that increases automatically when the counter value becomes 100. The window closes and the next window opens, which is the login window.

4-2. Login Screen:

In the event that the username and password are written incorrectly, that is, it does not match what is in the database, an error message will appear telling you to verify the username or password.

Figure 8 - Login Screen

Figure 9 - Error Message

In the event that the username and password are written incorrectly, that is, it does not match what is in the database, an error message will appear telling you to verify the username or password.
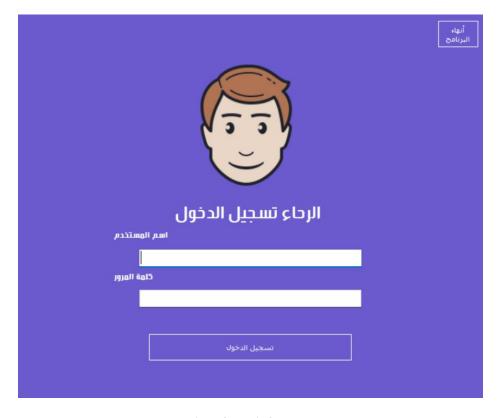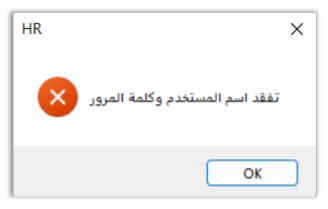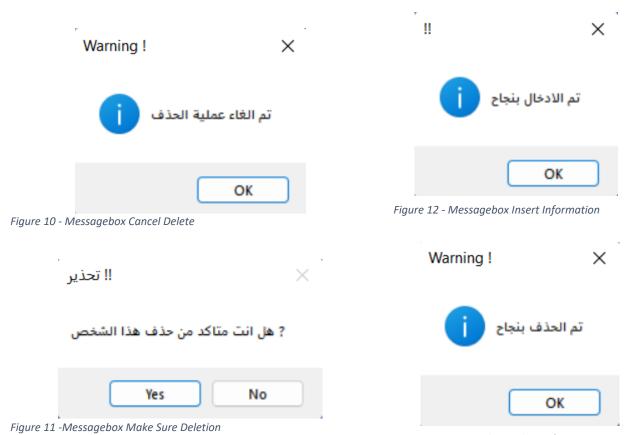
MessageBox Used In Project:

Figure 10 - Messagebox Cancel Delete

Figure 12 - Messagebox Insert Information

Figure 11 -Messagebox Make Sure Deletion

Figure 13 - Messagebox Delete Information

4-3. Main Menu:

It is considered one of the most important interfaces in the program because it shows all the windows in the project and the user can choose the desired window very easily.

Figure 14 - Main Menu

4-4. Employee:

Figure 15 - Employee

4-5. Manage Employee:

In this window, employee data is fully managed, such as the process of entering new employee data, and it is stored in the database within the employee table so that the data is displayed with ease. The data can be modified and deleted according to the employee number

Figure16 - Manage Employee

4-6. Department:

Figure17 - Department

4-7. Job:

Figure 18 - Job

4-8. Reword:

Rewards data is managed in this window such as adding, updating and deleting

Figure 19 - Reword

Penalties and leave data are managed in these two windows, such as adding, updating and deleting

4-9. Attendance and Departure:

The date and time are displayed inside the attendance and departure window, so that the actual time in which the attendance or departure process takes place is stored, and these settings cannot be tampered with.

- Attendance and Departure:20 Figure

4-10. Total:

The company owner needs to know the total number of employees, the number of vacations, penalties, attendance and absence on a particular date.

Figure 21 - Total

4-11. About:

Here in this window, the project data appears, such as the name of the project, the name of the programmer's students, and the name of the doctor supervising the project.

Figure 22 - About

Chapter Five

Conclusions and Recommendations

1. Recommendations:

We recommend developing the system by uploading the database on hosting such as Microsoft hosting or Google hosting and converting the system from local to global connection so that the company or organization can be managed remotely, and the presence of user permissions is one of the reasons why the program is able to manage several branches and not one branch.

We also recommend that the data stored in the database be encrypted by an encryption algorithm to protect the data from hacking.

2. Conclusions:

Human Resource Management System With attendance and departure system, all employee data and personal information can be managed in addition to managing attendance and departure data, and it is an excellent and easy to use software, beautifully designed and free from unnecessary and unnecessary complications in our modern day.

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