

International Journal of Computer Science and Mobile Computing



A Monthly Journal of Computer Science and Information Technology

ISSN 2320-088X

IMPACT FACTOR: 7.056

IJCSMC, Vol. 12, Issue. 1, January 2023, pg.70 – 81

Specific Employees Affairs System for RAL International Company- Part 1

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DOI: <https://doi.org/10.47760/ijcsmc.2023.v12i01.009>

Abstract— *Employee's affairs systems are rapidly developing in line with the rapid development of the digital sector. Employee's affairs systems in companies are often systems within companies that include all digital resources/information that the employees need. Sometimes the employee needs a resource/information while he is outside the company, which forces him to go to the company to obtain that resource/information even if it is late, or to postpone work on that resource until next day, which will negatively affect the employee's work. To resolve this problem, we are working to find online system for managing the digital resources/information to be available for employees at any time and any space inside the company or outside it. We need Visual Studio editor to use the programming languages, ASP, C#, and SQL SERVER to manage the database. In this paper, system requirements and system design will be presented. Implementation part will be presented in the next paper.*

Keywords— *software development, system design, system requirements, system modelling.*

I. INTRODUCTION

The impact of technological development and advancement in this era stimulates companies, universities etc. to keep pace with this development and progress, in which corporations depend on employee's affairs systems to record or get information. After corporations were confined only to records or systems inside it, they are now fundamentally dependent on computers, and online access from anywhere in the world. This new development in the digital sector facilitates getting resources/information at anytime from anywhere, which increases employee's production. The employee's affairs system in companies is a good facility for all employees who need to use or see any information/resources. However, most companies still use systems residing in the companies building and their branches. This work focuses on developing a system to supply the employees with the digital information/resources at any time and at any place. This system contains two users, admin and employee. The admin will manage all employees' records, and the employee user will show and see all information/resources he wants. In this paper, system requirements and system design will be presented. Implementation part will be presented in the next paper.

This paper is organized as follow: section II problem statement, section III objectives, section IV scope, section V system analysis and requirements, section VI system design, and section VII conclusions and future work.

II. PROBLEM STATEMENT

The proposed system will be a website for managing the employee resources/information, and this system gives the users many advantages like view information regarding salary, his status in the company etc. The employee's affairs system has many features as following: Speed on response, Use a good database, which is SQL SERVER Database which can be filled with thousands of data, and friendly interface which means that the user can use the website easily and can find what he needs quickly.

III.OBJECTIVES

The objectives include: support the employees with an online website, offering all digital information/resources which are required for employees through their work, and saving time and effort for employees through providing online information/resources.

IV.SCOPE

This work will be implemented by employees to supply them with a good online website offering all digital information/resources. This system will be free that the admin user will upload it to the internet server and then the employees will use it through their work.

V. SYSTEM ANALYSIS AND REQUIREMENTS

There are multiple and different methods and models for analysis the system, the steps of analyzing the system can start with a feasibility study to determine whether the project is economically, technologically, and operationally feasible, and then verify the requirements of the end-users of the system through the use of questionnaires, interviews, etc. And then determining how the system will be used by users and stakeholders, and in another opinion.

A. SOFTWARE DEVELOPMENT METHODOLOGIES

There are many methodologies to use in analyzing the system. In this work, WaterFall methodology was used, which is displayed clearly in the following figure:

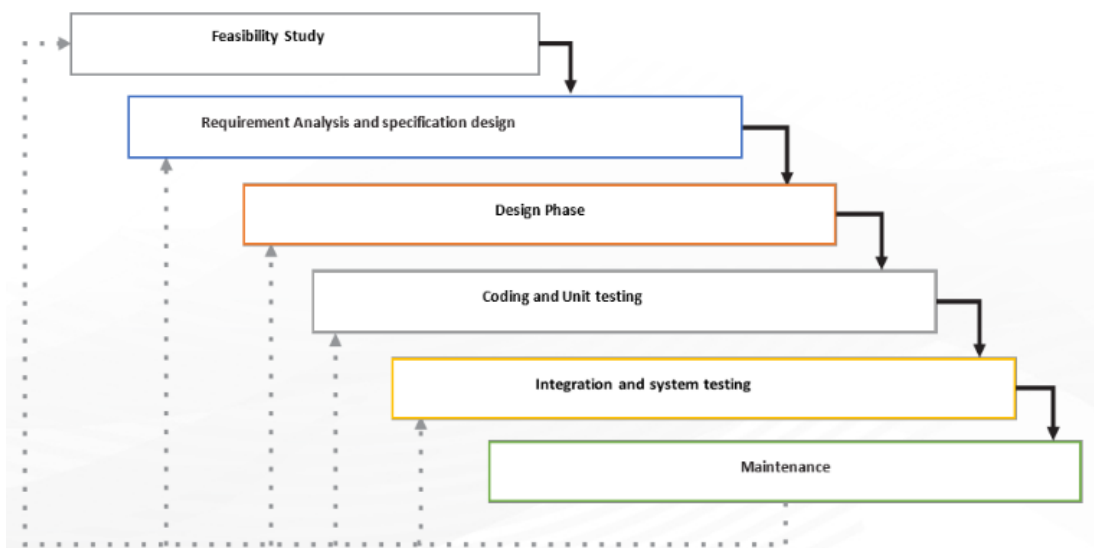


Fig. 1 WaterFall Model

B. FEASIBILITY ANALYSIS

Technical feasibility: This system is technical where technical developing tools are used such as ASP and C# programming languages, in addition, to use the SQL SERVER to build the database. **Operational feasibility:** This system is operational where the website is able to run on any explorer of the Windows operating system. It needs only accessing the internet and recording the address of the website in the address section of the internet explorer. **Schedule feasibility:** This project takes three months to finish. **Economic feasibility:** This system is economic because it saves the disbursements on employees and the company in managing the resources in the company to be available for the employee at any time without printing papers.

C. SYSTEM REQUIREMENTS

1) *The Functional Requirements*

This system includes many functions for each actor as it looks clearly in the following:

- **Admin**
 - Login
 - Manage employee
 - Add employee
 - Update employee
 - Delete employee
 - View employee(s)
 - View employee(s) data as card
 - Check employee status in both Municipality(Amana) and Management
 - Track employee status in both Municipality and Management
 - Search for employee by his name or by his iqama number
 - Manage user
 - Create
 - Delete
 - Update
 - Manage users by role
 - Track user status
 - All methods are shown in class diagram figure 7.
 - Manage role
 - Create
 - Delete
 - Update
 - Manage roles by user
 - All methods are shown in class diagram figure 7.
 - Manage report
 - View report by different criteria and statistics
 - Print report
 - Chang password
 - Logout
- **Employee**
 - Login
 - View data
 - Check his status in both Municipality and Management
 - Track his status in both Municipality and Management
 - Chang password
 - Logout

2) *The Non-Functional Requirements*

We study some non-functional requirements as follows:

Security: This system is secure because of using secure login to reach the services of the system and the data which will be used by the employee is managed by the admin. ASP.NET Membership framework manages user accounts; create, update, and delete user accounts, and limit access to a web page, directory, or specific functionality based on the logged in user. ASP.NET Roles framework associates user accounts with roles, manage user roles and limits access to a web page, directory, or specific functionality based on the logged in user's role. **Usability:** This system is usable and easy to use because any employee in the company requires only accessing the internet and internet explorer. **Maintainability:** This system will be tracked by the employee and admin to maintain any programming mistake and updating the version into better ones.

D. TECHNOLOGIES USED

1) *Software*

To develop this project, we need the following software tools: MS WORD to prepare the report of this project, MS POWER POINT to prepare the presentation, MS VISIO to draw the UML diagrams for analysis and design the system, ASP to design the website interfaces, C# to write the programming code, SQL SERVER to create the database, Windows 7 as an operating system, and Internet explorer to run the website.

2) Hardware

To develop this website, we need computer with good specification as follows: CPU: Core i5, 2.4GHz, RAM: 4GB, and HARD DISK SPACE: 500GB.

E. UML MODELS AND DIAGRAMS

1) Use Case Diagrams

This diagram specifies all cases for each actor which will be as processes in this system.

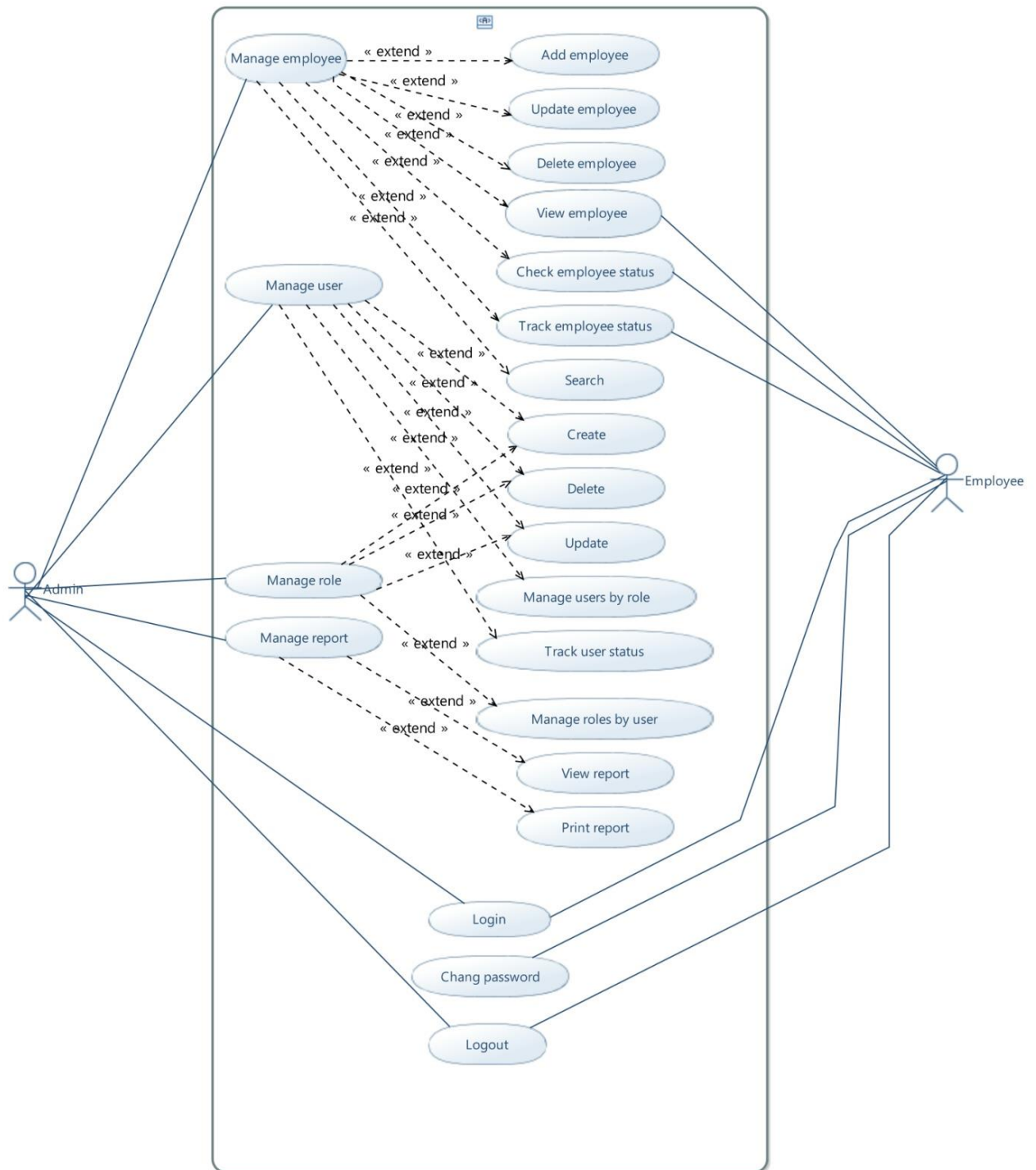


Fig. 2 Use Case Diagram

2) Sequence Diagrams

This type of diagrams displays how the processes executed depending on time consequently. The diagram for each actor looks clearly as follows:

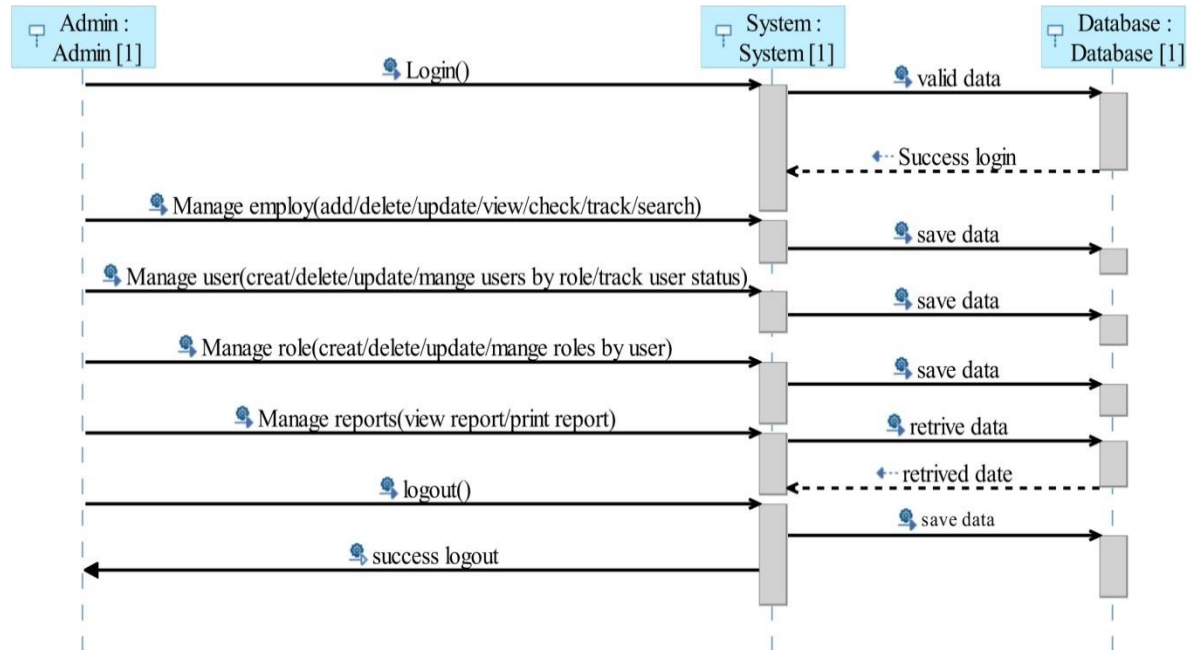


Fig. 3 Admin Sequence Diagram

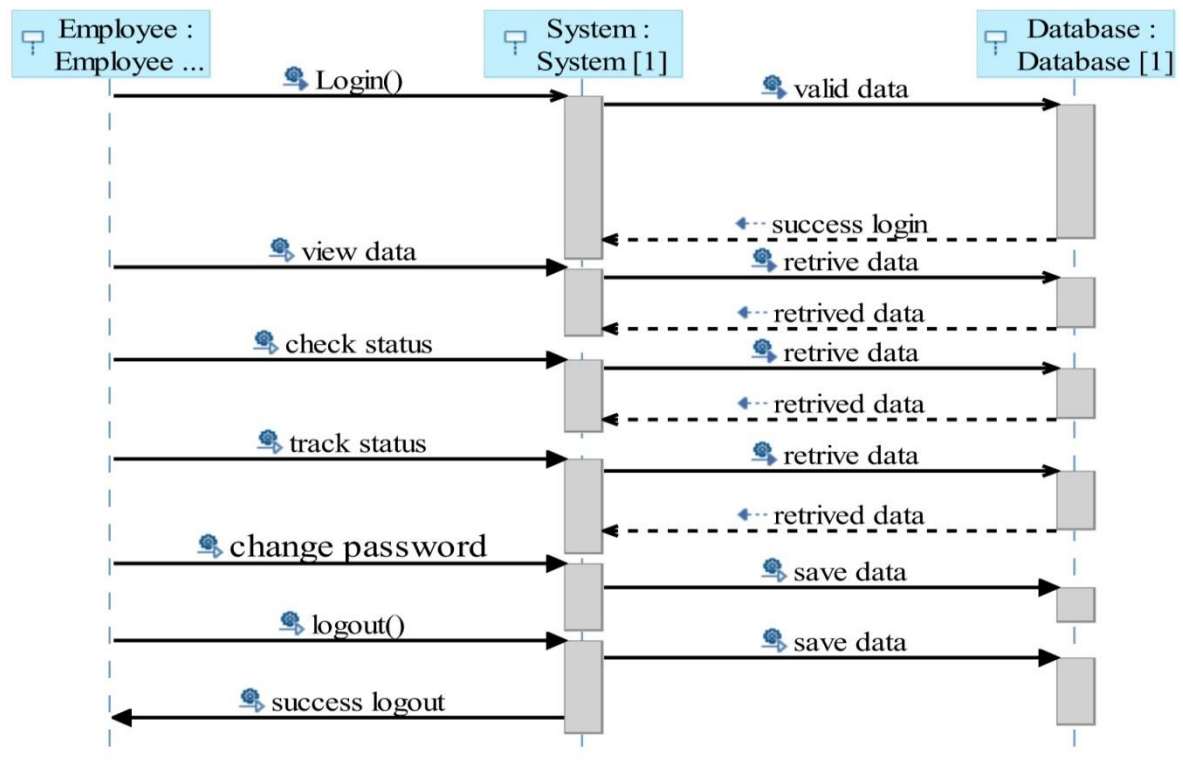


Fig. 4 Employee Sequence Diagram

3) Activity Diagrams

This diagram displays the activities of each actor in this system and the following diagrams display the activities of each user:

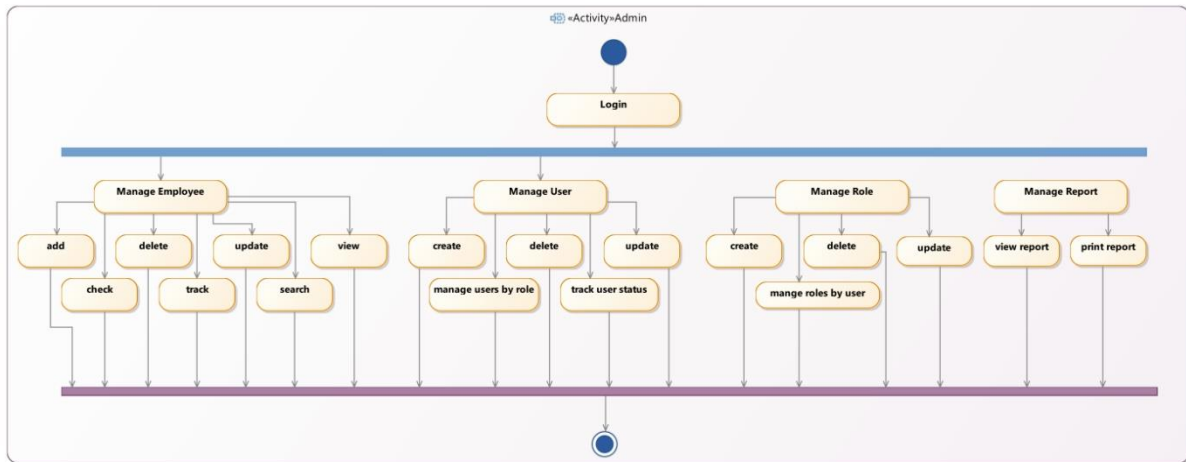


Fig. 5 Admin Activity Diagram

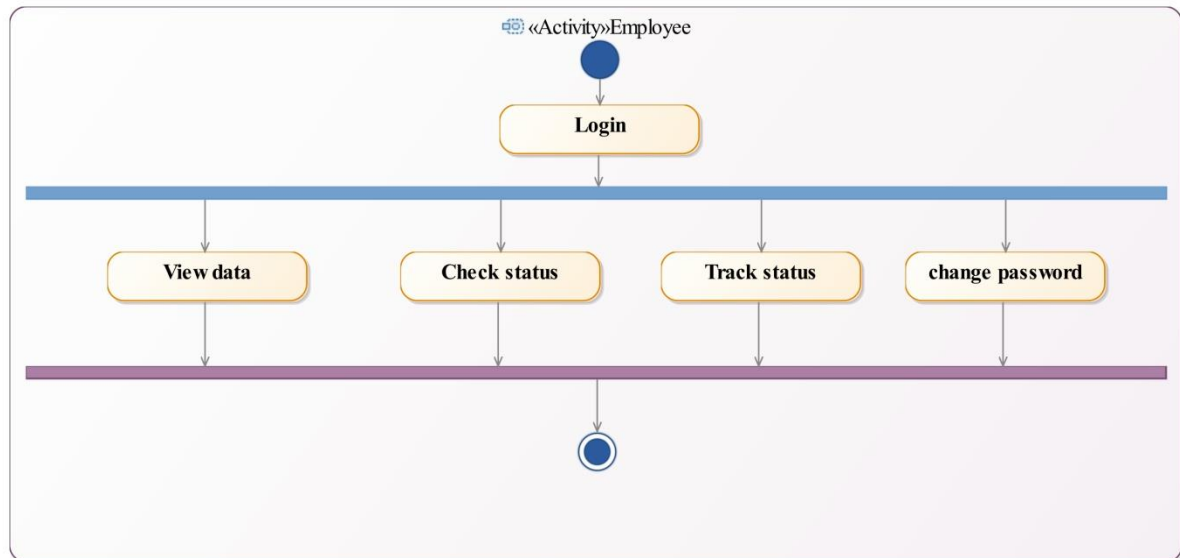


Fig. 6 Employee Activity Diagram

4) Class Diagram

This diagram Fig.7 displays all objects of the database and the relations between all objects. In addition to displays all functions on the entities such as search, add, and delete. The admin is an employee having a role as administrator.

VI.SYSTEM DESIGN

A. INTRODUCTION

We can define the design and analysis of the system as an in-depth study of the core of an existing system and its details, in order to arrive at its problems and weaknesses. In order to solve it, or build and develop a better system than it, all this is done by following the systems analyst to a series of steps and procedures that require designing and building a computerized system to the fullest extent.

1) Design Concept

The importance of systems analysis is to divide the complex system in its composition into its main components in a logical manner, taking into account the scope of the system, its objectives, and the organizational framework of the company as a whole, and this comes on the sidelines of the analyst's attempt to seek to develop and improve the system or introduce a new system. The systems analysis process considers that

the system is a decision point, meaning that it is the starting point for the correct decision-making by the systems analyst according to the available input data.

2) Context Diagram

In this diagram Fig. 8, we can see the general behaviour of the system and how it reacts with the inputs and what the outputs must be:

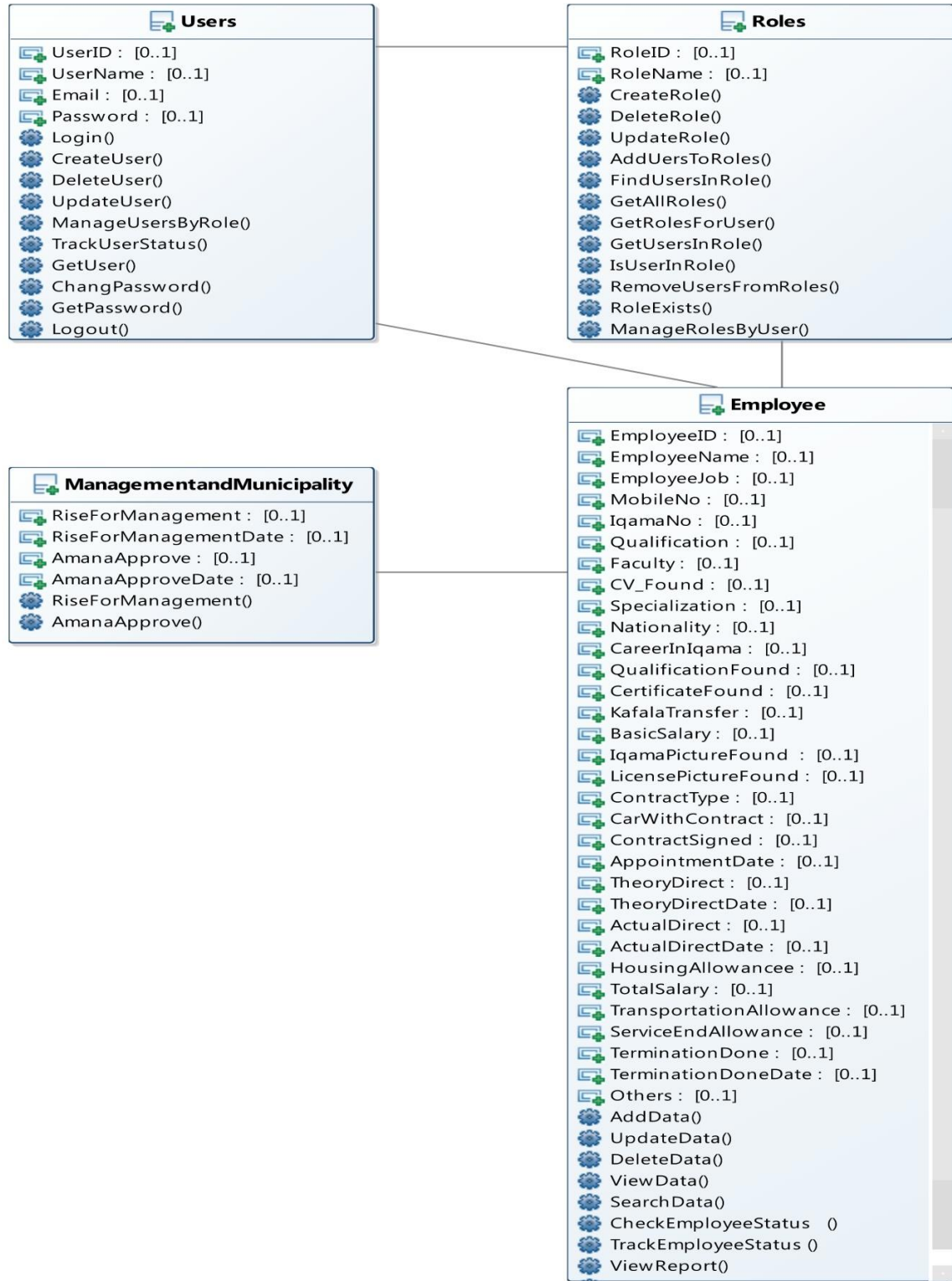


Fig. 7 Class Diagram

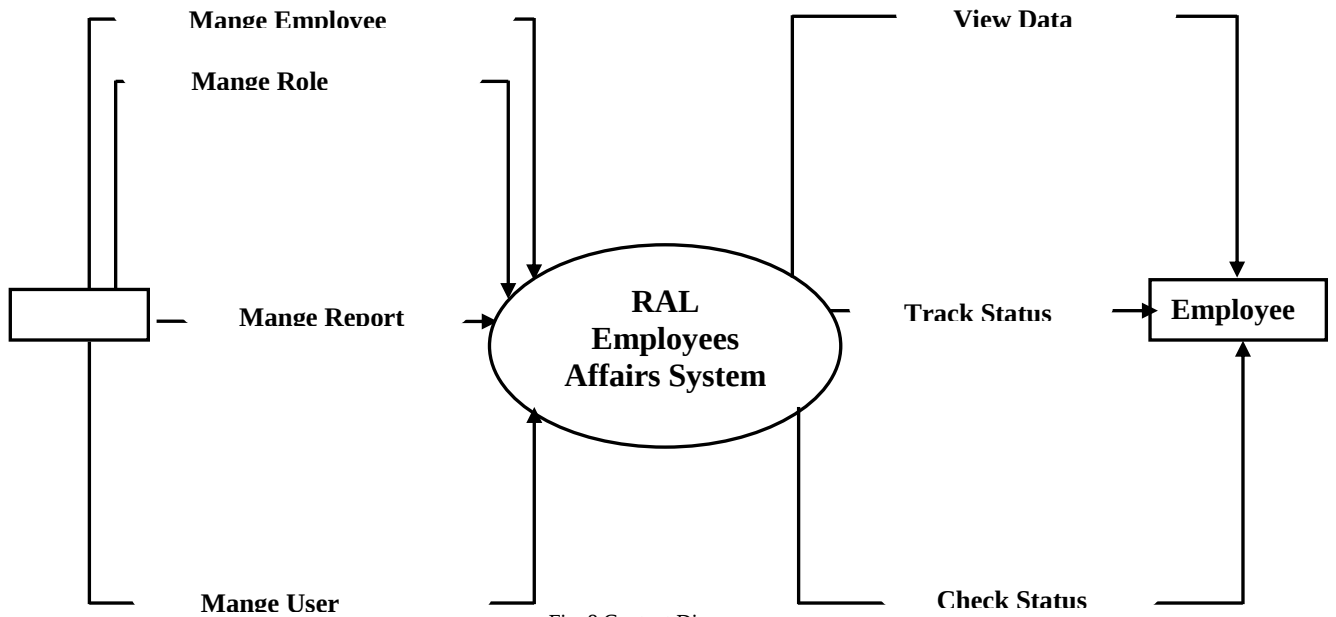


Fig. 8 Context Diagram

3) Data Flow Diagram

In this diagram Fig 9, we can see the processes of each actor in more details than the context diagram.

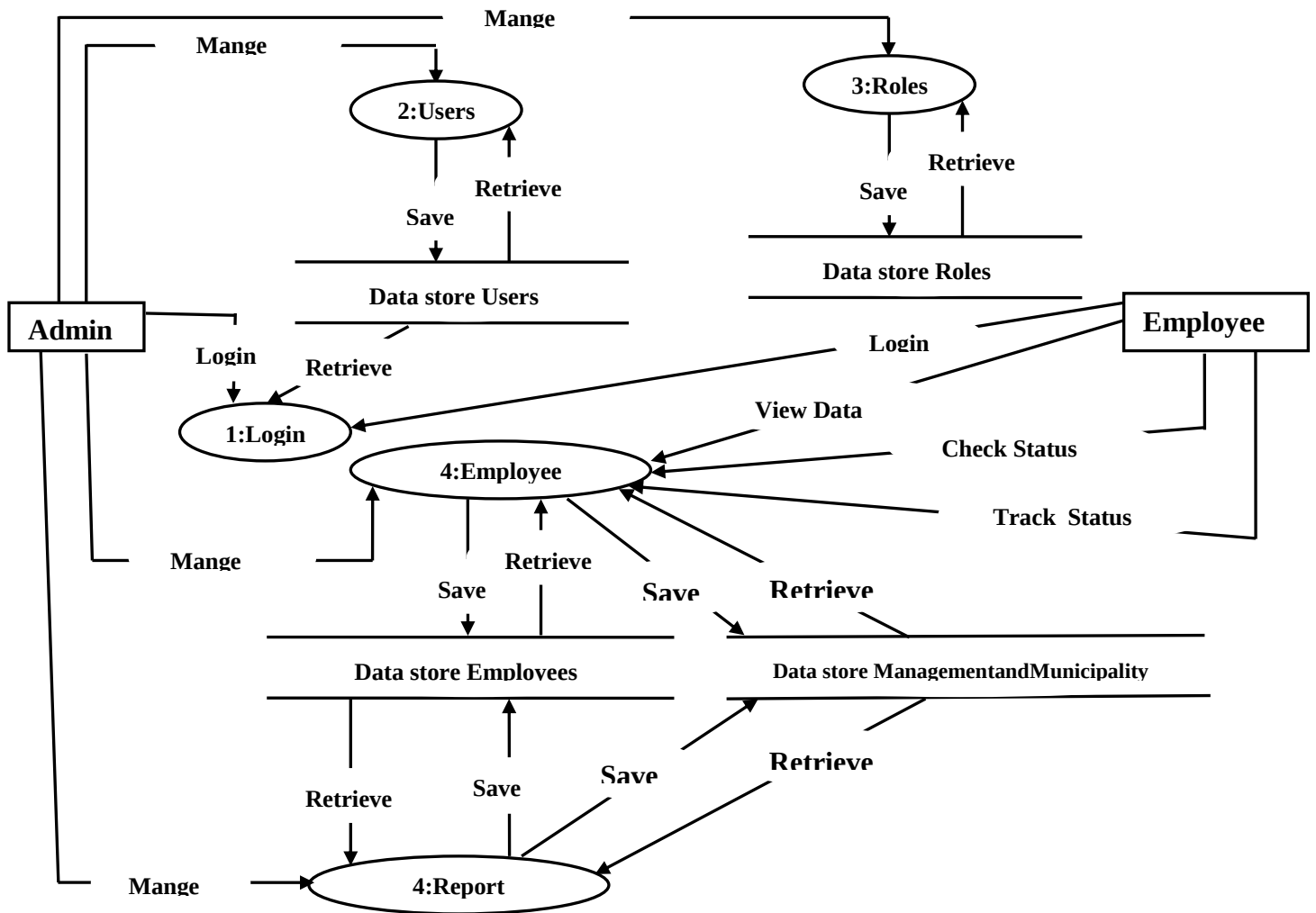
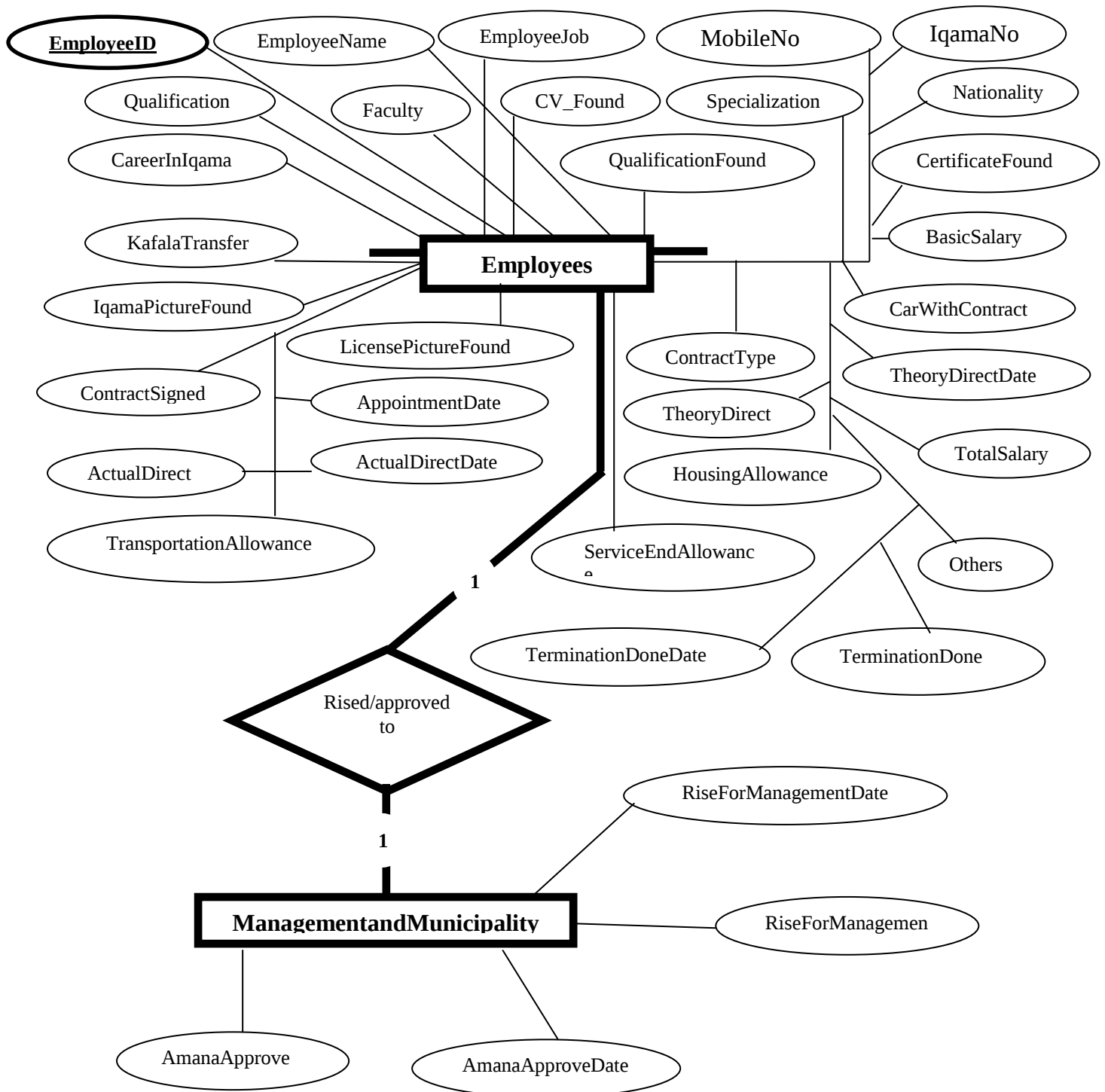


Fig. 9 DF Level 0 Diagram

B. DATABASE DESIGN

1) E-R Diagrams

This diagram displays all entities with their attributes which represents the database tables in addition to the relation between these entities.



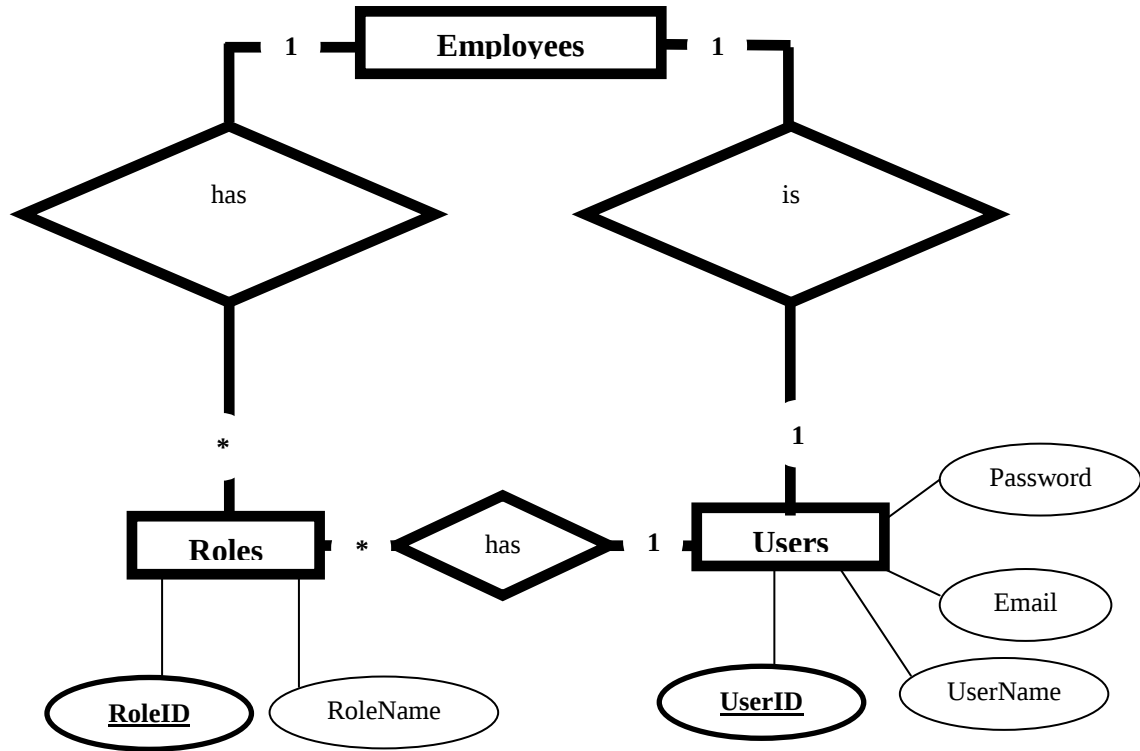


Fig. 10 ER Diagram

2) Database Tables

The following tables are inside our database for this system.

TABLE 1
USER TABLE

Attribute	Type	Constraint
UserID	Int	PK
UserName	Nvarchar(15)	
Email	Nvarchar(50)	
Password	Nvarchar(50)	
RoleName	Nvarchar(50)	

TABLE 2
ROLES TABLE

Attribute	Type	Constraint
RoleID	Int	PK
RoleName	Nvarchar(15)	
UserID	Int	FK

TABLE ERROR! NO TEXT OF SPECIFIED STYLE IN DOCUMENT.
MANAGEMENT AND MUNICIPALITY TABLE

Attribute	Type	Constraint
EmployeeID	Int	FK
RiseForManagement	Nvarchar(15)	
RiseForManagementDate	Date	
AmanaApprove	Nvarchar(16)	
AmanaApproveDate	Date	

TABLE 4
EMPLOYEE TABLE

Attribute	Type	Constraint
UserID	Int	FK
RoleID	Int	FK
EmployeeID	Int	PK
EmployeeName	Nvarchar(50)	
EmployeeJob	Nvarchar(50)	
MobileNo	Int	
Qualification	Nvarchar(50)	
Faculty	Nvarchar(50)	
CV_Found	Nvarchar(50)	
Specialization	Nvarchar(50)	
Nationality	Nvarchar(50)	
CareerInIqama	Nvarchar(50)	
QualificationFound	Nvarchar(50)	
CertificateFound	Nvarchar(50)	
KafalaTransfer	Nvarchar(50)	
BasicSalary	Float	
IqamaPictureFound	Nvarchar(50)	
LicensePictureFound	Nvarchar(50)	
ContractType	Int	
CarWithContract	Nvarchar(50)	
ContractSigned	Nvarchar(50)	
AppointmentDate	Date	
TheoryDirect	Nvarchar(50)	
TheoryDirectDate	Date	
ActualDirect	Nvarchar(50)	
ActualDirectDate	Date	
HousingAllowance	Float	
TotalSalary	Float	
TransportationAllowance	Float	
ServiceEndAllowance	Float	
Others	Float	
TerminationDone	Nvarchar(50)	
TerminationDoneDate	Date	

C. USER INTERFACE DESIGN

Here, Home Interface and login interface only presented, other interfaces will be presented in implementation section in the next paper.

1) Home Interface

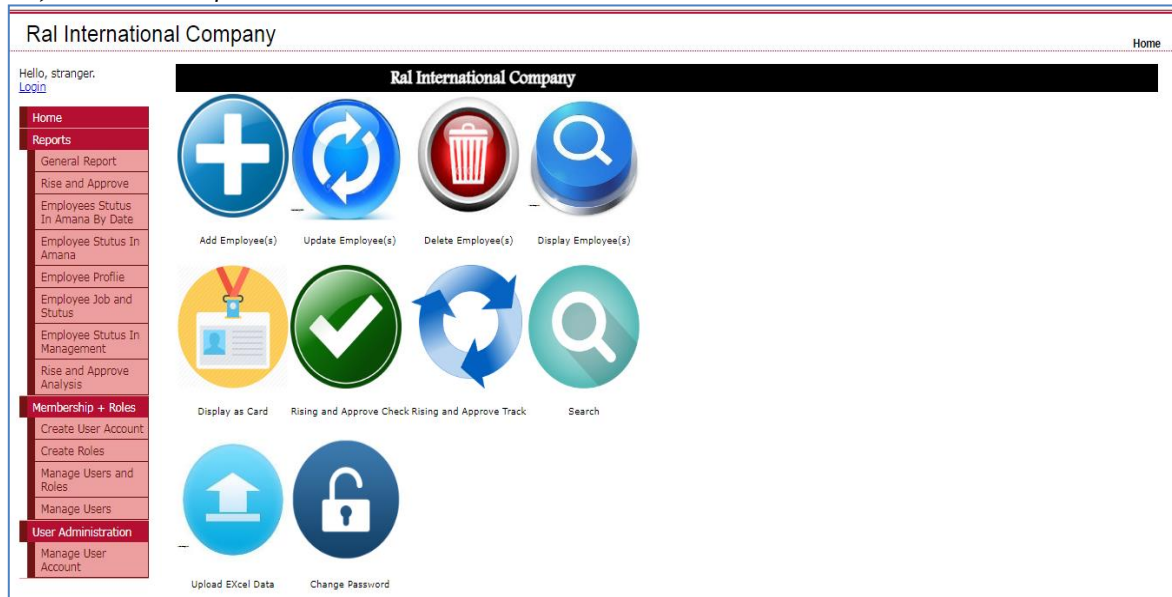


Fig. 11. Home Interface

2) Login Interface

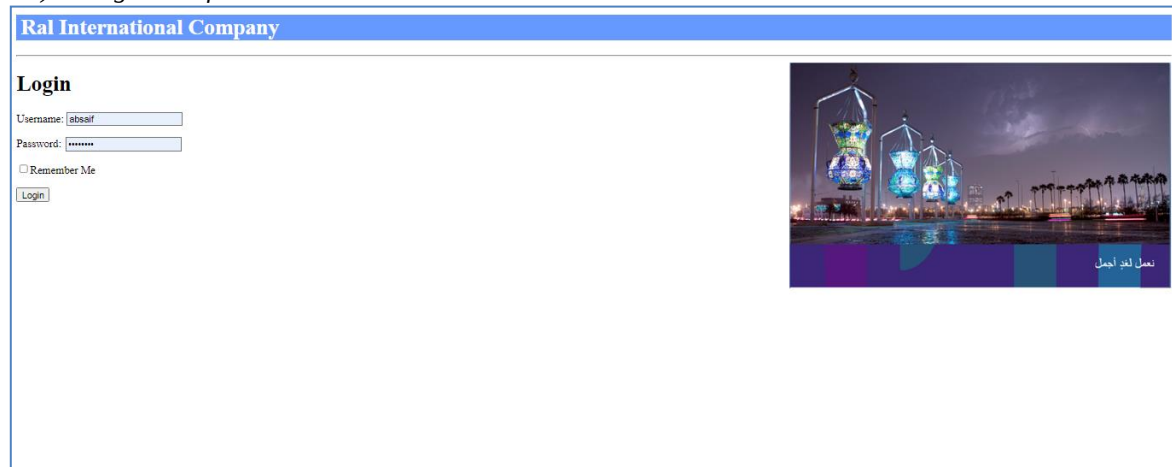


Fig. 12 Login Interface

VII. CONCLUSIONS AND FUTURE WORK

CONCLUSIONS

In this paper, the problem statement of the project idea is presented, in addition to the objectives of the solution to this problem as well as the features of the proposed system are specified. Data was collected and analyzed to analysis and design the system in addition to specify the database design.

FUTURE WORK

The website will be implemented using the programming languages and the functional and non-functional requirements will be tested. Uploading the files into a web server to use the website by employees.

REFERENCES

- [1] RAL international company employees.
- [2] Jeddah Municipality: <https://www.jeddah.gov.sa/index.php>