Abstract

Employee Management System is a distributed application, developed to maintain the details of employees working in any organization. It maintains the information about the personal details of their employees, also the details about the payroll system which enable to generate the payslip. The application is actually a suite of applications developed using Java.

It is simple to understand and can be used by anyone who is not even familiar with simple employees system. It is user friendly and just asks the user to follow step by step operations by giving him few options. It is fast and can perform many operations of a company.

This software package has been developed using the powerful coding tools of JAVA at Front End and Microsoft Sql Server at Back End.The software is very user friendly. The package contains different modules like Employee details. This version of the software has multi-user approach. For further enhancement or development of the package, user's feedback will be considered.

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List of Tables and Figures

Introduction

1.1 Purpose:

Employee Management system is an application that enables users to create and store Employee Records. The application also provides facilities of a payroll system which enables user to generate Pay slips too. This application is helpful to department of the organization which maintains data of employees related to an organization .

Java is a platform independent language. Its created applications can be used on a standalone machine as well as on distributed network. More over applications developed in java can be extended to Internet based applications.

Thus java was chosen as background to design this application.

1.2 Objective :

In this world of growing technologies everything has been computerized. With large number of work opportunities the Human workforce has increased. Thus there is a need of a system which can handle the data of such a large number of Employees in an organization. This project simplifies the task of maintain records because of its user friendly nature.

Requirement Analysis and specifications

The aim of the system is to develop "EMPLOYEE MANAGEMENT SYSTEM" software, which should automate the process to create and store employee details . The system is supposed to be used as a subsystem in a large office system, which could be manual system or a computerized one. Therefore, the proposed system must be able to function under both circumstances.

2.1 **Software Requirements**

· **Web Server**: Since we will use Microsoft .NET products, we are planning to use IIS for web server or any other Microsoft's Web server.

· **DBMS**: When the development platforms are thought the Oracle, MS SQL Server 2000 are the possible solutions. As stated before we chose .NET for development platform; therefore we will use any ADO .NET databases and MS SQL Server 2000 will be our database choice that we thought it will be the best solution for us.

· **Development:** For development phase of our system we decided again on Microsoft's products. Our development platform will be .NET and we are planning to use the following tools and languages.

§ Visual C# .NET programming language for main development

§ ASP .NET for Web side solutions

§ XML web services

§ Microsoft Visual Studio .NET 2003 as development tool.

Other Development Software:

§ Windows XP operating system

§ MS Office Packet for reports or any other documents

§ Microsoft Visio for diagrams

§ SmartDraw for diagrams or time charts

Hardware Requirements

· **Web Server**: We need a reliable web server for our system. This machine must be fast and must show high performance in all situations. At least 512MB RAM and Pentium 4 2000MHz processor seems to be the minimum requirements for this machine. Any IBM, HP machine can be selected for this purpose.

· **Database Server**: Since our system requires a huge amount of data to be stored, we will need an apart machine that will serve as a database. At least 40GB storage capacity is needed for this system. And this machine must also be a high performance machine. An IBM machine like xseries 382 may be a suitable choice for this purpose.

Database Design

3.1. ER Diagram

This ER diagram represents the model of Employee management System entities.the entity-relationship diagram of Employee management System showa all the visual instruments of database tables and relationship between salary, Experience,Employee, Attendance etc.It used structured data and t define relationship between structured data groups of Employee management System functionalities. the main entity of Employee management System are Employee, Salary,Leave ,Experience,Login and attendance.

Employee management System entities and attributes:

- Employee Entity:

Attribute Name	Meaning	Value
emp_id	write meaning of each attribute	write the size of an attribute
emp_name		
emp_mobile		
emp_email		
emp_username		
emp_password		
emp_address		

- Salary Entity:

Attribute Name	Meaning	Value
sal_id	write meaning of each attribute	write the size of an attribute
emp_id		
sal-amount		
sal_total		

- Leave Entity:

Attribute Name	Meaning	Value
leave_id	write meaning of each attribute	write the size of an attribute
emp_id		
leave_type		
leave_to		
leave_from		
leave_description		

- Experience Entity:

Attribute Name	Meaning	Value
emp_id	write meaning of each attribute	write the size of an attribute
exp_year		
data_of_joining		

- Login Entity

Attribute Name	Meaning	Value
login_username	write meaning of each attribute	write the size of an attribute
login_pass		
emp_id		
last_login		

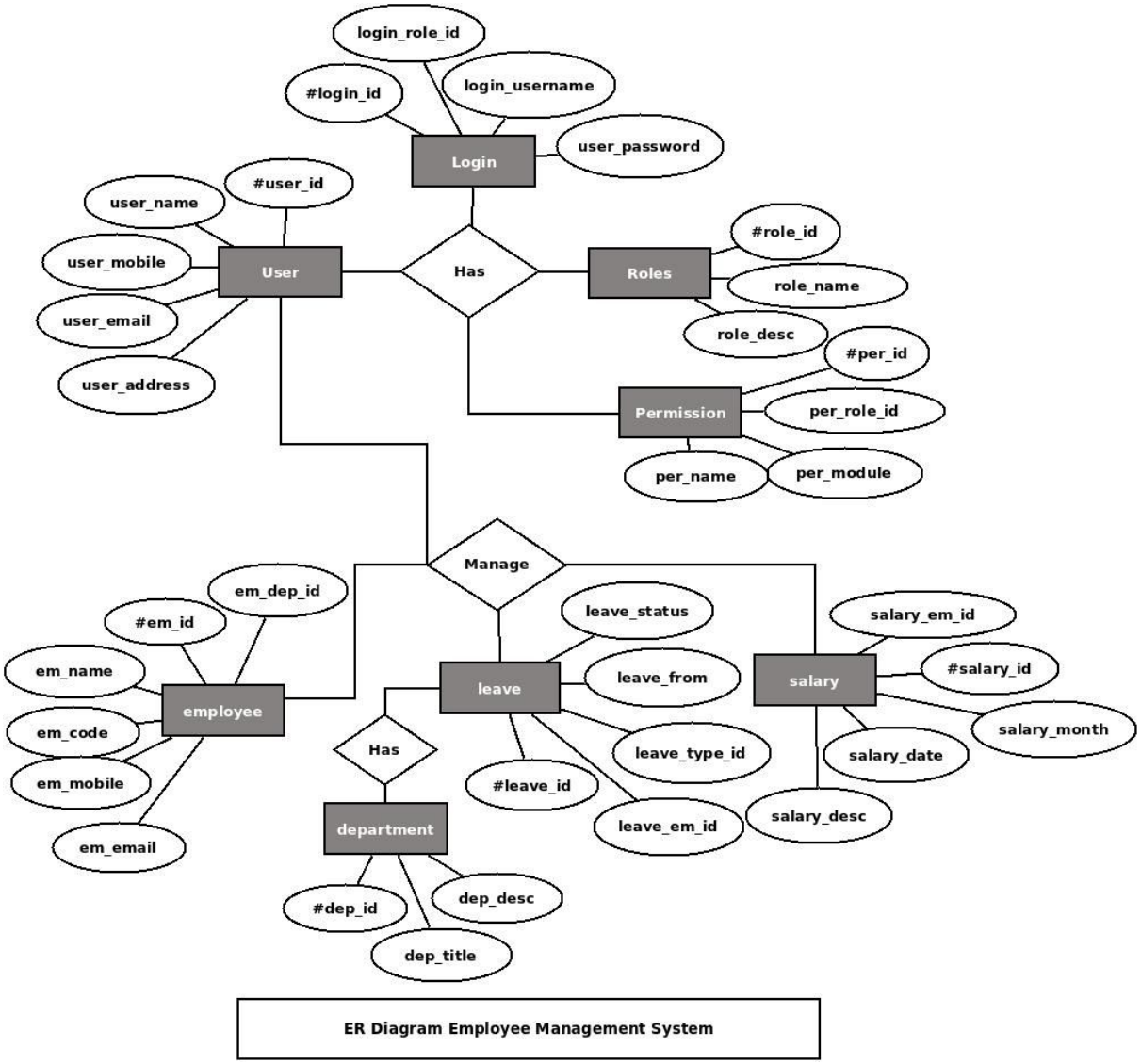
- Attendance Entity

Attribute Name	Meaning	Value
em_id	write meaning of each attribute	write the size of an attribute
attendance_date		

Description of Employee management System :

The entity is a concept or object in which the piece of information can be stored. There are three types of relationship between entities. They are as follows:

- **One to One(1-1):** This relationship specifies that one instance of an entity is associated with another instance of an entity.
- **One to Many(1-N):** This relationship specifies that one instance of an entity is associated with zero or many other instances of another entity.
- **Many to Many(N-N):** This relationship specifies that one instance of an entity is associated with zero or many other instances of another entity.

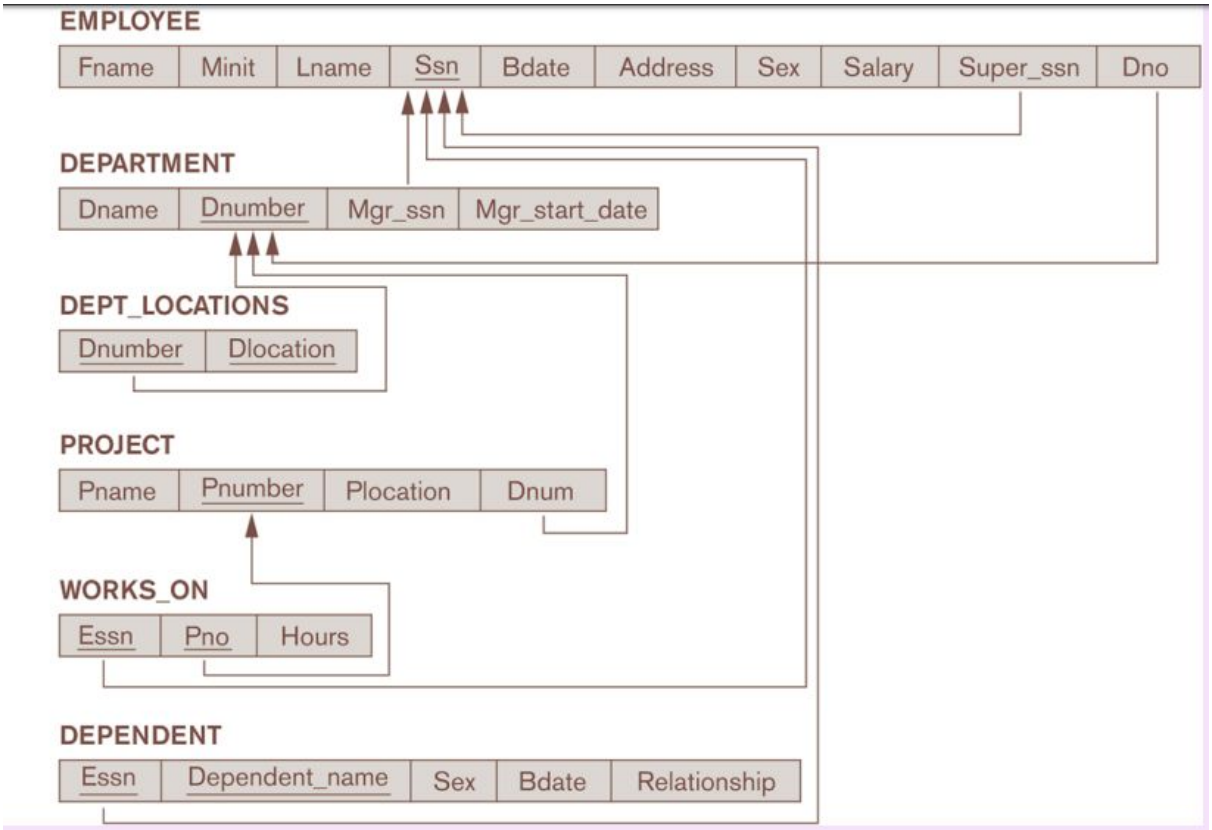


write description about the entity relationship with respect to your project.

3.2 Relational Database design

In this section give a description of Mapping of ER diagram with Relation schema along with schema diagram of your project.A relational database schema is the tables, columns and relationships that make up a relational database.There are two steps to creating a relational database schema: creating the logical schema and creating the physical schema. The logical schema depicts the structure of the database, showing the tables, columns and relationships with other tables in the database and can be created with modeling tools or spreadsheet and drawing software. The physical schema is created by actually generating the tables, columns and relationships in the relational database management software (RDBMS). Most modeling tools can automate the creation of the physical schema from the logical schema, but it can also be done by manually

Below there is a sample of schema diagram for employee database you have to elaborate it for your complete project.



3.3 Constraints in relation Schema:

Give all the types of constraints with explanations that you have used for your project.For example:

- Key Constraints
- Cardinality Ratio
- Participation constraints
- Structural constraints

Project Components

4.1 Front End Design:

Explain all the modules of your project with appropriate diagrams if necessary and also give the brief explanation of the framework used.

4.2 Security Measures:

Mention the type of vulnerabilities that may occur in your project and how you overcome those vulnerabilities

Below there are a list of possible vulnerability that may occur while creating an application:

1.SQL INJECTIONS

SQL injection is a type of web application security vulnerability in which an attacker attempts to use application code to access or corrupt database content. If successful, this allows the attacker to create, read, update, alter, or delete data stored in the back-end database. SQL injection is one of the most prevalent types of web application security vulnerabilities.

2. CROSS SITE SCRIPTING (XSS)

Cross-site scripting (XSS) targets an application's users by injecting code, usually a client-side script such as JavaScript, into a web application's output. The concept of XSS is to manipulate client-side scripts of a web application to execute in the manner desired by the attacker. XSS allows attackers to execute scripts in the victim's browser which can hijack user sessions, deface websites, or redirect the user to malicious sites.

3 . BROKEN AUTHENTICATION & SESSION MANAGEMENT

Broken authentication and session management encompass several security issues, all of them having to do with maintaining the identity of a user. If authentication credentials and

session identifiers are not protected at all times an attacker can hijack an active session and assume the identity of a user.

4. INSECURE DIRECT OBJECT REFERENCES

Insecure direct object reference is when a web application exposes a reference to an internal implementation object. Internal implementation objects include files, database records, directories, and database keys. When an application exposes a reference to one of these objects in a URL hackers can manipulate it to gain access to a user's personal data.

5. SECURITY MISCONFIGURATION

Security misconfiguration encompasses several types of vulnerabilities all centered on a lack of maintenance or a lack of attention to the web application configuration. A secure configuration must be defined and deployed for the application, frameworks, application server, web server, database server, and platform. Security misconfiguration gives hackers access to private data or features and can result in a complete system compromise.

6. CROSS-SITE REQUEST FORGERY (CSRF)

Cross-Site Request Forgery (CSRF) is a malicious attack where a user is tricked into performing an action he or she didn't intend to do. A third-party website will send a request to a web application that a user is already authenticated against (e.g. their bank). The attacker can then access functionality via the victim's already authenticated browser. Targets include web applications like social media, in browser email clients, online banking, and web interfaces for network devices.

Results & Discussion

This section include snapshots of your results along with explanation.

Example:

Fig. 7.1 Home Page

Fig 7.1 shows the homepage of our project, here we provide 2 icons, Admin Login and User Login for cafeteria administrator and the users respectively. On clicking a particular icon they will be navigated to their respective login page.

CONCLUSION

Since this project has been designed exclusively as a project, certain complexities that do faced by any real life manual problem like total no. of employee, address redundancy etc. are considered in this project. But enhancement to the project can easily be made without changing the current design and programming structure.