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A DBMS Mini Project Report on

"PAYROLL MANAGEMENT SYSTEM"

Submitted in the partial fulfillment for the requirements for the conferment of degree of

BACHELOR OF ENGINEERING

In

COMPUTER SCIENCE AND ENGINEERING

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CERTIFICATE

This is to certify that the Mini Project work entitled **"PAYROLL MANAGEMENT SYSTEM"** is a bonafide work carried out by **Mr. VEDASHRUTHA D S (1BY19CS178)** in partial fulfilment for the award of **Bachelor of Engineering Degree in Computer-Science and Engineering** of the Visvesvaraya Technological University, Belagavi during the year 2021-22. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in this report. The Mini project report has been approved as it satisfies the academic requirements in respect of project work for the B.E Degree.

Signature of Guide1	**Signature of Guide2**	**Signature of HOD**
Dr. Hemamalini B H	Dr. Dhanalakshmi B K	Dr. Bhuvaneshwari C M

Name of the Examiners **Signature with Date**

1.

2.

ABSTRACT

The entitled project **"Payroll Management System"** is developed keeping in mind all the aspects of the salary. By all the aspects I mean, it will be capable of doing all the necessary operations/functions that are done in any Company for example - tax on the employee, salary of the employee, clearing the attendance of the employee for the next year etc. Since all the work that is to be done by this software can also be done manually, which consumes time and labor. So, this software will be a relief to those who have to do all this work manually. The knowledge of computers and programming has become a basic skill needed to survive in present information based on society. Only if the employees get their salary on time, they shall be motivated to work. Though the attendance is biometric, still there is human intervention in case of leave management that consumes a lot of time. Performance appraisal is the most difficult and most important aspect of HR. There is a lot of document review work which takes a lot of time and also very cumbersome .Employee payroll management system is a web-based application, which any organization can use to manage the records of the employees working in the company. Payroll Application has been designed to for the purpose of maintaining details of various employees, their allowances and deductions that need to be given to the employees of the organization. There will be an entry (Unique ID) of all the employee of any organization. Basic pay will be defined according to the post of employee and department.

The motive to make this project is to make such kind of software which is very easy to use. Training is not required, any person with computer skill can make effective and efficient utilization of this software. Through this project the details of the employees present in the company can be retrieved if necessary. Records of the employees will be kept for further enquiries.

ACKNOWLEDGEMENT

I am happy to present this Mini project after completing it successfully. This project would not have been possible without the guidance, assistance and suggestions of many individuals. I would like to express my deep sense of gratitude and indebtedness to each and every one who has helped me to make this project a success.

I heartily thank our **Principal, Dr. MOHAN BABU G N, BMS Institute of Technology & Management** for his constant encouragement and inspiration in taking up this Mini project.

I heartily thank our **Head of the Department, Dr. Bhuvaneshwari C.M, Dept. of Computer Science and Engineering, BMS Institute of Technology & Management** for his constant encouragement and inspiration in taking up this Mini project.

I gracefully thank Project guide**, Dr. Hemamalini B H,** Associate Professor **Dept. of Computer Science and Engineering, Dr. Dhanalakshmi B K,** Assistant Professor **Dept. of Computer Science and Engineering** for their encouragement and advice throughout the course of the Project work.

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Last but not least, I thank my parents and friends for their encouragement and support given to me in order to finish this precious work.

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CONTENTS

CHAPTER 1

INTRODUCTION

The project "**Payroll Database**" is designed once and can be updated many times, so the burden of application maintenance is short listed by all the general guidelines. The main task ahead is to see all the things whether they are running smoothly or not, this software will be capable of doing or performing following tasks: -

- Login.
- Monitor Attendance.
- Pay Salary/Month.
- Sanction loan
- Maintain Old Employee List

This software will be developed keeping in mind the various aspects of employees in Company. This software is intended to be developed for Employee maintenance, cut tax on yearly basis, lend loan and pay salary accordingly with respect to attendance only.

MYSQL database management system will be used as "Backend" which will be capable of recording information and high-level language "**PHP**" and "**HTML**" will serve as "Frontend" for the software. The database will be capable of doing following operations:

1. Keeping records of each employee of company.
2. Keeping records of attendance of each employee on monthly basis.
3. Keeping records of old employees.
4. Keeping records of tax/year for each employee.
5. Keeping records of salary/day and allowance/month.
6. Keeping records of loan on an employee.

1.1 Background

Front end: HTML, CSS, javascript

Back end: PHP, MySQL

Introduction to DBMS

A database is simply an organized collection of related data, typically stored on disk, and accessible by possibly many concurrent users. Databases are generally separated into application areas. For example, one database may contain Human Resource (employee and payroll) data; another may contain sales data; another may contain accounting data; and so on. Databases are managed by a DBMS.

The choice of a database product is often influenced by factors such as:

- The computing platform (i.e., hardware, operating system)
- the volume of data to be managed
- the number of transactions required per second
- existing applications or interfaces that an organization may have
- support for heterogeneous and/or distributed computing
- cost
- vendor support

Introduction to SQL

Structured Query Language (SQL), is a language to request data from a database, to add, update, or remove data within a database, or to manipulate the metadata of the database.

SQL is a declarative language in which the expected result or operation is given without the specific details about how to accomplish the task. The steps required to execute SQL statements are handled transparently by the SQL database. Sometimes SQL is characterized as non-procedural because procedural languages generally require the details of the

operations to be specified, such as opening and closing tables, loading and searching indexes, or flushing buffers and writing data to filesystems. Therefore, SQL is considered to be designed at a higher conceptual level of operation than procedural languages because the lower level logical and physical operations aren't specified and are determined by the SQL engine or server process that executes it.

Introduction to HTML and PHP

HTML stands for HyperText Markup Language. It is used to design web pages using a markup language. HTML is the combination of Hypertext and Markup language. Hypertext defines the link between the web pages. A markup language is used to define the text document within tag which defines the structure of web pages. Most markup languages are human-readable. The language uses tags to define what manipulation has to be done on the text. HTML is a markup language used by the browser to manipulate text, images, and other content, in order to display it in the required format.

PHP is a recursive acronym for "PHP: Hypertext Preprocessor".PHP is a server-side scripting language that is embedded in HTML. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites. It is integrated with a number of popular databases, including MySQL, PostgreSQL, Oracle, Sybase, Informix, and Microsoft SQL. The MySQL server, once started, executes even very complex queries with huge result sets in record-setting time.PHP supports a large number of major protocols such as POP3, IMAP, and LDAP. PHP4 added support for Java and distributed object architectures.

CHAPTER 2

LITERATURE SURVEY

Payroll processing is crucial in an organization because it involves the payment of the organization's workforces and protection of its reputation by ensuring that the organization complies with the government authorities' employment legislations. It calculates salary, allowance, overtime, contributions and deductions of employees that varies across designations.

The payroll process must be responsive to changes in employment status, latest rules or acts by the government authorities such as re-allocation of employee's contribution in Employees Provident Fund (EPF) and taxes legislation. However, an organization may face several challenges in payroll processing such as to pay employees accurately on time, meet obligations between employees and employers and uphold other legislative responsibilities. Tedious, time consuming and increased effort to process the payroll, particularly in large organizations with huge number of employees, are common issues in manual payroll processing. As the demand to produce timely, accurate and efficient payroll intensify, it leads to increasing needs for computerized or automated payroll processing system.

In This System, the process is automated; it would be of great benefit as it would require less time to calculate the salary of the employees. The software for payroll management system service on the cloud is provided as a solution in this paper. It involves keeping track of hours worked and is capable of keeping a record of employee data including their pay, allowances, deductions and taxes on monthly bases so that fresh definitions are reflected from the month onwards, which leaves all the past data intact. The proposed payroll system is advantageous as it provides a user-friendly environment and also increases security and minimizes human calculation errors.

This Application will help to automate payroll system of an organization. Multiple authorized users will be able to login and logout from a web browser. Login checks (username, password) are controlled by administrator. Administrator will have total web-based control to completely customize the payroll system. HR of the company will be able to authenticate new employees, update existing employees pay, and view reports. The system is user friendly. Whenever there is an error in entering data, it

immediately shows an error. The application is equipped with tools for updating salary records, tax calculation, add new allowances, leave appraisal or request deduction and savings and many other features that are easy to be operated by users. The system has also provision for full salary history including all payroll elements and changes that have been implemented. The prototype computer-based payroll system is complete in itself and ready to be implemented but changes and growth in requirements will be a reality on every software project so there is need to timely update them. The same applies to this payroll system.

CHAPTER 3

SOFTWARE REQUIREMENTS SPECIFICATION

Function scope Login module: - design to make the system secure through authentication and authorization. Insert module: - to insert the employee details such as employee id, tax details and salary details etc. HR can view employee details. Operating environment to develop this system we used software and hardware operating environment. The software requirements are description of features and functionalities of the target system.

Software environments to develop the system we use different types of software environments such as: Operating system, Text editor,chrome browser for running the program, because chrome browser provide support PHP, CSS and HTML. Hardware environment. The hardware part of the operating environment also necessary for the developing of the new examination systems.

3.1 Hardware Requirement

Processor: Intel Pentium or Higher

Hard Disk: At least 10GB

RAM: Minimum 2GB

3.2 Software Requirement

Operating System: Windows

User Interface: Xampp

Programming Language: PHP, SQL

Database: MySQL

Server: Xampp Server

Network Connection : Broadband/Wifi connection.

Web Browser: Chrome/Microsoft Edge

CHAPTER 4

DESIGN

The design involves the production of technical and visual prototypes. This stage has some non-technical aspects such as gathering of web content. For the server side programming and other technical aspects of the design emphasis will be laid on such design concepts and principles as effective modularity (high cohesion and low coupling), information hiding and stepwise elaboration. The goal is to make the system easier to adapt, enhance, test and use.

Database design involves the production of a model of the data to be stored in the database. A data model is a diagram of the database design that documents and communicates how the database is structured. The design process is divided into three main stages - conceptual, logical and physical database design.Fig1 shows the schema diagram for Employee Payroll Database. The purpose of the conceptual database design is to decompose the design into more manageable tasks, by examining user perspectives of the system. That is, local conceptual data models are created that are a complete and accurate representation of the enterprise as seen by different users. Each local conceptual data model is made up of entity types, relationship types, attributes and their domains, primary keys and integrity constraints. For each user view identified a local conceptual data model would be built. In building the conceptual data model, a data dictionary is built to identify the major entities in the system.

An entity relationship (ER) diagram is used to visualize the system and represent the user's requirements. Fig2 shows the ER diagram for Employee Payroll Database.The ER diagram is used to represent entities and how they relate to one another. The ER diagram also shows the relationships between the entities, their occurrence (multiplicities) and attributes.

4.1 Schema Diagram

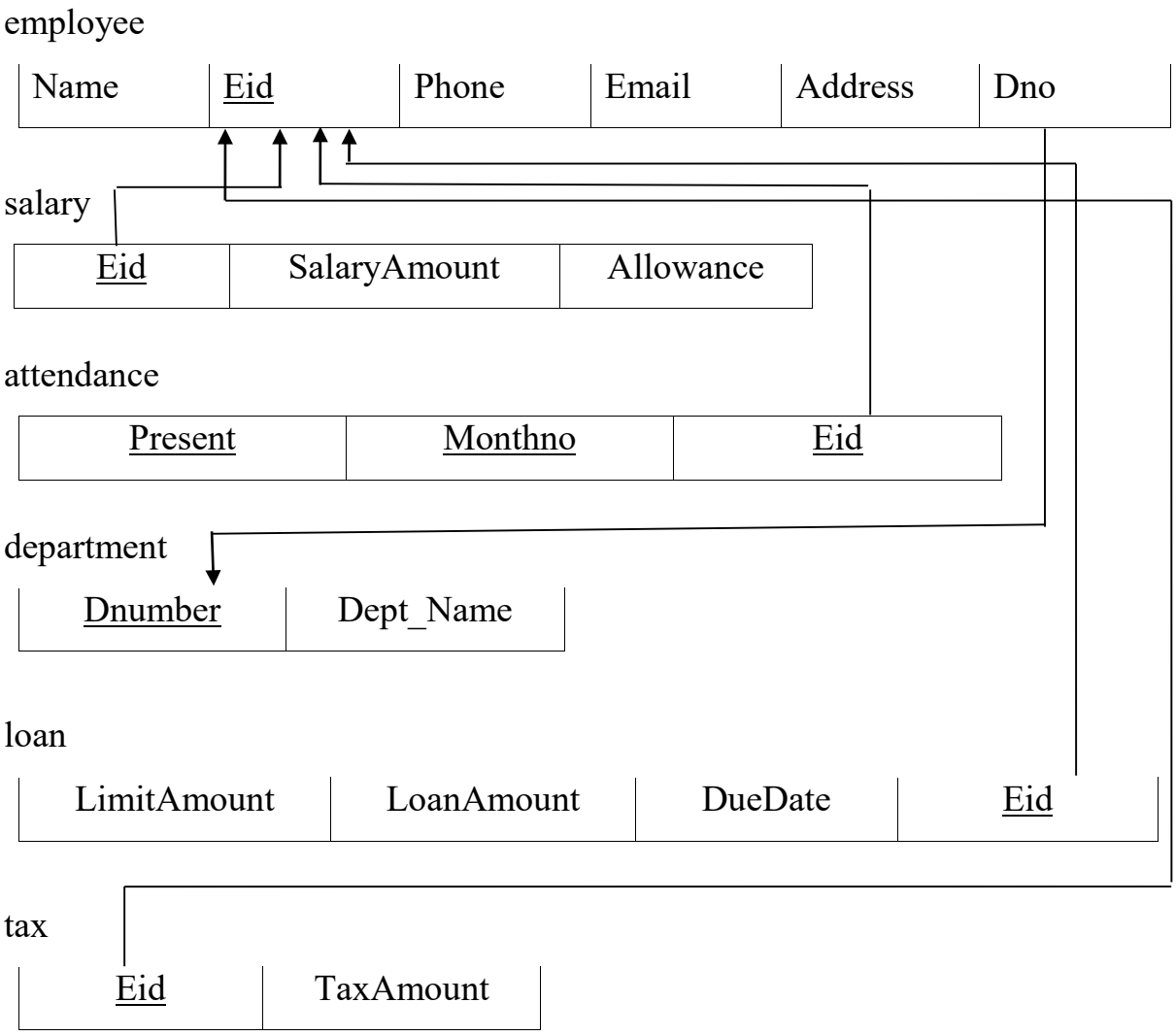


Fig1: Schema Diagram for Employee Payroll Database

4.2 Entity-Relationship Diagram

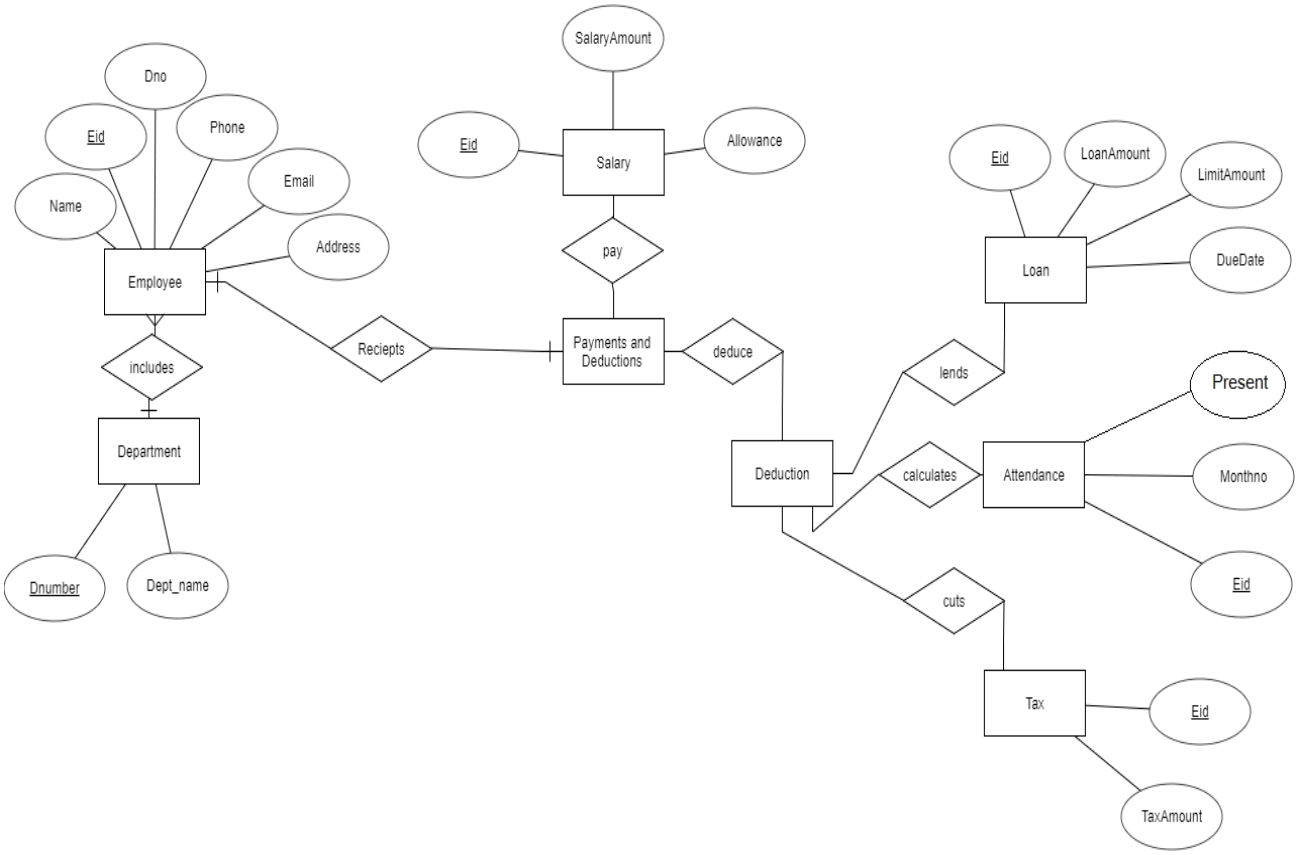


Fig2: Entity-Relationship Diagram for Employee Payroll Database

CHAPTER 5

IMPLEMENTATION

To create Database Table

```
CREATE TABLE employee (
  Name varchar (20) NOT NULL,
  Eid varchar (4) primary key,
  Phone varchar (10) NOT NULL,
  Email varchar (20) NOT NULL,
  Address varchar (20) NOT NULL,
  Dno varchar (2) NOT NULL);

CREATE TABLE salary (
  Eid varchar2(10) References employee (Eid) ON DELETE CASCADE,
  SalaryAmount int NOT NULL,
  Allowance int NOT NULL);

CREATE TABLE attendance (
  Present int NOT NULL,
  Monthno int NOT NULL,
  Eid varchar (10) NOT NULL References employee (Eid) ON DELETE CASCADE,
  Absent varchar (10) NOT NULL) ;

CREATE TABLE loan (
  LimitAmount int NOT NULL,
  LoanAmount int NOT NULL,
  DueDate date NOT NULL,
  Eid varchar (10) references  employee (Eid) ON DELETE CASCADE);

CREATE TABLE tax (
```

```
  Eid varchar (10)  references employee(Eid) ON DELETE CASCADE,
  TaxAmount int NOT NULL);

CREATE TABLE department (
  Dnumber varchar2(10) NOT NULL primary key,
  Dept_name varchar2(30) NOT NULL);

CREATE TABLE deleted_employees (
  Eid int NOT NULL ,
  Name varchar2(30) NOT NULL,
  Phone varchar2(12) NOT NULL,
  Email varchar2(50) NOT NULL,
  Address varchar2(100) NOT NULL,
  Dno varchar2(2) NOT NULL);
```

Loading values to the database

```
INSERT INTO employee VALUES ('Ranjitha', '0001', '1234567899', 'ranjitha@gmail.com',
'Bangalore', '1');
INSERT INTO employee VALUES ('Maltesh', '0002', '1234567898', 'maltesh@gmail.com',
'Bangalore', '2');
INSERT INTO employee VALUES ('Jagdish', '0003', '986543211', 'jagga@gmail.com', 'Bangalore',
'3');
INSERT INTO employee VALUES ('Abhi', '0004', '4598761651', 'abhi@gmail.com', 'Bangalore',
'5');
INSERT INTO employee VALUES ('Suresh', '0005', '951236478', 'suresh@gmail.com', 'Bangalore',
'5');
INSERT INTO employee VALUES ('Hanumanthappa', '0006', '9685712365',
'hanumanthappa@gmail.com', 'Mangalore', '3');
INSERT INTO employee VALUES ('Vani', '0007', '9635874125', 'vani@gmail.com', 'Bangalore',
'4');
```

```
INSERT INTO employee VALUES ('John Simen', '0008', '9857456321', 'john@gmail.com',
'Bangalore', '5');
INSERT INTO employee VALUES ('Keshav', '0009', '9658742564', 'keshav@gmail.com',
'Mangalore', '2');
INSERT INTO employee VALUES ('Surya', '0010', '9854758745', 'surya@gmail.com', 'Bangalore',
'2');
INSERT INTO employee VALUES ('Pramoda', '0011', '9587458745', 'pramoda@gmail.com',
'Mangalore', '2');

INSERT INTO salary VALUES ('0001', 1000, 1000);
INSERT INTO salary VALUES ('0002', 2000, 1000);
INSERT INTO salary VALUES ('0003', 1500, 500);
INSERT INTO salary VALUES ('0004', 4000, 2000);
INSERT INTO salary VALUES ('0005', 5000, 2500);
INSERT INTO salary VALUES ('0006', 2000, 1000);
INSERT INTO salary VALUES ('0007', 2000, 1000);
INSERT INTO salary VALUES ('0008', 2000, 1000);
INSERT INTO salary VALUES ('0009', 2000, 1000);
INSERT INTO salary VALUES ('0010', 4000, 1000);
INSERT INTO salary VALUES ('0011', 3000, 3000);

INSERT INTO attendance VALUES (24, 1, '0001', 1);
INSERT INTO attendance VALUES (23, 1, '0002', 2);
INSERT INTO attendance VALUES (24, 1, '0003', 1);
INSERT INTO attendance VALUES (25, 1, '0004', 0);
INSERT INTO attendance VALUES (25, 1, '0005', 0);
INSERT INTO attendance VALUES (25, 1, '0006', 0);
INSERT INTO attendance VALUES (24, 1, '0007', 1);
INSERT INTO attendance VALUES (25, 1, '0008', 0);
INSERT INTO attendance VALUES (22, 1, '0009', 3);
INSERT INTO attendance VALUES (22, 1, '0010', 3);
```

```
INSERT INTO attendance VALUES (25, 1, '0011', 0);

INSERT INTO loan VALUES (10000, 5000,'28-feb-22', '0001');
INSERT INTO loan VALUES (20000, 10000, '20-feb-22', '0002');
INSERT INTO loan VALUES (30000, 20000, '05-mar-22', '0003');

INSERT INTO tax VALUES ('0001', 2000);
INSERT INTO tax VALUES ('0002', 2000);
INSERT INTO tax VALUES ('0003', 3000);

INSERT INTO department VALUES ('1', 'accounts');
INSERT INTO department VALUES ('2', 'research');
INSERT INTO department VALUES ('3', 'Sales');
INSERT INTO department VALUES ('4', 'Production');
INSERT INTO department VALUES ('5', 'Advertisement');

INSERT INTO deleted_employees (Eid, Name, Phone, Email, Address, Dno) VALUES
(7832, 'Clark Kent', '8876524534', 'clarkkent@gmail.com', 'UK', 're');
```

5.2 ScreenShots

```
SQL> select * from employee;

NAME                EID  PHONE      EMAIL                ADDRESS
------------------- ---- ---------- -------------------- --------------------
DN
--
Ranjitha            0001 1234567899 ranjitha@gmail.com   Bangalore
1

Maltesh             0002 1234567898 maltesh@gmail.com    Bangalore
2

Jagdish             0003 986543211  jagga@gmail.com      Bangalore
3
```

Fig: Employee Details

```
SQL> select * from department;

DNUMBER    DEPT_NAME
---------- ------------------------------
1          accounts
2          research
3          Sales
4          Production
5          Advertisement
```

Fig: Department Details

```
SQL> select * from attendance;

   PRESENT     MONTHNO EID         ABSENT
---------- ---------- ---------- ----------
        24          1 0001       1
        23          1 0002       2
        24          1 0003       1
        25          1 0004       0
        25          1 0005       0
        24          1 0007       1
        25          1 0008       0
        22          1 0009       3
        22          1 0010       3
        25          1 0011       0

10 rows selected.
```

Fig: Attendance Details

```
SQL> select * from salary;

EID        SALARYAMOUNT   ALLOWANCE
---------- ------------ ----------
0001               1000       1000
0002               2000       1000
0003               1500        500
0004               4000       2000
0005               5000       2500
0007               2000       1000
0008               2000       1000
0009               2000       1000
0010               4000       1000
0011               3000       3000

10 rows selected.
```

Fig: Salary Details

```
SQL> select * from loan;

LIMITAMOUNT LOANAMOUNT DUEDATE    EID
----------- ---------- --------- ----------
      10000       5000 28-FEB-22 0001
      20000      10000 20-FEB-22 0002
      30000      20000 05-MAR-22 0003
```

Fig: Loan Details

```
SQL> select * from tax;

EID          TAXAMOUNT
---------- ----------
0001             2000
0002             2000
0003             3000
```

Fig: Tax Details

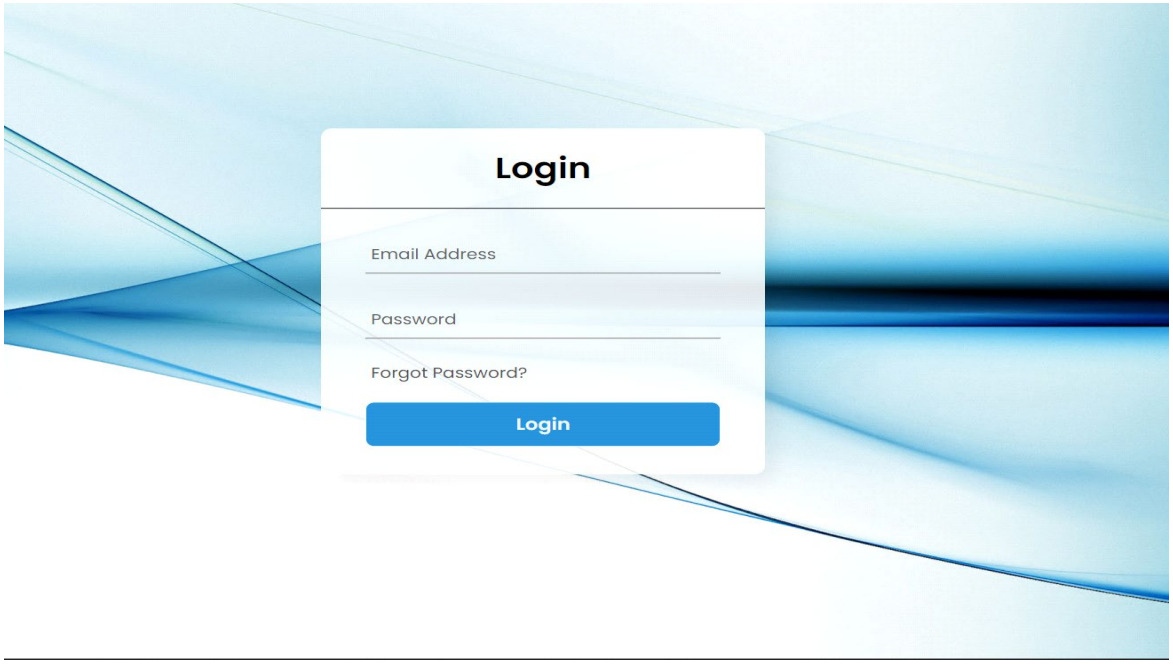


Fig: Login Page

Fig: Home Page

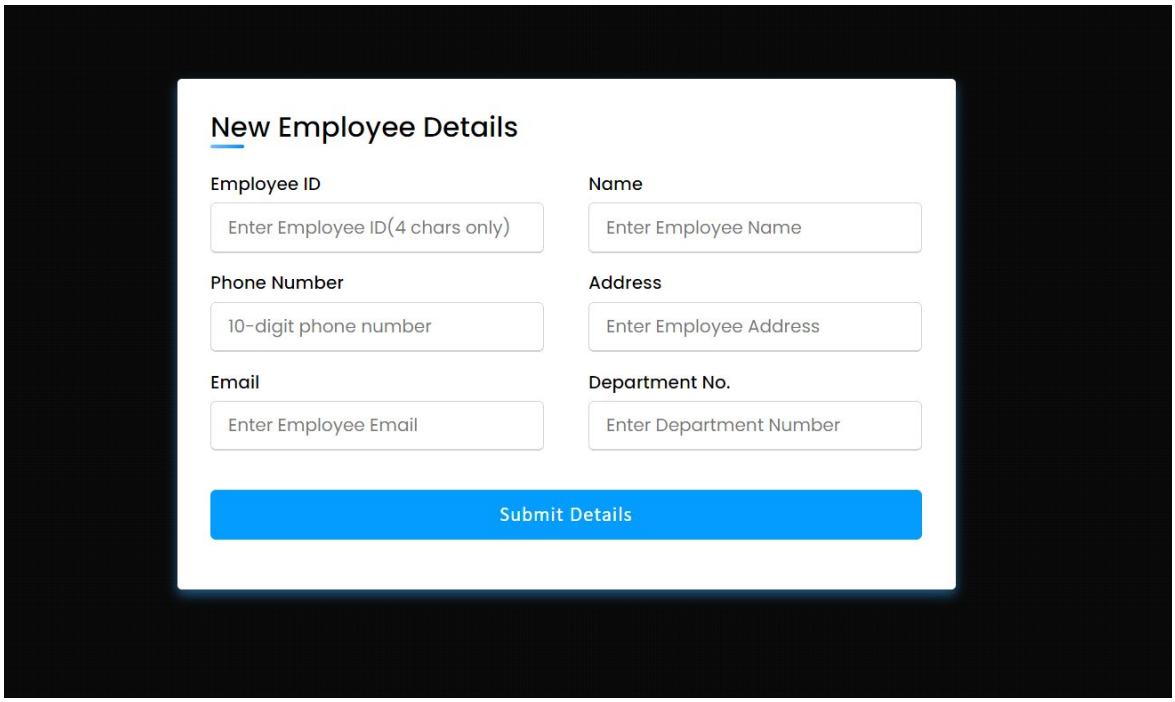


Fig: Inserting New Employee Details

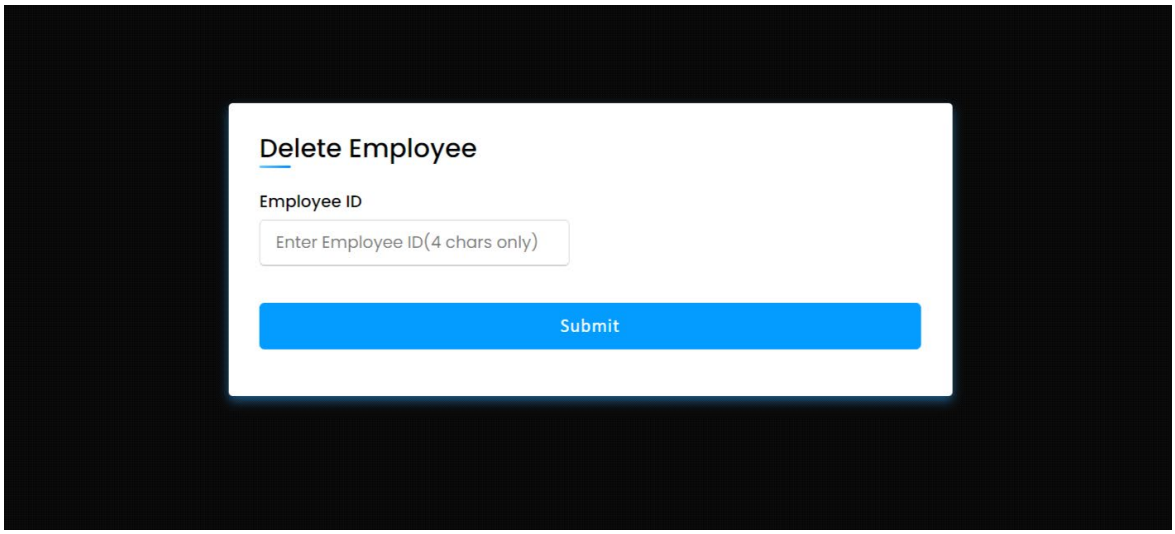
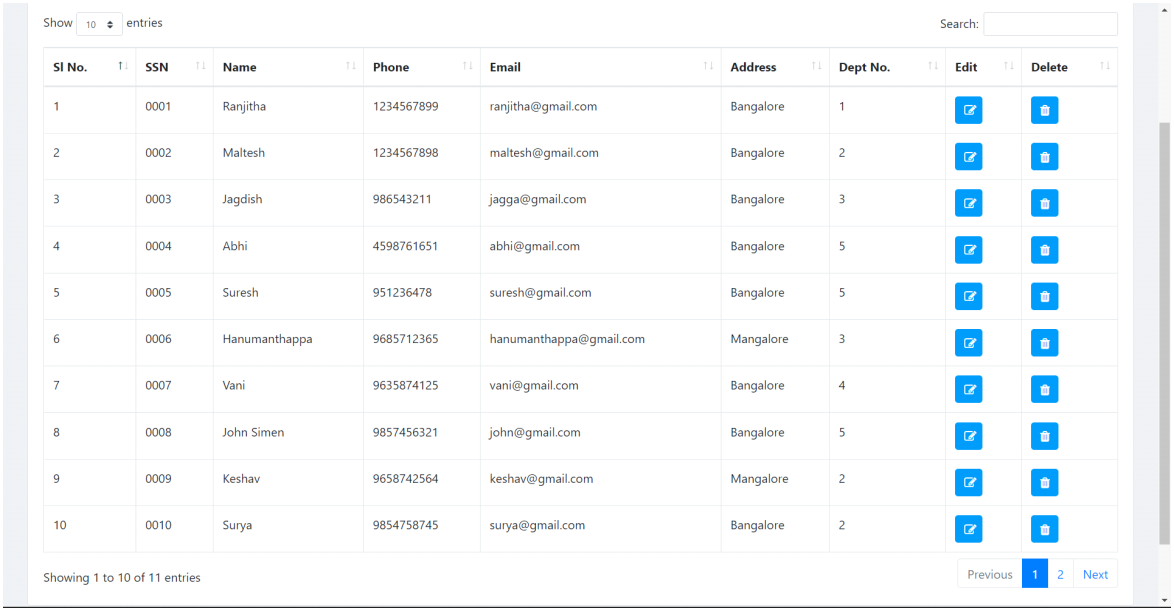


Fig: Deleting an Employee

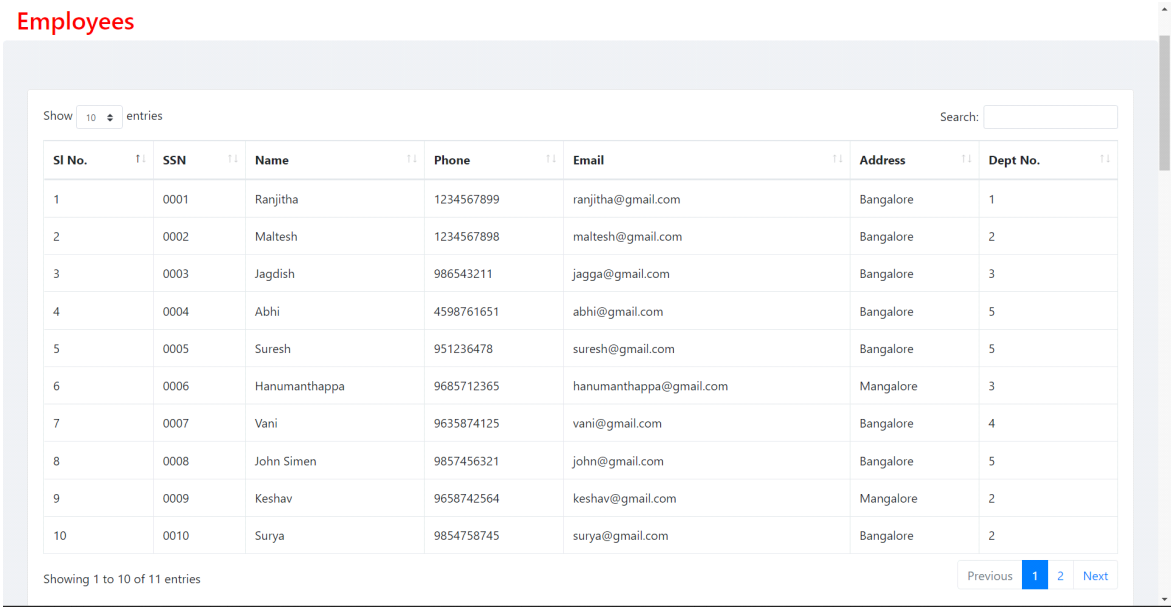


Show 10 entries Search:

Sl No.	SSN	Name	Phone	Email	Address	Dept No.	Edit	Delete
1	0001	Ranjitha	1234567899	ranjitha@gmail.com	Bangalore	1		
2	0002	Maltesh	1234567898	maltesh@gmail.com	Bangalore	2		
3	0003	Jagdish	986543211	jagga@gmail.com	Bangalore	3		
4	0004	Abhi	4598761651	abhi@gmail.com	Bangalore	5		
5	0005	Suresh	951236478	suresh@gmail.com	Bangalore	5		
6	0006	Hanumanthappa	9685712365	hanumanthappa@gmail.com	Mangalore	3		
7	0007	Vani	9635874125	vani@gmail.com	Bangalore	4		
8	0008	John Simen	9857456321	john@gmail.com	Bangalore	5		
9	0009	Keshav	9658742564	keshav@gmail.com	Mangalore	2		
10	0010	Surya	9854758745	surya@gmail.com	Bangalore	2		

Showing 1 to 10 of 11 entries Previous 1 2 Next

Fig: Edit/Update Details



Employees

Show 10 entries Search:

Sl No.	SSN	Name	Phone	Email	Address	Dept No.
1	0001	Ranjitha	1234567899	ranjitha@gmail.com	Bangalore	1
2	0002	Maltesh	1234567898	maltesh@gmail.com	Bangalore	2
3	0003	Jagdish	986543211	jagga@gmail.com	Bangalore	3
4	0004	Abhi	4598761651	abhi@gmail.com	Bangalore	5
5	0005	Suresh	951236478	suresh@gmail.com	Bangalore	5
6	0006	Hanumanthappa	9685712365	hanumanthappa@gmail.com	Mangalore	3
7	0007	Vani	9635874125	vani@gmail.com	Bangalore	4
8	0008	John Simen	9857456321	john@gmail.com	Bangalore	5
9	0009	Keshav	9658742564	keshav@gmail.com	Mangalore	2
10	0010	Surya	9854758745	surya@gmail.com	Bangalore	2

Showing 1 to 10 of 11 entries Previous 1 2 Next

Fig: View Employee Details

CHAPTER 6

CONCLUSION & FUTURE ENHANCEMENT

Conclusion

The project is based on the operational aspects of Payroll and a study of all the functions of the different aspects of the payroll.

It gives complete exposure of the requirement of the management for smooth functioning. The payroll policies differ from one company to another in this outlook but there is not much difference in the functioning of the payroll.

I would also like to thank all the lectures of department of Computer Science Engineering. and especially Dr Hemamalini B H and Dr Dhanalakshmi B K in giving me the guidance in completing the project.

The objective of the project was to study the various aspects of a Payroll in general, keeping attendance, tax, loan, salary and allowance in the depth to identify its drawbacks and suggest suitable solution during training period. The study is limited by lack of time and information. However, by adding system date and time many functionalities with respect to payroll can be modified or updated.

Future Enhancement

There are different forms and tables are used. The data is stored in tables automatically. I tried my best to do this project. However, the whole system can't be changed, but the computerized system designed not only saves time but at the same time reduces labor and expenditures.

In traditional system, there were lot of irregularities founds in generating data to where as in modified and computerized system in every problem overcome with the press of button. This system provides the security from loss, disclosure, modification and destruction of data. This system provides integrity of proper functioning of programs.

CHAPTER 7

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