MA660-ADVANCED DATABASE MANAGEMENT SYSTEMS

PROJECT REPORT ON

"Payroll Management System"

In partial fulfilment of requirements for the degree of

Master of Computer Applications

DEPARTMENT OF MATHEMATICAL AND COMPUTATIONAL SCIENCES

NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA

SURATHKAL

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CERTIFICATE

This is to certify that the project work entitled "PAYROLL MANAGEMENT SYSTEM" is bonafied work carried out by **Neeraj Jaiswal (184CA045)** in the partial fulfilment for the degree "Masters of Computer Applications" during the academic year 2019-20. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

Date: 26/11/2020

Signature of Faculty
Mrs. Sahana Bhat

ACKNOWLEDGMENT

With immense pleasure and commitment, I would like to present the project assignment. The nature of project on the development of **Payroll Management System** has given us wide opportunity to think, implement and interact with various aspects of management skills as well as the new emerging facilities and the technology used in architecture and the enhancements given to the students with a boon of spirituality and curricular activities.

I wish to express my sincere gratitude to **Mrs. Sahana Bhat**, who has nice attitude and substance of genius which has always been sincere and helpful in making us understand the different systems of the legal project and convincingly conveyed a spirit of adventure in regards to make my project more adorable.

We sincerely thank Head of Department **Prof. Shyam S Kamath**, for his continuous support in completing the project.

ABSTRACT

Payroll Management System (PMS) is a system which is used to maintain records of all the users working in an organization, providing an easy GUI to the user. This System is per organization. At the front end of the system we have used NetBeans IDE in JAVA technology and WAMP server for maintaining MySQL databases. The project proceeds through a sequence of well-designed code with validation to security, consistency, reliability, etc. Various users are provided which can perform various operations and tasks for which they have been authorized respectively. Basically, there are 4 types of users: Employee, Accountant, HR Manager and Admin. Admin is fully authorized.

While other users are authorized up to a certain level. Based on the user authorisation, users can perform various operations like Adding information of new Employee, updating information, View list of employees, generate pay slip of particular employee, Generate report of the organization. This system is very user friendly and easily maintains all the information for all kind off users without any difficulties. The system also generates fault and error messages in case of invalid operation or the user enters invalid or wrong information for some particular cases. Various UML diagrams are prepared which may help a user to understand the flow of any module/task easily. Individual modules of the system are tested later and test cases are generated for that. Later all the modules are integrated and then whole system testing is performed to ensure that the system is error free and secured.

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CHAPTER 1

INTRODUCTION

1.1 Project Details & Specification

Accurate and correct payroll is very important to your employees and important to you as a business owner. Payroll is more than just sending out paychecks every two weeks. You need to comply with and make sure you pay all of the federal, state and local taxes that are tied to having employees. A payroll service will handle the details and keep you out of trouble with the taxman; however, such a service does have some drawbacks.

Payroll Management System maintains all the records of all employees and accountants of an organisation. This system is developed to ease the process of searching and maintaining the valuable records of all type of users (i.e. employees).

Users of payroll Management System: -

1) Admin

Admin is a user who manages information about all the employees as well as about all the accountants. He/she is a user who manages all the information about each employee and can generate pay slips and reports.

2) HR Manager

HR Manager is a user who can only add information of new employees via interviews.

1.2 Purpose

The purpose of this SRS is to outline both functional and non-functional requirements of the subject Payroll Management System (PMS). In addition to said requirements, this document is intended to be used by the members of the project team that will implement and verify the correct functioning of the system. Consequently, the document should act as a foundation for efficient and well-managed project completion and further serve as an accurate reference in the future. It will not only provide an extensive capacity for project planning and progress assessment but it will further assist with developer interactions.

1.3 Scope

We describe what features are in the scope of the software to be developed.

- To view and manage information of all currently working employees and accountants in the organisation.
- To add and update details of all the employees.
- To view and generate pay slip of each employee.
- To generate report of organisation.

1.4 Product Perspective

PMS, a Payroll Management System that is easy to understand, easy to use and offers the simplicity of managing various records of an organization. This powerful software program is specifically designed for maintaining overall information of an organisation. This intuitive visual interface makes various aspects of performing various operations related with all the kind of users. PMS controls all back-end functionalities like generating pay slips, reports, tax calculations, leave management, etc.

1.5 System Terminology

This subsection presents definition for the terms and acronyms used throughout this SRS as they relate to the subject PMS.

Term	Description
Record	Information about various user
Employee	Developer in an organization
Accountant	High level authority who manages information
Admin	Highest authority user
Pay slip	Salary information of employee
Report	Performance of organization

Table 1.5 System Terminology

CHAPTER 2

SYSTEM REQUIREMENT & ANALYSIS

2.1 Hardware Platform

- RAM : 4 GB
- Processor : INTEL-CORE I3
- Processor Speed : 1.6 GHz
- Hard Disk : 10 GB

2.2 Software Platform

- Operating System : Windows 10
- Library : java.awt.*, javax.swing.*, java.sql.*.
- Tools : ApacheNetBeansIDE, MySQL, WampServer.
- Languages : JAVA, MySQL.

2.2.1 LIBRARY: -

java.awt.*: The **Abstract Window Toolkit** (**AWT**) is Java's original platform dependent windowing, graphics, and user-interface widget toolkit, preceding Swing. The AWT is part of the Java Foundation Classes (JFC) — the standard API for providing a graphical user interface (GUI) for a Java program. AWT is also the GUI toolkit for a number of Java ME profiles. For example, Connected Device Configuration profiles require Java runtimes on mobile telephones to support the Abstract Window Toolkit.

javax.swing.* :Swing is a GUI widget toolkit for Java.[1] It is part of Oracle's Java Foundation Classes (JFC) – an API for providing a graphical user interface (GUI) for Java programs. Swing was developed to provide a more sophisticated set of GUI components than the earlier Abstract Window Toolkit (AWT). Swing provides a look and feel that emulates the look and feel of several platforms, and also supports a pluggable look and feel that allows applications to have a look and feel unrelated to the underlying platform. It has more powerful and flexible components than AWT. In addition to familiar components such as buttons, check boxes and labels, Swing provides several advanced components such as tabbed panel, scroll panes, trees, tables, and lists. Unlike AWT components, Swing components are not implemented by platform-specific code. Instead, they are written entirely in Java and therefore are platform-independent**.**

java.sql.*: Java Sql Provides the API for accessing and processing data stored in a data source (usually a relational database) using the Java programming language. This API includes a framework whereby different drivers can be installed dynamically to access different data sources. Although the JDBC API is mainly geared to passing SQL statements to a database, it provides for reading and writing data from any data source with a tabular format. The reader/writer facility, available through the javax.sql.RowSet group of interfaces, can be customized to use and update data from a spread sheet, flat file, or any other tabular data source.

2.2.2 TOOLS: -

ApacheNetBeansIDE:

NetBeans is an integrated development environment (IDE) for Java. NetBeans allows applications to be developed from a set of modular software components called modules. NetBeans runs on Windows, macOS, Linux and Solaris. In addition to Java development, it has extensions for other languages like PHP, C, C++, HTML5, and JavaScript. Applications based on NetBeans, including the NetBeans IDE, can be extended by third party developers.

MySQL:

MySQL is free and open-source software under the terms of the GNU General Public License, and is also available under a variety of proprietary licenses. MySQL was owned and sponsored by the Swedish company MySQL AB, which was bought by Sun Microsystems (now Oracle Corporation). In 2010, when Oracle acquired Sun, Wideness forked the open-source MySQL project to create MariaDB. MySQL has stand-alone clients that allow users to interact directly with a MySQL database using SQL, but more often MySQL is used with other programs to implement applications that need relational database capability.

WampServer:

WampServer refers to a solution stack for the Microsoft Windows operating system, created by Romain Bourdon and consisting of the Apache web server, OpenSSL for SSL support, MySQL database and PHP programming language.

2.2.3 LANGUAGES: -

JAVA:

Java is a class-based, object-oriented programming language that is designed to have as few implementation dependencies as possible. It is a general-purpose programming language intended to let application developers write once, run anywhere (WORA), meaning that compiled Java code can run on all platforms that support Java without the need for recompilation.[18] Java applications are typically compiled to bytecode that can run on any Java virtual machine (JVM) regardless of the underlying computer architecture. The syntax of Java is similar to C and C++, but has fewer low-level facilities than either of them. The Java runtime provides dynamic capabilities (such as reflection and runtime code modification) that are typically not available in traditional compiled languages. As of 2019, Java was one of the most popular programming languages in use according to GitHub

MySQL:

MySQL is free and open-source software under the terms of the GNU General Public License, and is also available under a variety of proprietary licenses. MySQL has stand-alone clients that allow users to interact directly with a MySQL database using SQL, but more often MySQL is used with other programs to implement applications that need relational database capability.

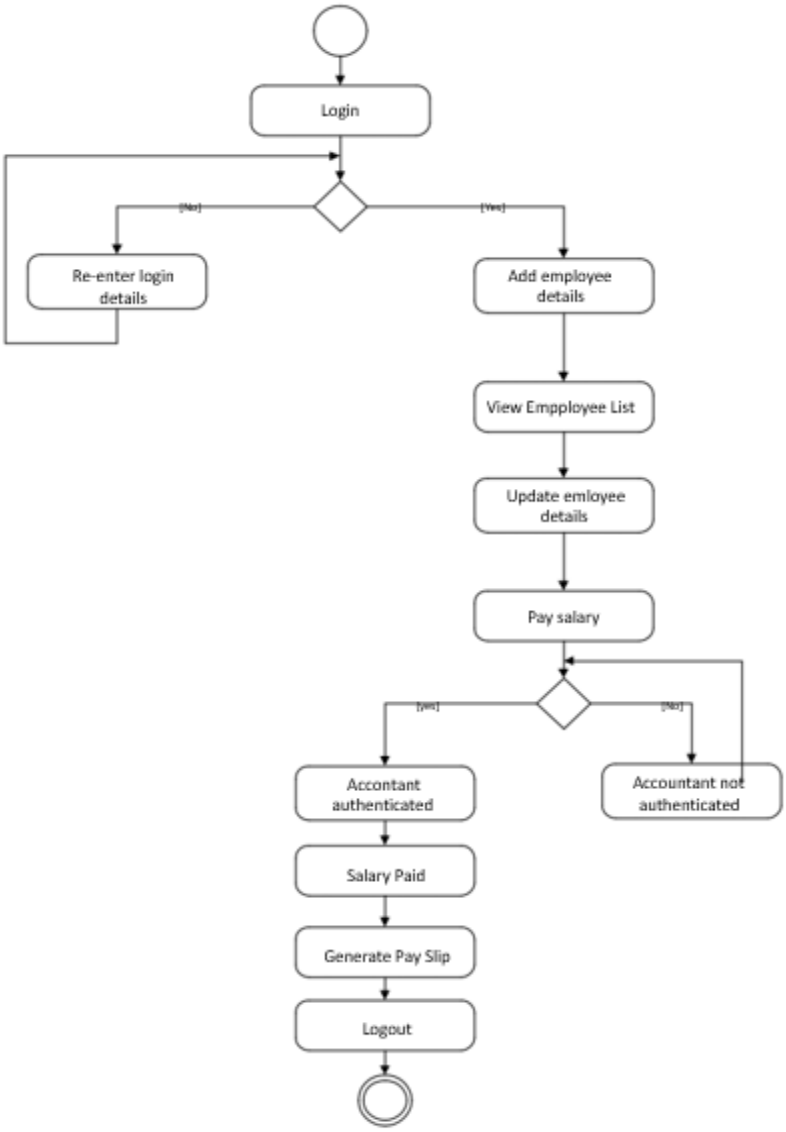
CHAPTER 3

SYSTEM DESIGN AND ANALYSIS

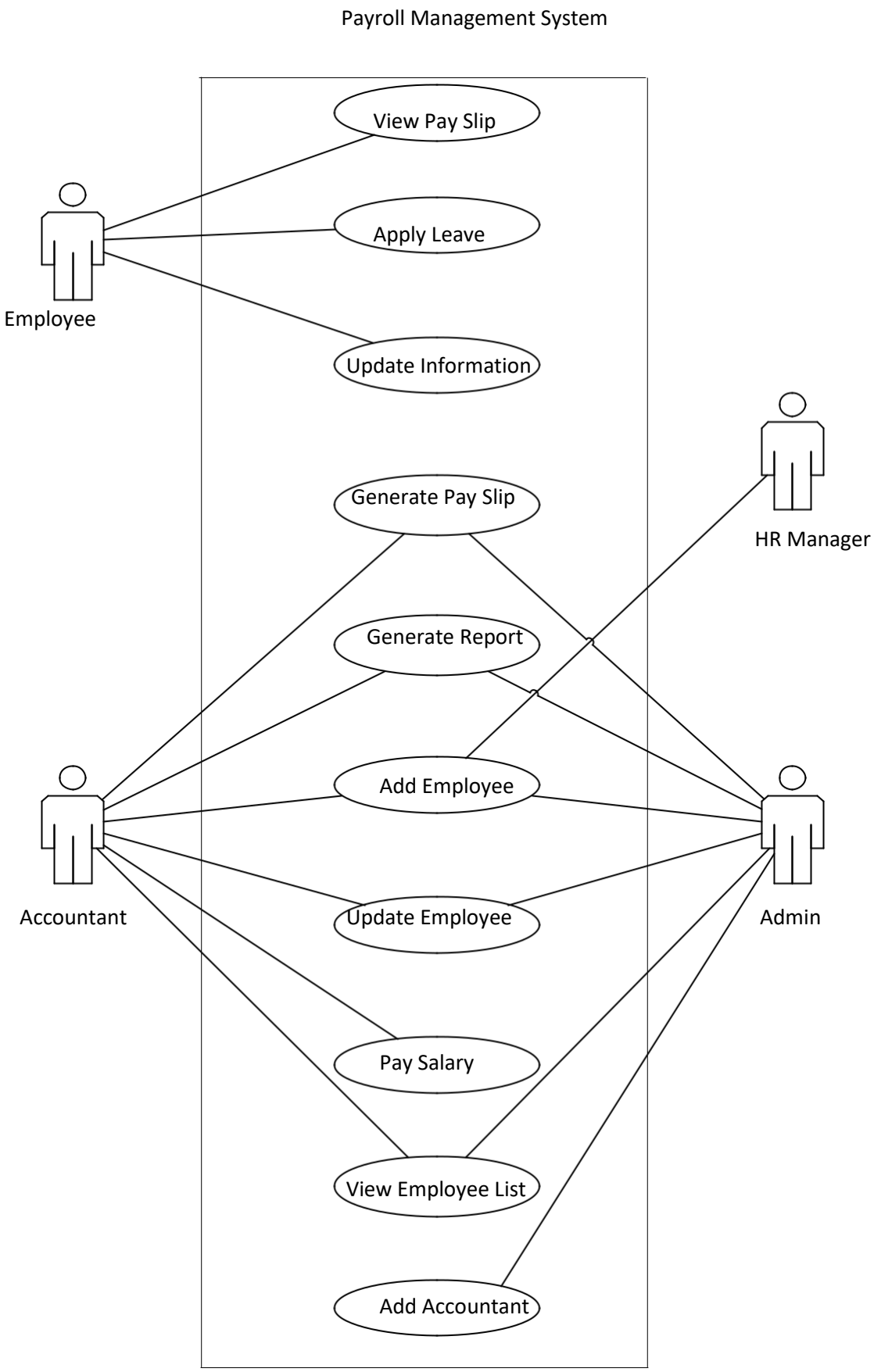
The Unified Modelling Language (UML) is a general-purpose modelling in the field of Software Engineering, which is designed to provide a standard way to visualize the design of a system. For PMS, we have developed following UML Diagrams:

- Flowchart
- Use case Diagram
- E-R Diagram

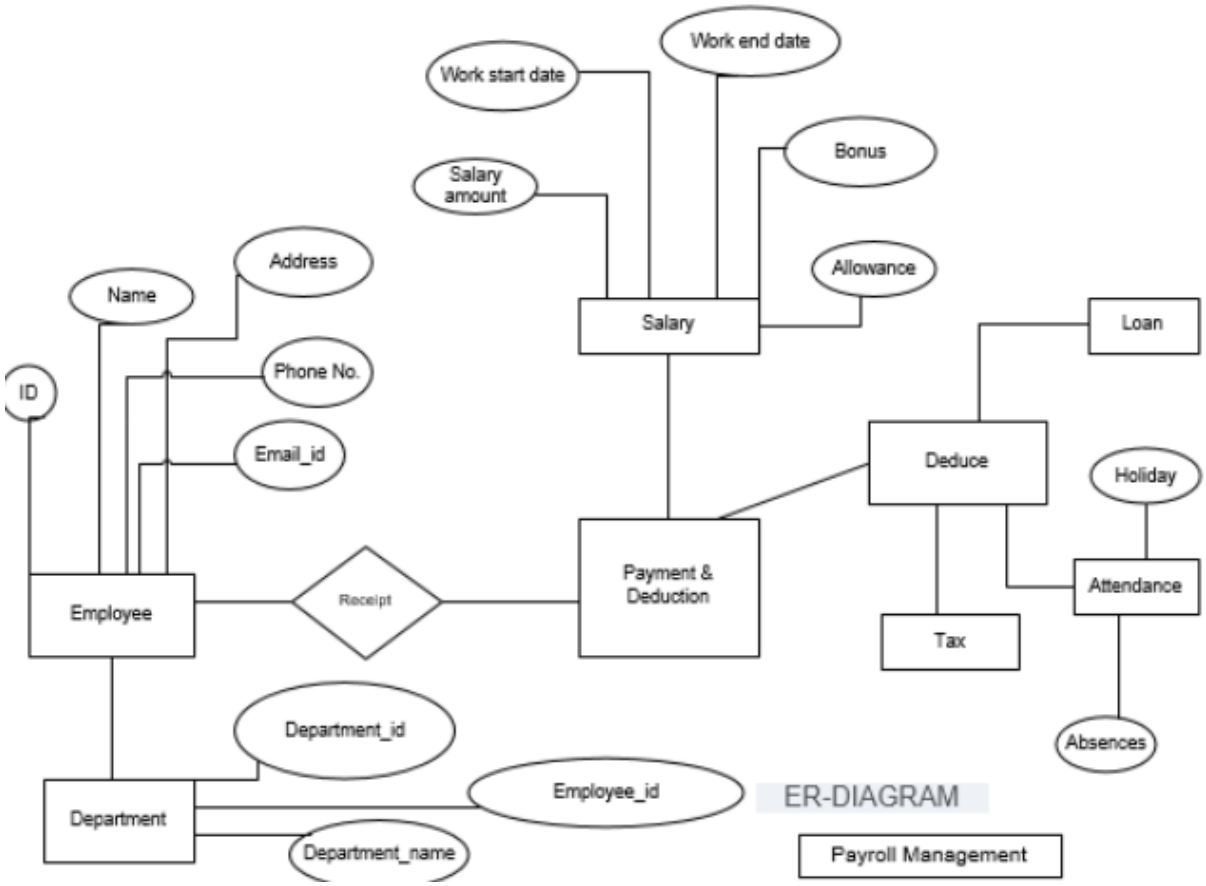
3.1 Flowchart:



3.2 Use case Diagram:



3.3 E-R Diagram:



CHAPTER 4

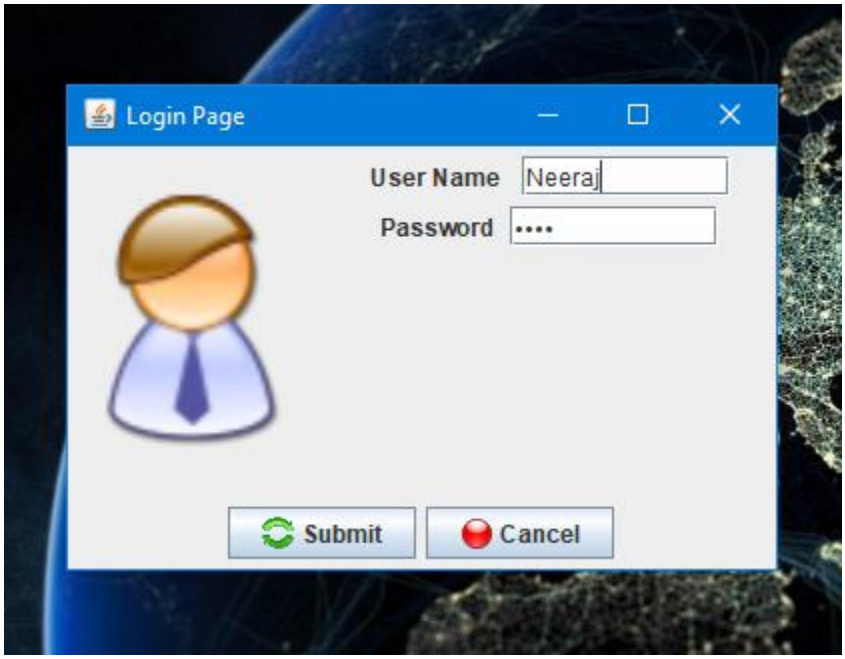
SYSTEM IMPLEMENTATION

4.1 Modules

4.1.1 Login Module:

This module provides login of the authorized users on the base of the user types.

This is the **Login** page:

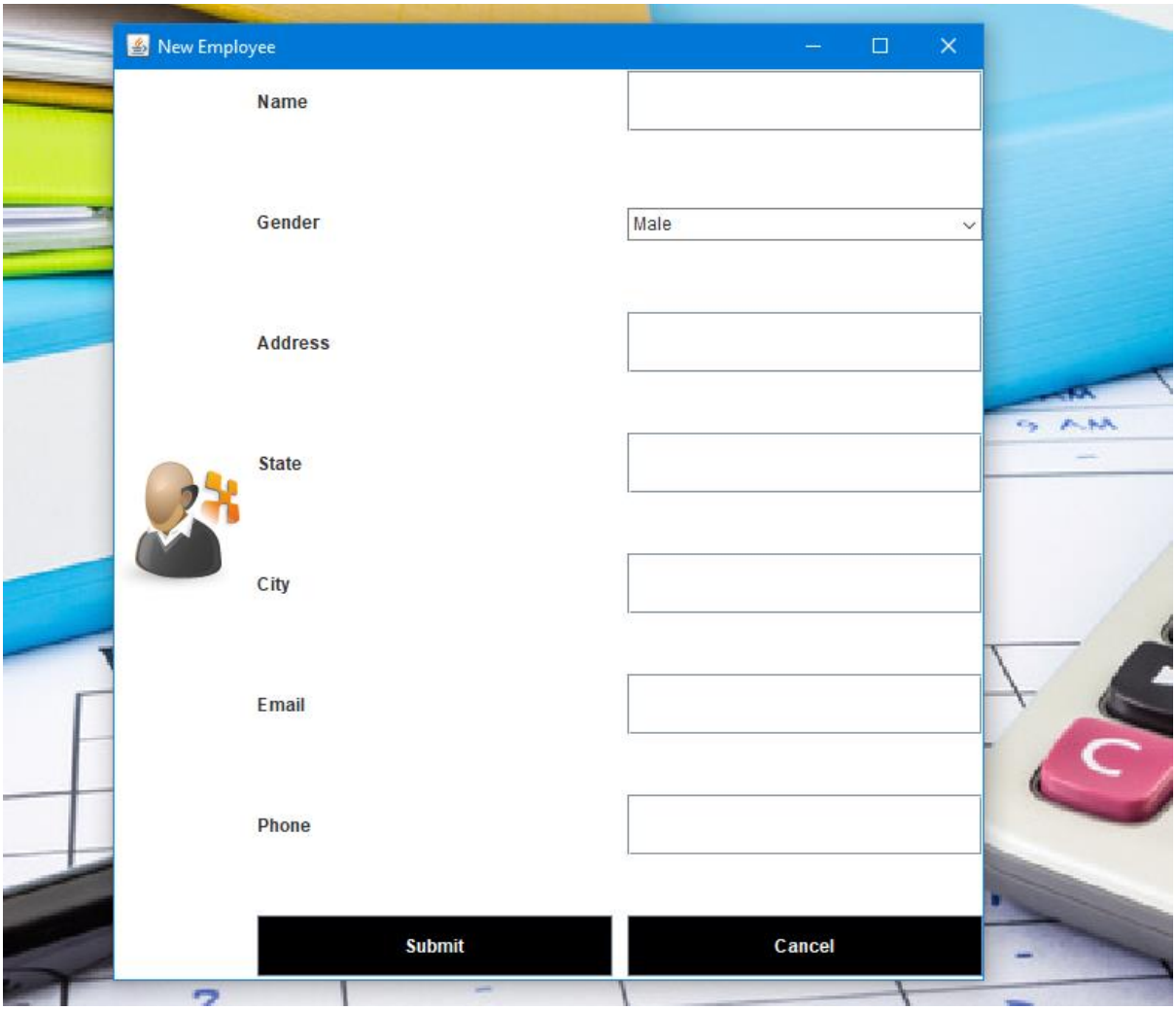


4.1.2 GUI:

This module provide access to admin all feature of Payroll System after login through correct username and password. This is the **GUI** homepage:

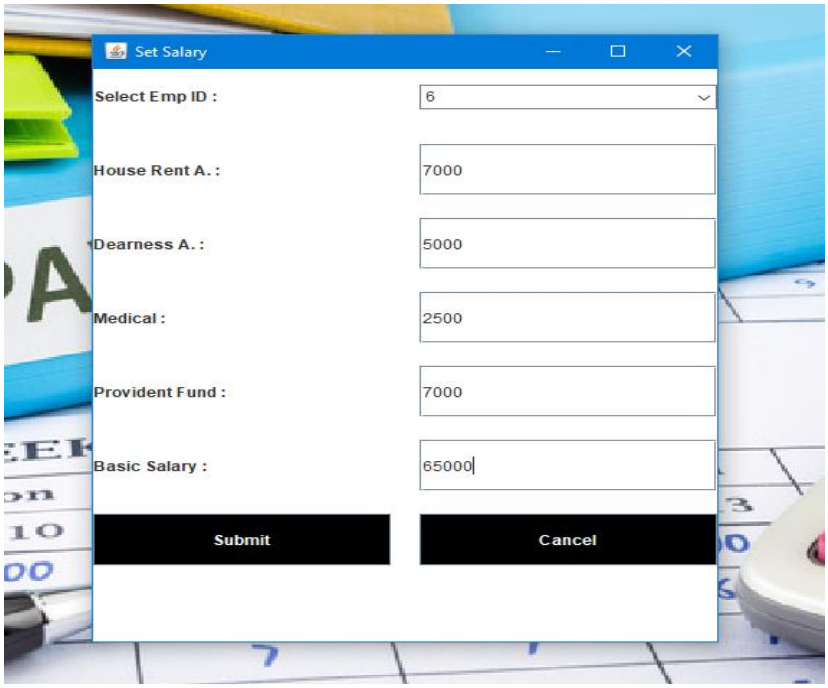
4.1.3 Add New Employee:

This module provide admin to add new employee with unique identification no. admin have to enter the correct employee details like Name, Gender, Address etc.



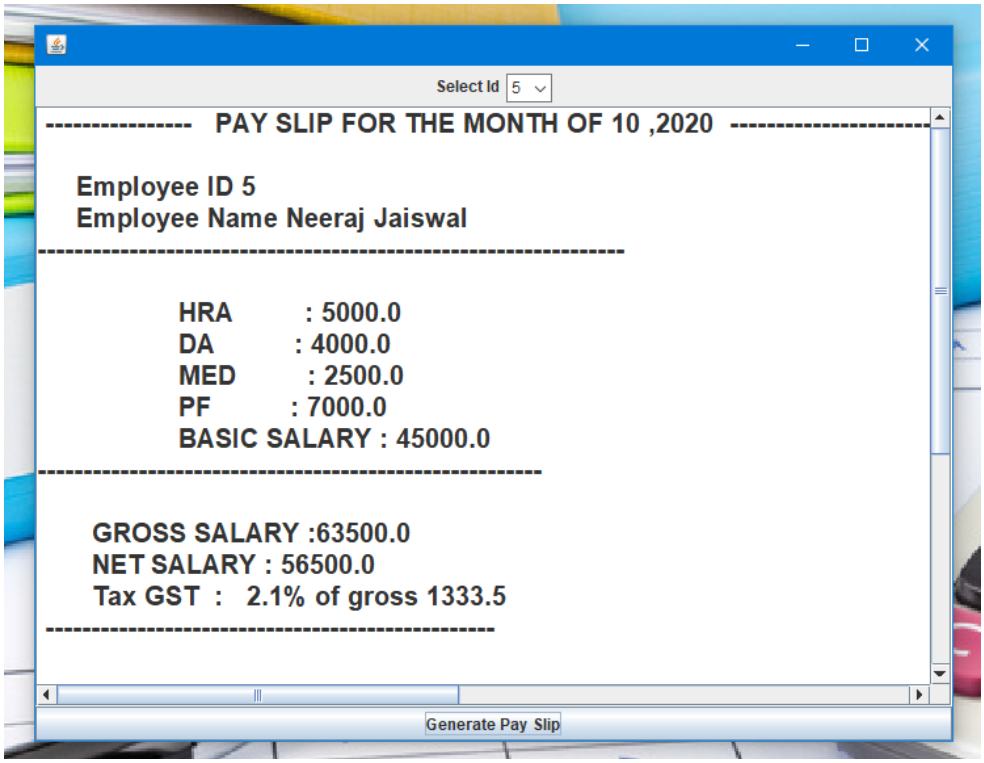
4.1.4 Set Salary of Employees:

In this module admin set the salaries of employees also mention their House Rent Allowance, Dearness Allowance, Medical Fee Allowance, PF, Basic Salary of employees.



4.1.5 Pay Slip:

This module provide final salary pay slip that handed to emplyee at end of the month. In this all the taxes and PF deducted.



CHAPTER 5

CONCLUSION & FUTURE WORK

5.1 CONCLUSION:

"Payroll Management System" software developed for a company has been designed to achieve maximum efficiency and reduce the time taken to handle the Payroll activity. It is designed to replace an existing manual record system thereby reducing time taken for calculations and for storing data. The system uses Java Swing & AWT as front end and MySQL as a backend for the database. The system is strong enough to withstand regressive daily operations under conditions where the database is maintained and cleared over a certain time of span. The implementation of the system in the organization will considerably reduce data entry, time and also provide readily calculated reports.

5.2 FUTURE WORK:

- In this system employee get monthly transaction details through organization Website.
- Employees will get their attendance through organization Website.
- They will also get their leaves from website.
- Employees can get more details about their income taxes.

REFERENCES

[1] Steven M. Bragg. Essentials of Payroll: Management and Accounting.

[2] Connolly, T.M. and C.E. Begg, 2004. Database System: A Practical Approach to Design, Implementation and Management. 4rd Edn.

[3] https://www.javatpoint.com/java/

[4] https://www.oracle.com/in/mysql/

[5] https://www.researchgate.net/publication/