

1 INTRODUCTION

About Company Organization (E-Gain)



Started in July'2015 (Head Office in Delhi) Tajendar Arora - Director Operational Head) of E-Gain 17+ yrs experience in Consulting, Training and Software designing and development. Scrum Master (International certificate for project development).He is Member of NASSCOM (The National Association of Software and Services Companies). E-Gain is IT consulting and development services Company. It deliver quality technical services to fulfill our client's requirements.IT have Years of Experience in Development, Training ,consulting and Mobile Apps Development. We Have the Team of Tailored Professionals Who Are Fully Trained Over Latest Technology and Experienced & Passionate About Their Work.

About Project

The proposed project “Employee Payroll Management System” has been developed to overcome the problems faced in the practicing of manual system. This software is built to eliminate and in some cases reduce the hardships faced by the existing system. Moreover, this system is designed for particular need of the company to carry out its operations in a smooth and effective manner This application is reduced as much as possible to avoid errors while entering data. It also provides error message while entering invalid data. It is user-friendly as no formal knowledge is required to use the system. Human resource challenges are faced by every organization which has to be overcome by the organization. Every organization has different employee and payroll management needs. Therefore, I have design exclusive Employee and payroll Management System that are adapted to the organization’s Managerial Requirements.

OBJRCTIVES

The Employee payroll management system is a set of processes that helps you streamline salaries, bonuses,deductions, taxes, and other necessary aspects of the net pay of all the employees in your organization. There are two primary objectives of **the Employee payroll management system in India**. One is the macro objective, which is related to sales, strategy, revenue, etc. Another is micro, which is associated with the daily tasks of the business.

Some objectives are –

- 1) Employee record
- 2) Calculate allowance
- 3) Calculate Deductions
- 4) Update Salary
- 5) Generate Reports

SYSTEM ANALYSIS

IDENTIFICATION OF NEED: - This software is developed specifically to cater the company Employees leave management, is totally self-contained and works efficiently. It provides simple database rather than complex ones for high requirements and is provides good and easy graphical user interface to both new as well as experienced user of the computer.

FEASIBILITY STUDY: - After identifying the scope of the project, the feasibility study is needed to be carried out. It is basically keeping the following points in mind. Building the software for managing the employee reports: processing on the file, and the behavior of this project is already identified and bundled in quantitative manner. Processing of this software is very simple as it has been designed in JAVA and it has been well divided into several functions according to the need.

TECHNICAL FEASIBLE: This software is very much technically feasible. It is very much Concerned with specifying equipment and the software will successfully satisfy almost all the admin's requirements. The technical need for this system may vary considerably but might include: a. The facility to produce output in a given time. b. Response time under certain conditions. c. Ability to process data at a particular speed. Therefore, the basic input/output of data is identified. So, the project can easily be built up and it will also be technically feasible.


ECONOMICAL FEASIBLE: The project is very much economical feasible. The implementation and development cost of this software under the reach of any college. Moreover, it requires some training for the use. So, training cost can be neglected and the resources of this software are very much available. It also reduces the worker and extra cost to be paid for worker. So indeed, It is Economical feasible.

DATAFLOW DIAGRAM

INTRODUCTION: - Data flow diagrams are used to graphically represent the flow of data in a business information system. DFD describes the processes that are involved in a system to transfer data from the input to the file storage and reports generation.

DFD(0-Level): - The Data flow Diagram shows the flow of data. It is generally made of symbols given below:

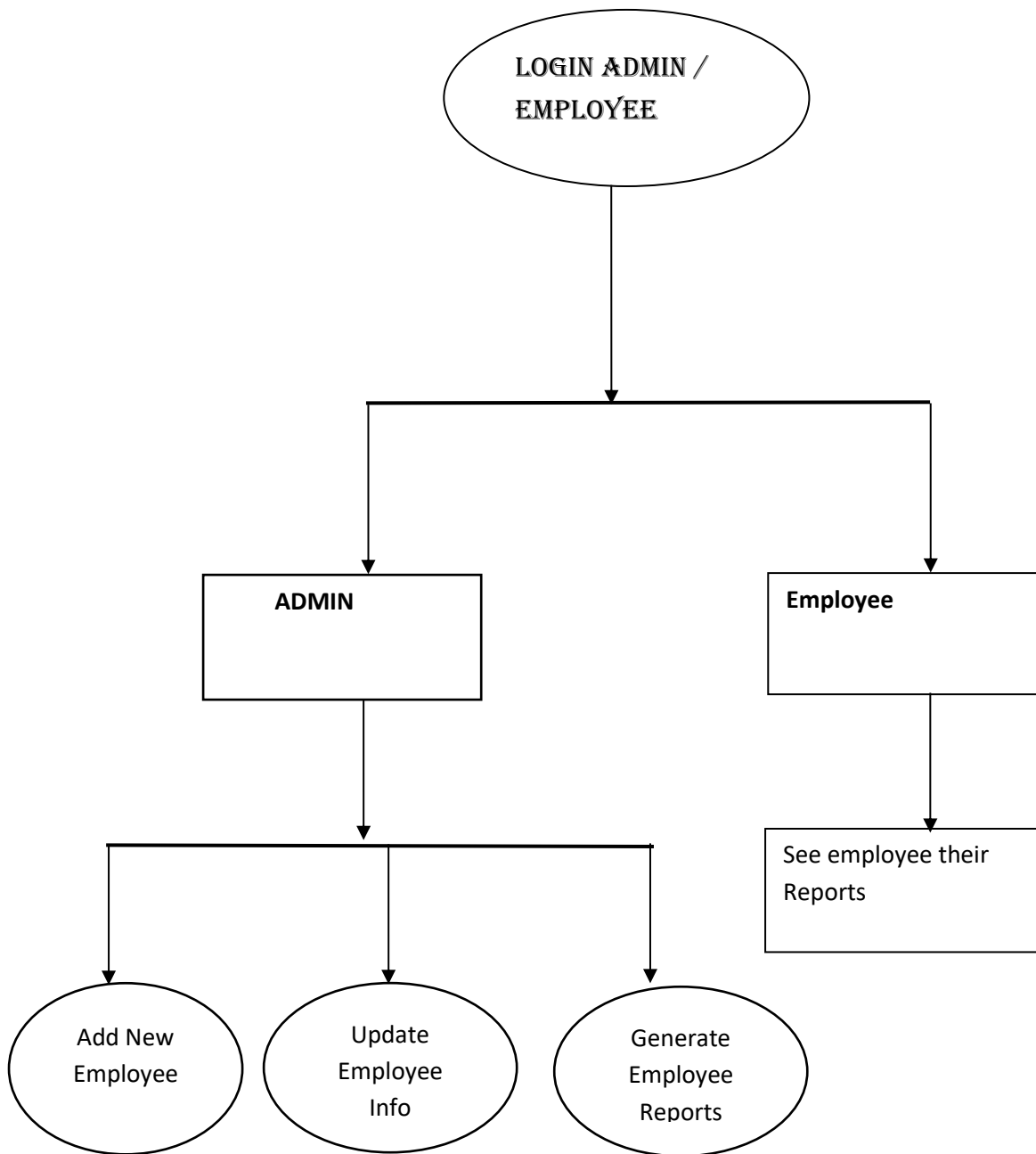
(1) A **square** shows the Entity: 

(2) A **Circle** shows the Process: - 

(3) An **Open-Ended Rectangle** shows the data store: -- 

(4) An **arrow** shows the data flow: - 

DFD(1-Level)



HARDWARE REQUIREMENT

Hardware: - This Application is very CPU and RAM efficient.

SOFTWARE REQUIREMENT

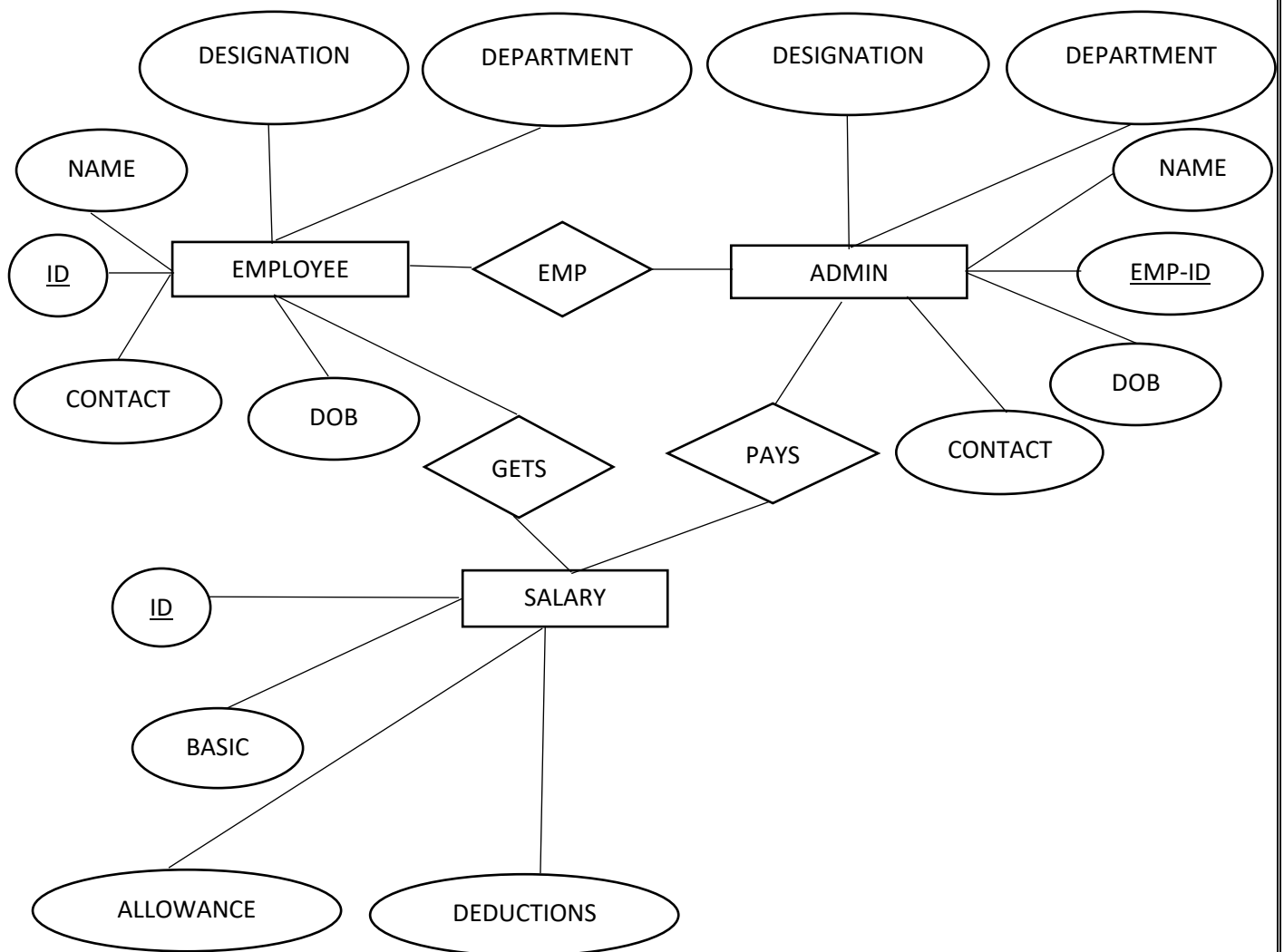
Software: - Operating System: Employee Payroll Management System runs on Windows Windows XP, Windows 2003, Windows 7, Windows 8, Windows 10 and 2016(GUI Required).

3. SYSTEM DESIGN

E-R DIAGRAM

An entity-relationship (ER) diagram is a specialized graphic that illustrates the interrelationship between entities in a database. ER diagrams often use symbols to represent three different types of information. Boxes are commonly used to represent entities. Diamonds are normally used to represent relationships and ovals are used to represent attributes.

E-R DIAGRAM



DATA/TABLE STRUCTURES

USER TABLE-

ID	USERNAME	PASSWORD	DIVISION	EMP_ID
1	amar	1234	Sales	1
2	RAM	4668	Admin	2
3	SITA	8963	Admin	6

EMPLOYEES TABLE -

ID	FIRST NAME	LAST NAME	DATE OF BIRTH	EMAIL	CONTACT	ADDRESS1	ADDRESS2	HOUSE NO.
RBS1004	Rajat	Tiwari	04/09/1996	rj01@gmail.com	444	avas vikas	--	1/308
RBS1005	amar	tiwari	15/01/1997	Tiwarihts01@gmail.com	5698	hathras	--	1/323
RBS1006	SITA		10/10/1998	sita@123gamil.com	4556	Mathura	--	1/356

POST CODE	DEPARTMENT	DESIGNATION	DATE HIRED	BASIC SALARY	JOB TITLE	STATUS	GENDER	IMG
204101	Admin	Hghh	12/12/2002	10000	LEADER	MARRIED	MALE	
20123	Sales	Marketing	15/19/2018	1500	M I	SINGLE	MALE	
20154	Sales	Head	15/12/2019	1800	M I	SINGLE	FEMALE	

ALLOWANCE TABLE -

SR. NO.	OVER TIME(IN HR)	MEDICAL	BONUS	OTHER	EMP_ID	SALARY
1	10	500	1000	0.00	RBS1004	10000
2	3	0.00	200	0.00	RBS1005	1500

RATE	TOTAL ALLOWANCE	FIRST NAME	LAST NAME	CREATED BY	WORKING DAYS
10	1600	Rajat	Tiwari	Ram	26
10	1530	amar	Tiwari	Ram	29

DEDUCTION TABLE –

SR NO.	FIRST NAME	LAST NAME	SALARY	DEDUCTION AMOUNT	REASON	EMP_ID	MADE BY
1	amar	tiwari	1500	50	1 Leave	RBS1005	Ram
2	sita		1800	100	2 Leave	RBs1006	Rajat

AUDIT TABLE –

AUDIT ID	EMP_ID	DATE	STATUS
1	RBS1004	10:13:28/21 Mar, 2020	Logged in
2	RBS1004	11:10:28/21 Mar, 2020	Logged out
3	RBS1006	09:18:59/26 Mar, 2020	Logged in
4	RBS1006	09:30:59/26 Mar, 2020	Logged out
5	RBS1005	12:52:38/26 Mar, 2020	Logged in
6	RBS1005	1:12:38/26 Mar, 2020	Logged out

IMPLEMENTATION AND MAINTENANCE

Implementation-

Implementation is a process of ensuring that the information system is operational. It involves –

- Constructing a new system from scratch
- Constructing a new system from the existing one.

Implementation allows the users to take over its operation for use and evaluation. It involves training the users to handle the system and plan for a smooth conversion.

EMPLOYEE PAYROLL MANAGEMENT SYSTEM Is easy to implement because it's developed in Java programming language that's platform independent language so it's make the software easy to use.

System Maintenance -

Maintenance means restoring something to its original conditions. Enhancement means adding, modifying the code to support the changes in the user specification. System maintenance conforms the system to its original requirements and enhancement adds to system capability by incorporating new requirements.

Thus, maintenance changes the existing system, enhancement adds features to the existing system, and development replaces the existing system. It is an important part of system development that includes the activities which corrects errors in system design and implementation, updates the documents , and tests the data.

SYSTEM TESTING

INTRODUCTION -

System testing, or end-to-end testing, tests a completely integrated system to verify that it meets its requirements. For example, a system test might involve testing a logon interface, then creating and editing an entry, plus sending or printing results, followed by summary processing or deletion (or archiving) of entries, then logoff.

TESTING TECHNIQUE –

1. Unit Testing
2. Alpha/ Beta Testing

Unit Testing-

Unit testing, also known as component testing, refers to tests that verify the functionality of a specific section of code, usually at the function level. In an object-oriented environment, this is usually at the class level, and the minimal unit tests include the constructors and destructors. These types of tests are usually written by developers as they work on code (white-box style), to ensure that the specific function is working as expected. One function might have multiple tests, to catch corner case or other branches in the code. Unit testing alone cannot verify the functionality of a piece of software, but rather is used to assure that the building blocks the software uses work independently of each other.

Alpha testing –

Alpha testing is simulated or actual operational testing by potential users/customers or an independent test team at the developers' site. Alpha testing is often employed for off-the-shelf software as a form of internal acceptance testing, before the software goes to beta testing.

Beta testing-

Beta testing comes after alpha testing and can be considered a form of external user acceptance testing. Versions of the software, known as beta versions, are released to a limited audience outside of the programming team. The software is released to groups of people so that further testing can ensure the product has few faults or bugs. Sometimes, beta versions are made available to the open public to increase the feedback field to a maximal number of future users.

White Box Black Box Testing -

White box testing is highly effective in detecting and resolving problems, because bugs (bug or fault is a manifestation of an error in a software) can often be found before they cause trouble. We can shortly define this method as testing software with the knowledge of the internal structure and coding inside the program. White box testing is also called white box analysis, clear box testing or clear box analysis. It is a strategy for software debugging (it is the process of locating and fixing bugs in computer program code or the engineering of a hardware device) in which the tester has excellent knowledge of how the program components interact. This method can be used for Web services applications, and is rarely practical for debugging in large systems and networks). Besides white box testing is considered as a security testing (the process to determine that an information system protects data and maintains functionality as intended) method that can be used to validate whether code implementation follows intended design, to validate implemented security functionality, and to uncover exploitable vulnerabilities. Black box testing is testing software based on output requirements and without any knowledge of the internal structure or coding in the program. In another words, a black box is any device whose workings are not understood by or accessible to its user. For example, in telecommunications, It is a resistor connected to a phone line that makes it impossible for the telephone company's equipment to detect when a call has been answered. In data mining, a black box is an algorithm that doesn't provide an explanation of how it works. In film – making, a black box is a dedicated hardware device.

SYSTEM SECURITY MEASURES

1) Establish strong passwords

This first measure is really easy to put in place. You must put together a combination of capitals, lower-case letters, numbers, and symbols to create a strong password. The more characters you put, the better. With that you must avoid using your birthday or any personal information and change the password accordingly.

2) Set up a firewall

In order to protect your network, firewalls are an important initiative to consider. They are a must-have for any company, as they control the internet traffic coming and leaving your business.

3) Think of antivirus protection

Antivirus and anti-malware are indispensable to protecting your Data. They are designed to prevent, search for, detect and remove viruses but also adware, worms, trojans, and so on.

4) Updating is important

Your computer must be properly patched and updated. Recent updates allow your Data to be more secured.

5) Secure every laptop

Laptops are portable so there is a higher risk that they can be stolen. As a consequence, it is important to take more security measures in order to protect all laptops. A simple solution is to encrypt them. In doing so, without the right password, your computer's Data is unreadable.

6) Secure mobile phones

Mobile phones are even more easily stolen than laptops but they are as valuable for companies.

Equally to laptops, phones can be encrypted- you can put a strong password and enable an automatic lock-out. You can also set up a wiping process if the phone is lost or stolen.

7) Schedule backups

You can schedule backups to external hard drives or in the cloud in order to keep your data stored safely. The right frequency is weekly but you can do incremental backups every few days. You can also use [Wimi](#) which centralizes your documents. With it, you can then share your documents with your team, your clients and your partners.

8) Monitor steadily

Data, Software, technologies, everything is moving so fast. Keep track of them, keep in touch with news to see to what is new on the market.

9) Be smart with emails and surfing the web

Downloading apps or files, opening emails and clicking on links can infect your computer and your network.

Be careful with the sources you find online or you receive. Take every “warning box” seriously.

10) Educate your employees about Data Security

Prevention is the best way to keep your data safe. Warned employees will always be more attentive.

7 Modules:

Admin Login: - An Admin can Login with user name and password and create new account for Employee and update information, delete employee account, update salary.

Employee Login: - An Employee can Login with Employee Id, Name and Password and Check All the information of their working days, Allowance, All Deductions according to Month.

Add Record: - This module is used for create new account for employee, it provides unique ID for new employee by using id admin can access the all the information about employee. like: update record, delete record, update salary.

Update Record: - An Admin can update record using id of the user like: update name, Department, basic information about employee can be updated.

Delete Record: - An Admin can delete particular employee record using id no. of the employee.

Update Information: - An Admin can update information About employee.

Update Salary: - This module is used for update salary in the basics of percentage or Amount.

Allowance: - This module is used for calculate the total allowance of the employee in the basics over time, medical, bonus, working days.

Deduction: - This module is used for calculate the deduction of an employee in the basics of percentage or amount.

Generate slip: - This module is used for generate salary slip of the employee in PDF format.

Audit: - In this module admin can see all the activities when the employee login and logout.

Employees Report: - This module is used for generate report about all the employees in PDF format.

Allowance Report: - This module is used for generate allowance report all the employees in PDF format.

Deduction Report: - This module is used for generate Deductions report all the employees in PDF format.

8 FUTURE SCOPE OF PROJECT

This system is very flexible so that the maintenance and further amendments based on the Changing environment and requirements can be made easily. Any changes that may lead to system failures are prevented with security measures. The project will support a multiuser environment, which is more than one user can access simultaneously.

It can be further developed to include more operations and analysis, as changes are required in the system to adapt to the external developments. Further enhancements can be made to the system at any later point in time.

Coding procedures can be modified according to the needs of the user. The system code is also well-designed that it will form the basis for further enhancement and also new operations can be included in the system. The reports can be represented in all necessary protection. Added options can be designed in reports.

Language/Libraries/Tools:

Front End : JAVA

Back End : MYSQL DATA BASE

Other S/W : JAVA

- IDE(NETBEANS)

9 APPENDICES

SCREEN SHOTS -

Login Window – An Admin and Employee can login here.



Login

8/6/2020 6:23:5

Enter ID , User Name & password :

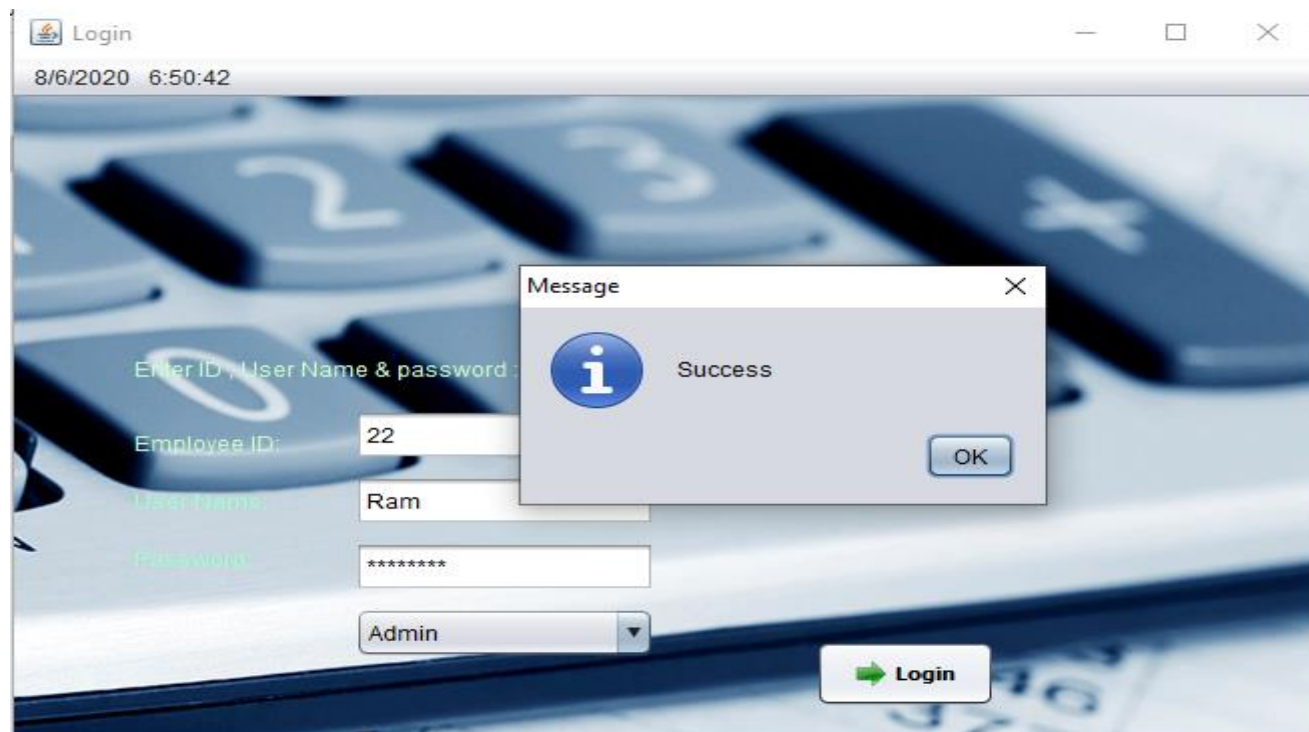
Employee ID:

User Name:

Password:

Admin

Login



Login

8/6/2020 6:50:42

Enter ID , User Name & password :

Employee ID: 22

User Name: Ram

Password: *****

Admin

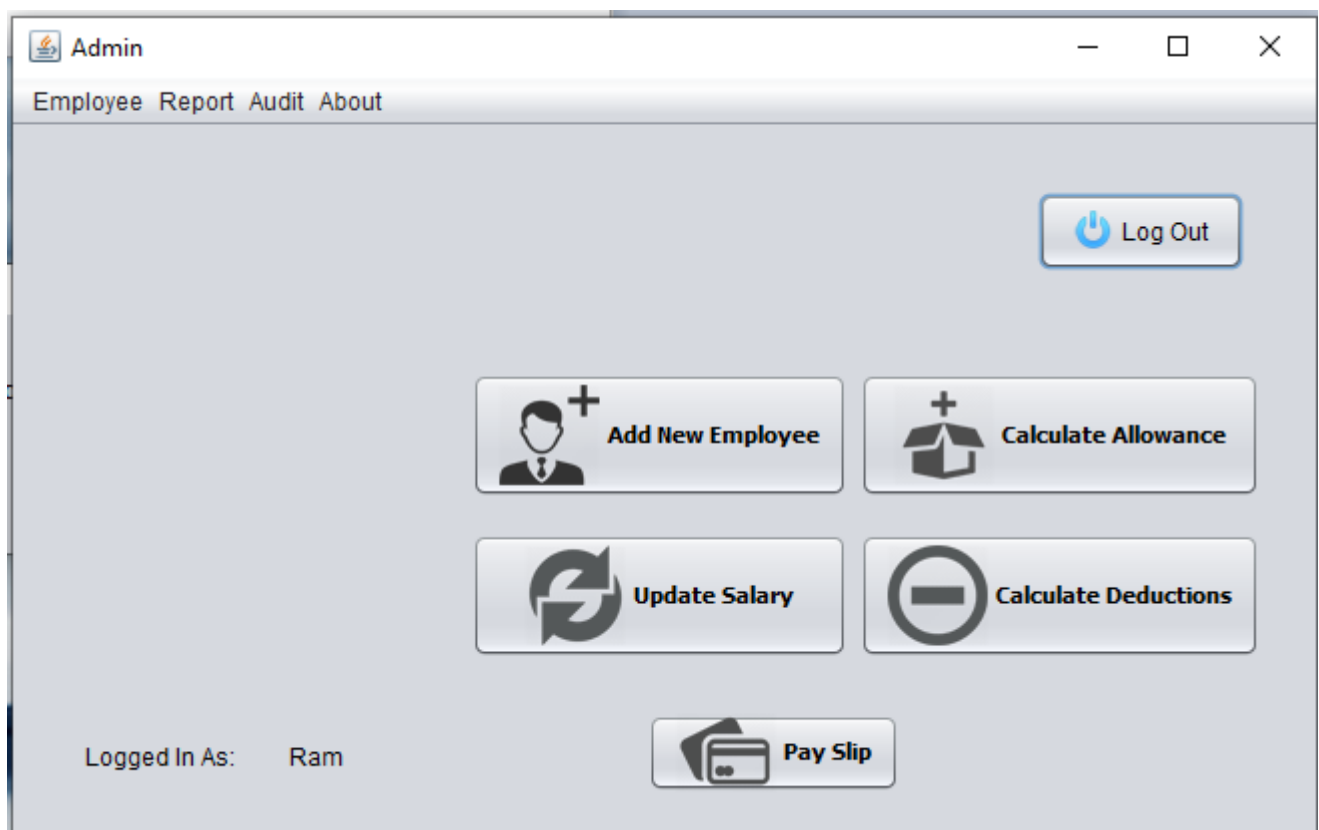
Message

i Success

OK

Login

Admin Window – Admin Can Manage Employee here. Like- add new Employee, Calculate Allowance, Deduction, Update salary, Generate report.



Add Employee – Here admin can add new Employee and update Employee Information.

Add & Update Record

Search Employee:

Employee Id:

First Name: House No.

Last Name:

Date Of Birth:

Gender: ☒ Male ☐ Female


Email:


Contact: Basic Salary:

Address1: Job Title:

Address2: Status:

Message

 Data is saved successfully Employee Id : RBS1009



Calculate Allowance – Here admin can Calculate allowance using Employee ID. Based on Medical, Over-Time, Bonus.

Calculate Allowance

Search Employee :

RBS1009

Search

Employee ID:

RBS1009

Over Time:

10

Over time in hours:

1

First Name:

amar

Medical:

90

Rate Per Hour:

50.0

Last name :

tiwari

Bonous:

1000

Working Days:

29

Contact:

1234

Other:

50

Total Overtime:

10.0

Basic Salary:

10000

Department:

Sales

Message

i

Allowance Added

OK

nt:

11296.0

+ Calculate

Save

Clear

Back

Sr_...

over...

medi...

bono...

other

emp...

s

1	0	0	0	0	1	388	0	0.00	amar	0
2	3.0	0	0	0	1	388	1.94	393....	amar	0
3	20.0	100	10	10	1	388	4.85	605.0	amar	0
4	1000.0	10	10	10	1	388	2.425	2843...	amar	0
5	0	0	0	0			0	0.00		0
6	0	0	0	0			0	0.00	null	0

work...

Logged in As:

22

Calculate Deductions – Here admin can Calculate deduction of the employee. Based on Percentage and Amount.

The screenshot displays the 'Calculate Deduction' application window. A modal message box is centered on the screen, indicating that the data has been saved successfully. The background form contains the following details:

- Search Employee:** RBS1009
- Employee Id:** RBS1009
- First Name:** amar
- Last Name:** tiwari
- Contact:** 1234
- Department:** Sales
- Designation:** xyz
- leader:** leader
- Date:** 15/01/2020
- Head:** Head
- Amount:** 14410

Update Salary by : ☒ Percentage(%) ☐ Amount

Percentage: 10 **Amount:**

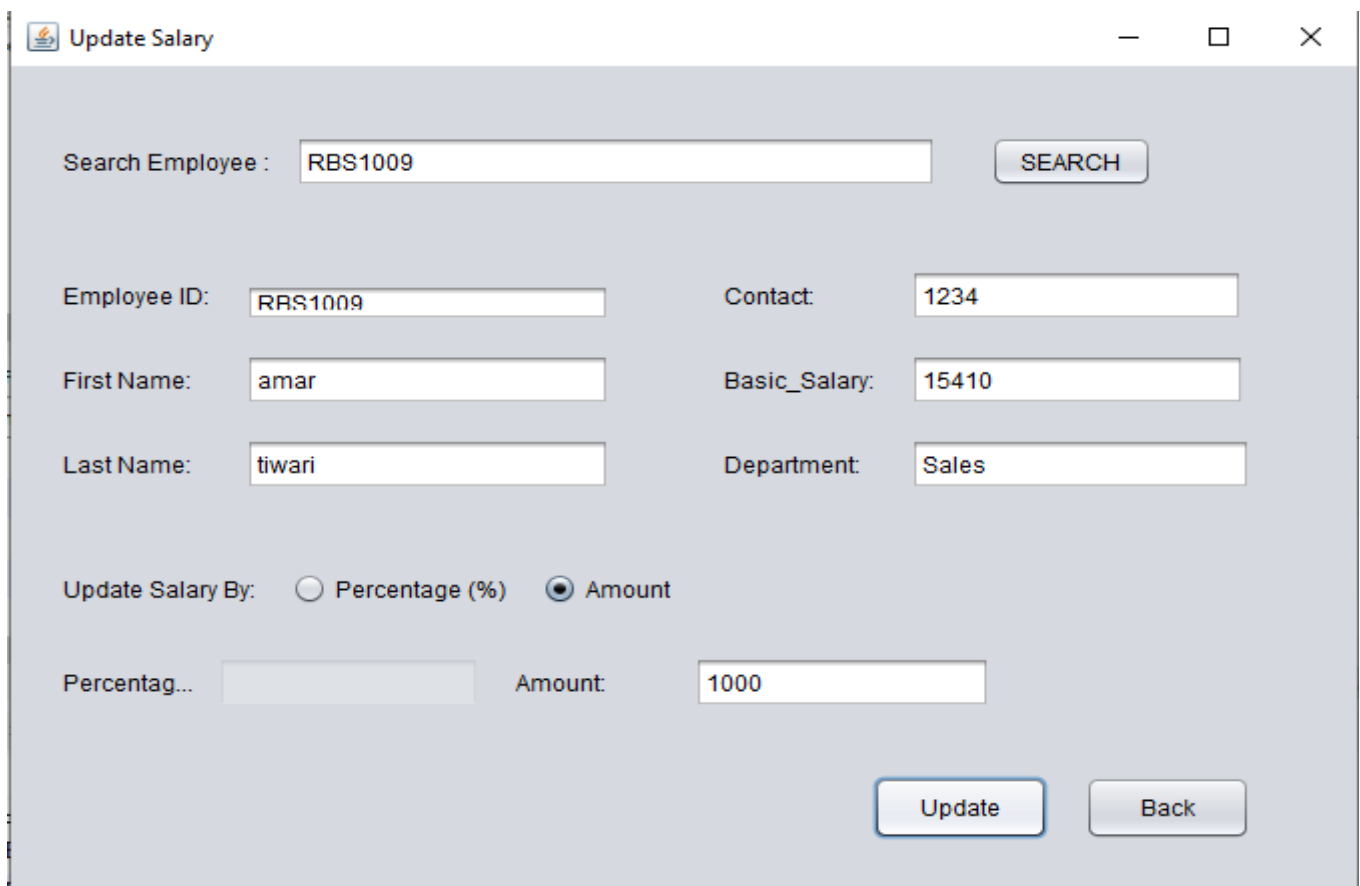
Reason: fever

Total Deduction: 1440 **Salary After Deduction:** 12970

Logged in As: 22

Buttons: + Calculate, Save, X Clear, Back

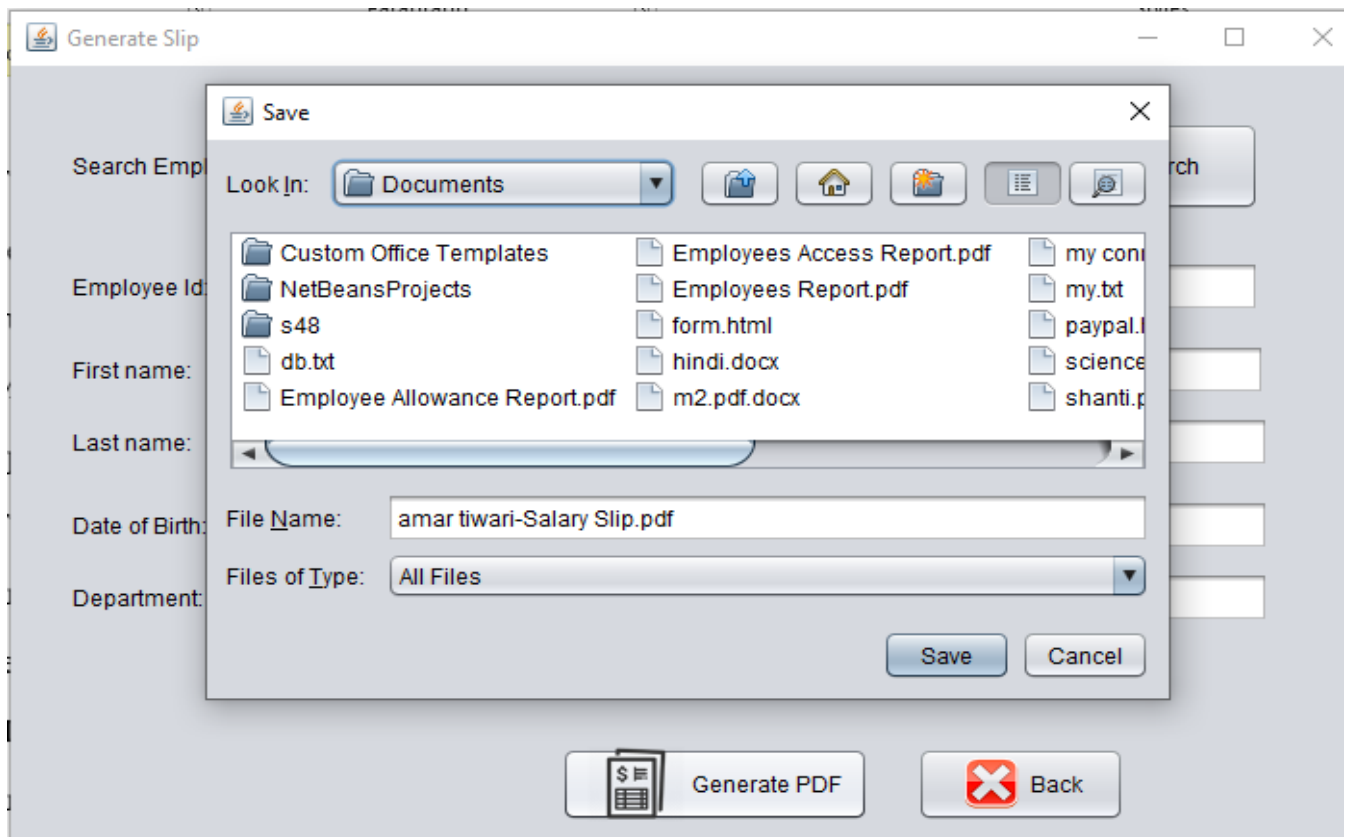
Update Salary – Here admin can Update salary of the employee. Based on Percentage and Amount.



The screenshot shows a web application window titled "Update Salary". It features a search bar at the top with the text "RBS1009" and a "SEARCH" button. Below the search bar, there are several input fields for employee details: "Employee ID" (RBS1009), "Contact" (1234), "First Name" (amar), "Basic_Salary" (15410), "Last Name" (tiwari), and "Department" (Sales). At the bottom, there are radio buttons for "Update Salary By": "Percentage (%)" and "Amount" (which is selected). Below these, there are input fields for "Percentag..." and "Amount" (1000). At the bottom right, there are two buttons: "Update" and "Back".

Search Employee : RBS1009		SEARCH
Employee ID:	RBS1009	Contact: 1234
First Name:	amar	Basic_Salary: 15410
Last Name:	tiwari	Department: Sales
Update Salary By: <input type="radio"/> Percentage (%) <input checked="" type="radio"/> Amount		
Percentag...		Amount: 1000
		Update Back

Generate Pay Slip – Here admin can generate pay slip in pdf format of the employee.



PAY SLIP

Thu Aug 06 19:28:31 IST 2020

EMPLOYEE DETAILS

Name of Employee: amar tiwari
Designation: Sales
Department: xyz

SALARY

Basic Salary: Rs15410
Overtime: 10.0 Hours
Medical: Rs90
Bonus: Rs1000
Other: Rs50

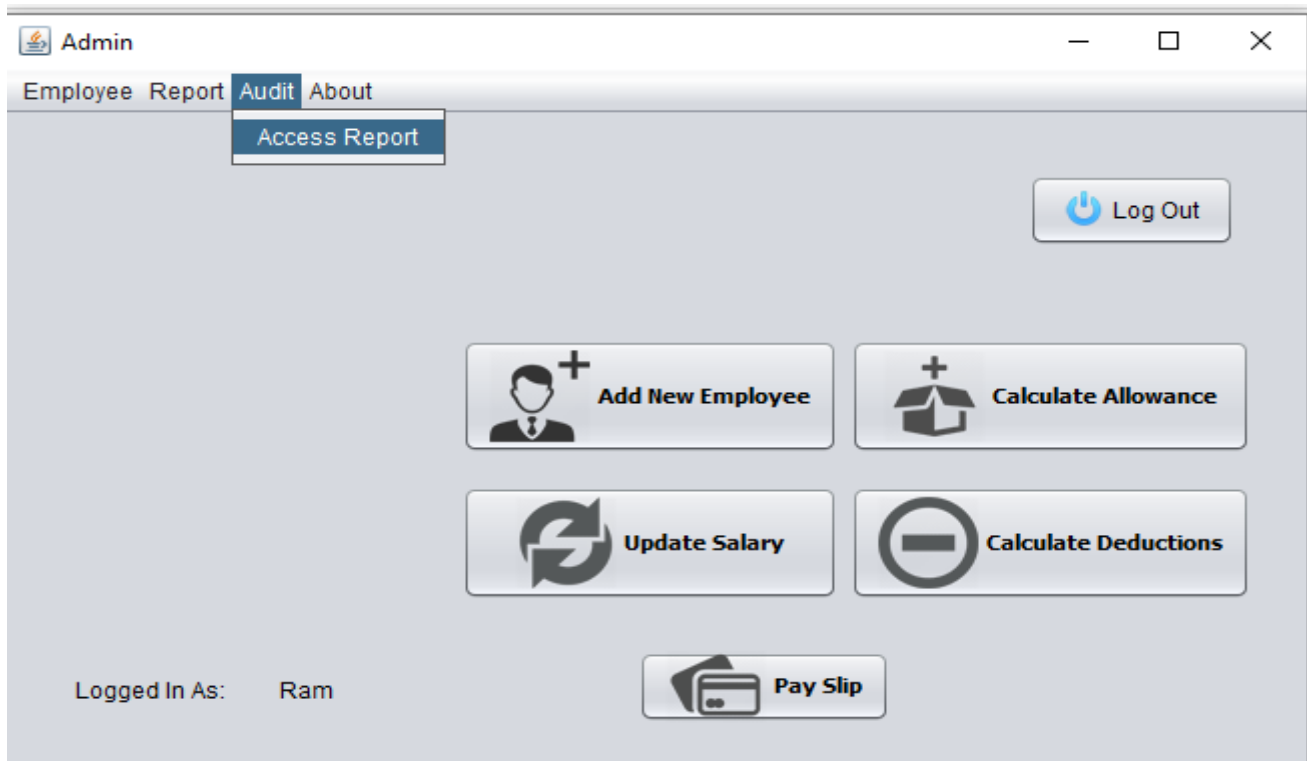
DEDUCTION

Deduction Details: fever
Total Deductions : Rs1440

TOTAL PAYMENT

Total Earnings: 11296.0
Net Pay : 25266.0

Login and Logout Information – Here admin can see when the employee logged in and logged out.

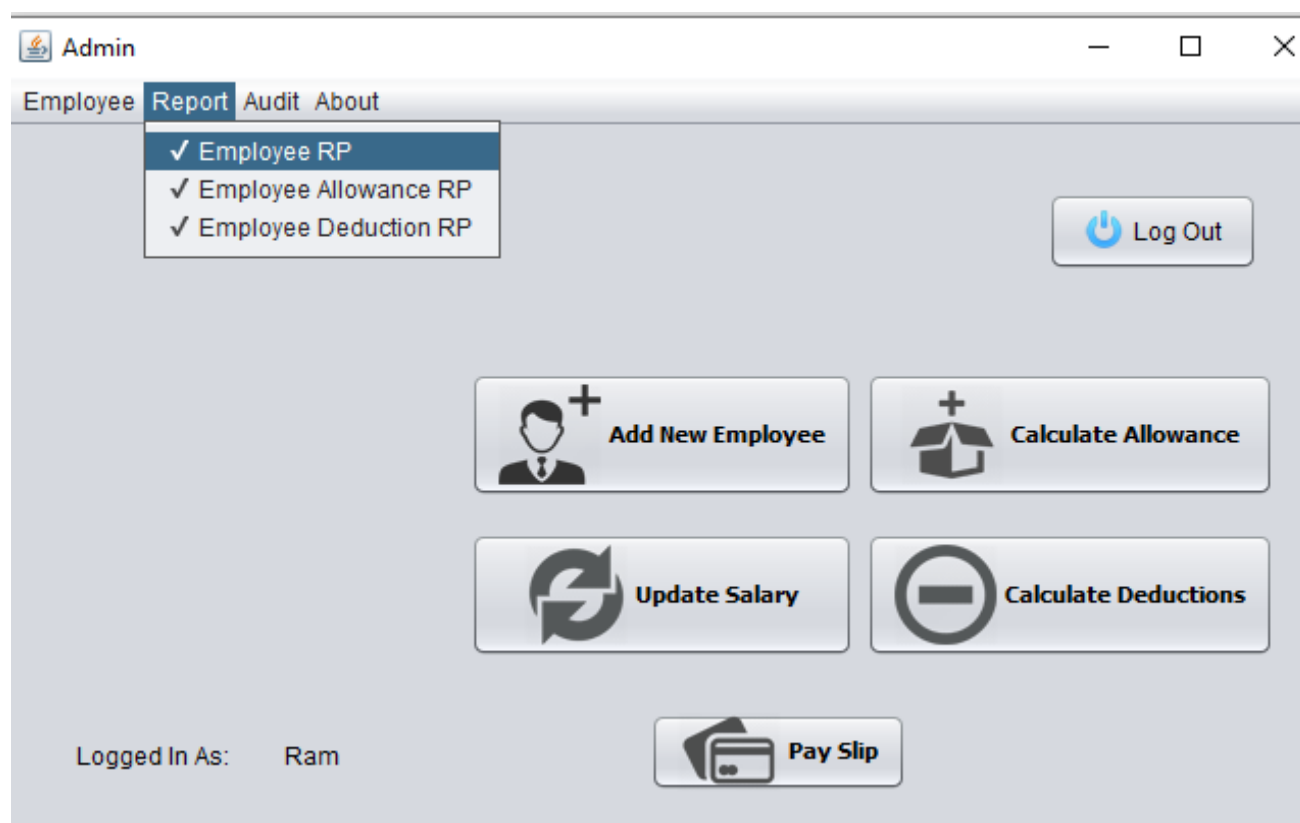


Employees List

Thu Aug 06 19:32:52 IST 2020

audit id	emp id	date	status
2	4	10:19:52/21 Mar, 2020	Logged in
3	4	10:20:07/21 Mar, 2020	Logged out
4	1	09:18:59/26 Mar, 2020	Logged in
5	null	12:52:38/26 Mar, 2020	Logged in
6	1	12:55:38/26 Mar, 2020	Logged in
7	null	13:06:14/26 Mar, 2020	Logged in
8	null	13:08:42/26 Mar, 2020	Logged in
9	1	13:10:23/26 Mar, 2020	Logged in
10	1	13:11:08/26 Mar, 2020	Logged in
11	1	13:13:57/26 Mar, 2020	Logged in
12	1	13:16:39/26 Mar, 2020	Logged in
13	1	13:20:23/26 Mar, 2020	Logged in
14	4	13:22:28/26 Mar, 2020	Logged in
15	1	13:25:43/26 Mar, 2020	Logged in
16	1	13:29:18/26 Mar, 2020	Logged in
17	4	13:29:57/26 Mar, 2020	Logged in
18	1	13:37:04/26 Mar, 2020	Logged in
19	1	13:39:12/26 Mar, 2020	Logged in
20	1	13:40:29/26 Mar, 2020	Logged in
21	1	13:42:55/26 Mar, 2020	Logged in
22	1	13:46:11/26 Mar, 2020	Logged in
23	1	13:51:45/26 Mar, 2020	Logged in
24	1	13:55:47/26 Mar, 2020	Logged in
25	1	16:53:49/29 Mar, 2020	Logged in
26	1	13:33:53/12 Apr, 2020	Logged in
27	null	13:38:34/12 Apr, 2020	Logged out
28	2	13:38:53/12 Apr, 2020	Logged in

All Employee Information – Here admin can generate all employee Information in pdf format.

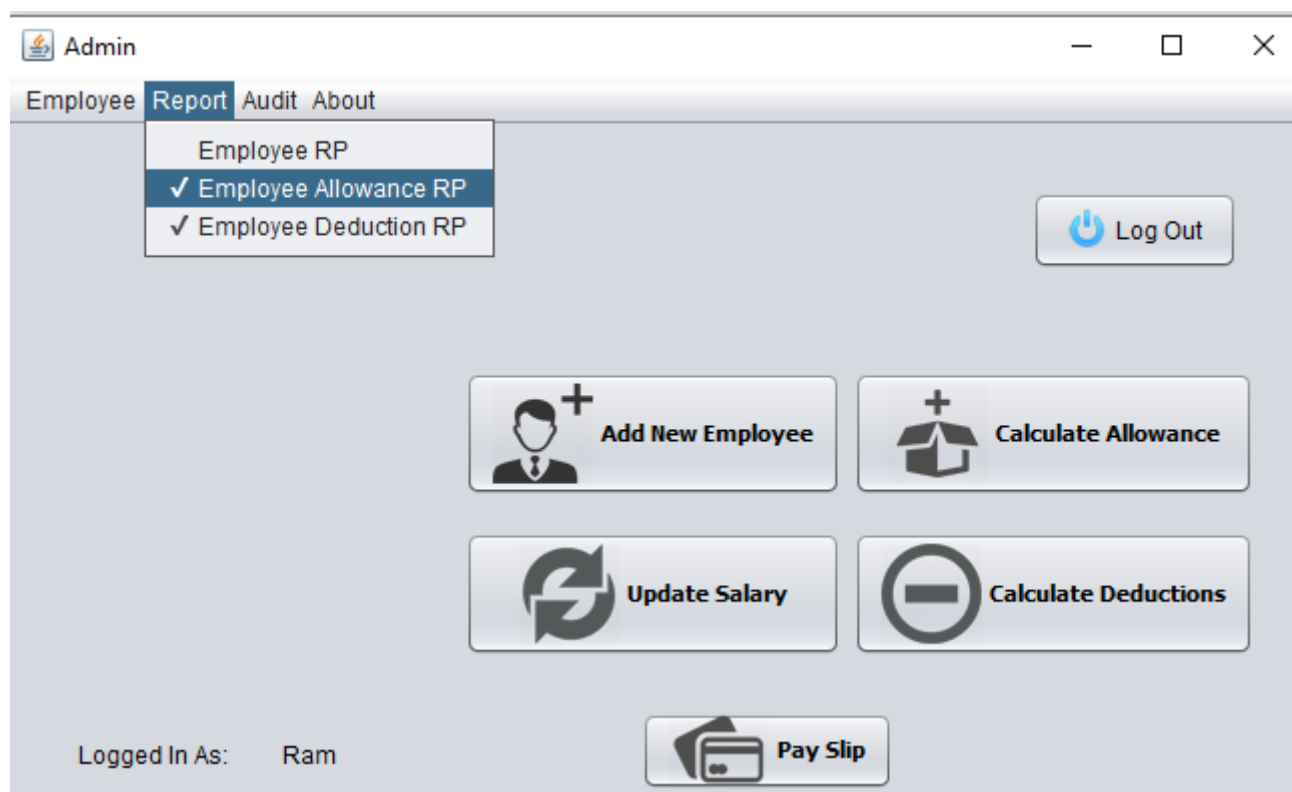


Employees List

Thu Aug 06 19:35:05 IST 2020

ID	First Name	Last name	Date of Birth	Email	Contact	Address	Department	Gender	Basic Salary	Status	Date Hired	Job Title
RBS1001	amar				545							Male
RBS1002	amar				545							Male
RBS1003	gulista				45							Female
RBS1004	Rajat	Tiwari	04/09/1996	rj01@gmail.com	444	avas vikas	204101	Admin	10000	sgg	wddw	Male
RBS1005	Ram	shym	15/01/1997	tiwarih ts01@gmail.com	1313	1/308	204101	Admin	20	malik	bhot shi	Male
RBS1006	Sita	Radha	15/01/1997	tiwari01@gmail.com	1212	home	204101	Sale	200	nhi	pta ni	Female
RBS1007	amar	tiwari	15/01/1997	tiwarih ts01@gmail.com	8533958104	1/308	204101	IT	100000	Project leader	hiegh	Male
RBS1008	amar	tiwari	15/01/1997	tiwarih ts01@gmail.com	1234	avas	204101	Sales	10000	Head	leader	Male
RBS1009	amar	tiwari	15/01/1997	tiwarih ts01@gmail.com	1234	avas	204101	Sales	15410	Head	leader	Male

All Employee Allowance Report – Here admin can generate all employee allowance report in pdf format.

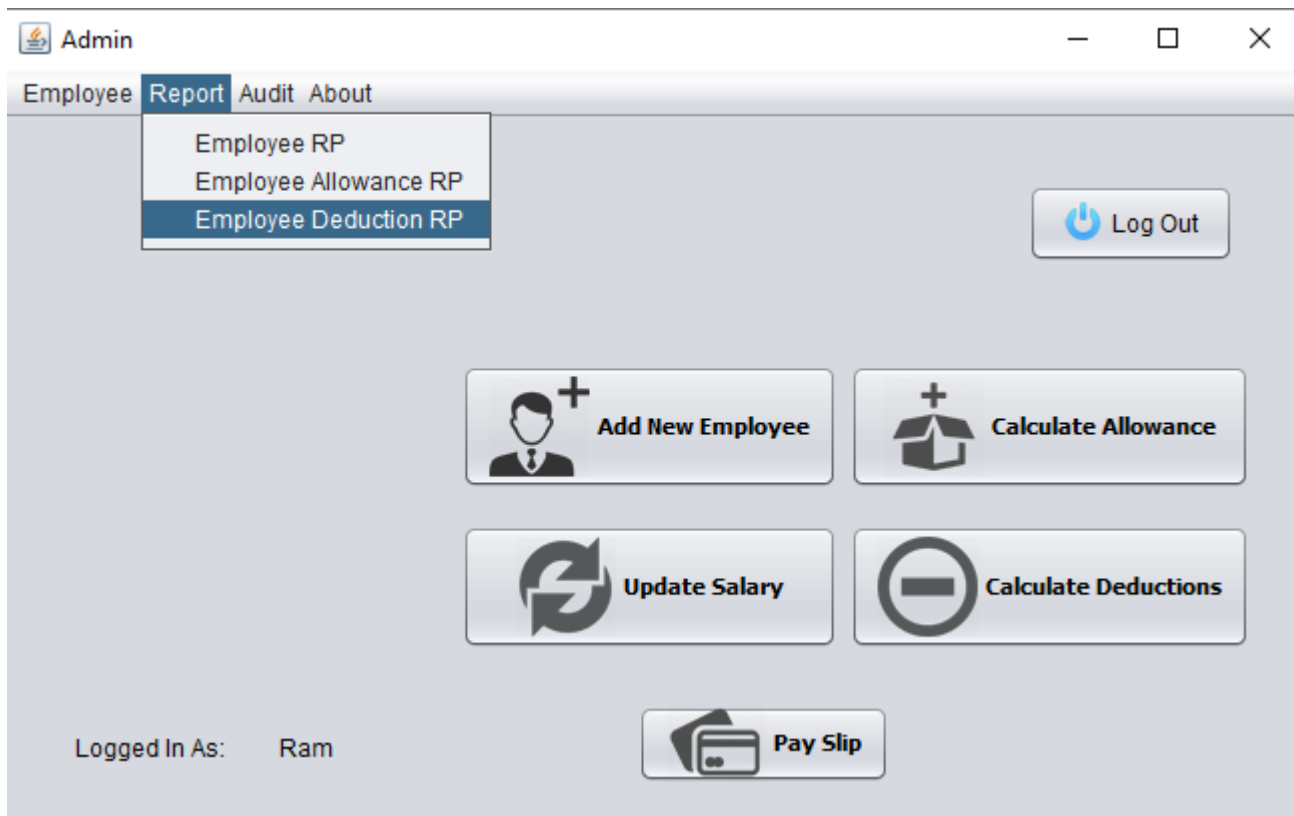


Employees Allowance List

Thu Aug 06 19:37:02 IST 2020

ID	Overtime	Medical	Bonous	Other	Employee ID	Basic Salary	Rate	Allowance	First Name	Last name
1	0	0	0	0	1	388	0	0.00	amar	
2	3.0	0	0	0	1	388	1.94	393.82	amar	
3	20.0	100	10	10	1	388	4.85	605.0	amar	
4	1000.0	10	10	10	1	388	2.425	2843.0	amar	
5	0	0	0	0			0	0.00		
6	0	0	0	0			0	0.00		
7	10.0	90	1000	50	RBS1009	10000	50.0	11296.0	amar	tiwari

All Employee Deduction Report – Here admin can generate all employee deduction Report in pdf format.



Employees Deduction List

Thu Aug 06 19:39:39 IST 2020

ID	First Name	Last name	Basic Salary	Deduction Amount	Deduction Reason	Employee ID	Created By
1	amar		388	30		1	null
2	Rajat	Tiwari	10000	1000		RBS1004	null
3	amar	tiwari	14410	1440	fever	RBS1009	22

