PROJECT REPORT

PAYROLL MANAGEMENT SYSTEM

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CSE 3001

SOFTWARE ENGINEERING

LAB

Under the guidance of

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2020-2021

B. Tech

in

COMPUTER SCIENCE AND ENGINEERING

OCTOBER 28

2020

ABSTRACT

"Payroll Management System" is one of the core areas of your business. Usually, it is pursued to manage the employees the employee's expenses, Allowances, salary, Gross Salary, Deduction, Tax and many more for a specific time period. Management and Accounting are two main essential parts for payroll.

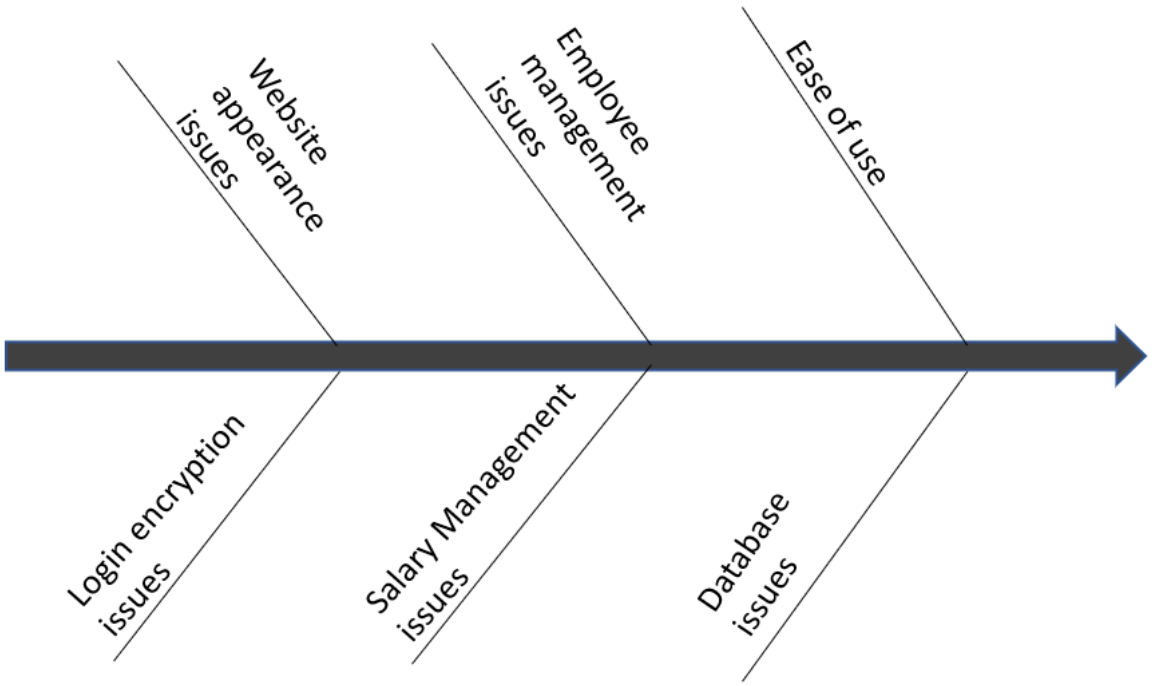
Payroll is an area in which you do not want to take any risk because it leads to some financial and serious legal consequences. Payroll is a serious concern for every small and medium sized enterprises(SME'S). It is mandatory for all business to pay every employees as per the government rules and regulations.

Furthermore, this project will develop for company management and enhance business in market and maintain the prestigious and reputation of the company. Others, this project to facilitate company to handle all the legal process and employee's expenditure properly and systematically.

The aim is to automate its existing manual system by the help of computerised equipments and full fledged computer software, fulfilling their requirements,so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. Basically the project describes how to manage for good performance and better services for the clients.

PROBLEM ANALYSIS

FISH BONE DIAGRAM:



PROBLEM DEFINITION:

This PAYROLL MANAGEMENT SYSTEM will solve the basic problems like the employee management and salary management and also the security or encryption issues for login.

Here is a simple introduction for the same:

Payroll Management System is basically used to build an application program, that a company uses to manage a record of the employees working in the company. It records the information regarding salaried in detail along with the required details of the employees and the employer.

Only the administration has the legal rights to work with the system. Employees can only log on the system to see their current status. The Payroll Management System deals with the financial aspects of employee's salary, allowances, deductions, gross pay, net pay etc. and generation of pay-slips for a specific

period. The outstanding benefit of Payroll Management System is its easy implementation.

A payroll system is software designed to organize all the tasks of employee payment and the filing of employee taxes. These tasks can include keeping track of hours, calculating wages, withholding taxes and deductions, printing and delivering checks and paying employment taxes to the government.

Payroll software often requires very little input from the employer. The employer is required to input employee wage information and hours— then the software calculates the information and performs withholdings automatically. Most payroll software is automatically updated whenever a tax law changes and will remind employers when to file various tax forms.

LIST OF USERS:

1. Administrator
2. Employees

PROBLEM:

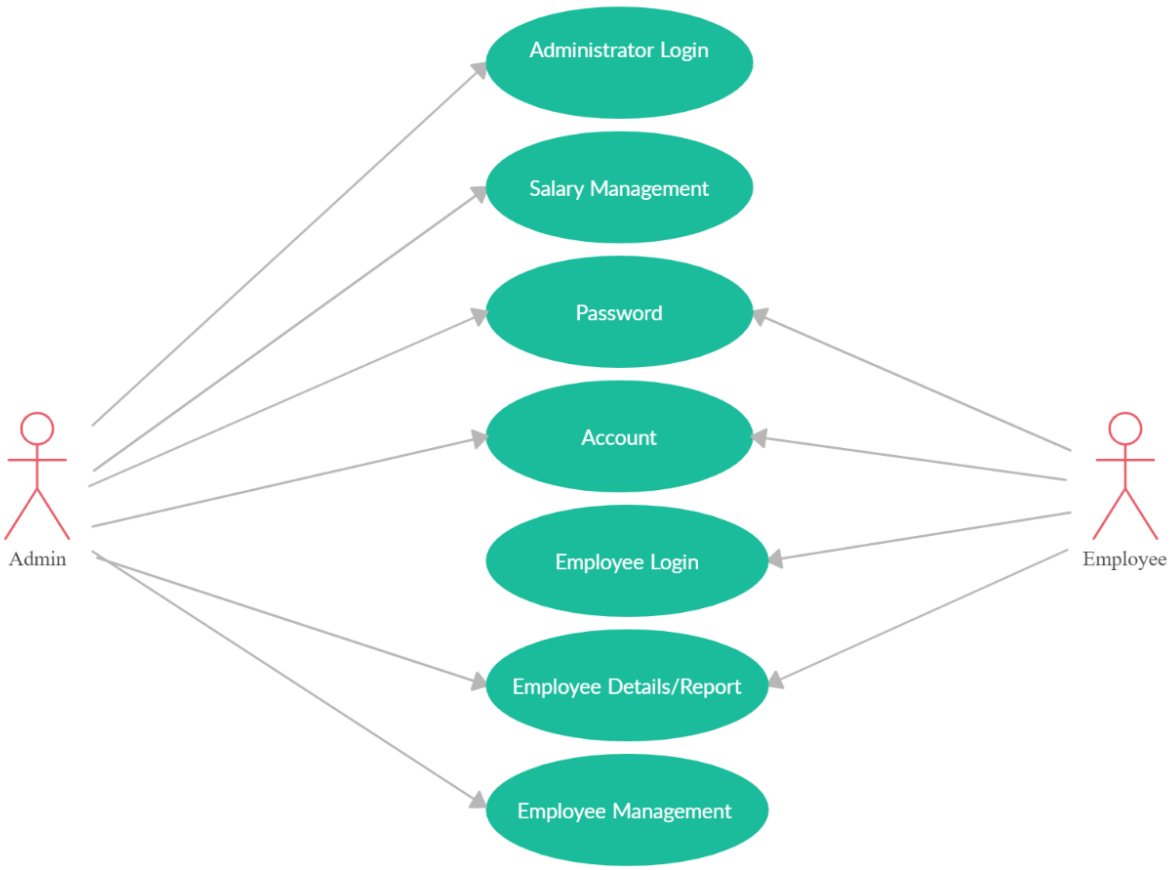
• **The problem of**	Payroll Management system where usually the companies face issues like the efficient management of their employees and their salaries whether it be related to the front end or backend.
• **Affects**	The employee and the adminintrator
• **And results in**	Better and efficient management
• **Benefits**	The administrator as well as the employees

CONSTRAINSTS:

- HTML
- CSS
- BOOTSTRAP
- MYSQL DATABASE
- XAMPP
- GOOGLE RECAPTCHA API FOR THE LOGIN ENCRYPTION

BUSINESS MODELLING

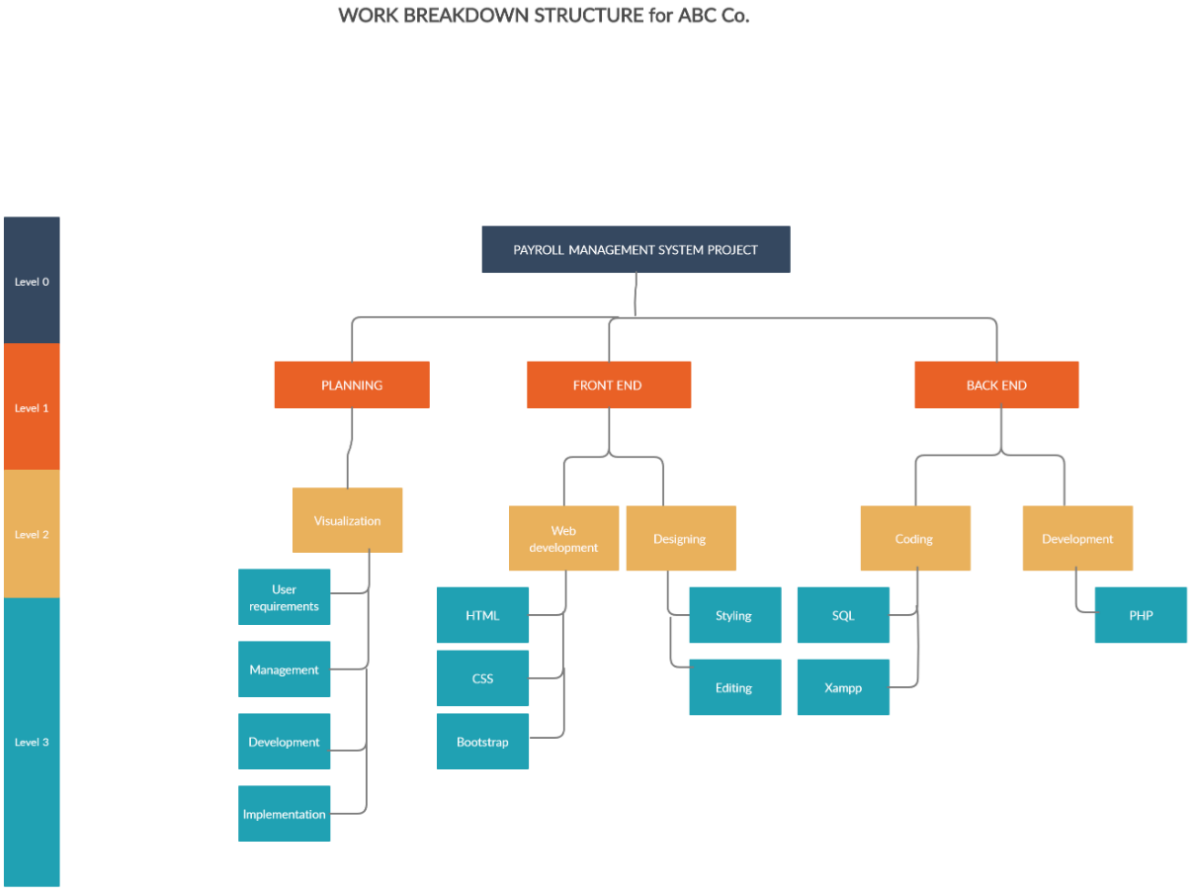
BUSINESS USE CASE DIAGRAM:



In this business use case diagram the entities like admin login, employee login, employee management , salary management , account, password and reports are included which can be seen in the project execution and the admin and employee access to each one of these entities are also specified as per the conditions.

WBS AND GANTT CHART

WBS (WORK BREAKDOWN STRUCTURE):



This is the WBS (Work Breakdown Structure) in which I have depicted four levels of planning and execution of the project and three major components in the level 1 i.e. planning , front end and backend. Planning includes the visualization process for the project , the things that is to be there In the project, frontend includes the creation and designing part for the website and backend includes the scripting part for the same using php and mysql database.

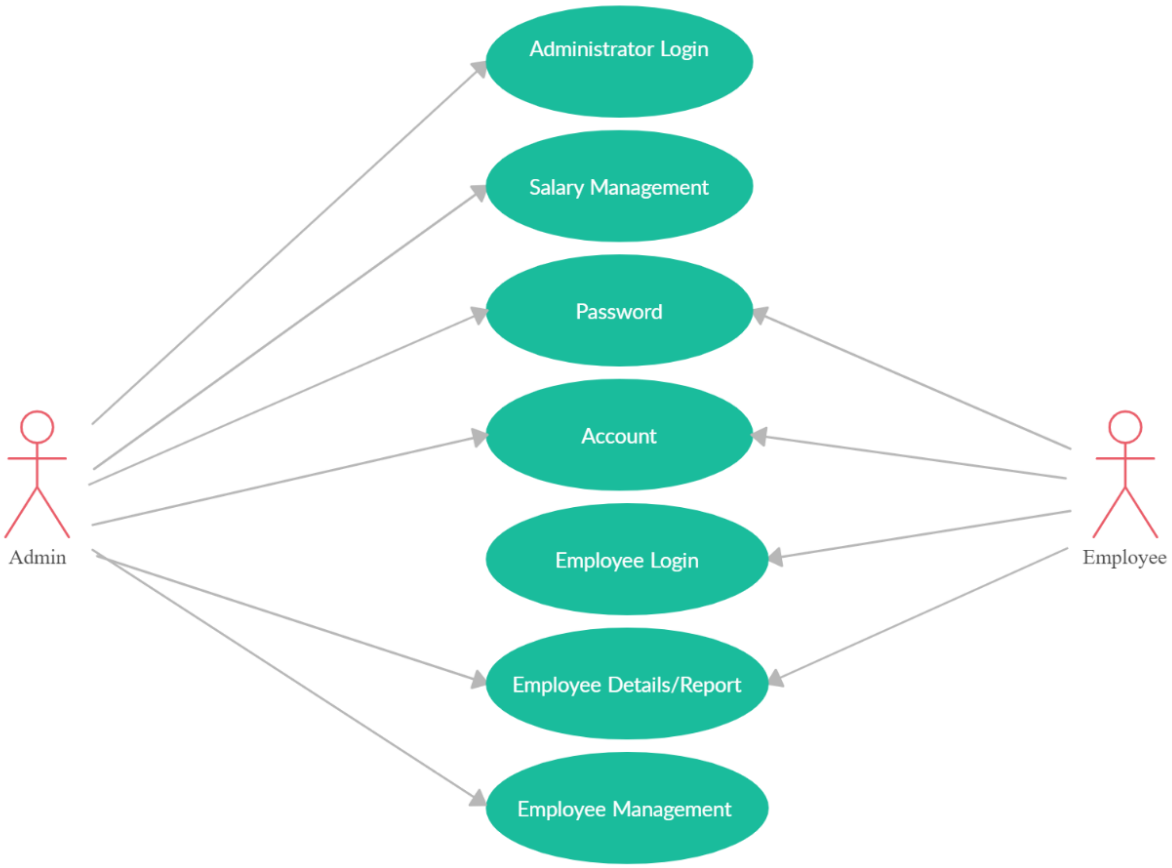
GANTT CHART:

ID	Tasks		AUG	SEP2020			OCT 2020				NOV 2020			
			4W	1W	2W	3W	4W	1W	2W	3W	4W	1W	2W	3W
1.0	Research and learning		2 Weeks 100 %											
1.1	- Project Initiation			2 Weeks 100 %										
1.2	- Project Planning	5			2 Weeks 100 %									
2.0	Analysis	15				2 Weeks 100 %								
3.0	Design	20					5 Weeks 100 %							
4.0	Implementation and Support	25								1 Week 100 %				
5.0	Testing	5									3 Weeks 100 %			
6.0	Evaluation	10												

This is the GANTT CHART which is the basic estimation for the execution of different modules or parts of the project . This primarily includes the time estimation for planning , designing and the implementation of the project in terms of weeks starting from last week of August to first week of November.

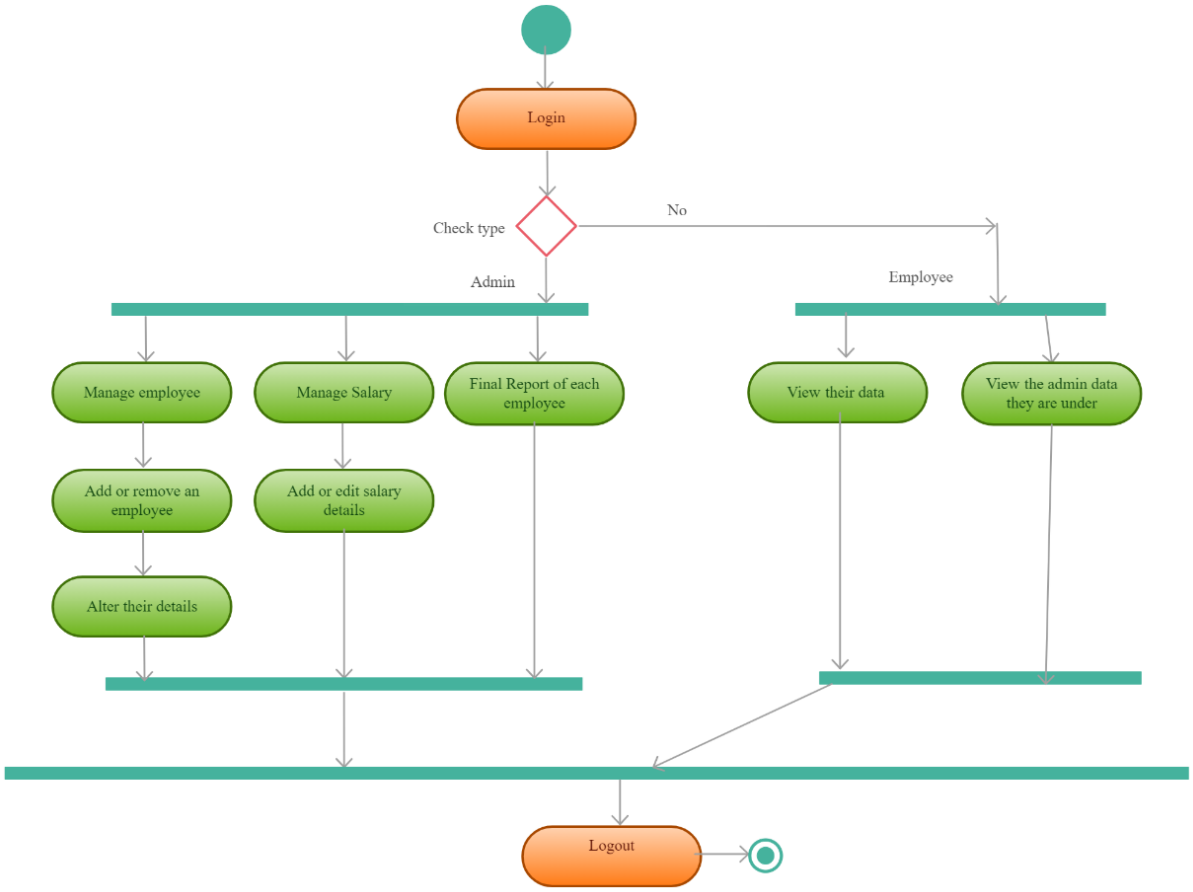
UML DIAGRAMS:

USE CASE DIAGRAM:



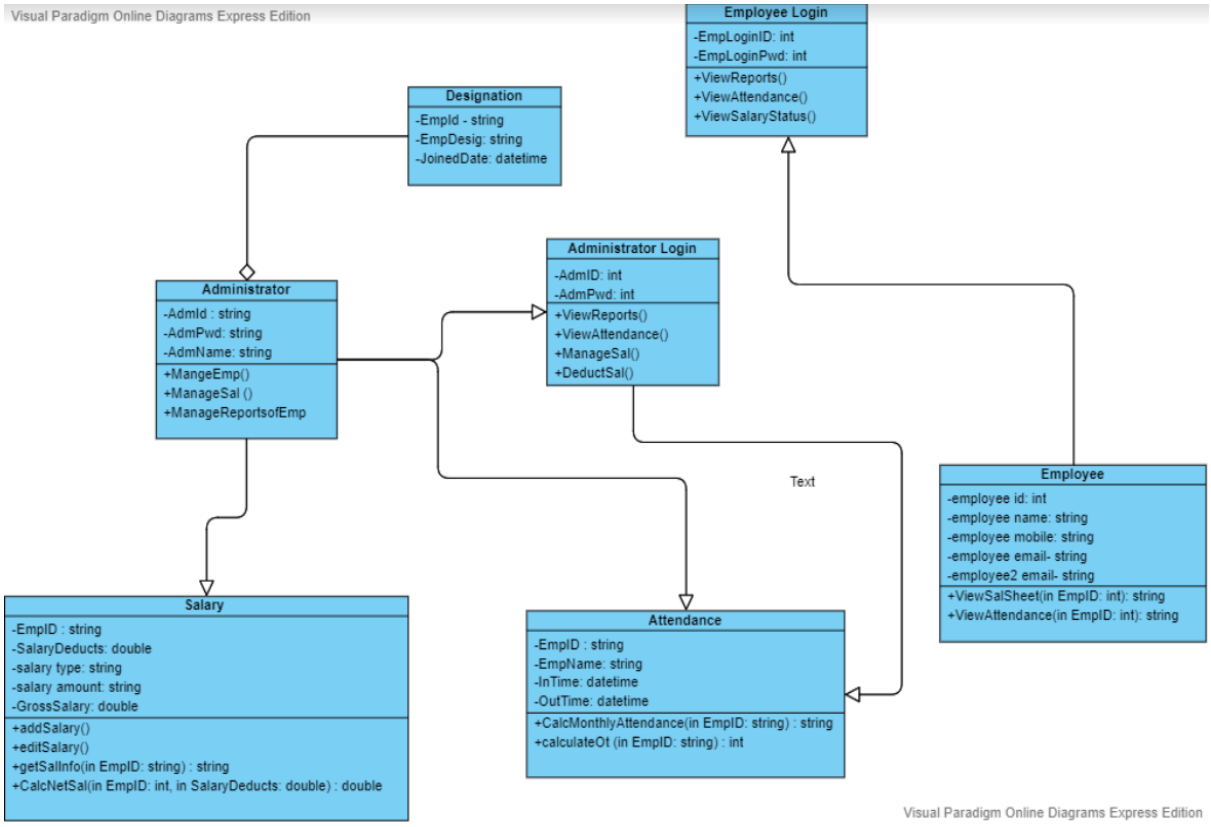
In use case diagram the entities like admin login, employee login, employee management , salary management , account, password and reports are included which can be seen in the project execution and the admin and employee access to each one of these entities are also specified as per the conditions.

ACTIVITY DIAGRAM:



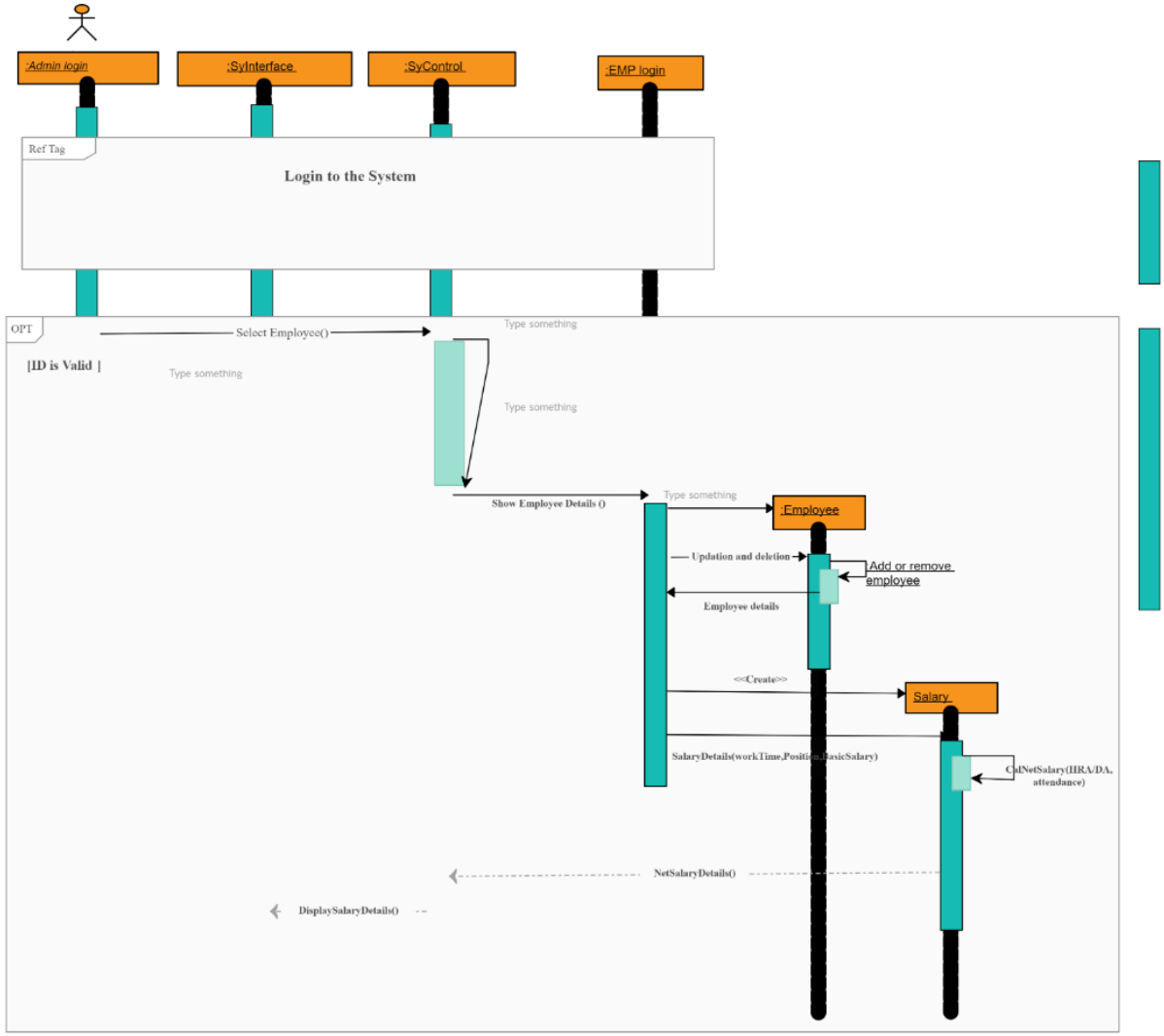
This is the activity diagram for the project- payroll management system which shows the number of activities each one of the admin as well as the employee does in the system in a particular sequence of logging in and logging out like the employee management, salary management and reports viewing.

CLASS DIAGRAM:



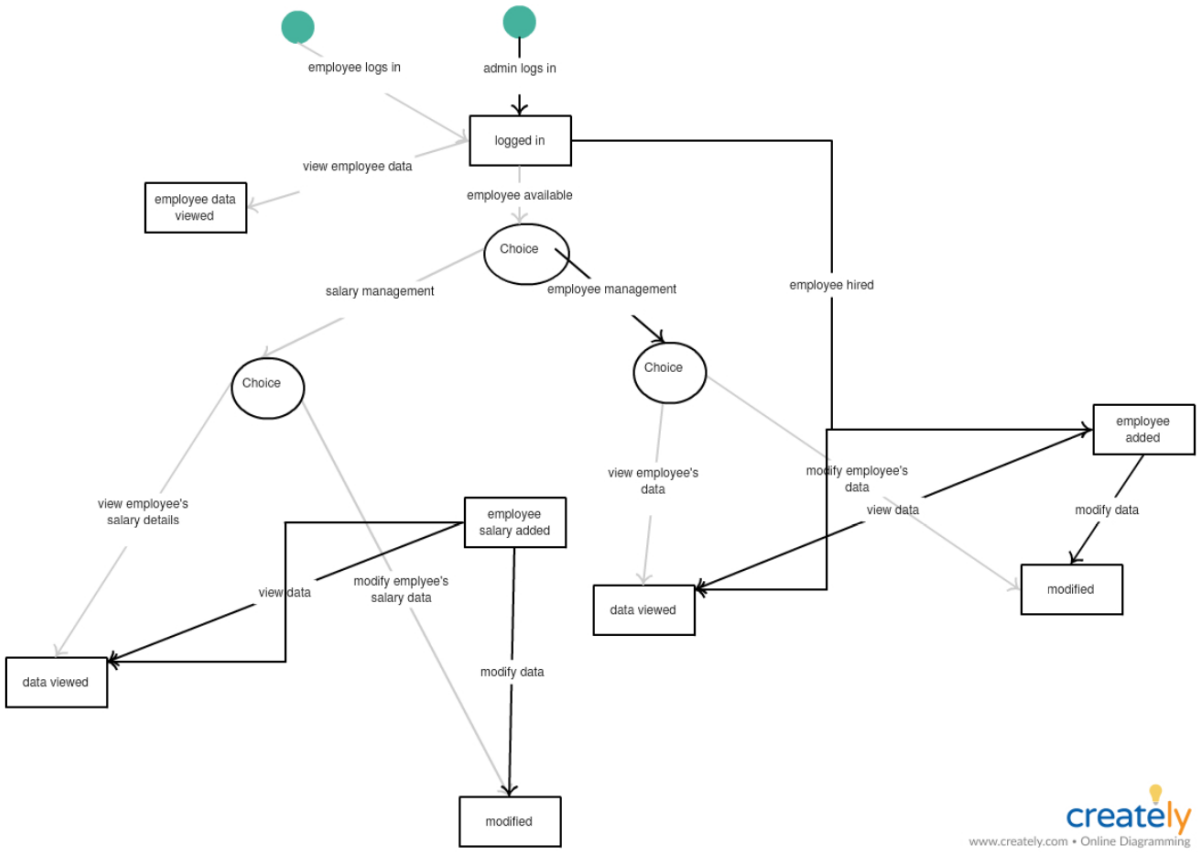
In the class diagram for the project Payroll Management System, there are classes like designation, employee login, admin login, employee and salary which are the primary part of it. These includes the required data types and the function they are linked to. Those functions will be executed when the data types mentioned with them will be passes along.

SEQUENCE DIAGRAM:



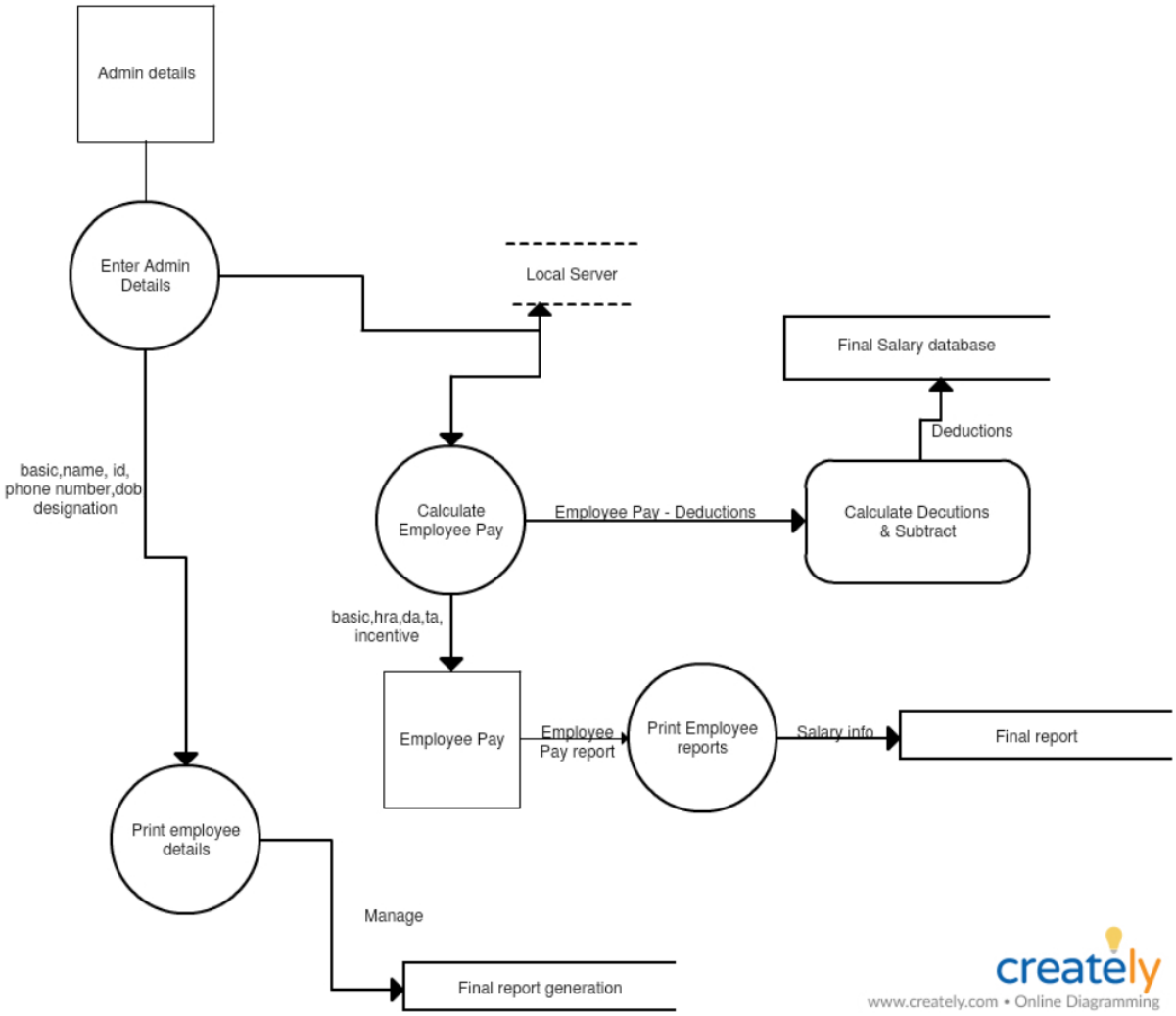
In the sequence diagram shown above its basically the admin login and the employee login which follows a sequence for the whole system. The admin logs in and can then manage all of the employees registered in the database. He can add, remove or edit the employee details as well as he can add or edit the salary details and the employee login shows all of the data related to him.

STATE TRANSITION DIAGRAM:



In the state transition diagram shown above, there are two logins i.e. admin and employee. Admin logs in can then choose between either employee management or salary management and can alter the data also. In the employee login, they can see all of the information related to them. All of this happens by moving from one state to another state or transitioning between them.

DATA FLOW DIAGRAM:



In the data flow diagram shown above, the data or the admin or employee credentials are beings passed into the system, level by level. The data passed generates a result as per the system requirements which is then being printed for the admin or employee to look for.

EFFORT ESTIMATION (FPA -> FUNCTION POINT ANALYSIS):

1	**SUMMARY**		
2	Instructions		Return
3	**Project Identification**		
4	Customer Name	Shreyansh Dokania	
5	Project Name	Payroll Management System	
6	Project Code		
7	Analyst		
8	Date	31-10-2020	
9			
10	**Summary Estimates**		
11	Unadjusted Function Point Count	497	*From FP worksheet*
12	Processing Complexity Adjustment Factor	1.21	*From PCA worksheet*
13	Adjusted Function Point Count (AFP)	601	*Calculated: (FP*PCA)*
14	Calibration Factor (CF)	1	*See note*
15	Total Function Point Measure (TFP)	601	*Calculated: (AFP*CF)*
16	Delivery Rate (DR) in FPs/person month		*See note*
17	Days per person-month (DPM)		*See note*
18	**High Level Effort Estimate (in person-days)**		*Calculated: (TFP/DR) * DPM*
19			
20	***Diagnostics***		
21	*1. Enter project identification data.*		
22			
23			
24			
25	*5. Enter a delivery rate in FPs/person-month. Delivery rate can not be zero*		
26	*6. Enter a factor for converting person-months to person-days.*		

1	**VALUE ADJUSTMENT FACTOR (VAF)**			
2	Instructions		Return	
3	General Systems Characteristics	Degree of Influence (0-5)	Description	
4	1. Data Communications	4	Significant	
5	2. Distributed Processing	4	Significant	
6	3. Performance	4	Significant	
7	4. Heavily Used Configuration	4	Significant	
8	5. Transaction Rates	4	Significant	
9	6. Online Data Entry	4	Significant	
10	7. Design for End User Efficiency	4	Significant	
11	8. Online Update	4	Significant	
12	9. Complex Processing	4	Significant	
13	10. Usable in Other Applications	4	Significant	
14	11. Installation Ease	4	Significant	
15	12. Operational Ease	4	Significant	
16	13. Multiple Sites	4	Significant	
17	14. Facilitate Change	4	Significant	
18	Total Degree of Influence (TDI)	56	*Calculated (sum of the above)*	
19	**Value Adjustment Factor (VAF)**	**1.21**	*Calculated ((TDI*0.01)+0.65)*	
20				
21	***Diagnostics***			

UNADJUSTED FUNCTION POINT COUNT (FP)

Instructions | Return

Function Type	Functional Complexity	Count	Weight	Function Points (FPs)	FP %
Internal Logical Files (ILFs)	Low	0	7	0	
	Average	2	10	20	
	High	10	15	150	34%
External Interface Files (EIFs)	Low	0	5	0	
	Average	5	7	35	
	High	7	10	70	21%
External Inputs (EIs)	Low	0	3	0	
	Average	0	4	0	
	High	12	6	72	14%
External Outputs (EOs)	Low	0	4	0	
	Average	0	5	0	
	High	12	7	84	17%
External Queries (EQs)	Low	0	3	0	
	Average	0	4	0	
	High	11	6	66	13%
Total Unadjusted Function Point Count				**497**	**100%**

Diagnostics

INTERNAL LOGICAL FILES (ILFs)

Instructions | Insert New Row | Return

List of files	# of DETs	# of RETs	Complexity Low	Complexity Average	Complexity High	Notes and Assumptions
	22	6	0	0	1	
	32	7	0	0	1	
	25	8	0	0	1	
	24	7	0	0	1	
	32	6	0	0	1	
	21	7	0	0	1	
	28	7	0	0	1	
	36	7	0	0	1	
	23	6	0	0	1	
	29	6	0	0	1	
	24	5	0	1	0	
	23	5	0	1	0	
Summary			**0**	**2**	**10**	

EXTERNAL INTERFACE FILES (EIFs)

Instructions | Insert New Row | Return

List of files	# of DETs	# of RETs	Complexity Low	Complexity Average	Complexity High	Notes and Assumptions
	34	4	0	1	0	
	23	5	0	1	0	
	32	6	0	0	1	
	25	6	0	0	1	
	32	7	0	0	1	
	23	6	0	0	1	
	32	5	0	1	0	
	32	5	0	1	0	
	27	6	0	0	1	
	24	7	0	0	1	
	29	5	0	1	0	
	26	8	0	0	1	
Summary			**0**	**5**	**7**	

EXTERNAL INPUTS (EIs)

Instructions | Insert New Row | Return

List of inputs	# of DETs	# of FTRs	Complexity			Notes and Assumptions
			Low	Average	High	
	43	3	0	0	1	
	44	8	0	0	1	
	43	7	0	0	1	
	45	8	0	0	1	
	41	3	0	0	1	
	34	6	0	0	1	
	49	3	0	0	1	
	36	7	0	0	1	
	33	3	0	0	1	
	48	5	0	0	1	
	32	6	0	0	1	
	43	6	0	0	1	
Summary			**0**	**0**	**12**	

EXTERNAL OUTPUTS (EOs)

Instructions | Insert New Row | Return

List of Outputs	# of DETs	# of FTRs	Complexity			Notes and Assumptions
			Low	Average	High	
	44	8	0	0	1	
	43	7	0	0	1	
	45	8	0	0	1	
	41	3	0	0	1	
	34	6	0	0	1	
	49	3	0	0	1	
	36	7	0	0	1	
	33	3	0	0	1	
	48	5	0	0	1	
	32	6	0	0	1	
	43	6	0	0	1	
	32	6	0	0	1	
Summary			**0**	**0**	**12**	

EXTERNAL QUERIES (EQs)

Instructions | Insert New Row | Return

List of Queries	Input Side			Output Side			Complexity			Notes and Assumptions
	# of DETs	# of FTRs	Cmplxty	# of DETs	# of FTRs	Cmplxty	Low	Average	High	
	43	3	High	43	3	High	0	0	1	
	34	3	High	34	3	High	0	0	1	
	43	7	High	43	7	High	0	0	1	
	23	3	High	23	3	High	0	0	1	
	23	4	High	23	4	High	0	0	1	
	54	5	High	54	5	High	0	0	1	
	23	7	High	23	7	High	0	0	1	
	32	6	High	32	6	High	0	0	1	
	34	7	High	34	7	High	0	0	1	
	29	6	High	29	6	High	0	0	1	
	45	9	High	45	9	High	0	0	1	
Summary							**0**	**0**	**11**	

TEST CASES

TEST CASES FOR THE LOGIN FORM:

TEST NO.	DATA INPUT (id, password)	EXPECTED OUTPUT	ACTUAL OUTPUT	STATUS
Test1	15,0	Logged in	Logged in	Successful
Test2	25,3	Logged in	INVALID DETAILS	Fail
Test3	35,4	Logged in	INVALID DETAILS	Fail
Test4	45,3	Logged in	Logged in	Successful
Test5	55,44	Logged in	Logged in	Successful
Test6	65,12	Logged in	Logged in	Successful

ACTUAL DATABASE TO VERIFY:

+ Options

←T→	aid	id	pswd	role
Edit Copy Delete	102	15	0	b
Edit Copy Delete	201	25	1	b
Edit Copy Delete	101	35	2	b
Edit Copy Delete	202	45	3	b
Edit Copy Delete	201	55	44	b
Edit Copy Delete	101	65	12	a

MANUAL TEST CASES:

	A	B	C	D	E
1		**Project Name:**	**Payroll Management System**	**Test Designed by:**	**Shreyansh Dokania (19BCE1764)**
2		**Module Name:**		**Test Designed date:**	24-10-2020
3		**Release Version:**		**Test Executed by:**	
4				**Test Execution date:**	
5					
6	**Pre-condition**	all the modules should be working fine for all of the webpages			
7	**Dependencies:**				
8	**Test Priority**				
9					
10	**Test Case#**	**Test Title**	**Test Summary**	**Test Steps**	**Test Data**
11	#1	login	Login verification	step1	payroll management system website
12				step2	id and password
13				step3	login button
14	#2	manage salary	Employee salary management	step1	salary management form
15				step2	basic, medical allowance , hra , ta, da , incentive
16	#3	manage employee	employee data management	step1	employee management form
17				step2	emp id,emp name,dob,ph no,desig,basic
18	#4	account information	account information display	step1	display web page
19	#5	logout	user logged out	step1	logout button
20					
21					

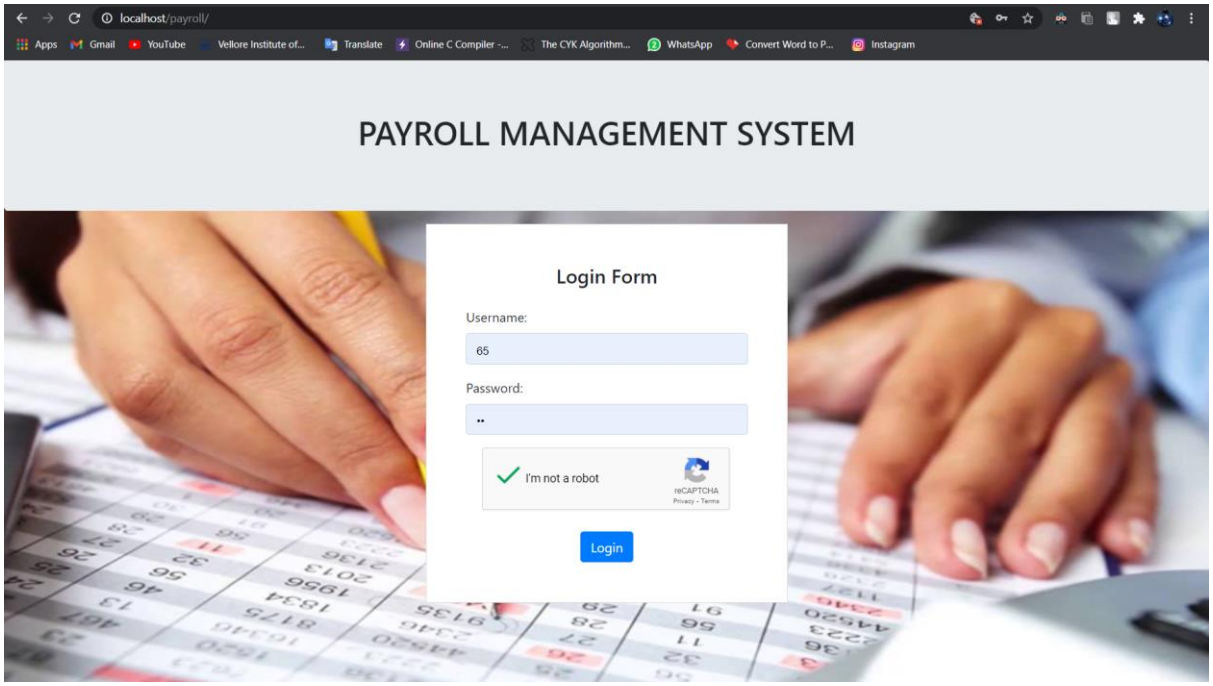
10	Expected Result	Post-condition	Actual Result	Status	Notes
11	the system should display the login page	the login page should be connected to the database	system had displayed the login page	successful	
12	the system should accept the login data	the employee or the admin login data must exist in the database	system had accepted the login data	successful	
13	system should login the user	login data entered should be valid	logged in	successful	
14	salary management page should be displayed	should be connected to the database	salary managemt page has been displayed	successful	
15	system should accept the data entered	database should be well connected with the webpage	data inserted	successful	
16	employee management page should be displayed	should be connected to the database	employee managemt page has been displayed	successful	
17	system should accept the data entered	database should be well connected with the webpage	data inserted	successful	
18	employee account information should be displayed	webpage should fetch all of the entered data from the database	employee account information has been displayed	successful	
19	system should log out the user	no conditions required at this point	logged out	successful	
20					
21					

FINAL PROJECT SCREENSHOTS:

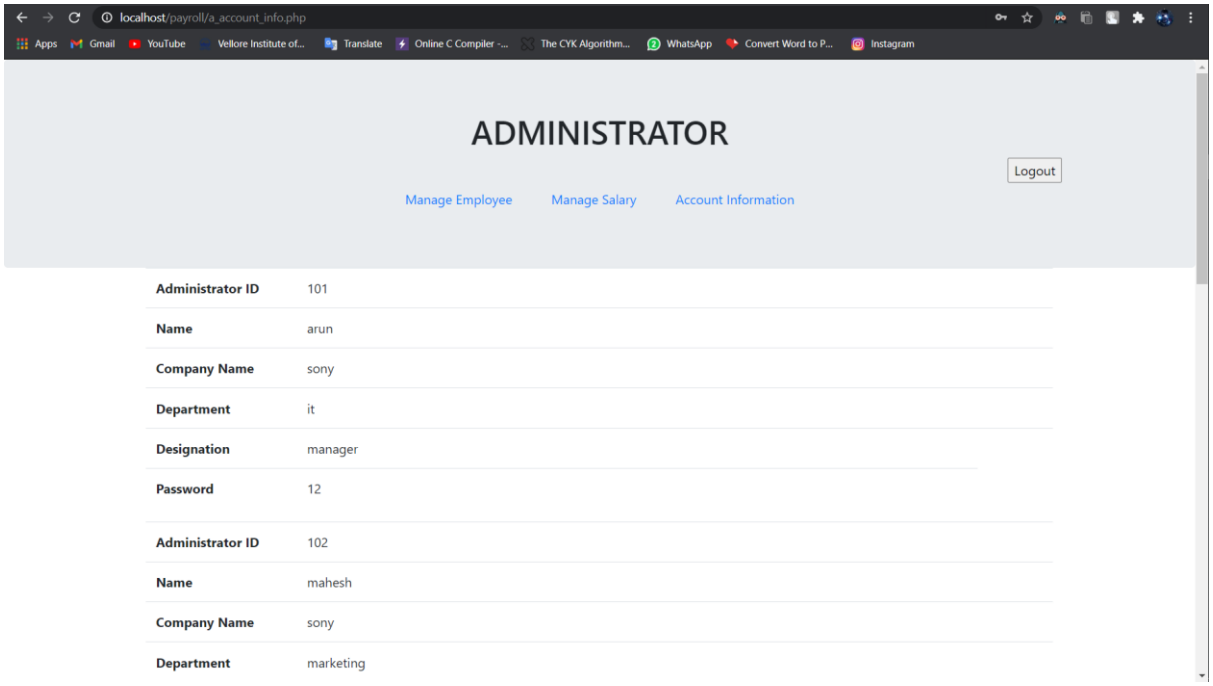
WE HAVE FIVE EMPLOYEE LOGIN IDS AND ONE ADMIN ID:

THIS ONE IS THE ADMIN LOGIN:

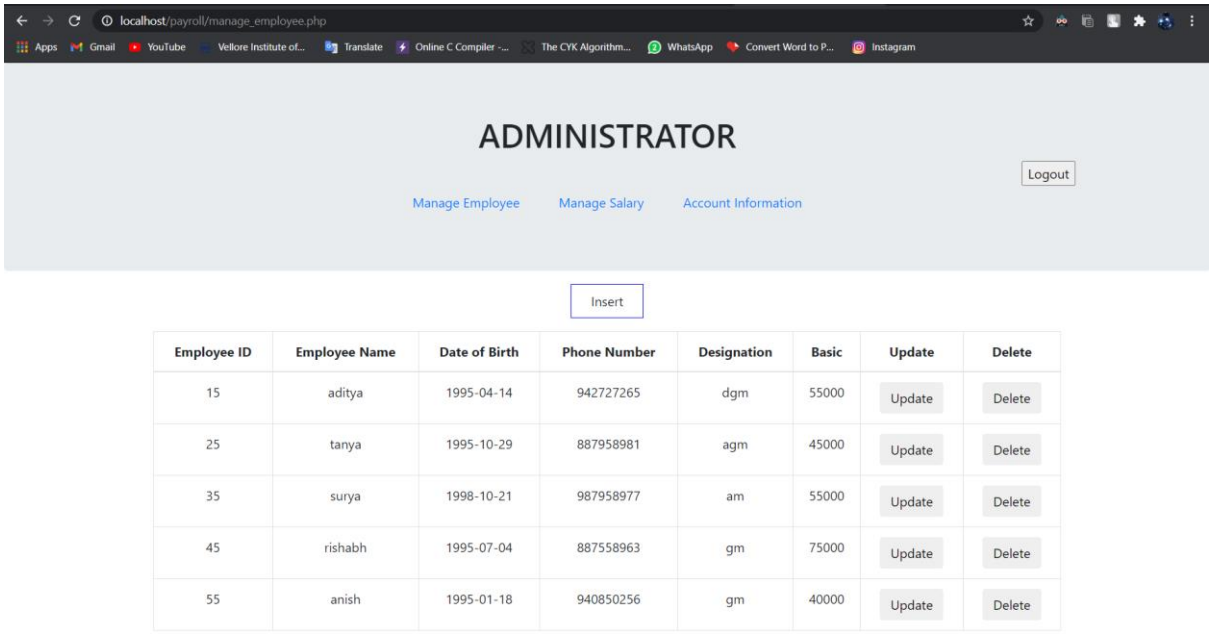
I HAVE ADDED THE GOOGLE RECAPTCHA FOR EDXTRA SECURITY IN LOGIN:



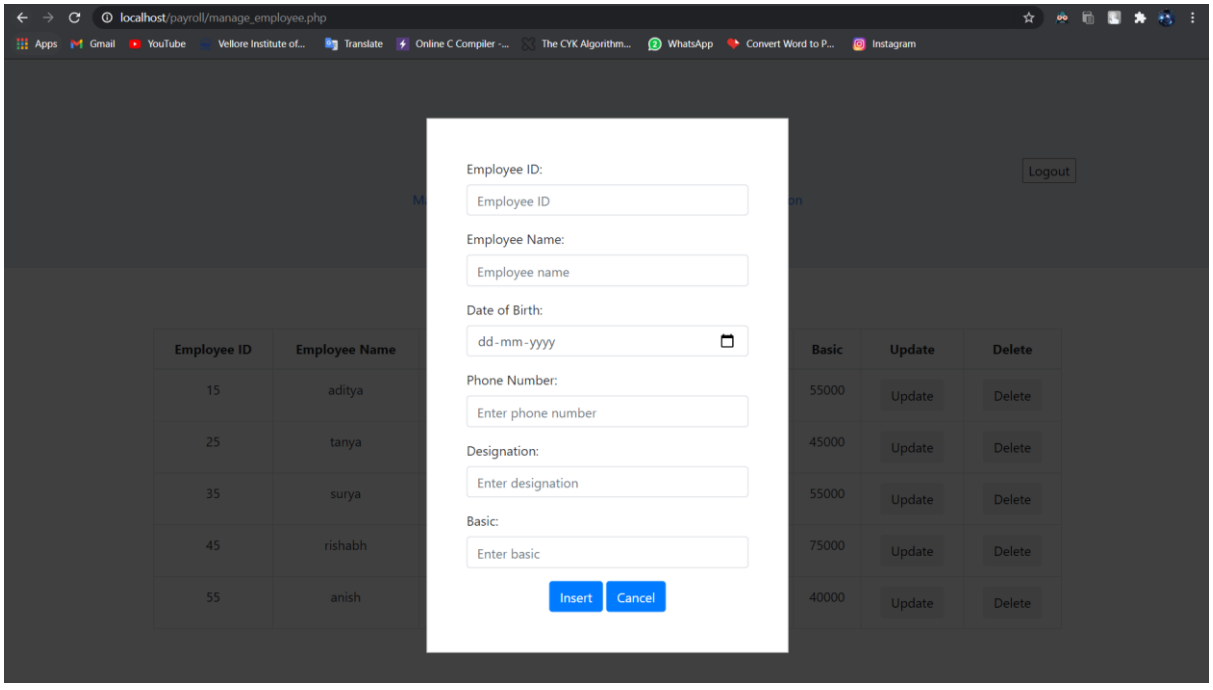
LOGOUT BUTTON IS IN THE RIGHT CORNER:



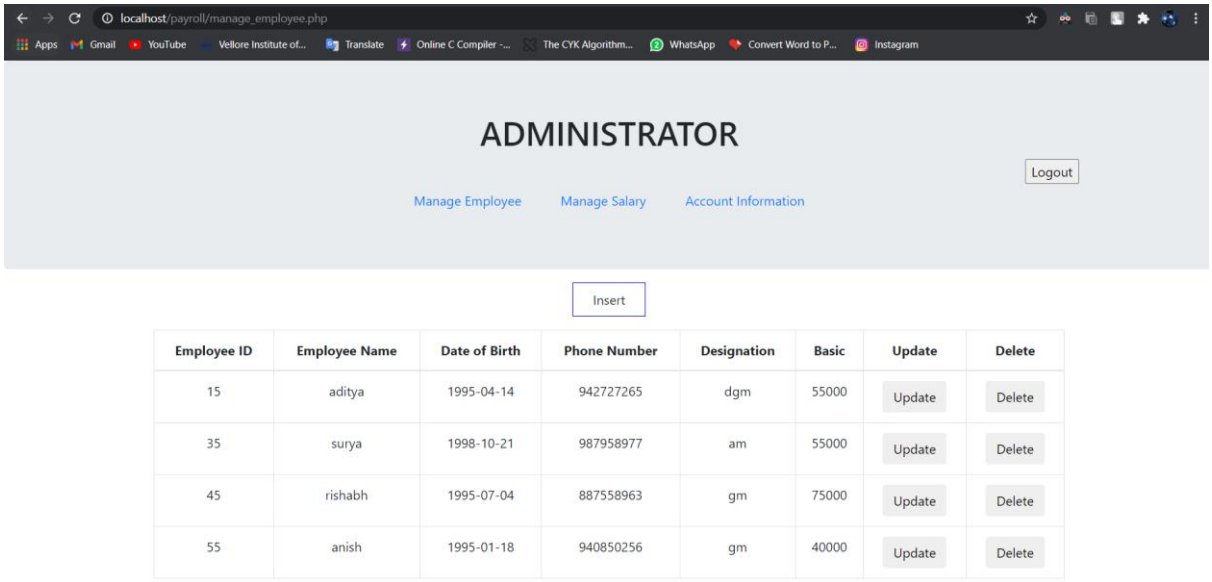
MANAGE EMPLOYEE:



INSERT:

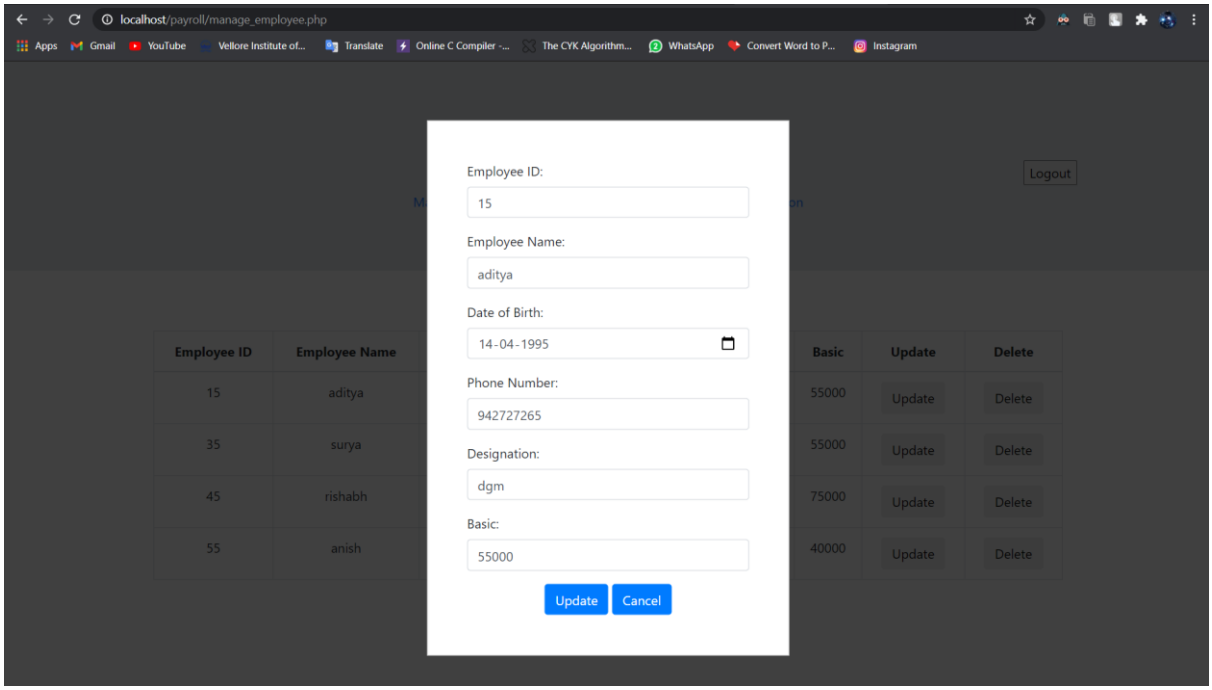


AFTER PRESSING THE DELETE BUTTON:

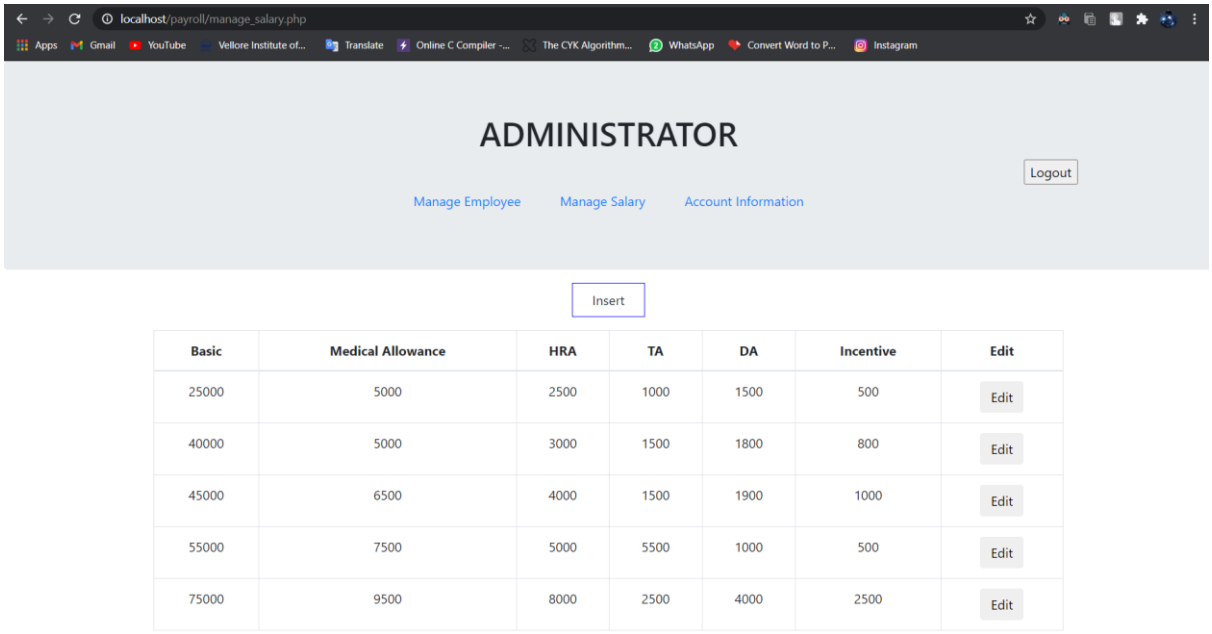


AFTER PRESSING THE UPDATE BUTTON:

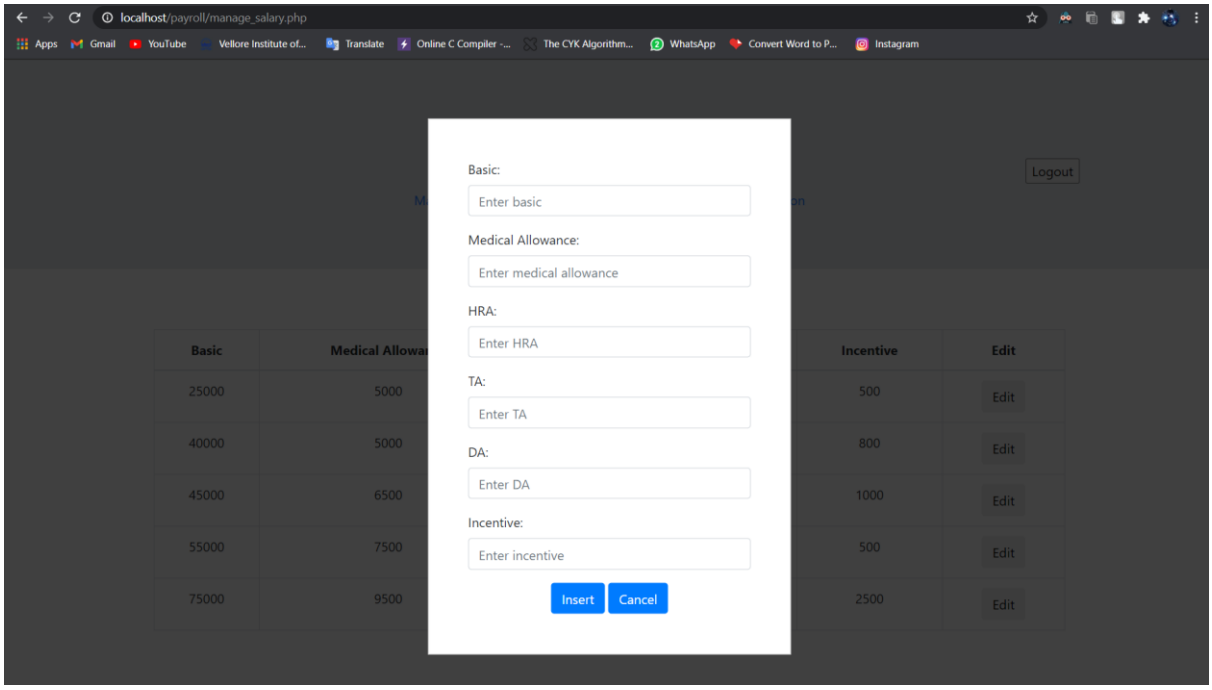
ANY DATA CAN BE CHANGED AND WHEN PRESSED THE UPDATE BUTTON IT WILL BE UPDATED:



MANAGE SALARY:

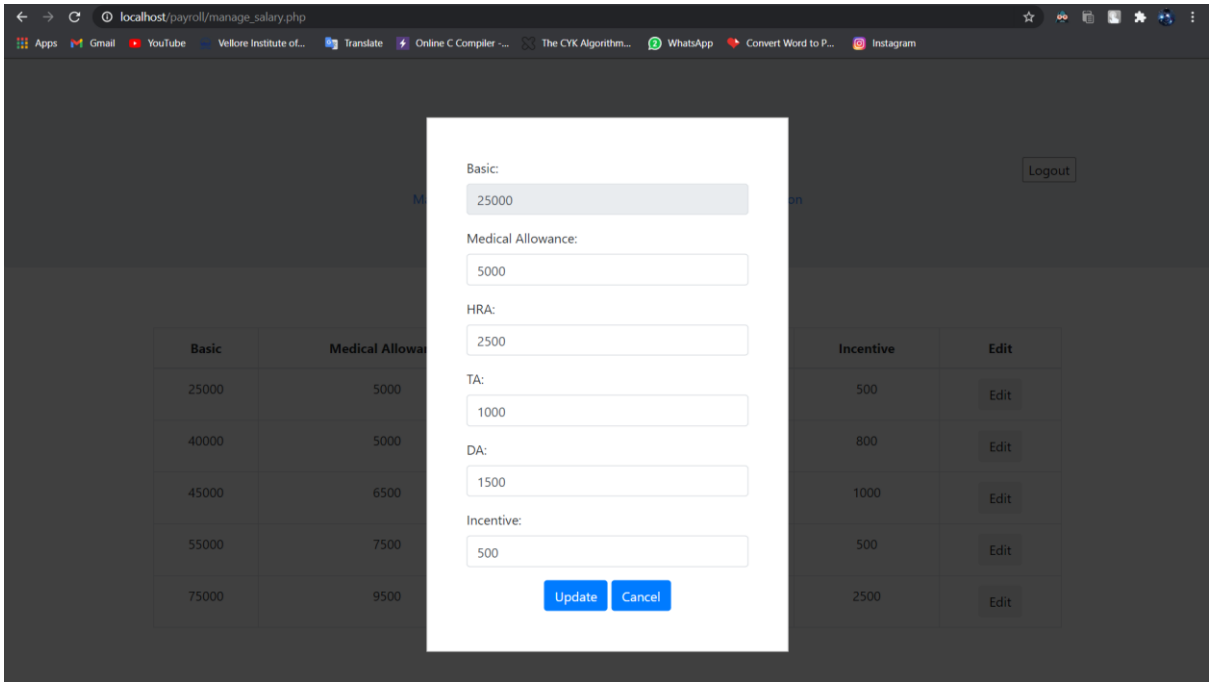


INSERT:



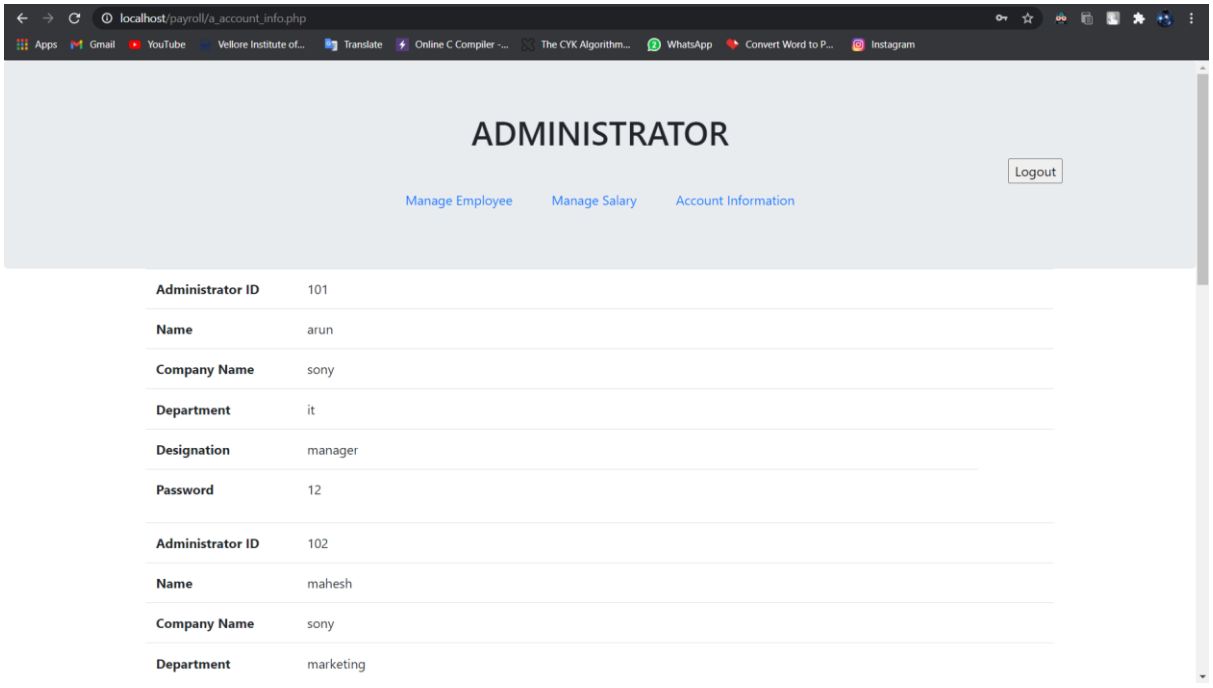
AFTER PRESSING THE EDIT BUTTON:

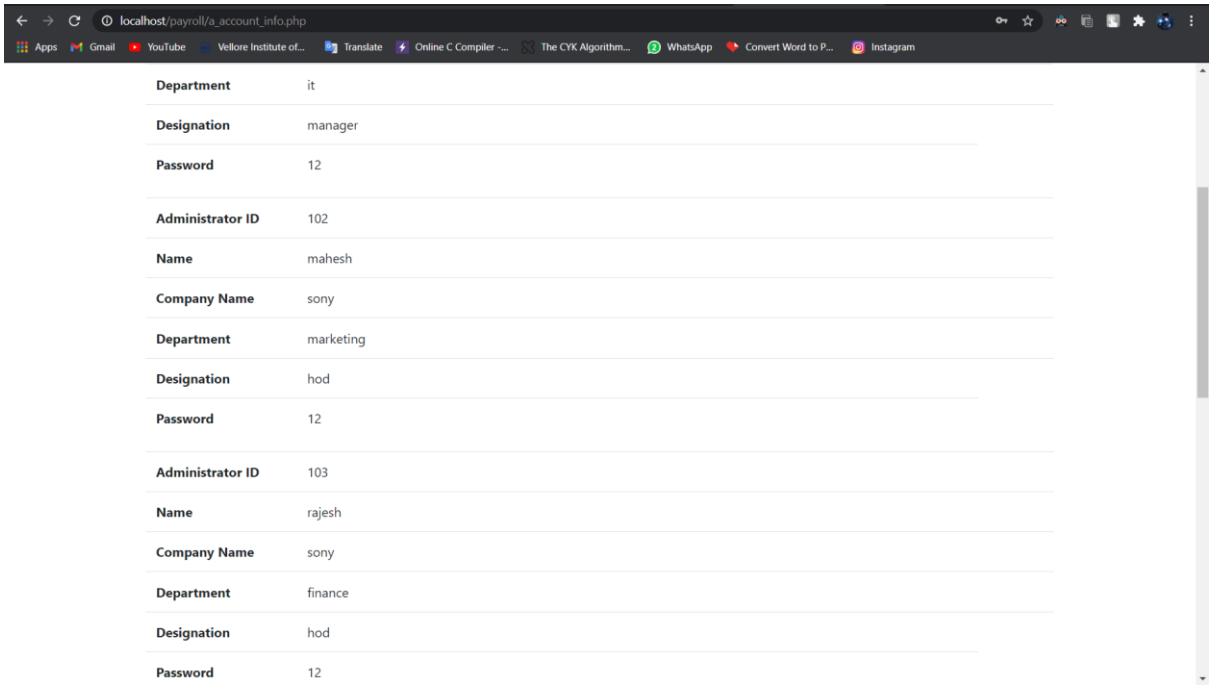
ANY DATA CAN BE CHANGED AND WHEN PRESSED THE UPDATE BUTTON IT WILL BE UPDATED:



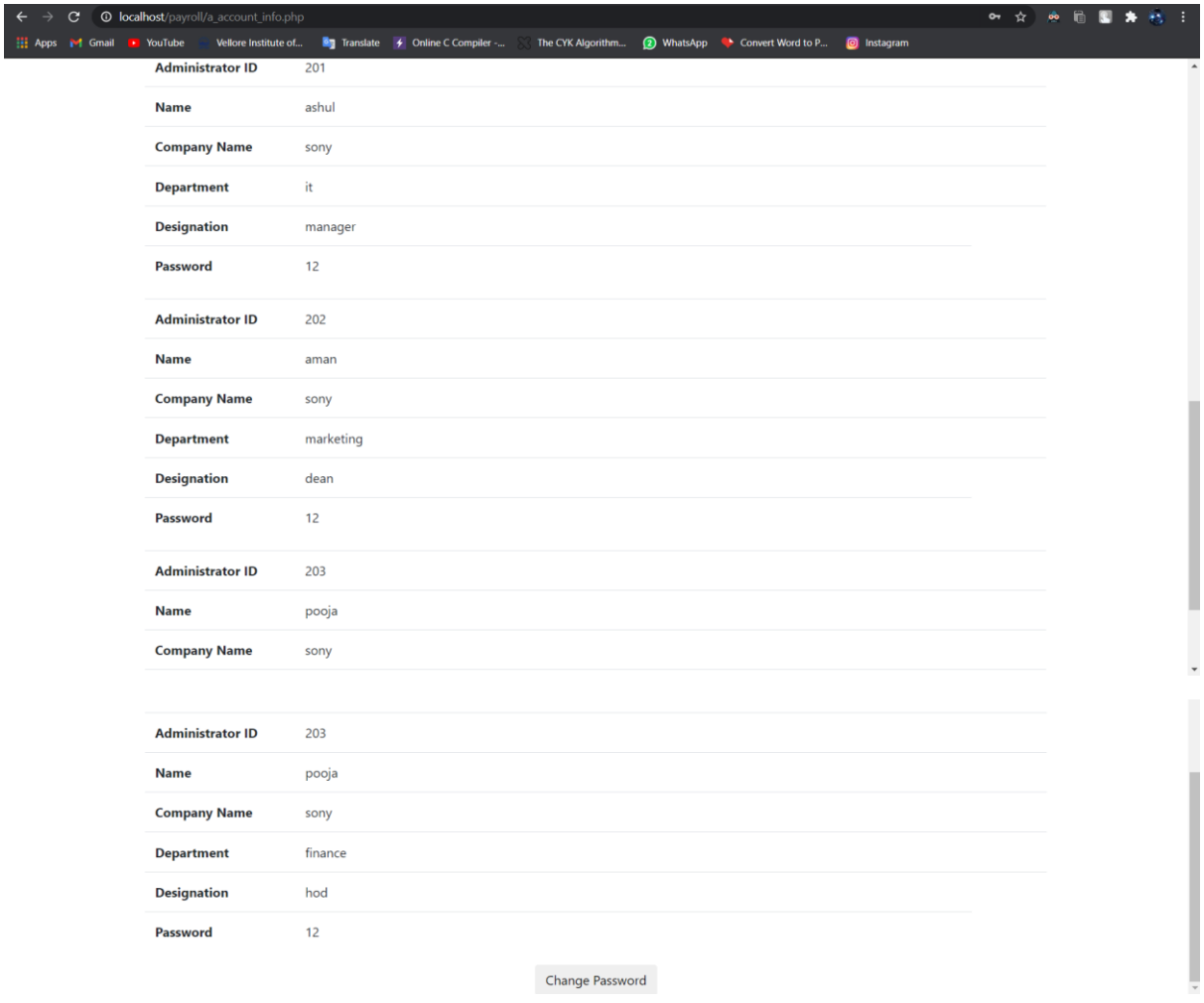
ACCOUNT INFORMATION:

THIS SHOWS ALL OF THE DATA OF ALL THE REGISTERED EMPLOYEES:



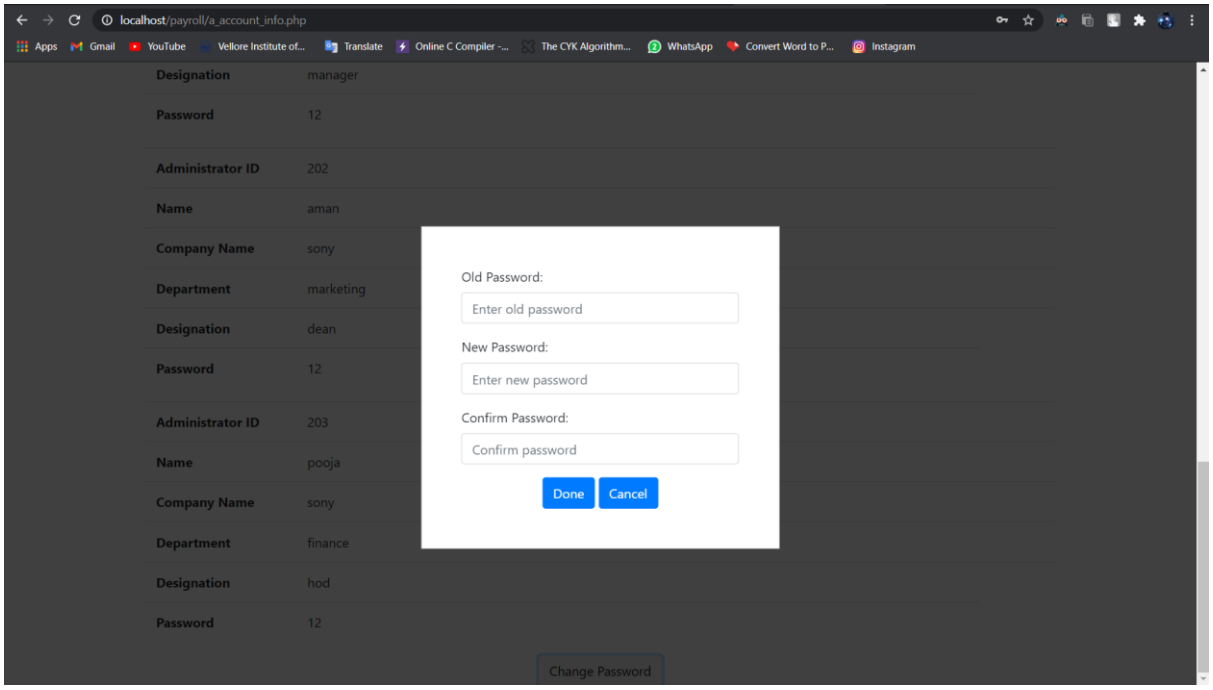


CHANGE PASSWORD BUTTON IN THE BOTTOM CENTER:

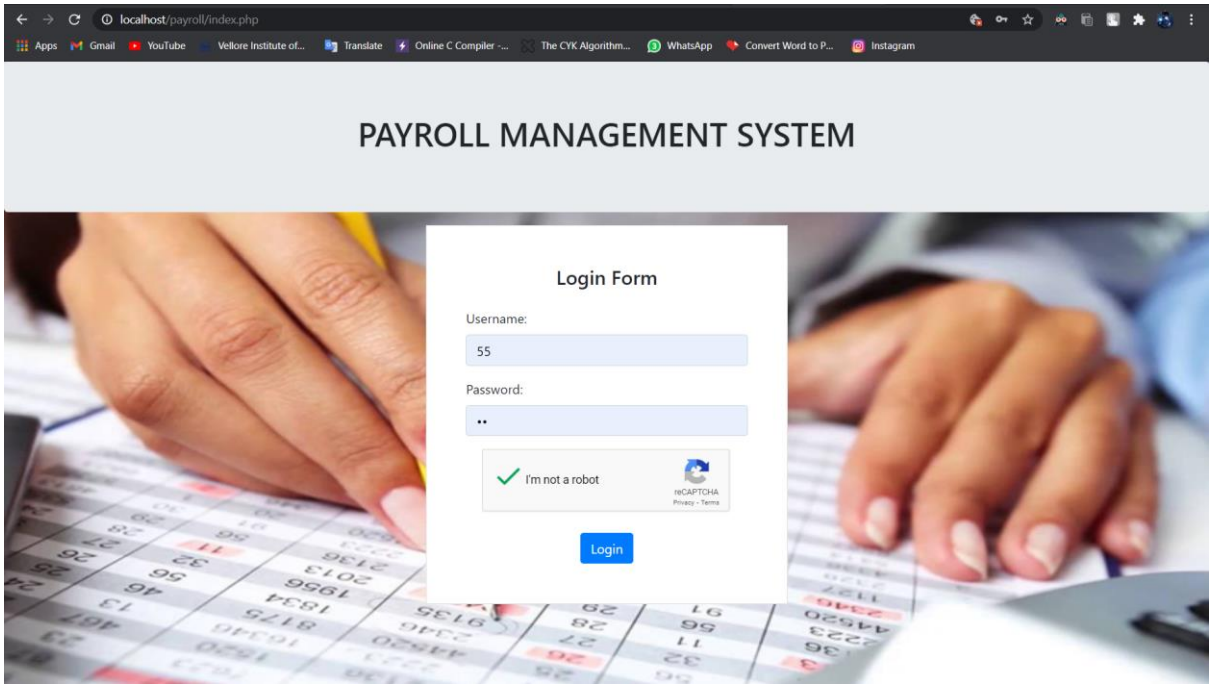


AFTER PRESSING THE CHANGE PASSWORD BUTTON:

USING THIS FORM THE PASSWORD CAN BE CHANGED FOR THE ADMIN LOGIN:

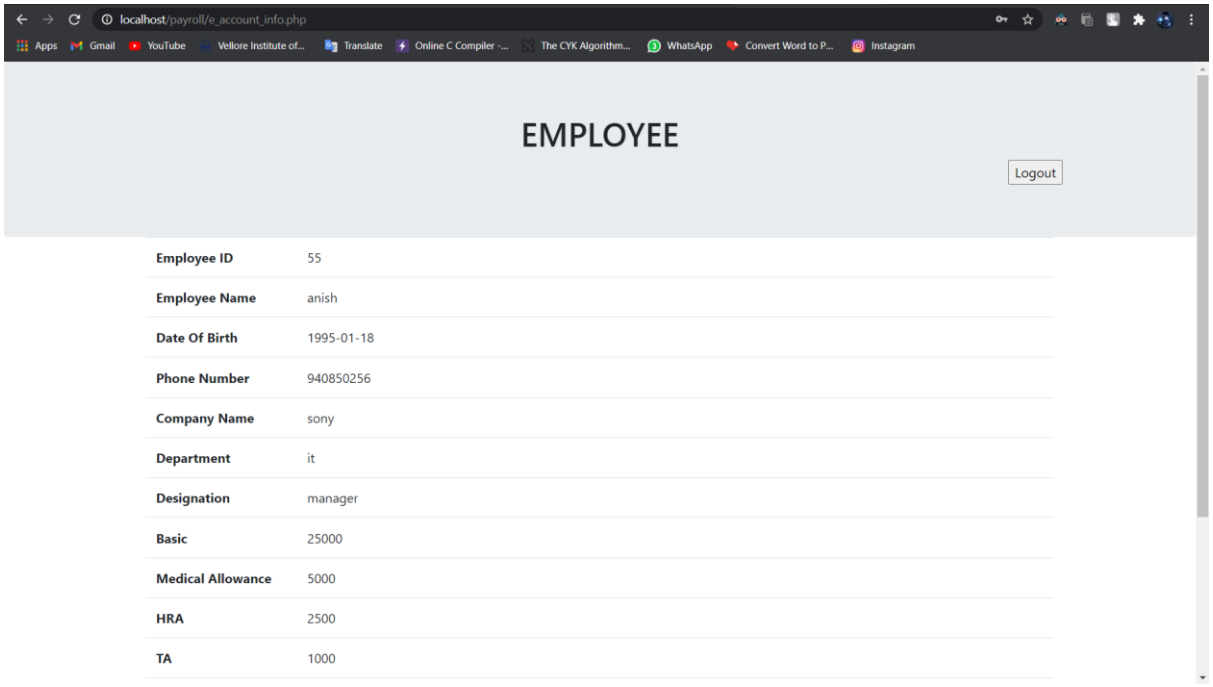


THIS IS THE EMPLOYEE LOGIN:

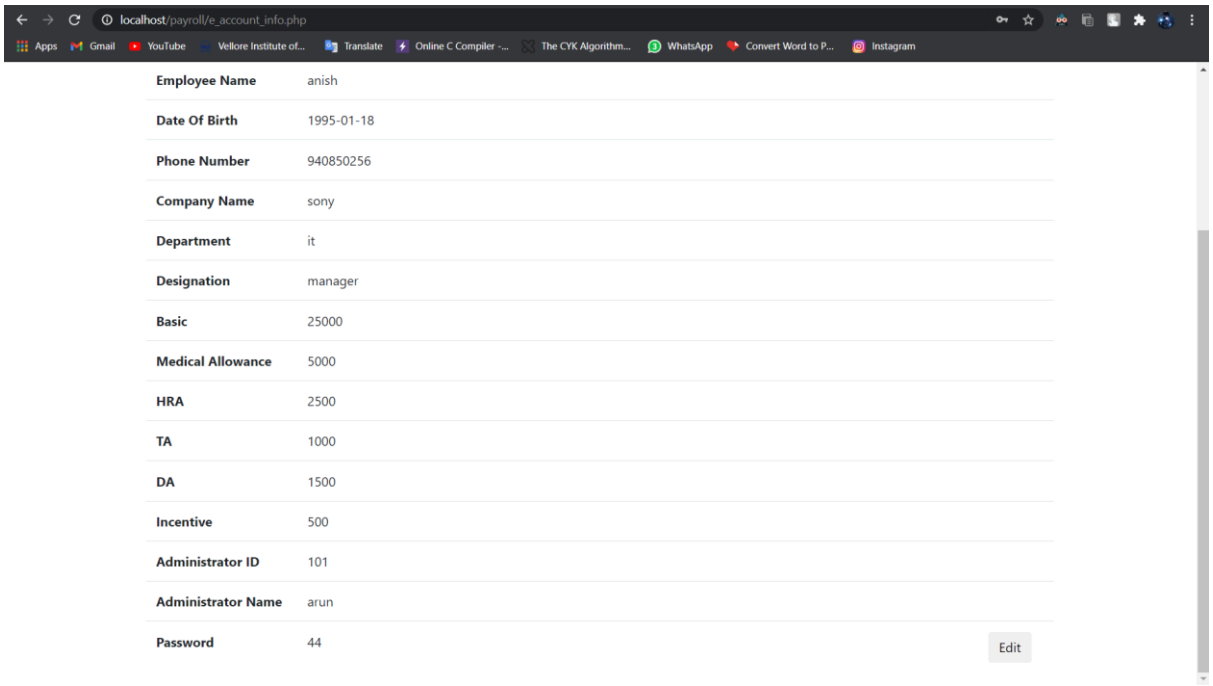


THIS SHOWS ALL OF THE EMPLOYEE DATA USING THE USERNAME AS THE IDENTIFIER:

LOGOUT BUTTON IS IN THE RIGHT CORNER:

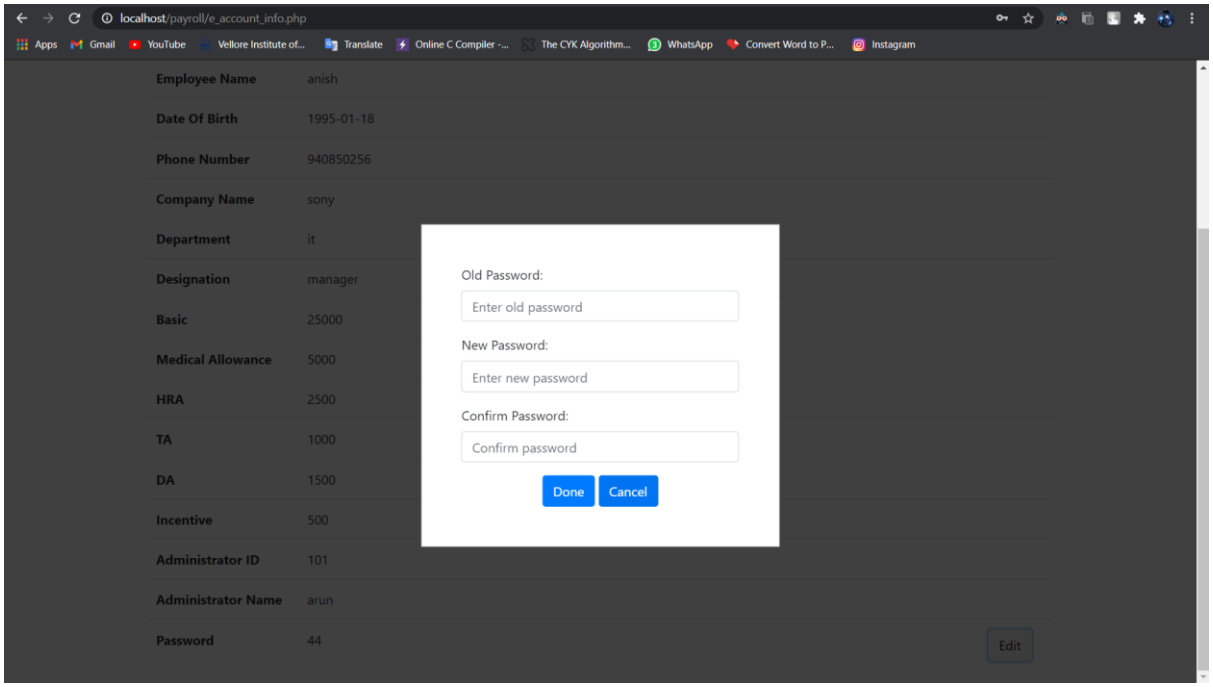


EDIT BUTTON IN THE RIGHT BUTTOM CORNER:



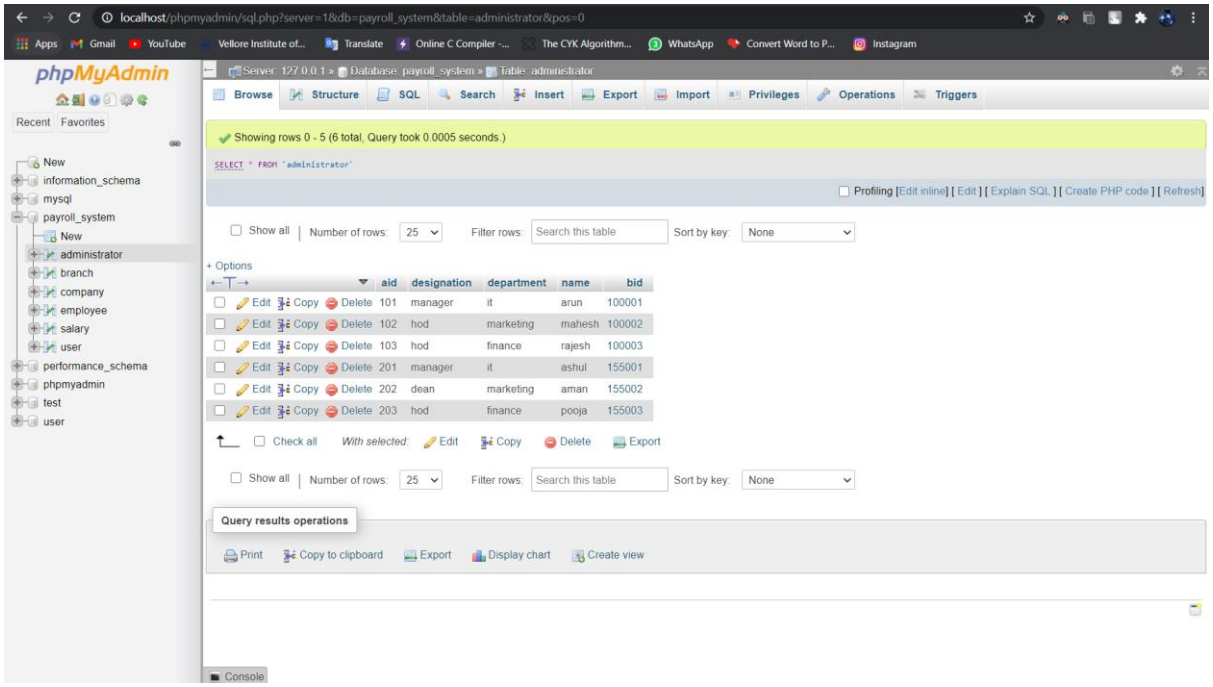
AFTER PRESSING THE EDIT BUTTON:

USING THIS FORM THE PASSWORD CAN BE CHANGED FOR THE EMPLOYEE LOGIN:

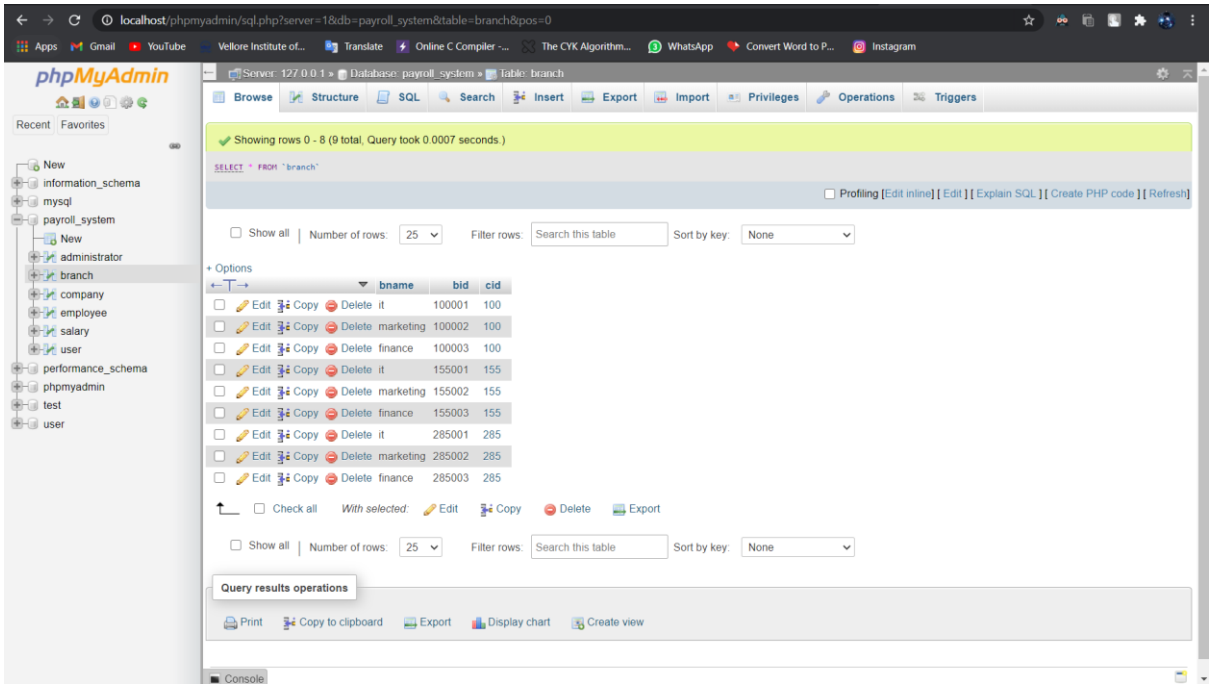


DATABASE SCREENSHOTS:

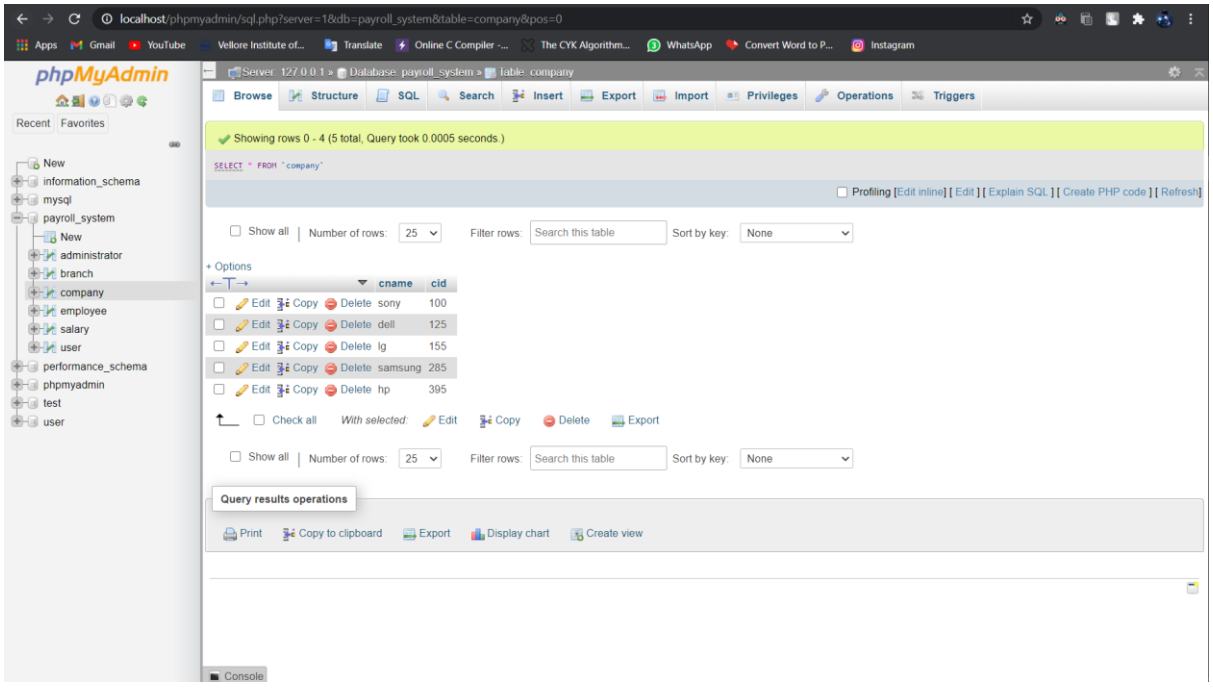
ADMINISTRATOR:



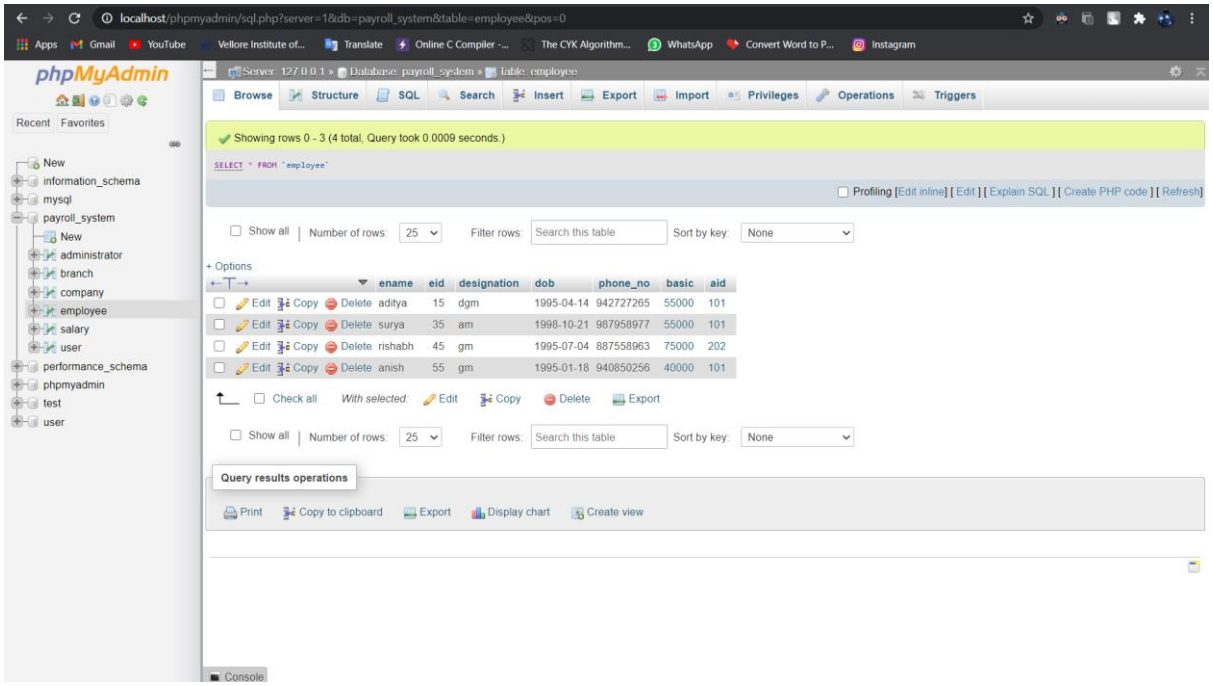
BRANCH:



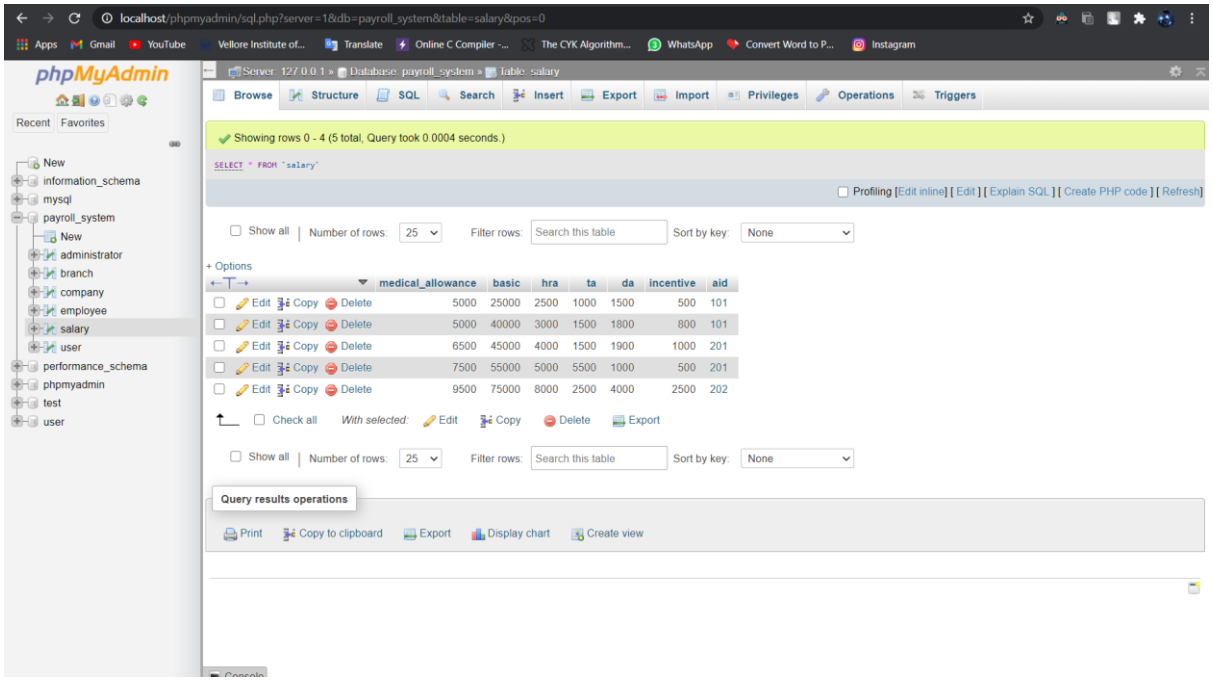
COMPANY:



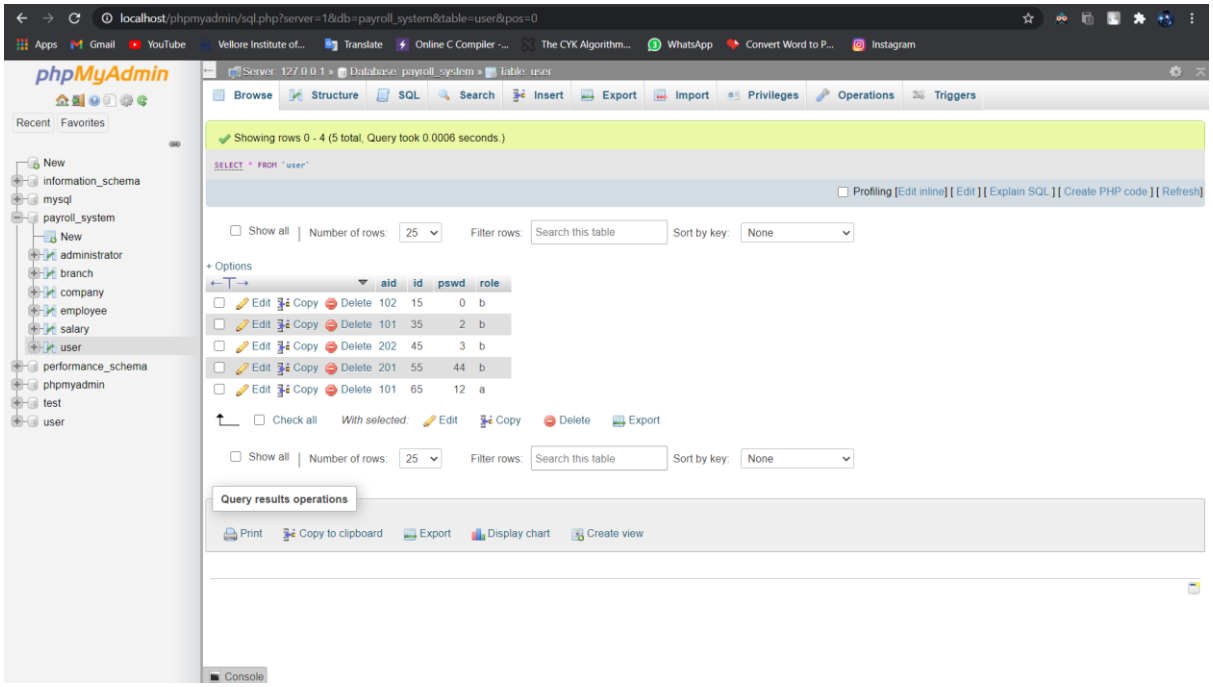
EMPLOYEE:



SALARY:



USER:



INDIVISUAL CONTRIBUTION

SHREYANSH DOKANIA 19BCE1764

I did the backend scripting for the website and linking part of the database, backend and frontend

ANANT VEDANSH 19BCE1343

Anant did the frontend part from development to designing

ANUPAM KUNWAR 19BCE1369

Anupam did the whole database part

CONCLUSION

OUTPUT/RESULTS:

As we can see above that as the end product we have a Payroll Management System website which basically two users one a privileged user Administrator and the other basic user Employee.

Employee can easily login and view his salary details and Administrator can view his basic info change Employee Details and Manage salaries of the employees

DISCUSSION:

This project is accomplished with the help of:

SQL for the database

HTML for the front end development.

CSS/BOOTSTRAP for designing part

PHP for the backend scripting

----------**THANK YOU**----------