DBMS - Mini Project

PAYROLL MANAGEMENT



Submitted By:

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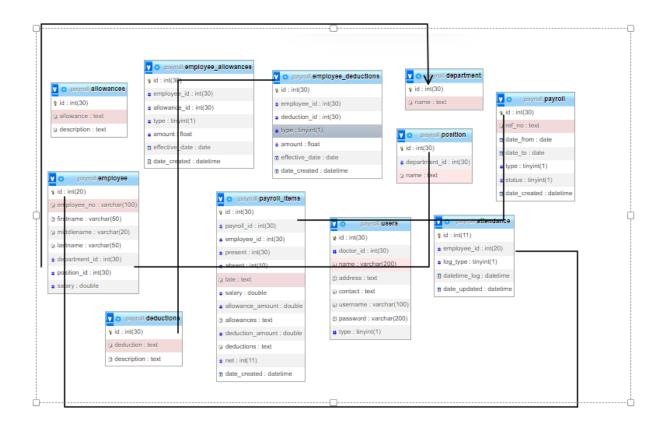
Short Description and Scope of the Project:

A payroll management system is used to manage all the employee's financial records in an automated manner. It manages employee's salaries, deductions, other conveyance, net pay, bonuses and generation of pay-slips. It includes collecting the list of employees to be paid, tracking the hours worked, calculating the employee's pay, distributing the salary on time, and recording the payroll expense. Employee work times are collected, records and attendance are verified, wages, taxes and adjustments are calculated.

The Admin gets logged in by valid username and password. Admin can add new Employee, add new Department, add new Pay Grade for the employees. Admin can set the 'from' and 'to' date worked by an employee in a department with specific pay grade. The Admin can generate an automated monthly salary of an employee. The admin can view all the past records of any recorded employee.

ER Diagram

Relational Schema



DDL statements - Building the database

```
CREATE TABLE `attendance` (
  `id` int(11) NOT NULL,
  `employee id` int(20) NOT NULL,
 `log type` tinyint(1) NOT NULL COMMENT '1 = AM IN,2 = AM out, 3= PM IN, 4= PM
out\r\n',
  `datetime_log` datetime NOT NULL DEFAULT current_timestamp(),
  `date_updated` datetime NOT NULL DEFAULT current_timestamp() ON UPDATE
current timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
-- Dumping data for table `attendance`
INSERT INTO `attendance` (`id`, `employee_id`, `log_type`, `datetime_log`,
`date updated`) VALUES
(10, 9, 1, '2020-09-16 08:00:00', '2020-09-29 16:16:57'),
(11, 9, 2, '2020-09-16 12:00:00', '2020-09-29 16:16:57'),
(12, 9, 3, '2020-09-16 13:00:00', '2020-09-29 16:16:57'),
(16, 9, 4, '2020-09-16 17:00:00', '2020-09-29 16:16:57');
-- Table structure for table `deductions`
CREATE TABLE `deductions` (
 `id` int(30) NOT NULL,
 `deduction` text NOT NULL,
 `description` text NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for table `deductions`
INSERT INTO `deductions` (`id`, `deduction`, `description`) VALUES
(1, 'Cash Advance', 'Cash Advance'),
(3, 'Sample', 'Sample Deduction');
-- Table structure for table `department`
```

```
CREATE TABLE `department` (
 `id` int(30) NOT NULL,
 `name` text NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for table `department`
INSERT INTO `department` (`id`, `name`) VALUES
(1, 'IT Department'),
(2, 'HR Department'),
(3, 'Accounting and Finance Department');
-- Table structure for table `employee`
CREATE TABLE `employee` (
 `id` int(20) NOT NULL,
 `employee_no` varchar(100) NOT NULL,
 `firstname` varchar(50) NOT NULL,
 `middlename` varchar(20) NOT NULL,
 `lastname` varchar(50) NOT NULL,
 `department_id` int(30) NOT NULL,
 `position_id` int(30) NOT NULL,
 `salary` double NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
-- Dumping data for table `employee`
INSERT INTO `employee` (`id`, `employee_no`, `firstname`, `middlename`,
(9, '2020-9838', 'John', 'C', 'Smith', 1, 1, 30000);
-- Table structure for table `employee_allowances`
CREATE TABLE `employee_allowances` (
 `id` int(30) NOT NULL,
```

```
'employee_id' int(30) NOT NULL,
  `allowance_id` int(30) NOT NULL,
 `type` tinyint(1) NOT NULL COMMENT '1 = Monthly, 2= Semi-Montly, 3 = once',
 `amount` float NOT NULL,
 `effective date` date NOT NULL,
 `date_created` datetime NOT NULL DEFAULT current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for table `employee allowances`
INSERT INTO `employee_allowances` (`id`, `employee_id`, `allowance_id`, `type`,
`amount`, `effective_date`, `date_created`) VALUES
(1, 9, 4, 1, 1000, '0000-00-00', '2020-09-29 11:20:04'),
(3, 9, 3, 2, 300, '0000-00-00', '2020-09-29 11:37:31'),
(5, 9, 1, 3, 1000, '2020-09-16', '2020-09-29 11:38:31');
-- Table structure for table `employee_deductions`
CREATE TABLE `employee_deductions` (
 `id` int(30) NOT NULL,
 `employee id` int(30) NOT NULL,
 `deduction id` int(30) NOT NULL,
 `type` tinyint(1) NOT NULL COMMENT '1 = Monthly, 2= Semi-Montly, 3 = once',
 `amount` float NOT NULL,
 `effective_date` date NOT NULL,
 `date created` datetime NOT NULL DEFAULT current timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for table `employee deductions`
INSERT INTO `employee_deductions` (`id`, `employee_id`, `deduction_id`, `type`,
`amount`, `effective_date`, `date_created`) VALUES
(2, 9, 3, 2, 500, '0000-00-00', '2020-09-29 11:52:46'),
(3, 9, 1, 3, 1500, '2020-09-16', '2020-09-29 11:53:27');
-- Table structure for table `payroll`
```

```
CREATE TABLE `payroll` (
  `id` int(30) NOT NULL,
  `ref_no` text NOT NULL,
  `date_from` date NOT NULL,
 `date to` date NOT NULL,
 `type` tinyint(1) NOT NULL COMMENT '1 = monthly ,2 semi-monthly',
  `status` tinyint(1) NOT NULL DEFAULT 0 COMMENT '0 =New,1 = computed',
 `date_created` datetime NOT NULL DEFAULT current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for table `payroll`
INSERT INTO `payroll` (`id`, `ref_no`, `date_from`, `date_to`, `type`, `status`,
`date created`) VALUES
(1, '2020-3543', '2020-09-16', '2020-09-30', 2, 1, '2020-09-29 15:04:13');
-- Table structure for table `payroll_items`
CREATE TABLE `payroll_items` (
  `id` int(30) NOT NULL,
  `payroll id` int(30) NOT NULL,
  `employee id` int(30) NOT NULL,
  `present` int(30) NOT NULL,
  `absent` int(10) NOT NULL,
 `late` text NOT NULL,
  `salary` double NOT NULL,
  `allowance_amount` double NOT NULL,
 `allowances` text NOT NULL,
  `deduction_amount` double NOT NULL,
  `deductions` text NOT NULL,
 `net` int(11) NOT NULL,
  `date created` datetime NOT NULL DEFAULT current timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for table `payroll items`
INSERT INTO `payroll_items` (`id`, `payroll_id`, `employee_id`, `present`,
`absent`, `late`, `salary`, `allowance_amount`, `allowances`, `deduction_amount`,
`deductions`, `net`, `date_created`) VALUES
(10, 1, 9, 1, 10, '0', 30000, 1300,
'[{\"aid\":\"3\",\"amount\":\"300\"},{\"aid\":\"1\",\"amount\":\"1000\"}]', 2000,
```

```
'[{\"did\":\"3\",\"amount\":\"500\"},{\"did\":\"1\",\"amount\":\"1500\"}]', 664,
'2020-09-29 18:46:59');
-- Table structure for table `position`
CREATE TABLE `position` (
 `id` int(30) NOT NULL,
 `department_id` int(30) NOT NULL,
 `name` text NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for table `position`
INSERT INTO `position` (`id`, `department_id`, `name`) VALUES
(1, 1, 'Programmer'),
(2, 2, 'HR Supervisor'),
(4, 3, 'Accounting Clerk');
-- Table structure for table `users`
CREATE TABLE `users` (
 `id` int(30) NOT NULL,
 `doctor_id` int(30) NOT NULL,
 `name` varchar(200) NOT NULL,
 `address` text NOT NULL,
 `contact` text NOT NULL,
 `username` varchar(100) NOT NULL,
  `password` varchar(200) NOT NULL,
 `type` tinyint(1) NOT NULL DEFAULT 2 COMMENT '1=admin , 2 = staff'
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for table `users`
INSERT INTO `users` (`id`, `doctor_id`, `name`, `address`, `contact`, `username`,
`password`, `type`) VALUES
(1, 0, 'Administrator', '', '', 'admin', 'admin123', 1);
```

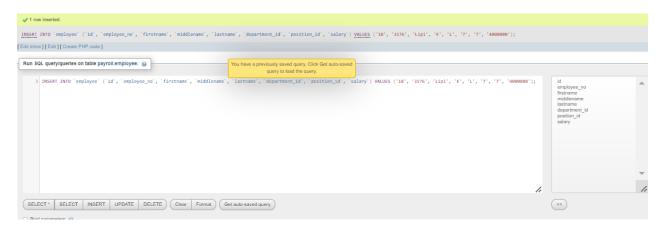
```
-- Indexes for dumped tables
-- Indexes for table `allowances`
ALTER TABLE `allowances`
 ADD PRIMARY KEY (`id`);
ALTER TABLE `attendance`
ADD PRIMARY KEY (`id`);
-- Indexes for table `deductions`
ALTER TABLE `deductions`
 ADD PRIMARY KEY (`id`);
-- Indexes for table `department`
ALTER TABLE `department`
 ADD PRIMARY KEY (`id`);
-- Indexes for table `employee`
ALTER TABLE `employee`
 ADD PRIMARY KEY (`id`);
-- Indexes for table `employee_allowances`
ALTER TABLE `employee_allowances`
 ADD PRIMARY KEY (`id`);
-- Indexes for table `employee_deductions`
ALTER TABLE `employee_deductions`
 ADD PRIMARY KEY (`id`);
-- Indexes for table `payroll`
```

```
ALTER TABLE `payroll`
  ADD PRIMARY KEY (`id`);
-- Indexes for table `payroll_items`
ALTER TABLE `payroll_items`
 ADD PRIMARY KEY (`id`);
-- Indexes for table `position`
ALTER TABLE `position`
 ADD PRIMARY KEY (`id`);
-- Indexes for table `users`
ALTER TABLE `users`
 ADD PRIMARY KEY (`id`);
-- AUTO_INCREMENT for dumped tables
-- AUTO INCREMENT for table `allowances`
ALTER TABLE `allowances`
 MODIFY `id` int(30) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=5;
-- AUTO_INCREMENT for table `attendance`
ALTER TABLE `attendance`
 MODIFY `id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=17;
-- AUTO_INCREMENT for table `deductions`
ALTER TABLE `deductions`
 MODIFY `id` int(30) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=4;
-- AUTO_INCREMENT for table `department`
ALTER TABLE `department`
 MODIFY `id` int(30) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=4;
```

```
-- AUTO_INCREMENT for table `employee`
ALTER TABLE `employee`
 MODIFY `id` int(20) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=10;
-- AUTO_INCREMENT for table `employee_allowances`
ALTER TABLE `employee allowances`
 MODIFY `id` int(30) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=6;
-- AUTO_INCREMENT for table `employee_deductions`
ALTER TABLE `employee_deductions`
 MODIFY `id` int(30) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=4;
-- AUTO INCREMENT for table `payroll`
ALTER TABLE `payroll`
 MODIFY `id` int(30) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=2;
-- AUTO_INCREMENT for table `payroll_items`
ALTER TABLE `payroll_items`
 MODIFY `id` int(30) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=11;
-- AUTO INCREMENT for table `position`
ALTER TABLE `position`
 MODIFY `id` int(30) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=5;
-- AUTO INCREMENT for table `users`
ALTER TABLE `users`
 MODIFY `id` int(30) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=2;
COMMIT;
/*!40101 SET CHARACTER SET CLIENT=@OLD CHARACTER SET CLIENT */;
/*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
/*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
```

Populating the Database

Inserting into employee table



Inserting into department table:

```
# 1 row inserted.

INSERT INTO 'department' ('id', 'name') VALUES ('20', 'Administration department');

[Edit inline] [Edit] [Create PHP code]

Run SQL query/queries on table payroll.department: 

1 INSERT INTO 'department' ('id', 'name') VALUES ('20', 'Administration department');
```

Inserting into position table:

```
INSERT INTO 'position' ('id', 'department_id', 'name') VALUES ('21', '7', 'Administrator');

[Edit inline] [Edit] [Create PHP code]

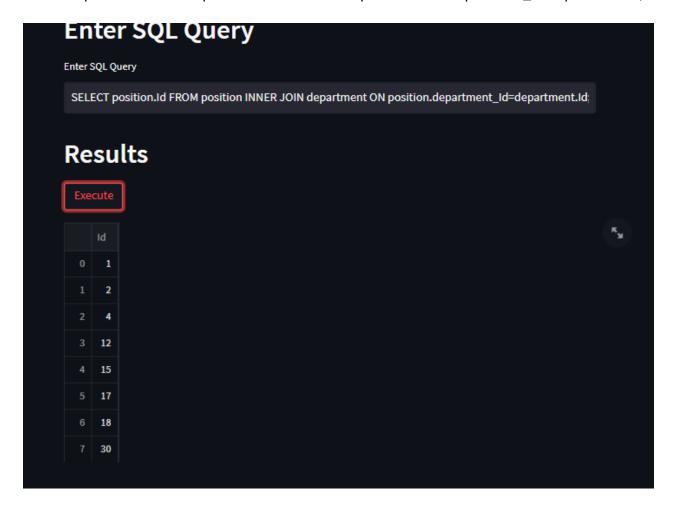
[Run SQL query/queries on table payroll.position: ('id', 'department_id', 'name') VALUES ('21', '7', 'Administrator');

1 INSERT INTO 'position' ('id', 'department_id', 'name') VALUES ('21', '7', 'Administrator');
```

Join Queries

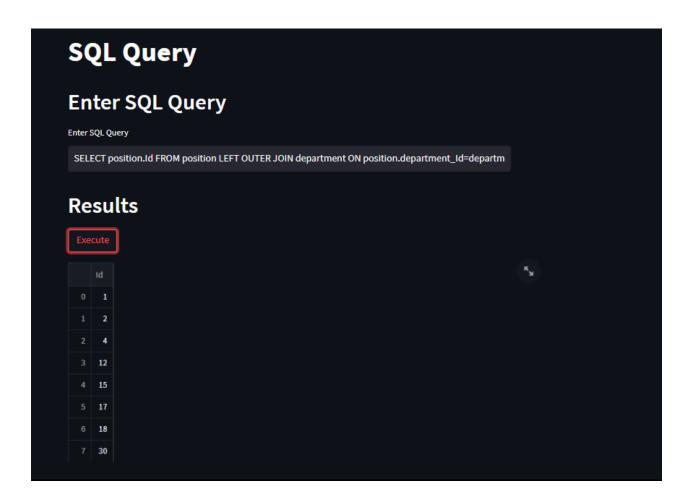
INNER JOIN: joining the id from department and position tables and display the id from position table

SELECT position.Id FROM position INNER JOIN department ON department_Id-department.Id;

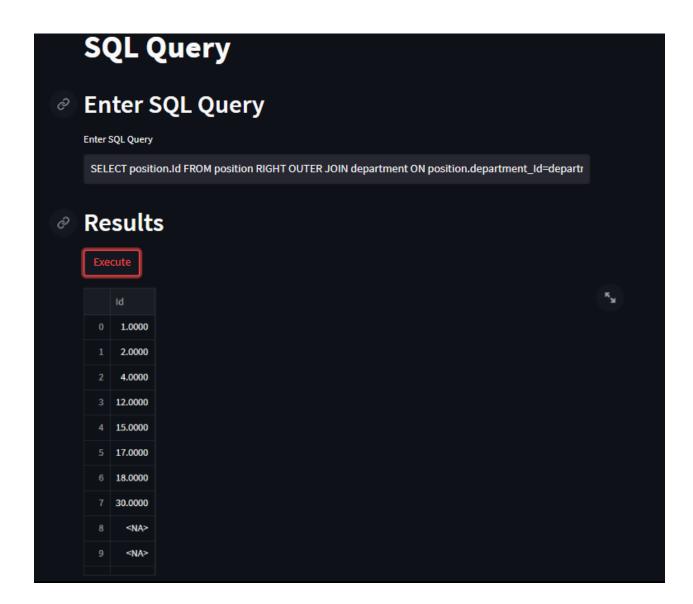


LEFT OUTER JOIN:

Performing left outer join on position and department table and display the id from position table



RIGHT OUTER JOIN:



NATURAL JOIN:

SQL Query

Enter SQL Query

Enter SQL Query

SELECT * FROM employee NATURAL JOIN department;

Results

Execute

	id	employee_no	firstname	middlename	lastname	department_id	position_id	salary
	3	65236	Aditi	J	Pander	7	15	900,000.0000
	4	2623	Aishwarya	U	R	6	1	300,000.0000
2	6	7231	Aditya	К	L	2	2	240,000.0000
	7	7163	Alekhya	U	М	4	15	400,000.0000
4	9	2020-9838	John	С	Smith	1	1	30,000.0000
	11	5653	Mahesh	С	Α	7	17	3,400,000.0000

Aggregate Functions

COUNT- number of employees with salary more than 400000

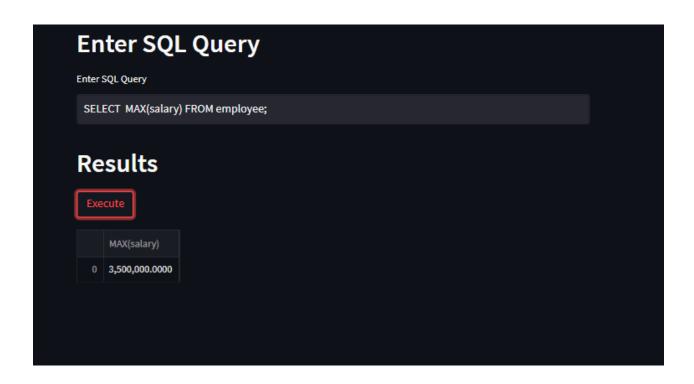


SUM- total salary given to all the employees



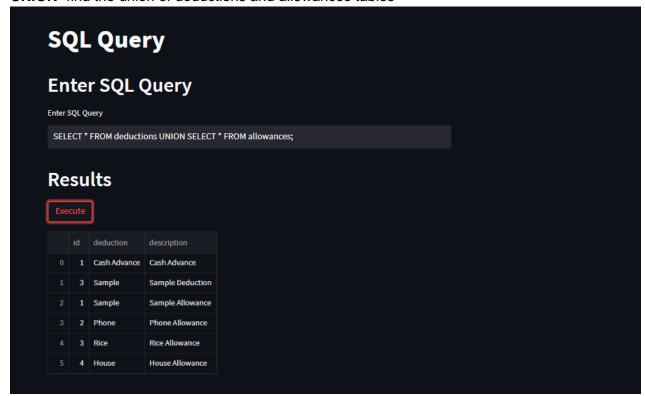


MAX- find the highest salary

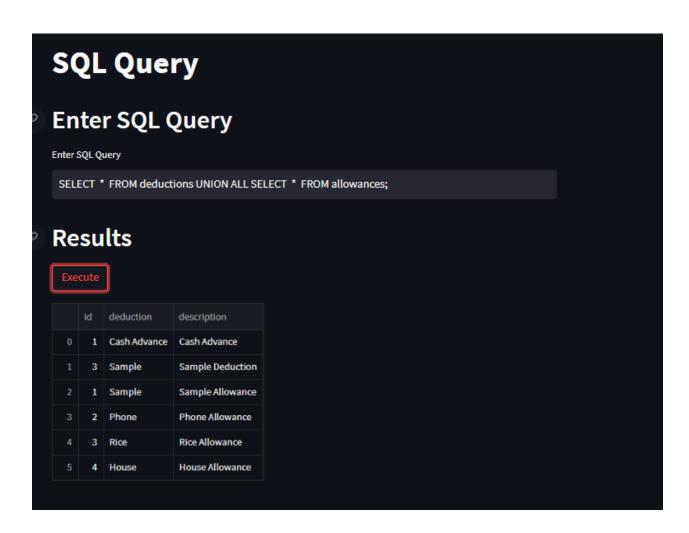


Set Operations

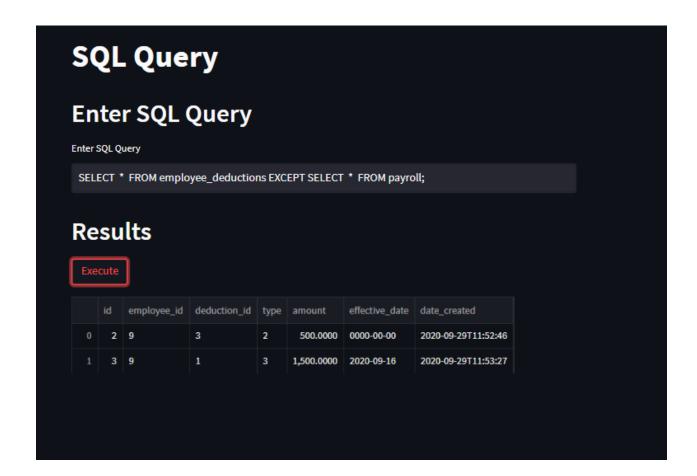
UNION- find the union of deductions and allowances tables



UNION ALL- find the union of all rows in deductions and allowances tables

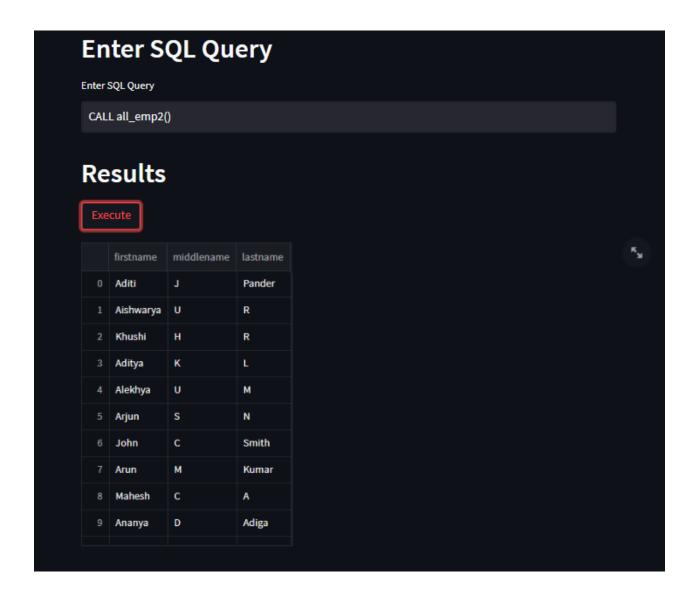


EXCEPT- find all the instances that exist in employee deductions table and not in payroll



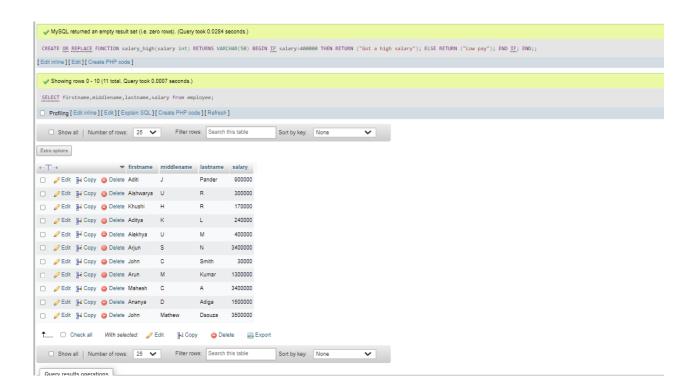
Functions and Procedures

Procedure to display first, middle and last name of employee CREATE PROCEDURE all_emp3() BEGIN SELECT firstname, middlename, lastname FROM employee; END



FUNCTIONS- to display the employees who have higher pay and lower pay

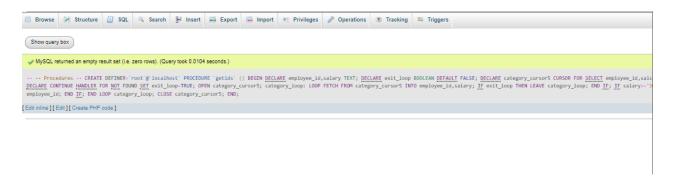
CREATE OR REPLACE FUNCTION salary_high(salary int) RETURNS VARCHAR(50) BEGIN IF salary>400000 TH EN RETURN ("Got a high salary"); ELSE RETURN ("Low pay"); END IF; END;;



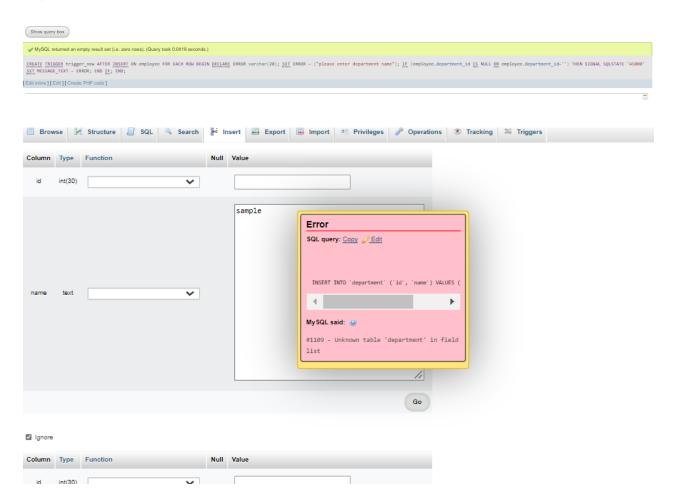
Triggers and Cursors

Create a Trigger and a Cursor. State the objective. Run and display the results.

CURSOR- fetch the rows of employees who have salary more than 400000



TRIGGER- display an error message if the department id is not given while inserting rows into department table

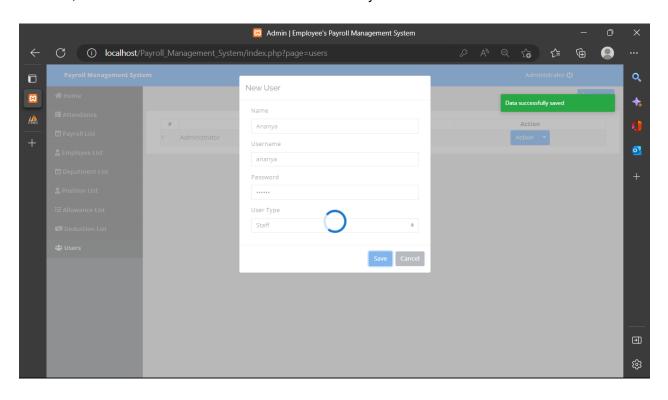


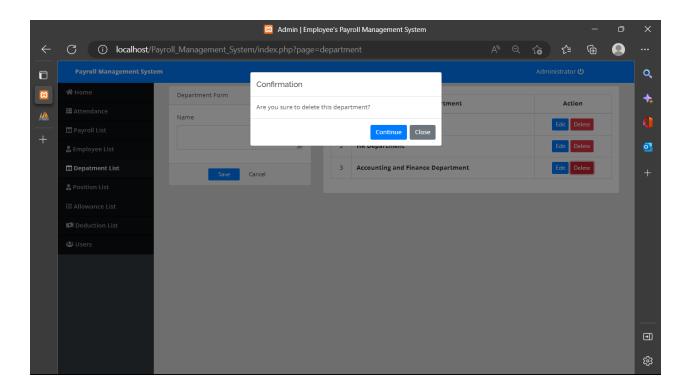
SQL Query Enter SQL Query Enter SQL Query SHOW TRIGGERS Results Execute Trigger Trigger Event Table Statement Defore_employee_update UPDATE employee INSERT INTO employees_audit SET action = 'update', emp employee_update UPDATE employee INSERT INTO employees_audit SET action = 'update', emp minimum in the imployee instruction in the imployee instruction in the imployees audit set action in the imployee instruction in the imployee in

Developing a Frontend

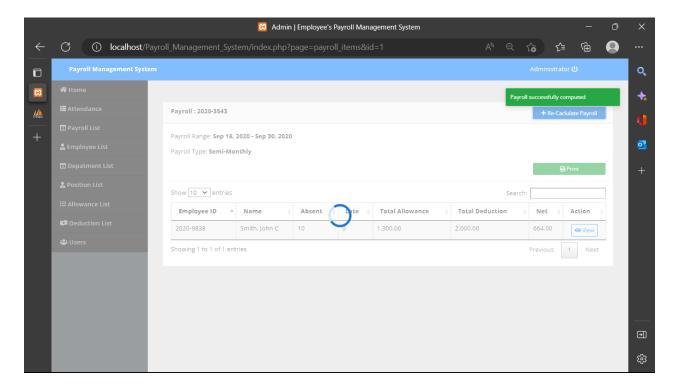
The frontend should support

1. Addition, Modification and Deletion of records from any chosen table





2. There should be an window to accept and run any SQL statement and display the result



QUERY BOX

