Employee Payroll Management System Project Using MySQL

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Introduction

Employee data is crucial to keeping an accurate record of the workforce and their personal details for things like getting in touch with them to invite them to conferences and gathering input for the business. It is also crucial to save their pay data, as this will assist the organization or its board in determining how much money is being spent on a certain employee of a specific company, in addition to helping managers and HR keep track of employee salaries. No matter how big or little, an organization must maintain records on all its branches' and regions' work locations and activities. An evaluation of each workplace's personnel of a specific branch can provide insight into the branch's performance.

For an organization to run smoothly, all these including data and analysis of projects carried out should be evaluated and monitored. (Employee data, Salary details, Work locations and Project details). This project will analyze all these details using Microsoft MySQL workbench.

Features of MySQL Workbench used in this Project

- Created a Database called rachealdb
- Created eleven tables in the database
- Also, created Relational, Inline and Materialized Views satisfying various business requirements
- Created Index on Account Details table
- Built an E-R Diagram to know how the entities are related in the payroll management system for any company

List of Entities

Employee

Employee table will include all the personal details of the employee and would be very much cover overall information of that employee

Salary

The Salary Table will cover all the current and previous salaries an employee has had or currently has. This table will help a manager/ an HR to analyze which employee has been given promotion on which date or when did his salary grade changed

Department

Department Table maintains the data of the all the possible departments an employee can belong to

Account Details

Account Details Table will maintain the data regarding the accounts which the employee has connected with the company for his/her salary to be credited

Attendance

This table includes all the data of the employee's attendance which includes the number of hours an employee has worked in a week

Project

This table includes the data of all the projects a particular company is working on or the projects on which the company is going to work in the future

Education

The Education Table keeps the track of the education of the employee including his degrees achieved until now

Work Location

The name of the table tells you most of the things. This table includes the location of the office, which city is it located, which state it is in and tracks the number of employees in a particular location

Leave

Leave table keeps the record of the number of leaves an employee takes or has taken over the course of any month or a year

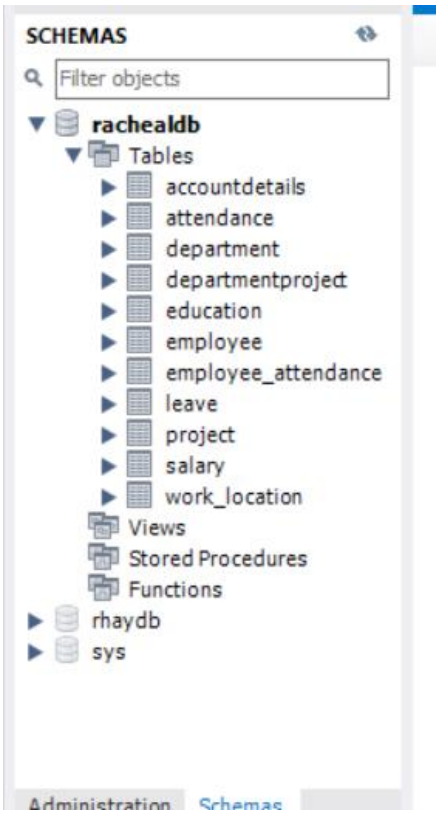

Fig 1: Scheme and Table

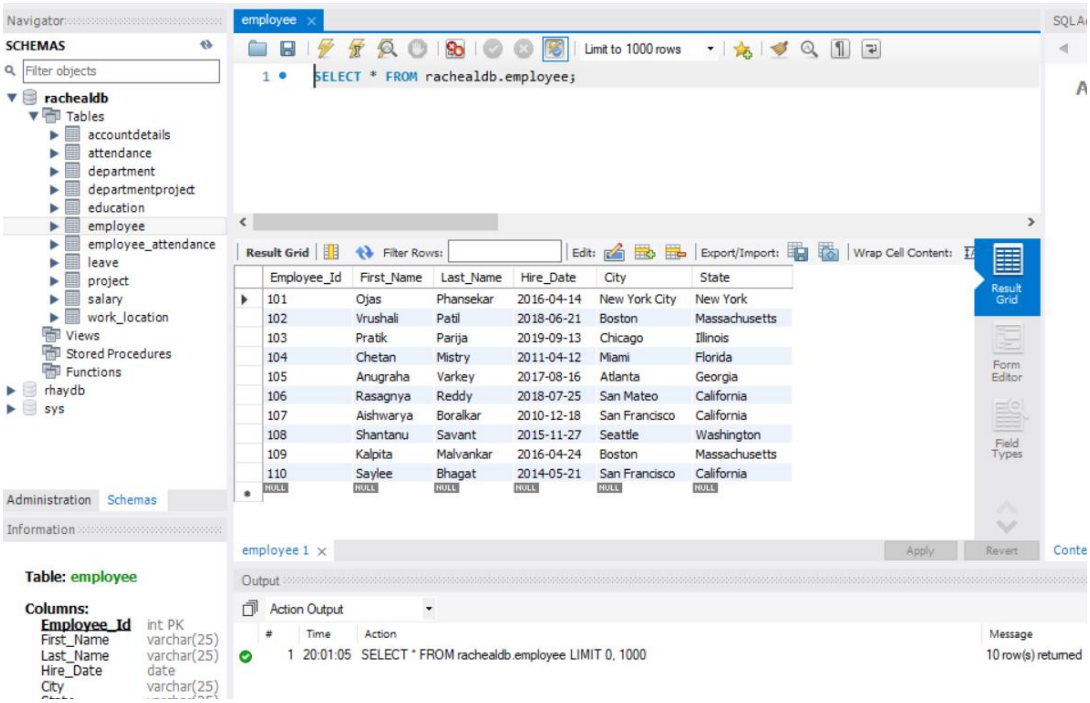

Fig 2: Display of entities in the table

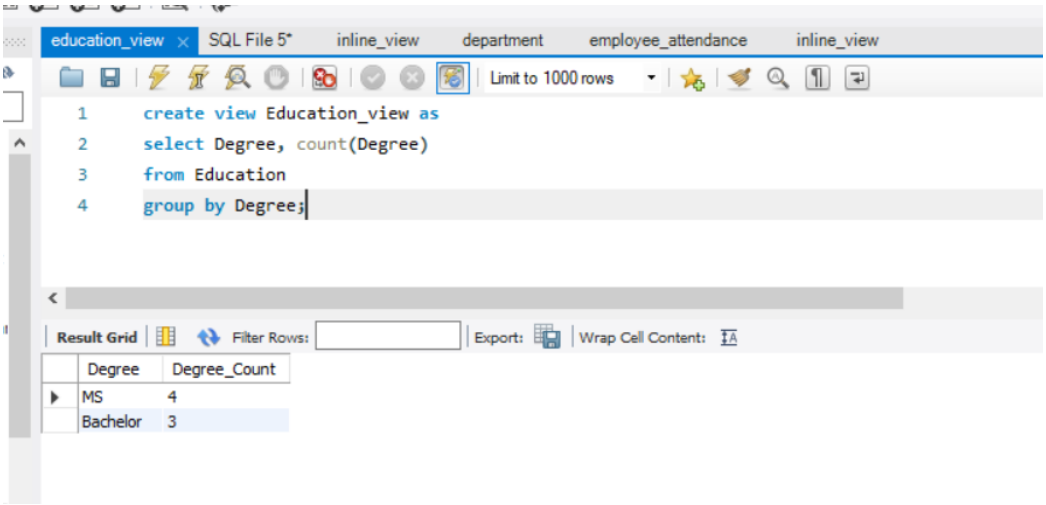

Fig 3: Materialized View

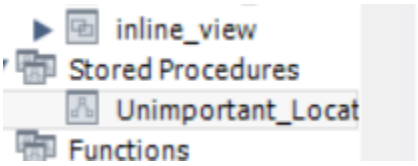

Fig 4: Unimportant location procedure

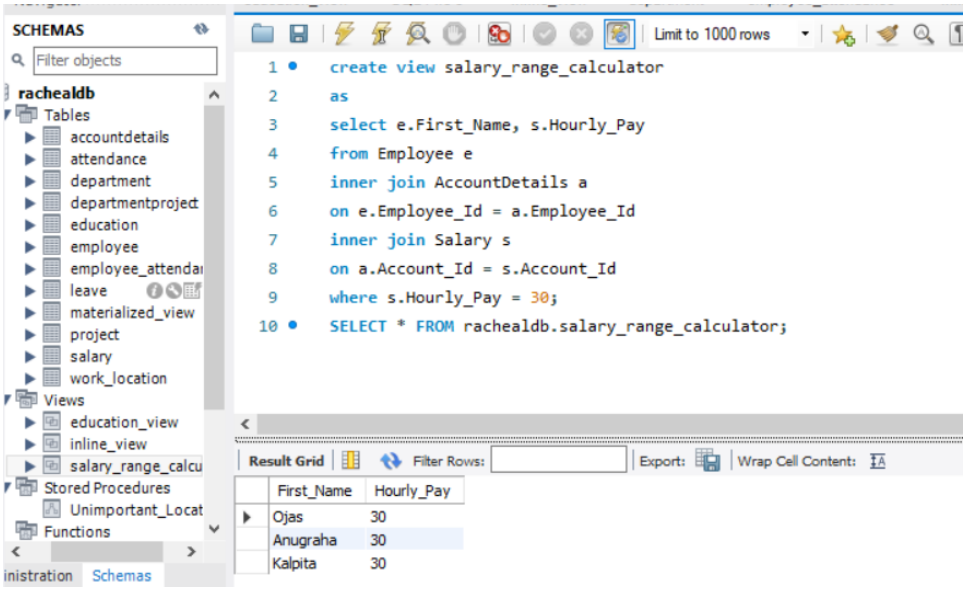

Fig 5: Relation view

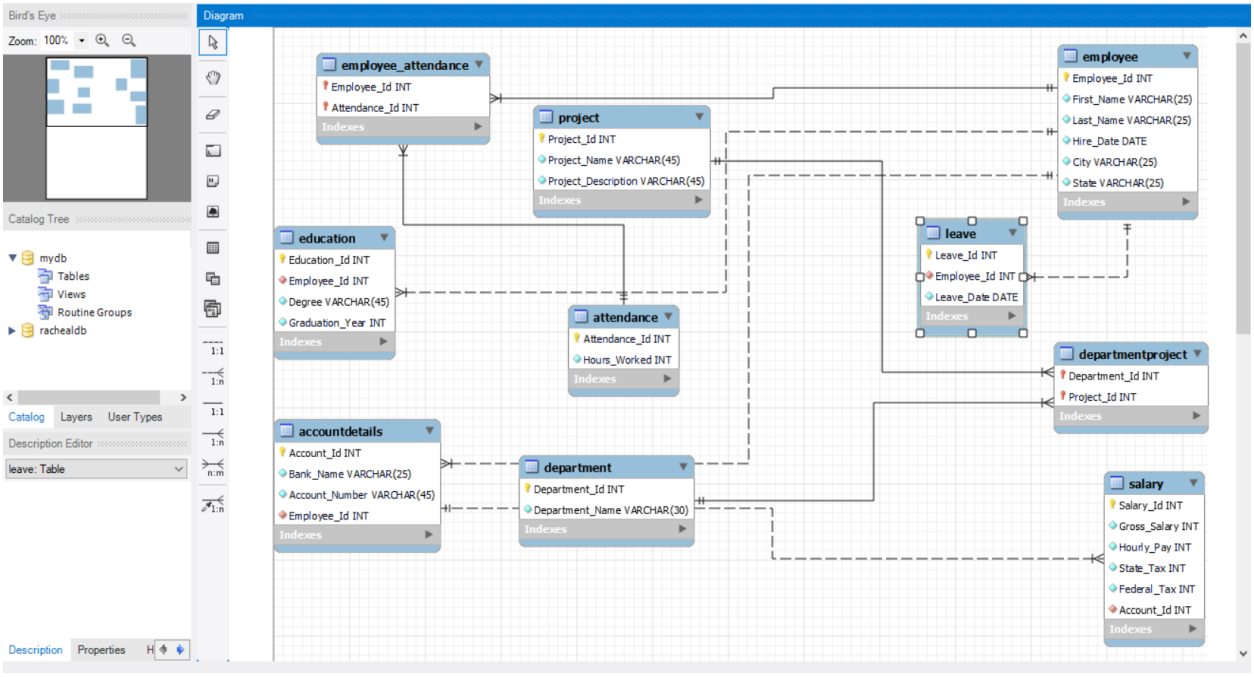

Fig 6: ER Diagram

Appendix

Create Statements

Employee

```
CREATE TABLE Employee(
Employee_Id NUMBER(6),
First_Name VARCHAR2(25),
Last_Name VARCHAR2(25),
Hire_Date DATE,
City VARCHAR2(25),
State VARCHAR2(25),
CONSTRAINT EMPLOYEE_PK PRIMARY KEY (Employee_Id));
```

Department

```
CREATE TABLE Department(
Department_Id NUMBER,
Department_Name VARCHAR2(30),
CONSTRAINT DEPARTMENT_PK PRIMARY KEY (Department_Id)
);
```

Salary

```
CREATE TABLE Salary(
Salary_Id NUMBER,
Gross_Salary NUMBER,
Hourly_Pay NUMBER,
State_Tax NUMBER,
Federal_Tax NUMBER,
Account_Id NUMBER,
CONSTRAINT SALARY_PK PRIMARY KEY (Salary_Id),
FOREIGN KEY (Account_Id)
REFERENCES ACCOUNTDETAILS(Account_Id)
```

```
);


Department_Project
-------------------------------------------------
CREATE TABLE Department_Project(
Department_Id NUMBER,
Project_Id NUMBER,
CONSTRAINT DEPTPROJECT_PK PRIMARY KEY (Department_Id,Project_Id),
FOREIGN KEY (Department_Id)
REFERENCES Department(Department_Id),
FOREIGN KEY (Project_Id)
REFERENCES Project(Project_Id)
);
-------------------------------------------------
Project
CREATE TABLE Project(
Project_Id NUMBER,
Project_Name VARCHAR2(50),
Project_Description VARCHAR2(50),
CONSTRAINT Project_PK PRIMARY KEY (Project_Id)
);
-------------------------------------------------
Account_Details
CREATE TABLE Account_Details(
Account_Id NUMBER,
Bank_Name VARCHAR2(50),
Account_Number VARCHAR2(50),
Employee_Id NUMBER,
CONSTRAINT Account_PK PRIMARY KEY (Account_Id),
FOREIGN KEY (Employee_Id)
```

```
REFERENCES Employee(Employee_Id)
);
```

Education

```
CREATE TABLE Education(
Education_Id NUMBER,
Employee_Id NUMBER,
Degree VARCHAR(30),
Graduation_Year NUMBER(4),
CONSTRAINT Location_PK PRIMARY KEY (Education_Id),
FOREIGN KEY (Employee_Id)
REFERENCES Employee(Employee_Id)
);
```

Employee_Attendance

```
CREATE TABLE Employee_Attendance(
Employee_Id NUMBER,
Attendance_Id NUMBER,
CONSTRAINT DEPARTMENTPROJECT_PK PRIMARY KEY (Employee_Id,Attendance_Id),
FOREIGN KEY (Employee_Id)
REFERENCES Employee(Employee_Id),
FOREIGN KEY (Attendance_Id)
REFERENCES Attendance(Attendance_Id)
);
```

Attendance

```
CREATE TABLE Attendance(
Attendance_Id NUMBER,
Hours_Worked NUMBER,
CONSTRAINT Attendance_PK PRIMARY KEY (Attendance_Id)
```

);

Work_Location

CREATE TABLE Work_Location(

Location_Id NUMBER,

Location VARCHAR2(25),

Number_Of_Employees NUMBER,

City VARCHAR2(25),

State VARCHAR2(25),

CONSTRAINT Loc_PK PRIMARY KEY (Location_Id)

);

Insert Statements

INSERT INTO Employee VALUES (101,'Ojas','Phansekar',STR_TO_DATE('14-APR-16', '%d-%b-%y'),'New York City','New York');

INSERT INTO Employee VALUES (102,'Vrushali','Patil',STR_TO_DATE('21-JUN-18', '%d-%b-%y'),'Boston','Massachusetts');

INSERT INTO Employee VALUES (103,'Pratik','Parija',STR_TO_DATE('13-SEP-19', '%d-%b-%y'),'Chicago','Illinois');

INSERT INTO Employee VALUES (104,'Chetan','Mistry',STR_TO_DATE('12-APR-11', '%d-%b-%y'),'Miami','Florida');

INSERT INTO Employee VALUES (105,'Anugraha','Varkey',STR_TO_DATE('16-AUG-17', '%d-%b-%y'),'Atlanta','Georgia');

INSERT INTO Employee VALUES (106,'Rasagnya','Reddy',STR_TO_DATE('25-JUL-18', '%d-%b-%y'),'San Mateo','California');

INSERT INTO Employee VALUES (107,'Aishwarya','Boralkar',STR_TO_DATE('18-DEC-10', '%d-%b-%y'),'San Francisco','California');

INSERT INTO Employee VALUES (108,'Shantanu','Savant',STR_TO_DATE('27-NOV-15', '%d-%b-%y'),'Seattle','Washington');

INSERT INTO Employee VALUES (109,'Kalpita','Malvankar',STR_TO_DATE('24-APR-16', '%d-%b-%y'),'Boston','Massachusetts');

```
INSERT INTO Employee VALUES (110,'Saylee','Bhagat',STR_TO_DATE('21-MAY-14', '%d-%b-%y'),'San Francisco','California');
```

```
INSERT INTO Department VALUES (1,'Human Resources');
INSERT INTO Department VALUES (2,'Software Development');
INSERT INTO Department VALUES (3,'Data Analysis');
INSERT INTO Department VALUES (4,'Data Science');
INSERT INTO Department VALUES (5,'Business Intelligence');
INSERT INTO Department VALUES (6,'Data Engineering');
INSERT INTO Department VALUES (7,'Manufacturing');
INSERT INTO Department VALUES (8,'Quality Control');
```

```
INSERT INTO Project VALUES (21,'Dev','Whatever');
INSERT INTO Project VALUES (22,'Prod','do something');
INSERT INTO Project VALUES (23,'Test','focus');
INSERT INTO Project VALUES (24,'Nothing','do nothing');
INSERT INTO Project VALUES (25,'Research','focus on everything');
INSERT INTO Project VALUES (26,'Next Steps','find some way out');
```

```
INSERT INTO AccountDetails VALUES (40,'Santander','S12344',101);
INSERT INTO AccountDetails VALUES (41,'Santander','S12345',102);
INSERT INTO AccountDetails VALUES (42,'Santander','S12346',103);
INSERT INTO AccountDetails VALUES (43,'Santander','S12347',104);
INSERT INTO AccountDetails VALUES (44,'Chase','C12344',105);
INSERT INTO AccountDetails VALUES (45,'Chase','C12345',106);
INSERT INTO AccountDetails VALUES (46,'Chase','C12347',107);
```

```
INSERT INTO AccountDetails VALUES (47,'Chase','C12334',108);
INSERT INTO AccountDetails VALUES (48,'BOFA','C12378',109);
INSERT INTO AccountDetails VALUES (49,'BOFA','C12390',110);
```

```
INSERT INTO Education VALUES (10,101,'MS',2017);
INSERT INTO Education VALUES (11,102,'MS',2019);
INSERT INTO Education VALUES (12,104,'MS',2011);
INSERT INTO Education VALUES (13,108,'MS',2015);
INSERT INTO Education VALUES (14,109,'Bachelor',2013);
INSERT INTO Education VALUES (15,107,'Bachelor',2008);
INSERT INTO Education VALUES (16,106,'Bachelor',2007);
```

```
INSERT INTO `Leave` VALUES (51,104,STR_TO_DATE('1-DEC-19', '%d-%b-%y'));
INSERT INTO `Leave` VALUES (52,108,STR_TO_DATE('2-DEC-19', '%d-%b-%y'));
INSERT INTO `Leave` VALUES (53,109,STR_TO_DATE('3-DEC-19', '%d-%b-%y'));
INSERT INTO `Leave` VALUES (54,107,STR_TO_DATE('4-DEC-19', '%d-%b-%y'));
INSERT INTO `Leave` VALUES (55,106,STR_TO_DATE('5-DEC-19', '%d-%b-%y'));
INSERT INTO `Leave` VALUES (56,104,STR_TO_DATE('6-DEC-19', '%d-%b-%y'));
INSERT INTO `Leave` VALUES (57,108,STR_TO_DATE('7-DEC-19', '%d-%b-%y'));
INSERT INTO `Leave` VALUES (58,109,STR_TO_DATE('7-DEC-19', '%d-%b-%y'));
INSERT INTO `Leave` VALUES (59,107,STR_TO_DATE('8-DEC-19', '%d-%b-%y'));
INSERT INTO `Leave` VALUES (60,106,STR_TO_DATE('9-DEC-19', '%d-%b-%y'));
```

```
INSERT INTO Attendance VALUES (90,10);
INSERT INTO Attendance VALUES (91,20);
INSERT INTO Attendance VALUES (92,30);
INSERT INTO Attendance VALUES (93,40);
```

```
INSERT INTO Attendance VALUES (94,45);
INSERT INTO Attendance VALUES (95,56);
INSERT INTO Attendance VALUES (96,58);

INSERT INTO Work_Location VALUES (71,'North',4,'New York City','New York');
INSERT INTO Work_Location VALUES (72,'North',4,'Boston','Massachusetts');
INSERT INTO Work_Location VALUES (73,'North',4,'Chicago','Illinois');
INSERT INTO Work_Location VALUES (74,'North',89,'Miami','Florida');
INSERT INTO Work_Location VALUES (75,'South',90,'Atlanta','Georgia');
INSERT INTO Work_Location VALUES (76,'South',100,'San Mateo','California');
INSERT INTO Work_Location VALUES (77,'South',4,'San Francisco','California');
INSERT INTO Work_Location VALUES (78,'South',2,'Seattle','Washington');
INSERT INTO Work_Location VALUES (79,'South',25,'Alpharetta','Georgia');
INSERT INTO Work_Location VALUES (80,'South',20,'Keene','New Hampshire');
INSERT INTO Work_Location VALUES (81,'South',22,'Hampton','New Hampshire');


INSERT INTO Employee_Attendance VALUES (101,90);
INSERT INTO Employee_Attendance VALUES (102,91);
INSERT INTO Employee_Attendance VALUES (103,92);
INSERT INTO Employee_Attendance VALUES (104,93);
INSERT INTO Employee_Attendance VALUES (105,94);
INSERT INTO Employee_Attendance VALUES (106,95);
INSERT INTO Employee_Attendance VALUES (107,96);
INSERT INTO Employee_Attendance VALUES (108,91);
INSERT INTO Employee_Attendance VALUES (109,92);
INSERT INTO Employee_Attendance VALUES (110,93);

INSERT INTO DepartmentProject VALUES (1,21);
INSERT INTO DepartmentProject VALUES (2,22);
```

```
INSERT INTO DepartmentProject VALUES (3,23);
INSERT INTO DepartmentProject VALUES (4,24);
INSERT INTO DepartmentProject VALUES (5,25);
INSERT INTO DepartmentProject VALUES (6,26);
INSERT INTO DepartmentProject VALUES (7,21);
INSERT INTO DepartmentProject VALUES (8,24);

INSERT INTO Salary VALUES (1,57600,30,200,1000,40);
INSERT INTO Salary VALUES (2,76800,40,300,1300,41);
INSERT INTO Salary VALUES (3,96000,50,400,1500,42);
INSERT INTO Salary VALUES (4,115200,60,500,1700,43);
INSERT INTO Salary VALUES (5,57600,30,200,1000,44);
INSERT INTO Salary VALUES (6,76800,40,300,1300,45);
INSERT INTO Salary VALUES (7,96000,50,400,1500,46);
INSERT INTO Salary VALUES (8,115200,60,500,1700,47);
INSERT INTO Salary VALUES (9,57600,30,200,1000,48);
INSERT INTO Salary VALUES (10,76800,40,300,1300,49);

 select * from rachealdb.accountdetails;
```

Materizalized View

```
create view Education_view as
select Degree, count(Degree)
from Education
group by Degree;
```

Relational View

```
create view salary_range_calculator
as
select e.First_Name, s.Hourly_Pay
```

```
from Employee e
inner join AccountDetails a
on e.Employee_Id = a.Employee_Id
inner join Salary s
on a.Account_Id = s.Account_Id
where s.Hourly_Pay = 30;
SELECT * FROM rachealdb.salary_range_calculator;
```

Unimportant Location Procedure

```
DELIMITER //

CREATE PROCEDURE Unimportant_Locations(IN l_NOFEmployees INT)
BEGIN
   DECLARE l_wl INT;
   DECLARE l_emp INT;

   SELECT COUNT(*) INTO l_wl
   FROM Work_Location
   WHERE Number_Of_Employees = l_NOFEmployees;

   SELECT COUNT(*) INTO l_emp
   FROM Employee e
   INNER JOIN Work_Location w ON e.Employee_Id = w.Employee_Id
   WHERE w.Number_Of_Employees = l_NOFEmployees;

   IF l_wl < 5 THEN
      DELETE FROM Work_Location
      WHERE Number_Of_Employees = l_NOFEmployees;
```

```
    END IF;

    IF l_emp = 0 THEN
        SIGNAL SQLSTATE '45000'
        SET MESSAGE_TEXT = 'No Such Data Available';
    END IF;
END //

DELIMITER ;
```