

ASSIGNMENT-4(SQL)

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1. Create a database with EmployeeSystem.

-->create database EmployeeSystem

2. Create tables based on ER diagram.

->CREATE TABLE Employee(employee_id int NOT NULL AUTO_INCREMENT,first_name char(50) NOT NULL, last_name char(50) NOT NULL,gender char(6) NOT NULL,age int NOT NULL, email char(50) NOT NULL, designation char(50) NOT NULL, hire_date date NOT NULL, resigned_date date,address char(100),PRIMARY KEY (employee_id));

-> CREATE TABLE Salary (salary_id int NOT NULL AUTO_INCREMENT, issue_date DATE NOT NULL, amount float NOT NULL,bonus float, PRIMARY KEY (salary_id));

-> CREATE TABLE Department (department_id int NOT NULL AUTO_INCREMENT, name char(50) NOT NULL, description char(100), PRIMARY KEY (department_id));

-> ALTER TABLE Salary ADD employee_id int;

-> ALTER TABLE Salary ADD FOREIGN KEY (employee_id) REFERENCES Employee(employee_id);

-> ALTER TABLE Employee ADD dep_id int;

-> ALTER TABLE Employee ADD FOREIGN KEY (dep_id) REFERENCES Department(department_id);

3. Add 20 employees.

->INSERT INTO Employee (first_name, last_name, gender, age, email, designation,hire_date,resigned_date,address) values ('Raman', 'gupta', 'Male', '35', 'Raman@gmail.com', 'Prodct Engineer','2021-5-20',NULL,'birgunj'), ('Tommy', 'gupta', 'male', '24', 'Tommy@gmail.com', 'Mechanical Engineer','2021-6-20',NULL,'birgunj'),('Kome', 'panday', 'female', '28', 'Kome@gmail.com', 'Software Engineer','2021-7-20',NULL,'pokhra'),('madhan', 'panday', 'male', '21', 'madhan@gmail.com', 'Software Engineer','2021-8-20',NULL,'birgunj'),('sumit', 'gupta', 'male', '25', 'sumit@gmail.com', 'Fata Data','2000-08-30',NULL,'jaipur-01'), ('tome', 'gupta', 'male', '21', 'tome@gmail.com', 'Test Softare','2021-11-20',NULL,'jaipur-01'),('rame', 'gupta', 'female', '23', 'rame@gmail.com', 'Jr. Software Engineer','2021-6-14',NULL,'birgunj'), ('Ramaner', 'gupta', 'male', '23', 'Ramaner@gmail.com', 'Senior Software Engineer','2021-2-20',NULL,'birgunj'),('rose', 'gupta',

'female', '29', 'rose@gmail.com', 'Lop Manager','2000-08-30',NULL,'birgunj'),('raxi', 'gupta', 'male', '26', 'raxi@gmail.com', 'TEst Manger','2021-9-20',NULL,'birgunj'), ('ashwarya', 'gupta', 'female', '21', 'ashwarya@gmail.com', 'Manager of It','2021-6-20',NULL,'birgunj'),('testing', 'gupta', 'male', '29', 'testing@gmail.com', 'Developer','2021-9-20',NULL,'birgunj'), ('dummy', 'gupta', 'female', '21', 'dummy531@gmail.com', 'Coder','2021-5-20',NULL,'birgunj'), ('ramnam', 'gupta', 'male', '21', 'ramnam@gmail.com', 'Tester','2021-7-20',NULL,'birgunj'),('tommy', 'gupta', 'female', '21', 'tommy@gmail.com', 'Doctor','2021-8-20',NULL,'birgunj'),('testing', 'gupta', 'male', '21', 'dummy531@gmail.com', 'Software Engineer','2021-7-20','2021-9-14','birgunj'),('dummy', 'gupta', 'female', '21', 'dummy531@gmail.com', 'Software Engineer','2021-11-14',NULL,'birgunj'), ('rame', 'gupta', 'male', '21', 'dummy531@gmail.com', 'Manger','2021-2-20',NULL,'bhaktapur');

4. Add the salary of each employee.

->INSERT INTO Salary (issue_date,amount,bonus,employee_id) values ('2019-8-20',15000,NULL,1),('2020-10-12',20000,NULL,15),('2020-8-20',30000,NULL,50),('2020-11-12',40000,NULL,51),('2020-7-12',23000,NULL,52),('2020-8-20',30000,NULL,53),('2020-4-12',40000,NULL,54),('2020-7-12',23000,NULL,55),('2020-8-20',30000,NULL,56),('2020-11-12',40000,NULL,57),('2020-7-12',23000,NULL,58),('2020-8-20',30000,NULL,59),('2020-4-12',40000,NULL,60),('2020-7-12',23000,NULL,61),('2020-8-20',30000,NULL,62),('2020-4-12',40000,NULL,63),('2020-7-12',23000,NULL,64),('2020-8-20',30000,NULL,65),('2020-11-12',40000,NULL,66),('2020-7-12',23000,NULL,67);

5. Add departments with employees working in it.

-> INSERT INTO Department (name,description) values ('Accounts','Account Department'),('Backend','Backend Department');

->update Employee set dep_id = 1 where employee_id BETWEEN 50 AND 60;

->update Employee set dep_id = 2 where employee_id BETWEEN 60 AND 68;

->update Employee set dep_id = 2 where employee_id BETWEEN 1 AND 15;

->ALTER TABLE Project ADD FOREIGN KEY (employee_id) REFERENCES Employee(employee_id);

6. Add 7 projects.

→INSERT INTO Project (name,description,employee_id) values ('Abc project',NULL,1),('Aj frontend','Develop A website',15),('gopikrinal website',NULL,50),('nash mukti website','develop a website for nasha mukti kendra',61),('ash frontend',NULL,65),('Nichal software',NULL,66),('backend',NULL,67);

7. Move 3 employees to another department(any).

→update Employee set dep_id = 2 where employee_id=1;

→update Employee set dep_id = 2 where employee_id=15;

→update Employee set dep_id = 1 where employee_id=66;

8. Add resigned date for 2 employee.

→update Employee set resigned_date = '2021-9-22' where employee_id=1;

→update Employee set resigned_date = '2021-9-28' where employee_id=65;

9. Show detail of employee whose first name start with 'R' or 'r'.

→SELECT * FROM Employee WHERE first_name LIKE 'R%' OR first_name LIKE 'r%';

10. Show detail of employees who work in more than one project.

→SELECT emp.*,COUNT(pro.employee_id) FROM Employee AS emp JOIN Project AS pro ON emp.employee_id=pro.employee_id GROUP BY pro.employee_id HAVING COUNT(pro.employee_id)>1;

11. Count number of employee who have less than 20000 salary.

→SELECT COUNT(employee_id) as totalEmployees FROM Salary where amount<20000;

12. Increment salary of all employee by 10%.

→UPDATE Salary SET amount=(amount*0.1)+amount;

13. Give bonus of 10% to all employee hired before 2000-09-30.

→UPDATE Salary sal LEFT JOIN Employee emp ON sal.employee_id = emp.employee_id set bonus=amount*0.1 WHERE emp.hire_date<'2000-09-30';

14. Find the average salary of each department, number of employee working on that department.

→select emp.dep_id,avg(sal.amount) as AverageSalary,count(emp.employee_id) as NumofEmp FROM Employee emp inner join Salary sal ON emp.employee_id=sal.employee_id group by emp.dep_id;

15. Select the employee from each department which has a maximum salary.

→SELECT emp.*, max(sal.amount) as maxsalary FROM Employee AS emp JOIN Salary sal ON emp.employee_id=sal.employee_id GROUP BY emp.dep_id;

16. Select the employee from each department which has a maximum salary without using group by clause.

→ SELECT Department.name AS 'Department', EmployeeSalary.first_name AS Employee, EmployeeSalary.Salary FROM Department, EmployeeSalary WHERE Department.department_id = EmployeeSalary.dep_id AND

→SELECT Department.name AS 'Department', EmployeeSalary.first_name AS Employee, EmployeeSalary.Salary FROM Department, EmployeeSalary WHERE Department.department_id = EmployeeSalary.dep_id AND EmployeeSalary.Salary = (SELECT MAX(EmployeeSalary.Salary) FROM EmployeeSalary WHERE EmployeeSalary.dep_id = Department.department_id);

→SELECT emp.employee_id, emp.first_name, emp.last_name,
emp.dep_id,dept.name,s.amount as salary FROM Employee AS emp JOIN Salary s ON
emp.employee_id=s.employee_id JOIN Department as dept ON
dept.department_id=emp.dep_id where s.amount = (select max(amount) from Salary);

→Select A.first_name,A.dep_name,MAX(A.salary),A.employee_id,A.dep_id FROM (SELECT
emp.employee_id, emp.first_name, emp.last_name, emp.dep_id,d.name as
dep_name,sal.amount as salary FROM Employee AS emp JOIN Salary sal ON
emp.employee_id=sal.employee_id JOIN Department as d ON
d.department_id=emp.dep_id) A where A.dep_id=2 OR A.dep_id=1;

→Select A.first_name,A.dep_name,MAX(A.salary),A.employee_id,A.dep_id FROM (SELECT
emp.employee_id, emp.first_name, emp.last_name, emp.dep_id,d.name as
dep_name,sal.amount as salary FROM Employee AS emp JOIN Salary sal ON
emp.employee_id=sal.employee_id JOIN Department as d ON
d.department_id=emp.dep_id) A where A.dep_id=2 OR A.dep_id=2;

17. Check what happens when you want to delete an employee who have resigned; What needs to be done to delete?

-→DELETE FROM Employee Where resigned_date IS NOT NULL;

→ERROR 1451 (23000): Cannot delete or update a parent row: a foreign key constraint fails
(`EmployeeSystem`.`Project`, CONSTRAINT `Project_ibfk_1` FOREIGN KEY (`employee_id`)
REFERENCES `Employee` (`employee_id`))

When we want to delete an employee who have resigned we are prompted with an ERROR 1451 which states that the data couldn't be deleted or updated because that employee has it data located in another table as a foreign key. So to delete the employee data firstly the employee's data in the salary table should be removed and then we can delete the employee data from Employee table without any error.