

## Assignment 4

1. Create a database with Employee System.

➤ CREATE DATABASE EmployeeSystem.

2. Creating 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 Department ( department\_id int NOT NULL AUTO\_INCREMENT, name char(50) NOT NULL, description char(100), PRIMARY KEY (department\_id) );

➤ CREATE TABLE Project ( project\_id int NOT NULL AUTO\_INCREMENT, name char(50) NOT NULL, description char(100), PRIMARY KEY (project\_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) );

3. Adding 20 employees.

➤ INSERT INTO Employee (first\_name, last\_name, gender, age, email, designation, hire\_date, resigned\_date, address) values ('Ramita', 'Shrestha', 'female', '35', 'Ramita@gmail.com', 'Product Engineer', '2021-5-20', NULL, 'birgunj'), ('Tom', 'Hamal', 'male', '24', 'Tom@gmail.com', 'Mechanical Engineer', '2021-6-20', NULL, 'birgunj'), ('Komal', 'Panday', 'female', '28', 'Komal@gmail.com', 'Software Engineer', '2021-7-20', NULL, 'pokhara'), ('Madhu', 'Panday', 'female', '21', 'madhu@gmail.com', 'Software Engineer', '2021-8-20', NULL, 'birgunj'), ('Suman', 'Rana', 'male', '25', 'suman@gmail.com', 'Data Scientist', '2000-08-30', NULL, 'Kathmandu'), ('Tp', 'gupta', 'male', '21', 'tp@gmail.com', 'Tester', '2021-11-20', NULL, 'Kathmandu'), ('ramesh', 'Shrestha', 'male', '23', 'ramesh@gmail.com', 'Jr. Software Engineer', '2021-6-14', NULL, 'birgunj'), ('Ramaneshwor', 'gupta', 'male', '23', 'Ramaneshwor@gmail.com', 'Senior Software Engineer', '2021-2-20', NULL, 'birgunj'),

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('rose', 'lama', 'female', '29', 'rose@gmail.com', 'Manager', '2000-08-30', NULL, 'birgunj'),
('rashi', 'gupta', 'female', '26', 'rashi@gmail.com', 'Tester', '2021-9-20', NULL, 'birgunj'),
('Aishwarya', 'Gurung', 'female', '21', 'aishwarya@gmail.com', 'Manager', '2021-6-20', NULL, 'birgunj'),
('Tapu', 'gupta', 'male', '29', 'tapu@gmail.com', 'Developer', '2021-9-20', NULL, 'birgunj'),
('Dinesh', 'Gajurel', 'male', '21', 'dinesh531@gmail.com', 'Coder', '2021-5-20', NULL, 'birgunj'),
('Reshma', 'Gurung', 'female', '21', 'reshma@gmail.com', 'Tester', '2021-7-20', NULL, 'birgunj'),
('Tommy', 'Sharma', 'male', '21', 'tommy@gmail.com', 'Doctor', '2021-8-20', NULL, 'birgunj'),
('Tushar', 'gupta', 'male', '21', 'tushar531@gmail.com', 'Software Engineer', '2021-7-20', '2021-9-14', 'birgunj'),
('Ajay', 'gupta', 'male', '21', 'ajay531@gmail.com', 'Software Engineer', '2021-11-14', NULL, 'birgunj'),
('ratan', 'gupta', 'male', '21', 'ratan531@gmail.com', 'Manger', '2021-2-20', NULL, 'bhaktapur'),
('Ram', 'gupta', 'male', '21', 'Ram531@gmail.com', 'Manger', '2021-2-20', NULL, 'bhaktapur'),
('Shyam', 'gupta', 'male', '21', 'shyam531@gmail.com', 'Manger', '2021-2-20', NULL, 'bhaktapur');

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#### 4. Adding salary of each employee.

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➤ ALTER TABLE Salary ADD employee_id int;
ALTER TABLE Salary ADD FOREIGN KEY (employee_id) REFERENCES Employee(employee_id);

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INSERT INTO Salary (issue_date, amount, bonus, employee_id)
values ('2019-8-20', 15000, NULL, 1),
('2020-11-12', 20000, NULL, 2),
('2020-9-12', 12000, NULL, 3),
('2020-10-12', 35000, NULL, 4),
('2020-10-12', 14000, NULL, 5),
('2020-10-12', 20000, NULL, 6),
('2020-10-12', 7000, NULL, 7),
('2020-10-12', 20000, NULL, 8),
('2020-7-12', 20000, NULL, 9),
('2020-10-12', 25000, NULL, 10),
('2020-10-12', 20000, NULL, 11),
('2020-10-12', 20000, NULL, 12),

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('2020-10-12',20000,NULL,13),
('2020-10-12',20000,NULL,14),
('2020-10-12',20000,NULL,15),
('2020-10-12',20000,NULL,16),
('2020-10-12',20000,NULL,17),
('2020-10-12',20000,NULL,18),
('2020-10-12',20000,NULL,19),
('2020-10-12',20000,NULL,20);
```

5. Adding departments with employees working in it.

➤ ALTER TABLE Employee ADD dep\_id int;

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

```
INSERT INTO Department (name,description) values ('Marketing','This is
marketing Department'),('IT', 'This is IT Department');
```

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update Employee set dep_id = 2 where employee_id BETWEEN 1 AND 10;
update Employee set dep_id = 1 where employee_id BETWEEN 11 AND 20;
```

6. Adding 7 projects.

➤ ALTER TABLE Project ADD employee\_id int;  
ALTER TABLE Project ADD FOREIGN KEY (employee\_id) REFERENCES  
Employee(employee\_id);

```
INSERT INTO Project (name,description,employee_id)
values ('Anta project',NULL,1),
('Ajax project','Develop A website',1),
('gopikrishna website',NULL,2),
('nashville website','develop a website for nashvill',2),
('front',NULL,20),
('software',NULL,17),
('back',NULL,5);
```

7. Moving 3 employees to another department.

➤ update Employee set dep\_id = 1 where employee\_id=1;  
update Employee set dep\_id = 1 where employee\_id=2;  
update Employee set dep\_id = 1 where employee\_id=3;

8. Adding resigned date for 2 employees.

➤ update Employee set resigned\_date = '2021-10-22' where employee\_id=1;

update Employee set resigned\_date = '2021-10-22' where employee\_id=2;

9. Showing details of employees whose first name start with 'R' or 'r'.

- SELECT \* FROM Employee WHERE first\_name LIKE 'R%' OR first\_name LIKE 'r%';

10. Showing details of employees who works in more than one project.

- SELECT emp.\*,COUNT(p.employee\_id) FROM Employee AS emp JOIN Project AS p ON emp.employee\_id=p.employee\_id GROUP BY p.employee\_id HAVING COUNT(p.employee\_id)>1;

11. Counting number of employees who have less than 20000 salaries.

- SELECT COUNT(employee\_id) as totalEmployees FROM salary where amount<20000;

12. Incrementing salary of all employees by 10%.

- UPDATE Salary SET amount=(amount\*0.1)+amount;

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

- UPDATE Salary s LEFT JOIN Employee emp ON s.employee\_id = emp.employee\_id set bonus=amount\*0.1 WHERE emp.hire\_date<'2000-09-30';

14. Finding the average salary of each department, number of employees working on that department.

- select emp.dep\_id,avg(s.amount) as AverageSalary,count(emp.employee\_id) as NumofEmp FROM Employee emp inner join Salary s ON emp.employee\_id=s.employee\_id group by emp.dep\_id;

15. Selecting the employees from each department which has a maximum salary.

- SELECT emp.\*, max(s.amount) as maxsalary FROM Employee AS emp JOIN Salary s ON emp.employee\_id=s.employee\_id GROUP BY emp.dep\_id;

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

- 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);

17. Checking what happens when you want to delete an employee who has resigned; what needs to be done to delete.

- `DELETE FROM Employee Where resigned_date IS NOT NULL;`
- Error: 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`))
- To avoid these constraint errors during table deletion we can drop table in the correct order i.e., child table first and parent table as the last one. In case of a loop in foreign keys, we can remove this loop and redefine tables structure before dropping tables, we can also temporarily set `"FOREIGN_KEY_CHECKS=0"` and drop the table and again put `"FOREIGN_KEY_CHECKS=1"`.