

MYSQL Assignment No:4

- `mysql> CREATE DATABASE Saranya;`
Query OK, 1 row affected (0.02 sec)
- `mysql> USE Saranya`
Database changed
- ◆ `mysql> CREATE TABLE Location (Location_Id INT PRIMARY KEY, Regional_Group VARCHAR(20));`
Query OK, 0 rows affected (0.06 sec)
- `mysql> INSERT INTO Location (Location_Id, Regional_Group) VALUES`
 - > (1, 'Thiruvananthapuram'),
 - > (2, 'Kollam'),
 - > (3, 'Pathanamthitta'),
 - > (4, 'Alappuzha'),
 - > (5, 'Kottayam'),
 - > (6, 'Idukki'),
 - > (7, 'Ernakulam'),
 - > (8, 'Thrissur'),
 - > (9, 'Palakkad'),
 - > (10, 'Malappuram');Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
- ◆ `mysql> CREATE TABLE Department (Department_Id INT PRIMARY KEY, Name VARCHAR(255), Location_Id INT, FOREIGN KEY (Location_Id) REFERENCES Location(Location_Id));`
Query OK, 0 rows affected (0.08 sec)
- `mysql> INSERT INTO Department (Department_Id, Name, Location_Id) VALUES`
 - > (10, 'Sales', 1),
 - > (20, 'Marketing', 1),
 - > (30, 'Finance', 2),
 - > (40, 'Human Resources', 2),
 - > (50, 'Operations', 3),
 - > (60, 'IT', 3),
 - > (70, 'Research and Development', 4),
 - > (80, 'Customer Service', 4),
 - > (90, 'Production', 5),
 - > (100, 'Quality Assurance', 5);Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
- ◆ `mysql> CREATE TABLE Job (Job_Id INT PRIMARY KEY, `Function` VARCHAR(30));`
Query OK, 0 rows affected (0.06 sec)
- `mysql> INSERT INTO Job (Job_Id, `Function`) VALUES`
 - > (1, 'Manager'),
 - > (2, 'Engineer'),
 - > (3, 'Analyst'),
 - > (4, 'Supervisor'),
 - > (5, 'Coordinator'),
 - > (6, 'Specialist'),
 - > (7, 'Administrator'),
 - > (8, 'Consultant'),
 - > (9, 'Developer'),
 - > (10, 'Designer');Query OK, 10 rows affected (0.02 sec)
Records: 10 Duplicates: 0 Warnings: 0

- ◆ mysql> CREATE TABLE Employee (Employee_Id INT PRIMARY KEY, Lastname VARCHAR(255), Firstname VARCHAR(255), Middlename VARCHAR(255), Job_Id INT, Manager_Id INT, Hiredate DATE, Salary DECIMAL(10, 2), Department_Id INT, FOREIGN KEY (Job_Id) REFERENCES Job(Job_Id), FOREIGN KEY (Manager_Id) REFERENCES Employee(Employee_Id), FOREIGN KEY (Department_Id) REFERENCES Department(Department_Id));
Query OK, 0 rows affected (0.10 sec)
- mysql> INSERT INTO Employee (Employee_Id, Lastname, Firstname, Middlename, Job_Id, Manager_Id, Hiredate, Salary, Department_Id) VALUES
-> (101, 'Viswanathan', 'Mohanlal', 'Gopalakrishnan', 1, NULL, '2021-01-01', 5000, 10),
-> (201, 'Pillai', 'Dileep', 'Kumar', 2, 101, '2021-02-01', 4500, 10),
-> (301, 'Ali', 'Mammootty', 'Rasheed', 3, 201, '2021-03-01', 4000, 20),
-> (401, 'Ali', 'Prithviraj', 'Sukumaran', 4, 401, '2021-04-01', 3800, 20),
-> (501, 'Faasil', 'Fahadh', 'Faasil', 2, 101, '2021-05-01', 4200, 10),
-> (601, 'Pauly', 'Nivin', 'Jacob', 5, 301, '2021-06-01', 3700, 30),
-> (701, 'Salmaan', 'Dulquer', 'Salmaan', 6, 601, '2021-07-01', 3900, 30),
-> (801, 'Ramasamy', 'Jayasurya', 'Rajagopal', 7, 701, '2021-08-01', 4100, 40),
-> (901, 'Kumar', 'Vineeth', 'Kumar', 4, 201, '2021-09-01', 3800, 20),
-> (1001, 'Sukumaran', 'Prithviraj', 'Grace', 6, 501, '2021-10-01', 4000, 30);
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
- ◆ mysql> CREATE TABLE Loan (Employee_Id INT, Firstname VARCHAR(255), Loan_Amount DECIMAL(10, 2), FOREIGN KEY (Employee_Id) REFERENCES Employee(Employee_Id));
Query OK, 0 rows affected (0.08 sec)
- mysql> INSERT INTO Loan (Employee_Id, Firstname, Loan_Amount) VALUES
-> (101, 'Mohanlal', 1000),
-> (201, 'Dileep', 2000),
-> (301, 'Mammootty', 1500),
-> (401, 'Prithviraj', 1200),
-> (501, 'Fahadh', 1800),
-> (601, 'Nivin', 2500),
-> (701, 'Dulquer', 2200),
-> (801, 'Jayasurya', 3000),
-> (901, 'Vineeth', 1700),
-> (1001, 'Prithviraj', 1900);
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
- mysql> SELECT * FROM Location;
+-----+
| Location_Id | Regional_Group |
+-----+
| 1 | Thiruvananthapuram |
| 2 | Kollam |
| 3 | Pathanamthitta |
| 4 | Alappuzha |
| 5 | Kottayam |
| 6 | Idukki |
| 7 | Ernakulam |
| 8 | Thrissur |
| 9 | Palakkad |
| 10 | Malappuram |
+-----+
10 rows in set (0.00 sec)

- mysql> SELECT * FROM Department;

Department_Id	Name	Location_Id
10	Sales	1
20	Marketing	1
30	Finance	2
40	Human Resources	2
50	Operations	3
60	IT	3
70	Research and Development	4
80	Customer Service	4
90	Production	5
100	Quality Assurance	5

10 rows in set (0.00 sec)

- mysql> SELECT * FROM Job;

Job_Id	Function
1	Manager
2	Engineer
3	Analyst
4	Supervisor
5	Coordinator
6	Specialist
7	Administrator
8	Consultant
9	Developer
10	Designer

10 rows in set (0.00 sec)

- mysql> SELECT * FROM Employee;

Employee_Id	Lastname	Firstname	Middlename	Job_Id	Manager_Id	Hiredate	Salary	Department_Id
101	Viswanathan	Mohanlal	Gopalakrishnan	1	NULL	2021-01-01	5000.00	10
201	Pillai	Dileep	Kumar	2	101	2021-02-01	4500.00	10
301	Ali	Mammootty	Rasheed	3	201	2021-03-01	4000.00	20
401	Ali	Prithviraj	Sukumaran	4	401	2021-04-01	3800.00	20
501	Faasil	Fahadh	Faasil	2	101	2021-05-01	4200.00	10
601	Pauly	Nivin	Jacob	5	301	2021-06-01	3700.00	30
701	Salmaan	Dulquer	Salmaan	6	601	2021-07-01	3900.00	30
801	Ramasamy	Jayasurya	Rajagopal	7	701	2021-08-01	4100.00	40
901	Kumar	Vineeth	Kumar	4	201	2021-09-01	3800.00	20
1001	Sukumaran	Prithviraj	Grace	6	501	2021-10-01	4000.00	30

10 rows in set (0.00 sec)

- mysql> SELECT * FROM Loan;

Employee_Id	Firstname	Loan_Amount
101	Mohanlal	1000.00
201	Dileep	2000.00
301	Mammootty	1500.00
401	Prithviraj	1200.00
501	Fahadh	1800.00
601	Nivin	2500.00
701	Dulquer	2200.00
801	Jayasurya	3000.00
901	Vineeth	1700.00
1001	Prithviraj	1900.00

10 rows in set (0.00 sec)

1) **Perform all types of JOIN operations on Employee and Loan tables**

■ a) Inner Join

- ◆ mysql> SELECT Employee.Employee_Id, Employee.Lastname, Loan.Loan_Amount
-> FROM Employee
-> INNER JOIN Loan ON Employee.Employee_Id = Loan.Employee_Id;

Employee_Id	Lastname	Loan_Amount
101	Viswanathan	1000.00
201	Pillai	2000.00
301	Ali	1500.00
401	Ali	1200.00
501	Faasil	1800.00
601	Pauly	2500.00
701	Salmaan	2200.00
801	Ramasamy	3000.00
901	Kumar	1700.00
1001	Sukumaran	1900.00

10 rows in set (0.00 sec)

■ b) Left Join

- ◆ mysql> SELECT Employee.Employee_Id, Employee.Lastname, Loan.Loan_Amount
-> FROM Employee
-> LEFT JOIN Loan ON Employee.Employee_Id = Loan.Employee_Id;

Employee_Id	Lastname	Loan_Amount
101	Viswanathan	1000.00
201	Pillai	2000.00
301	Ali	1500.00
401	Ali	1200.00
501	Faasil	1800.00
601	Pauly	2500.00
701	Salmaan	2200.00
801	Ramasamy	3000.00
901	Kumar	1700.00
1001	Sukumaran	1900.00

10 rows in set (0.00 sec)

■ c) Right Join

- ◆ mysql> SELECT Employee.Employee_Id, Employee.Lastname, Loan.Loan_Amount
-> FROM Employee
-> RIGHT JOIN Loan ON Employee.Employee_Id = Loan.Employee_Id;

Employee_Id	Lastname	Loan_Amount
101	Viswanathan	1000.00
201	Pillai	2000.00
301	Ali	1500.00
401	Ali	1200.00
501	Faasil	1800.00
601	Pauly	2500.00
701	Salmaan	2200.00
801	Ramasamy	3000.00
901	Kumar	1700.00
1001	Sukumaran	1900.00

10 rows in set (0.00 sec)

■ d)Full Outer

- ◆ mysql> SELECT Employee.Employee_Id, Employee.Lastname, Loan.Loan_Amount
-> FROM Employee
-> LEFT JOIN Loan ON Employee.Employee_Id = Loan.Employee_Id
-> UNION
-> SELECT Employee.Employee_Id, Employee.Lastname, Loan.Loan_Amount
-> FROM Employee
-> RIGHT JOIN Loan ON Employee.Employee_Id = Loan.Employee_Id
-> WHERE Employee.Employee_Id IS NULL;

Employee_Id	Lastname	Loan_Amount
101	Viswanathan	1000.00
201	Pillai	2000.00
301	Ali	1500.00
401	Ali	1200.00
501	Faasil	1800.00
601	Pauly	2500.00
701	Salmaan	2200.00
801	Ramasamy	3000.00
901	Kumar	1700.00
1001	Sukumaran	1900.00

10 rows in set (0.01 sec)

2) **Perform all types of set operations on Employee and Loan tables**

■ a)Union

- ◆ mysql> SELECT Employee_Id, Lastname, Firstname FROM Employee
-> UNION
-> SELECT Employee_Id, Firstname, NULL FROM Loan;

Employee_Id	Lastname	Firstname
101	Viswanathan	Mohanlal
201	Pillai	Dileep
301	Ali	Mammootty
401	Ali	Prithviraj
501	Faasil	Fahadh
601	Pauly	Nivin
701	Salmaan	Dulquer
801	Ramasamy	Jayasurya
901	Kumar	Vineeth
1001	Sukumaran	Prithviraj
101	Mohanlal	NULL
201	Dileep	NULL
301	Mammootty	NULL
401	Prithviraj	NULL
501	Fahadh	NULL
601	Nivin	NULL
701	Dulquer	NULL
801	Jayasurya	NULL
901	Vineeth	NULL
1001	Prithviraj	NULL

20 rows in set (0.00 sec)

■ b)Intersection

- ◆ mysql> SELECT Employee.Employee_Id, Employee.Lastname, Employee.Firstname
-> FROM Employee
-> INNER JOIN Loan ON Employee.Employee_Id = Loan.Employee_Id;

Employee_Id	Lastname	Firstname
101	Viswanathan	Mohanlal
201	Pillai	Dileep
301	Ali	Mammootty
401	Ali	Prithviraj
501	Faasil	Fahadh
601	Pauly	Nivin
701	Salmaan	Dulquer
801	Ramasamy	Jayasurya
901	Kumar	Vineeth
1001	Sukumaran	Prithviraj

10 rows in set (0.00 sec)

■ c) Difference

- ◆ mysql> SELECT Employee.Employee_Id, Employee.Lastname, Employee.Firstname
-> FROM Employee
-> LEFT JOIN Loan ON Employee.Employee_Id = Loan.Employee_Id
-> WHERE Loan.Employee_Id IS NULL;
Empty set (0.00 sec)

3) **Find out no.of employees working in “Sales” department**

- ◆ mysql> SELECT COUNT(*) AS EmployeeCount
-> FROM Employee
-> JOIN Department ON Employee.Department_Id = Department.Department_Id
-> WHERE Department.Name = 'Sales';
- | EmployeeCount |
|---------------|
| 3 |
- 1 row in set (0.00 sec)

4) **Find out the employees who are not working in department 10 or 30**

- ◆ mysql> SELECT Employee_Id, Lastname, Firstname
-> FROM Employee
-> WHERE Department_Id NOT IN (10, 30);
- | Employee_Id | Lastname | Firstname |
|-------------|----------|------------|
| 301 | Ali | Mammootty |
| 401 | Ali | Prithviraj |
| 901 | Kumar | Vineeth |
| 801 | Ramasamy | Jayasurya |
- 4 rows in set (0.00 sec)

5) List out employee id, last name in descending order based on the salary column

```
◆ mysql> SELECT Employee_Id, Lastname  
-> FROM Employee  
-> ORDER BY Salary DESC;
```

Employee_Id	Lastname
101	Viswanathan
201	Pillai
501	Faasil
801	Ramasamy
301	Ali
1001	Sukumaran
701	Salmaan
401	Ali
901	Kumar
601	Pauly

10 rows in set (0.00 sec)

6) How many employees who are working in different departments wise in the organization

```
◆ mysql> SELECT Department.Name, COUNT(*) AS EmployeeCount  
-> FROM Employee  
-> JOIN Department ON Employee.Department_Id = Department.Department_Id  
-> GROUP BY Department.Name;
```

Name	EmployeeCount
Sales	3
Marketing	3
Finance	3
Human Resources	1

4 rows in set (0.00 sec)

7) List out the department id having at least Two employees

```
◆ mysql> SELECT Department_Id, COUNT(*) AS EmployeeCount  
-> FROM Employee  
-> GROUP BY Department_Id  
-> HAVING COUNT(*) >= 2;
```

Department_Id	EmployeeCount
10	3
20	3
30	3

3 rows in set (0.01 sec)

8) Display the employee who got the maximum salary

- mysql> SELECT Employee_Id, Lastname, Firstname, Salary
-> FROM Employee
-> WHERE Salary = (SELECT MAX(Salary) FROM Employee);

Employee_Id	Lastname	Firstname	Salary
101	Viswanathan	Mohanlal	5000.00

1 row in set (0.00 sec)

9) Update the employees' salaries, who are working as Clerk on the basis of 10%

- mysql> UPDATE Employee
-> SET Salary = Salary * 1.1
-> WHERE Job_Id = (SELECT Job_Id FROM Job WHERE `Function` = 'Clerk');
Query OK, 0 rows affected (0.01 sec)
Rows matched: 0 Changed: 0 Warnings: 0

- mysql> SELECT * FROM Employee;

Employee_Id	Lastname	Firstname	Middlename	Job_Id	Manager_Id	Hiredate	Salary	Department_Id
101	Viswanathan	Mohanlal	Gopalakrishnan	1	NULL	2021-01-01	5000.00	10
201	Pillai	Dileep	Kumar	2	101	2021-02-01	4500.00	10
301	Ali	Mammootty	Rasheed	3	201	2021-03-01	4000.00	20
401	Ali	Prithviraj	Sukumaran	4	401	2021-04-01	3800.00	20
501	Faasil	Fahadh	Faasil	2	101	2021-05-01	4200.00	10
601	Pauly	Nivin	Jacob	5	301	2021-06-01	3700.00	30
701	Salmaan	Dulquer	Salmaan	6	601	2021-07-01	3900.00	30
801	Ramasamy	Jayasurya	Rajagopal	7	701	2021-08-01	4100.00	40
901	Kumar	Vineeth	Kumar	4	201	2021-09-01	3800.00	20
1001	Sukumaran	Prithviraj	Grace	6	501	2021-10-01	4000.00	30

10 rows in set (0.00 sec)

10) Delete the employees who are working in Human Resources department

- mysql> DELETE FROM Loan
-> WHERE Employee_Id IN (SELECT Employee_Id FROM Employee WHERE Department_Id = (SELECT Department_Id FROM Department WHERE Name = 'Human Resources'));

Query OK, 1 row affected (0.03 sec)

- mysql> DELETE FROM Employee
-> WHERE Department_Id = (SELECT Department_Id FROM Department WHERE Name = 'Human Resources');

Query OK, 1 row affected (0.02 sec)

- mysql> SELECT * FROM Employee;

Employee_Id	Lastname	Firstname	Middlename	Job_Id	Manager_Id	Hiredate	Salary	Department_Id
101	Viswanathan	Mohanlal	Gopalakrishnan	1	NULL	2021-01-01	5000.00	10
201	Pillai	Dileep	Kumar	2	101	2021-02-01	4500.00	10
301	Ali	Mammootty	Rasheed	3	201	2021-03-01	4000.00	20
401	Ali	Prithviraj	Sukumaran	4	401	2021-04-01	3800.00	20
501	Faasil	Fahadh	Faasil	2	101	2021-05-01	4200.00	10
601	Pauly	Nivin	Jacob	5	301	2021-06-01	3700.00	30
701	Salmaan	Dulquer	Salmaan	6	601	2021-07-01	3900.00	30
901	Kumar	Vineeth	Kumar	4	201	2021-09-01	3800.00	20
1001	Sukumaran	Prithviraj	Grace	6	501	2021-10-01	4000.00	30

9 rows in set (0.01 sec)

11) Find out whose department has not employees

- mysql> SELECT Department.Department_Id, Department.Name
-> FROM Department
-> LEFT JOIN Employee ON Department.Department_Id = Employee.Department_Id
-> WHERE Employee.Employee_Id IS NULL;

Department_Id	Name
40	Human Resources
50	Operations
60	IT
70	Research and Development
80	Customer Service
90	Production
100	Quality Assurance

7 rows in set (0.01 sec)

12) List out the department wise maximum salary, minimum salary, average salary of the employees

- mysql> SELECT Department.Department_Id, Department.Name, MAX(Employee.Salary) AS MaxSalary, MIN(Employee.Salary) AS MinSalary, AVG(Employee.Salary) AS AvgSalary
-> FROM Department
-> JOIN Employee ON Department.Department_Id = Employee.Department_Id
-> GROUP BY Department.Department_Id, Department.Name;

Department_Id	Name	MaxSalary	MinSalary	AvgSalary
10	Sales	5000.00	4200.00	4566.666667
20	Marketing	4000.00	3800.00	3866.666667
30	Finance	4000.00	3700.00	3866.666667

3 rows in set (0.01 sec)

13) How many employees who are joined in 1985

- mysql> SELECT COUNT(*) AS EmployeeCount
-> FROM Employee
-> WHERE YEAR(Hiredate) = 1985;

EmployeeCount
0

1 row in set (0.01 sec)

14) *Display the employees who are working in “Kollam”*

- ◆ mysql> SELECT Employee.Employee_Id, Employee.Lastname, Employee.Firstname FROM Employee JOIN Department ON Employee.Department_Id = Department.Department_Id JOIN Location ON Department.Location_Id = Location.Location_Id WHERE Location.Regional_Group = 'Kollam';
+-----+-----+-----+
| Employee_Id | Lastname | Firstname |
+-----+-----+-----+
| 601 | Pauly | Nivin |
| 701 | Salmaan | Dulquer |
| 1001 | Sukumaran | Prithviraj |
+-----+-----+-----+
3 rows in set (0.00 sec) 4 rows in set (0.00 sec)

15) *List our employees with their department names*

- ◆ mysql> SELECT Employee.Employee_Id, Employee.Lastname, Employee.Firstname, Department.Name
-> FROM Employee
-> JOIN Department ON Employee.Department_Id = Department.Department_Id;
+-----+-----+-----+-----+
| Employee_Id | Lastname | Firstname | Name |
+-----+-----+-----+-----+
| 101 | Viswanathan | Mohanlal | Sales |
| 201 | Pillai | Dileep | Sales |
| 301 | Ali | Mammootty | Marketing |
| 401 | Ali | Prithviraj | Marketing |
| 501 | Faasil | Fahadh | Sales |
| 601 | Pauly | Nivin | Finance |
| 701 | Salmaan | Dulquer | Finance |
| 901 | Kumar | Vineeth | Marketing |
| 1001 | Sukumaran | Prithviraj | Finance |
+-----+-----+-----+-----+
9 rows in set (0.00 sec)