MySQL class problem

**UC1 :**

**Query to create database**

mysql> create database payroll\_service;

Query OK, 1 row affected (0.01 sec)

**Query to show database**

mysql> show databases;

+--------------------+

| Database |

+--------------------+

| information\_schema |

| mysql |

| payroll\_service |

| performance\_schema |

| sakila |

| sys |

| world |

+--------------------+

**Query to use payroll\_service database**

mysql> use payroll\_service;

Database changed

**Query to see current database**

mysql> SELECT DATABASE();

+-----------------+

| DATABASE() |

+-----------------+

| payroll\_service |

+-----------------+

**UC2 :**

**Query to create table in employee\_service**

mysql> CREATE TABLE employee\_payroll

-> (

-> id INT unsigned NOT NULL AUTO\_INCREMENT,

-> name VARCHAR(150) NOT NULL,

-> salary Double NOT NULL,

-> start DATE NOT NULL,

-> PRIMARY KEY (id)

-> );

Query OK, 0 rows affected (0.05 sec)

**UC3:**

**Query to insert data into database**

mysql> INSERT INTO employee\_payroll (name, salary, start) VALUES

-> ( 'Bill', 1000000.00, '2018-01-03'),

-> ( 'Terisa', 2000000.00, '2019-11-13'),

-> ( 'Charlie', 3000000.00, '2020-05-21');

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

**UC4:**

**Query to retrieve all data from database payroll\_service**

mysql> SELECT \* FROM employee\_payroll;

+----+---------+---------+------------+

| id | name | salary | start |

+----+---------+---------+------------+

| 1 | Bill | 1000000 | 2018-01-03 |

| 2 | Terisa | 2000000 | 2019-11-13 |

| 3 | Charlie | 3000000 | 2020-05-21 |

+----+---------+---------+------------+

3 rows in set (0.00 sec)

**UC5:**

**Query to retrieve salary data for a particular employee**

mysql> SELECT salary FROM employee\_payroll WHERE name = 'Bill';

+---------+

| salary |

+---------+

| 1000000 |

+---------+

1 row in set (0.00 sec)

mysql> SELECT \* FROM employee\_payroll WHERE start BETWEEN CAST('2018-01-01' AS DATE) AND DATE(NOW());

+----+---------+---------+------------+

| id | name | salary | start |

+----+---------+---------+------------+

| 1 | Bill | 1000000 | 2018-01-03 |

| 2 | Terisa | 2000000 | 2019-11-13 |

| 3 | Charlie | 3000000 | 2020-05-21 |

+----+---------+---------+------------+

3 rows in set (0.01 sec)

**UC6:**

**Query to add gender to employee\_payroll table**

ALTER TABLE employee\_payroll ADD gender CHAR(1) AFTER name;

Query OK, 0 rows affected (0.14 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> update employee\_payroll set gender = 'F' where name = 'Terisa';

Query OK, 1 row affected (0.01 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> update employee\_payroll set gender = 'M' where name = 'Bill' or name = 'Charlie';

Query OK, 2 rows affected (0.01 sec)

Rows matched: 2 Changed: 2 Warnings: 0

mysql> update employee\_payroll set salary = 3000000.00 where name = 'Terisa';

Query OK, 1 row affected (0.01 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> SELECT \* FROM employee\_payroll;

+----+---------+--------+---------+------------+

| id | name | gender | salary | start |

+----+---------+--------+---------+------------+

| 1 | Bill | M | 1000000 | 2018-01-03 |

| 2 | Terisa | F | 3000000 | 2019-11-13 |

| 3 | Charlie | M | 3000000 | 2020-05-21 |

+----+---------+--------+---------+------------+

3 rows in set (0.00 sec)

**UC7:**

**Query to find sum, average, min, max and no. of male and female employees from employee\_payroll table**

mysql> SELECT SUM(salary) FROM employee\_payroll WHERE gender = 'F' GROUP BY gender;

+-------------+

| SUM(salary) |

+-------------+

| 3000000 |

+-------------+

1 row in set (0.01 sec)

mysql> SELECT SUM(salary) FROM employee\_payroll WHERE gender = 'M' GROUP BY gender;

+-------------+

| SUM(salary) |

+-------------+

| 4000000 |

+-------------+

1 row in set (0.00 sec)

mysql> SELECT AVG(salary) FROM employee\_payroll WHERE gender = 'M' GROUP BY gender;

+-------------+

| AVG(salary) |

+-------------+

| 2000000 |

+-------------+

1 row in set (0.00 sec)

mysql> SELECT AVG(salary) FROM employee\_payroll WHERE gender = 'F' GROUP BY gender;

+-------------+

| AVG(salary) |

+-------------+

| 3000000 |

+-------------+

1 row in set (0.00 sec)

mysql> SELECT MIN(salary) FROM employee\_payroll WHERE gender = 'F' GROUP BY gender;

+-------------+

| MIN(salary) |

+-------------+

| 3000000 |

+-------------+

1 row in set (0.00 sec)

mysql> SELECT MIN(salary) FROM employee\_payroll WHERE gender = 'M' GROUP BY gender;

+-------------+

| MIN(salary) |

+-------------+

| 1000000 |

+-------------+

1 row in set (0.00 sec)

mysql> SELECT MAX(salary) FROM employee\_payroll WHERE gender = 'M' GROUP BY gender;

+-------------+

| MAX(salary) |

+-------------+

| 3000000 |

+-------------+

1 row in set (0.00 sec)

mysql> SELECT MAX(salary) FROM employee\_payroll WHERE gender = 'F' GROUP BY gender;

+-------------+

| MAX(salary) |

+-------------+

| 3000000 |

+-------------+

1 row in set (0.00 sec)

mysql> SELECT COUNT(salary) FROM employee\_payroll WHERE gender = 'M' GROUP BY gender;

+---------------+

| COUNT(salary) |

+---------------+

| 2 |

+---------------+

1 row in set (0.00 sec)

mysql> SELECT COUNT(salary) FROM employee\_payroll WHERE gender = 'F' GROUP BY gender;

+---------------+

| COUNT(salary) |

+---------------+

| 1 |

+---------------+

1 row in set (0.00 sec)

**UC8:**

**Query to extend database employee\_payroll to store employee phone, address and department**

mysql> ALTER TABLE employee\_payroll ADD phoneNumber INT AFTER name;

Query OK, 0 rows affected (0.09 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> ALTER TABLE employee\_payroll ADD address VARCHAR(150) AFTER phoneNumber;

Query OK, 0 rows affected (0.11 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> ALTER TABLE employee\_payroll ADD department VARCHAR(150) NOT NULL AFTER address;

Query OK, 0 rows affected (0.09 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> Describe employee\_payroll;

+-------------+--------------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+-------------+--------------+------+-----+---------+----------------+

| id | int unsigned | NO | PRI | NULL | auto\_increment |

| name | varchar(150) | NO | | NULL | |

| phoneNumber | int | YES | | NULL | |

| address | varchar(150) | YES | | NULL | |

| department | varchar(150) | NO | | NULL | |

| gender | char(1) | YES | | NULL | |

| salary | double | NO | | NULL | |

| start | date | NO | | NULL | |

+-------------+--------------+------+-----+---------+----------------+

8 rows in set (0.01 sec)

**UC9:**

**Query to extend employee\_payroll table to have basic pay, deductions, taxable pay, income tax, net pay.**

mysql> ALTER TABLE employee\_payroll ADD basicPay INT AFTER gender;

Query OK, 0 rows affected (0.09 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> ALTER TABLE employee\_payroll ADD deductions Double AFTER basicPay;

Query OK, 0 rows affected (0.07 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> ALTER TABLE employee\_payroll ADD taxablePay Double AFTER deductions;

Query OK, 0 rows affected (0.08 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> ALTER TABLE employee\_payroll ADD incomeTax Double AFTER taxablePay;

Query OK, 0 rows affected (0.08 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> ALTER TABLE employee\_payroll ADD netPay Double AFTER incomeTax;

Query OK, 0 rows affected (0.07 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> Describe employee\_payroll;

+-------------+--------------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+-------------+--------------+------+-----+---------+----------------+

| id | int unsigned | NO | PRI | NULL | auto\_increment |

| name | varchar(150) | NO | | NULL | |

| phoneNumber | int | YES | | NULL | |

| address | varchar(150) | YES | | NULL | |

| department | varchar(150) | NO | | NULL | |

| gender | char(1) | YES | | NULL | |

| basicPay | int | YES | | NULL | |

| deductions | double | YES | | NULL | |

| taxablePay | double | YES | | NULL | |

| incomeTax | double | YES | | NULL | |

| netPay | double | YES | | NULL | |

| salary | double | NO | | NULL | |

| start | date | NO | | NULL | |

+-------------+--------------+------+-----+---------+----------------+

13 rows in set (0.01 sec)

mysql>

**UC10:**

**Query to insert department for terissa making two different entries for two different department.**

mysql> update employee\_payroll set department = 'Marketing' where name = 'Terisa';

Query OK, 1 row affected (0.00 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> Insert INTO employee\_payroll(name, address, department, gender, salary, start) VALUES

-> ('Terisa', 'Dellas', 'Sales', 'F', 3000000.00, '2019-11-13');

Query OK, 1 row affected (0.00 sec)

mysql> SELECT \* FROM employee\_payroll;

+----+---------+-------------+---------+------------+--------+----------+------------+------------+-----------+--------+---------+------------+

| id | name | phoneNumber | address | department | gender | basicPay | deductions | taxablePay | incomeTax | netPay | salary | start |

+----+---------+-------------+---------+------------+--------+----------+------------+------------+-----------+--------+---------+------------+

| 1 | Bill | NULL | NULL | | M | NULL | NULL | NULL | NULL | NULL | 1000000 | 2018-01-03 |

| 2 | Terisa | NULL | NULL | Marketing | F | NULL | NULL | NULL | NULL | NULL | 3000000 | 2019-11-13 |

| 3 | Charlie | NULL | NULL | | M | NULL | NULL | NULL | NULL | NULL | 3000000 | 2020-05-21 |

| 5 | Terisa | NULL | Dellas | Sales | F | NULL | NULL | NULL | NULL | NULL | 3000000 | 2019-11-13 |

+----+---------+-------------+---------+------------+--------+----------+------------+------------+-----------+--------+---------+------------+

4 rows in set (0.00 sec)

mysql> update employee\_payroll set salary = 5000000.00 where name = 'Terisa';

Query OK, 2 rows affected (0.01 sec)

Rows matched: 2 Changed: 2 Warnings: 0

mysql> SELECT \* FROM employee\_payroll;

+----+---------+-------------+---------+------------+--------+----------+------------+------------+-----------+--------+---------+------------+

| id | name | phoneNumber | address | department | gender | basicPay | deductions | taxablePay | incomeTax | netPay | salary | start |

+----+---------+-------------+---------+------------+--------+----------+------------+------------+-----------+--------+---------+------------+

| 1 | Bill | NULL | NULL | | M | NULL | NULL | NULL | NULL | NULL | 1000000 | 2018-01-03 |

| 2 | Terisa | NULL | NULL | Marketing | F | NULL | NULL | NULL | NULL | NULL | 5000000 | 2019-11-13 |

| 3 | Charlie | NULL | NULL | | M | NULL | NULL | NULL | NULL | NULL | 3000000 | 2020-05-21 |

| 5 | Terisa | NULL | Dellas | Sales | F | NULL | NULL | NULL | NULL | NULL | 5000000 | 2019-11-13 |

+----+---------+-------------+---------+------------+--------+----------+------------+------------+-----------+--------+---------+------------+

4 rows in set (0.00 sec)

**UC11:**

**ER Diagram**

Department

Emp start date

Net Pay

Income

Tax

Basic Salary

Comp Name

Emp Address

Comp ID

Emp Name

Emp ID

Company

Employee

Payroll

Dept. Emp

One to Many

Many to One

One to One

**UC 12:**

**Query to Implementation of ER Diagram into Payroll Service DB**

mysql> CREATE TABLE department (

-> deptID INT unsigned NOT NULL AUTO\_INCREMENT,

-> deptName VARCHAR(150) NOT NULL,

-> id INT unsigned NOT NULL,

-> PRIMARY KEY (deptID),

-> FOREIGN KEY (id) REFERENCES employee\_payroll(id)

-> );

Query OK, 0 rows affected (0.08 sec)

mysql> describe department;

+----------+--------------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+----------+--------------+------+-----+---------+----------------+

| deptID | int unsigned | NO | PRI | NULL | auto\_increment |

| deptName | varchar(150) | NO | | NULL | |

| id | int unsigned | NO | MUL | NULL | |

+----------+--------------+------+-----+---------+----------------+

3 rows in set (0.01 sec)

mysql> INSERT INTO department ( deptID, deptName, id) VALUES

-> (1, 'Marketing', 2),

-> (2, 'Sales', 2);

Query OK, 2 rows affected (0.01 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql> SELECT \* FROM department;

+--------+-----------+----+

| deptID | deptName | id |

+--------+-----------+----+

| 1 | Marketing | 2 |

| 2 | Sales | 2 |

+--------+-----------+----+

2 rows in set (0.00 sec)