



MSSQL DB

UC1



BridgeLabz
Empire of the Database



UC 1

Ability to create a payroll service database

- Using MSSQL Client use **create database** query to create a payroll_service database
- Also you can see the DB created by using **show database** query
- And go to the database created by using **use payroll_service** query

```
mysql> CREATE DATABASE payroll_service;  
Query OK, 1 row affected (0.35 sec)
```

```
mysql> show databases;
```

Database
information_schema
mysql
payroll_service
performance_schema
sakila
sys
world

```
7 rows in set (0.00 sec)
```

```
mysql> USE payroll_service;
```

```
Database changed
```

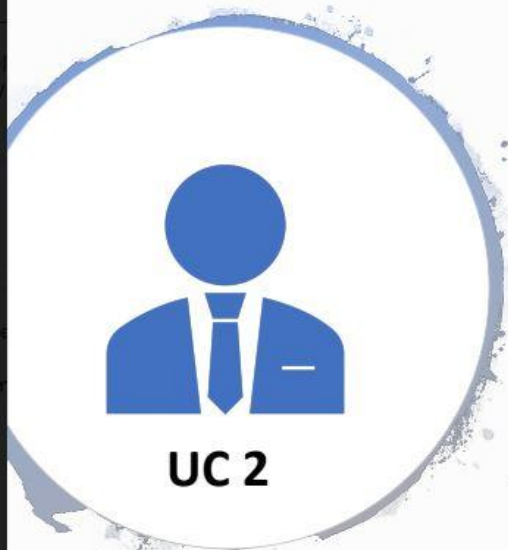
```
mysql> SELECT DATABASE();
```

DATABASE()
payroll_service

```
1 row in set (0.00 sec)
```

```
mysql>
```

UC2



Ability to create a employee payroll table in the payroll service database to manage employee payrolls

- Use payroll_service database in MSSQL Client
- Use **Create Table employee_payroll** Query to create employee payroll table with columns id, name, salary and start date as column. Note Id is set to auto increment.
- Understand the SQL data types to be used for the table
- Note: SQL Queries as case insensitive

```
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 (1.69 sec)


```
mysql> DESCRIBE employee_payroll;
```

Field	Type	Null	Key	Default	Extra
id	int unsigned	NO	PRI	NULL	auto_increment
name	varchar(150)	NO		NULL	
salary	double	NO		NULL	
start	date	NO		NULL	


4 rows in set (0.18 sec)

```
mysql>
```

UC3



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Empowering the Future



UC 3


Ability to create employee payroll data in the payroll service database as part of **CRUD** Operation


- Use payroll_service database in MSSQL Client
- Use `INSERT INTO employee_payroll` Query to create employees payroll data into the employee_payroll table

```
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 (0.30 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql>
```

UC4


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Employability Delivered



UC 4

Ability to retrieve all the employee payroll data that is added to payroll service database


- Use payroll_service database in MSSQL Client
- Use `SELECT * FROM employee_payroll` to retrieve all the data from the employee_payroll table

```
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 (0.11 sec)
```

UC5



UC 5



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Empathy Delivered

Ability to retrieve salary data for a particular employee as well as all employees who have joined in a particular data range from the payroll service database

- Use `SELECT salary FROM employee_payroll WHERE name = 'Bill'` Query to View Bill's salary
- Use `Select` query with `Where` condition View employees between start dates
- Query: `WHERE start BETWEEN CAST('2018-01-01' AS DATE) AND DATE(NOW());`
- Note: Where Condition Clause is used to retrieve the row needed from the table
- Note: Use of Database Functions like `CAST()` and `NOW()` in the Query

```
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 CASR('2018-01-01' AS DATE) AND DATE(NOW());
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'AND DATE(NOW())' at line 1
mysql> SELECT * FROM employee_payroll WHERE start BETWEEN CAST('2018-01-01' AS DATE) AND DATE(NOW());
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'AND DATE(NOW())' at line 1
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 (0.10 sec)

mysql>
```

Activate Windows
Go to Settings to activate Windows.

UC6



Ability to add Gender to Employee Payroll Table and Update the Rows to reflect the correct Employee Gender

- Use payroll_service database in MSSQL Client
- Use Alter Table Command to add Field gender after the name field
- Use Update Query to set the gender using where condition with the employee name
- E.g. `UPDATE employee_payroll set gender = 'M' where name = 'Bill' or name = 'Charlie';`

```
mysql> ALTER TABLE employee_payroll ADD gendder CHAR(1) AFTER name;
ERROR 1146 (42S02): Table 'payroll_service.employee_payroll' doesn't exist
mysql> ALTER TABLE employee_payroll ADD gendder CHAR(1) AFTER name;
Query OK, 0 rows affected (3.25 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	
gendder	char(1)	YES		NULL	
salary	double	NO		NULL	
start	date	NO		NULL	

```
5 rows in set (0.04 sec)
```

```
mysql> update employee_payroll set gender = 'F' where name = 'Terisa';
ERROR 1054 (42S22): Unknown column 'gender' in 'field list'
mysql> update employee_payroll set gendder = 'F' where name = 'Terisa';
Query OK, 1 row affected (0.06 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

```
mysql> SELECT * FROM employee_payroll;
```

id	name	gendder	salary	start
1	Bill	NULL	1000000	2018-01-03
2	Terisa	F	2000000	2019-11-13
3	Charlie	NULL	3000000	2020-05-21

```
3 rows in set (0.00 sec)
```

```
mysql> update employee_payroll set gender = 'M' where name = 'Bill' or name = 'Charlie';
ERROR 1054 (42S22): Unknown column 'gender' in 'field list'
mysql> update employee_payroll set gendder = 'M' where name = 'Bill' or name = 'Charlie';
Query OK, 2 rows affected (0.08 sec)
Rows matched: 2 Changed: 2 Warnings: 0
```


```
mysql> SELECT * FROM employee_payroll;
+-----+-----+-----+-----+-----+
| id | name   | gendder | salary | start   |
+-----+-----+-----+-----+-----+
| 1 | Bill   | M       | 1000000 | 2018-01-03 |
| 2 | Terisa | F       | 2000000 | 2019-11-13 |
| 3 | Charlie | M       | 3000000 | 2020-05-21 |
+-----+-----+-----+-----+-----+
3 rows in set (0.09 sec)

mysql> update employee_payroll set salary = 3000000.00 where name = 'Terisa';
Query OK, 1 row affected (0.11 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT * FROM employee_payroll;
+-----+-----+-----+-----+-----+
| id | name   | gendder | 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 (0.10 sec)

mysql>
```

UC7



UC 7

BridgeLabz
Employability Deliverables

Ability to find sum, average, min, max and number of male and female employees

- Use payroll_service database in MSSQL Client
- Use Database Function **SUM, AVG, MIN, MAX, COUNT** to do analysis by Male or Female.
- Note: You will need to use GROUP BY GENDER grouping to get the result
- E.g. **SELECT SUM(salary) FROM employee_payroll WHERE gender = 'F' GROUP BY gender;**

```
mysql> SELECT AVG(salary) FROM employee_payroll WHERE gender = 'M' GROUP BY gender;
ERROR 1054 (42S22): Unknown column 'gender' in 'where clause'
mysql> SELECT AVG(salary) FROM employee_payroll WHERE gendder = 'M' GROUP BY gender;
ERROR 1054 (42S22): Unknown column 'gender' in 'group statement'
mysql> SELECT AVG(salary) FROM employee_payroll WHERE gendder = 'M' GROUP BY gendder;
+-----+
| AVG(salary) |
+-----+
| 2000000 |
+-----+
1 row in set (0.10 sec)

mysql> SELECT AVG(salary) FROM employee_payroll WHERE GROUP BY gendder;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'GROUP BY gendder' at line 1
mysql> SELECT AVG(salary) FROM employee_payroll GROUP BY gendder;
+-----+
| AVG(salary) |
+-----+
| 2000000 |
| 3000000 |
+-----+
2 rows in set (0.10 sec)

mysql> SELECT gendder, AVG(salary) FROM employee_payroll GROUP BY gendder;
+-----+
| gendder | AVG(salary) |
+-----+
| M | 2000000 |
| F | 3000000 |
+-----+
2 rows in set (0.00 sec)

mysql> SELECT gendder, COUNT(name) FROM employee_payroll GROUP BY gendder;
+-----+
| gendder | COUNT(name) |
+-----+
| M | 2 |
| F | 1 |
+-----+
2 rows in set (0.00 sec)

mysql> SELECT gendder, SUM(salary) FROM employee_payroll GROUP BY gendder;
+-----+
| gendder | SUM(salary) |
+-----+
| M | 4000000 |
| F | 3000000 |
+-----+
2 rows in set (0.00 sec)
```

Activate Windows
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```
mysql> SELECT gendder, COUNT(name) FROM employee_payroll GROUP BY gendder;
+-----+
| gendder | COUNT(name) |
+-----+
| M | 2 |
| F | 1 |
+-----+
2 rows in set (0.00 sec)

mysql> SELECT gendder, SUM(salary) FROM employee_payroll GROUP BY gendder;
+-----+
| gendder | SUM(salary) |
+-----+
| M | 4000000 |
| F | 3000000 |
+-----+
2 rows in set (0.00 sec)

mysql> SELECT gendder, AVG(salary) FROM employee_payroll GROUP BY gendder;
+-----+
| gendder | AVG(salary) |
+-----+
| M | 2000000 |
| F | 3000000 |
+-----+
2 rows in set (0.00 sec)
```



```
mysql> SELECT gendder, AVG(salary) FROM employee_payroll GROUP BY gendder;
+-----+-----+
| gendder | AVG(salary) |
+-----+-----+
| M       | 2000000     |
| F       | 3000000     |
+-----+-----+
2 rows in set (0.00 sec)

mysql> SELECT gendder, MIN(salary) FROM employee_payroll GROUP BY gendder;
+-----+-----+
| gendder | MIN(salary) |
+-----+-----+
| M       | 1000000     |
| F       | 3000000     |
+-----+-----+
2 rows in set (0.08 sec)

mysql> SELECT gendder, MAX(salary) FROM employee_payroll GROUP BY gendder;
+-----+-----+
| gendder | MAX(salary) |
+-----+-----+
| M       | 3000000     |
| F       | 3000000     |
+-----+-----+
2 rows in set (0.00 sec)

mysql>
```