



# **CIS 11051 – PRACTICAL FOR DATABASE DESIGN**

Information and communication Technology

Faculty of Technology

South Eastern University of Sri Lanka

Registration Number: SEU/IS/22/ICT/075

Academic year: 22/23

Lab Sheet 07

## Task 01

i.

```
MySQL 8.0 Command Line Client
Query OK, 0 rows affected (0.05 sec)

mysql> create table Students(ID int,Name varchar(30),Total_Marks int,GPA decimal(3,2),Class varchar(30),Gender varchar(20));
Query OK, 0 rows affected (0.04 sec)

mysql> _
```

```
MySQL 8.0 Command Line Client
0, 2.0, 'Pass', 'Male'),(8, 'Alex', 78, 3.6, 'Second Upper', 'Male'),(9, 'Alpha', 39, 2.0, 'Pass', 'Female'),(10, 'Krish', 82, 3.71, 'First', 'Male'));
ERROR 1136 (21S01): Column count doesn't match value count at row 1
mysql> insert into students values(1, 'John Deo', 89, 3.8, 'First', 'Male'), (2, 'Max Ruin', 45, 2.5, 'Second lower', 'Male'), (3, 'Arnoid', 72, 3.3, 'Second Upper', 'F
female'),(4, 'Mary Mike', 67, 3.4, 'Second Upper', 'Female'),(5, 'Asruk', 52, 2.8, 'Second Lower', 'Male'),(6, 'Tes Qny', 90, 3.82, 'First', 'Female'),(7, 'Big John', 40
, 2.0, 'Pass', 'Male'),(8, 'Alex', 78, 3.6, 'Second Upper', 'Male'),(9, 'Alpha', 39, 2.0, 'Pass', 'Female'),(10, 'Krish', 82, 3.71, 'First', 'Male');
Query OK, 10 rows affected (0.02 sec)
Records: 10 Duplicates: 0 Warnings: 0

mysql> select * from students;
+----+-----+-----+-----+-----+-----+
| ID | Name   | Total_Marks | GPA | Class       | Gender |
+----+-----+-----+-----+-----+-----+
| 1  | John Deo | 89         | 3.80 | First       | Male   |
| 2  | Max Ruin | 45         | 2.50 | Second lower | Male   |
| 3  | Arnoid   | 72         | 3.30 | Second Upper | Female |
| 4  | Mary Mike | 67         | 3.40 | Second Upper | Female |
| 5  | Asruk    | 52         | 2.80 | Second Lower | Male   |
| 6  | Tes Qny  | 90         | 3.82 | First       | Female |
| 7  | Big John | 40         | 2.00 | Pass        | Male   |
| 8  | Alex     | 78         | 3.60 | Second Upper | Male   |
| 9  | Alpha    | 39         | 2.00 | Pass        | Female |
| 10 | Krish    | 82         | 3.71 | First       | Male   |
+----+-----+-----+-----+-----+-----+
10 rows in set (0.00 sec)

mysql> _
```

1.

```
mysql> select * from students where total_marks between 50 and 80;
+----+-----+-----+-----+-----+-----+
| ID | Name   | Total_Marks | GPA | Class       | Gender |
+----+-----+-----+-----+-----+-----+
| 3  | Arnoid   | 72         | 3.30 | Second Upper | Female |
| 4  | Mary Mike | 67         | 3.40 | Second Upper | Female |
| 5  | Asruk    | 52         | 2.80 | Second Lower | Male   |
| 8  | Alex     | 78         | 3.60 | Second Upper | Male   |
+----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> _
```

2.

```
mysql> select total_marks from students where GPA between 3.0 and 3.7;
+-----+
| total_marks |
+-----+
|          72 |
|          67 |
|          78 |
+-----+
3 rows in set (0.01 sec)
```

3.

```
mysql> select * from students where Class in ('First','Pass');
+-----+-----+-----+-----+-----+-----+
| ID | Name | Total_Marks | GPA | Class | Gender |
+-----+-----+-----+-----+-----+-----+
| 1 | John Deo | 89 | 3.80 | First | Male |
| 6 | Tes Qry | 90 | 3.82 | First | Female |
| 7 | Big John | 40 | 2.00 | Pass | Male |
| 9 | Alpha | 39 | 2.00 | Pass | Female |
| 10 | Krish | 82 | 3.71 | First | Male |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> _
```

4.

```
mysql> select * from students where ic in (2,4,6);
ERROR 1054 (42S22): Unknown column 'ic' in 'where clause'
mysql> select * from students where id in (2,4,6);
+-----+-----+-----+-----+-----+-----+
| ID | Name | Total_Marks | GPA | Class | Gender |
+-----+-----+-----+-----+-----+-----+
| 2 | Max Ruin | 45 | 2.50 | Second lower | Male |
| 4 | Mary Mike | 67 | 3.40 | Second Upper | Female |
| 6 | Tes Qry | 90 | 3.82 | First | Female |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

5.

```
mysql> select * from students where Name like 'a%';
```

ID	Name	Total_Marks	GPA	Class	Gender
3	Arnoid	72	3.30	Second Upper	Female
5	Asruk	52	2.80	Second Lower	Male
8	Alex	78	3.60	Second Upper	Male
9	Alpha	39	2.00	Pass	Female

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

6.

```
mysql> select * from students where Name like '%n';
```

ID	Name	Total_Marks	GPA	Class	Gender
2	Max Ruin	45	2.50	Second lower	Male
7	Big John	40	2.00	Pass	Male

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

```
mysql> _
```

7.

```
mysql> select * from students where name like '%oh%';
```

ID	Name	Total_Marks	GPA	Class	Gender
1	John Deo	89	3.80	First	Male
7	Big John	40	2.00	Pass	Male

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

8.

```
mysql> select name, gender from students where name like '____'
-> ;
+-----+-----+
| name  | gender |
+-----+-----+
| Asruk | Male   |
| Alpha | Female |
| Krish | Male   |
+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

9.

```
mysql> select name, gender from students where name like '____';
+-----+-----+
| name  | gender |
+-----+-----+
| Alex  | Male   |
+-----+-----+
1 row in set (0.00 sec)

mysql> _
```

10.

```
mysql> select id, name from students where name like '_a%';
+-----+-----+
| id  | name      |
+-----+-----+
| 2   | Max Ruin  |
| 4   | Mary Mike |
+-----+-----+
2 rows in set (0.00 sec)
```

11.

```
mysql> select id, name from students where name like '___x';
+-----+-----+
| id    | name  |
+-----+-----+
|      8 | Alex  |
+-----+-----+
1 row in set (0.00 sec)

mysql> _
```

12.

```
mysql> select * from students where gpa>3.5 and class='second upper';
+-----+-----+-----+-----+-----+-----+
| ID    | Name  | Total_Marks | GPA   | Class      | Gender |
+-----+-----+-----+-----+-----+-----+
|      8 | Alex  |          78 | 3.60 | Second Upper | Male   |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

13.

```
mysql> select * from students where total_marks>60 and class='second upper';
+-----+-----+-----+-----+-----+-----+
| ID    | Name    | Total_Marks | GPA   | Class      | Gender |
+-----+-----+-----+-----+-----+-----+
|      3 | Arnoid  |          72 | 3.30 | Second Upper | Female |
|      4 | Mary Mike |          67 | 3.40 | Second Upper | Female |
|      8 | Alex    |          78 | 3.60 | Second Upper | Male   |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

14.

```
mysql> select * from students where gender='male' or gpa<2.5;
+-----+-----+-----+-----+-----+-----+
| ID | Name | Total_Marks | GPA | Class | Gender |
+-----+-----+-----+-----+-----+-----+
| 1 | John Deo | 89 | 3.80 | First | Male |
| 2 | Max Ruin | 45 | 2.50 | Second lower | Male |
| 5 | Asruk | 52 | 2.80 | Second Lower | Male |
| 7 | Big John | 40 | 2.00 | Pass | Male |
| 8 | Alex | 78 | 3.60 | Second Upper | Male |
| 9 | Alpha | 39 | 2.00 | Pass | Female |
| 10 | Krish | 82 | 3.71 | First | Male |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)

mysql> _
```

15.

```
mysql> select * from students where class='first' or total_marks>80;
+-----+-----+-----+-----+-----+-----+
| ID | Name | Total_Marks | GPA | Class | Gender |
+-----+-----+-----+-----+-----+-----+
| 1 | John Deo | 89 | 3.80 | First | Male |
| 6 | Tes Qry | 90 | 3.82 | First | Female |
| 10 | Krish | 82 | 3.71 | First | Male |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

## Task 02 - SQL Practice – Logical & Comparison Operators

i.

```
mysql> create table employees(empid int,fullname varchar(30),department varchar(30),salary int,age int,experience varchar(30),gender varchar(30));
Query OK, 0 rows affected (0.03 sec)
```

```
mysql>
```

```
mysql> insert into employees values(101,'alice green','HR',55000,29,'3.5','female'),(102,'bob martin','it',75000,32,'6.0','male'),(103,'Cathy woods','marketing',60000,28,'4.2','female'),(104,'David Lee','IT',72000,35,'7.1','male'),(105,'Eva Stone','Finance',68000,30,'5.8','female'),(106,'Frank Johns','HR',52000,25,'2.5','Male'),(107,'Grace Park','Marketing',58000,27,'3.8','female'),(108,'Henry bolt','it',80000,40,'10.0','male'),(109,'Isla Ray','Finance',67000,33,'6.5','Female'),(110,'Jake Moon','IT',73000,29,'4.9','male');
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0
```

```
mysql> select * from employees;
```

empid	fullname	department	salary	age	experience	gender
101	alice green	HR	55000	29	3.5	female
102	bob martin	it	75000	32	6.0	male
103	Cathy woods	marketing	60000	28	4.2	female
104	David Lee	IT	72000	35	7.1	male
105	Eva Stone	Finance	68000	30	5.8	female
106	Frank Johns	HR	52000	25	2.5	Male
107	Grace Park	Marketing	58000	27	3.8	female
108	Henry bolt	it	80000	40	10.0	male
109	Isla Ray	Finance	67000	33	6.5	Female
110	Jake Moon	IT	73000	29	4.9	male

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

```
mysql>
```

1.

```
mysql> select * from employees where salary between 60000 and 75000;
```

empid	fullname	department	salary	age	experience	gender
102	bob martin	it	75000	32	6.0	male
103	Cathy woods	marketing	60000	28	4.2	female
104	David Lee	IT	72000	35	7.1	male
105	Eva Stone	Finance	68000	30	5.8	female
109	Isla Ray	Finance	67000	33	6.5	Female
110	Jake Moon	IT	73000	29	4.9	male

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

```
mysql>
```



2.

```
mysql> select * from employees where department='it' or department='finance';
+-----+-----+-----+-----+-----+-----+-----+
| empid | fullname | department | salary | age | experience | gender |
+-----+-----+-----+-----+-----+-----+-----+
| 102 | bob martin | it | 75000 | 32 | 6.0 | male |
| 104 | David Lee | IT | 72000 | 35 | 7.1 | male |
| 105 | Eva Stone | Finance | 68000 | 30 | 5.8 | female |
| 108 | Henry bolt | it | 80000 | 40 | 10.0 | male |
| 109 | Isla Ray | Finance | 67000 | 33 | 6.5 | Female |
| 110 | Jake Moon | IT | 73000 | 29 | 4.9 | male |
+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.01 sec)

mysql>
```

3.

```
mysql> select * from employees where experience>5 and salary<75000;
+-----+-----+-----+-----+-----+-----+-----+
| empid | fullname | department | salary | age | experience | gender |
+-----+-----+-----+-----+-----+-----+-----+
| 104 | David Lee | IT | 72000 | 35 | 7.1 | male |
| 105 | Eva Stone | Finance | 68000 | 30 | 5.8 | female |
| 109 | Isla Ray | Finance | 67000 | 33 | 6.5 | Female |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)

mysql>
```

4.

```
mysql> select * from employees where gender='female' or age<28;
+-----+-----+-----+-----+-----+-----+-----+
| empid | fullname | department | salary | age | experience | gender |
+-----+-----+-----+-----+-----+-----+-----+
| 101 | alice green | HR | 55000 | 29 | 3.5 | female |
| 103 | Cathy woods | marketing | 60000 | 28 | 4.2 | female |
| 105 | Eva Stone | Finance | 68000 | 30 | 5.8 | female |
| 106 | Frank Johns | HR | 52000 | 25 | 2.5 | Male |
| 107 | Grace Park | Marketing | 58000 | 27 | 3.8 | female |
| 109 | Isla Ray | Finance | 67000 | 33 | 6.5 | Female |
+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql>
```

```
mysql> select * from employees where fullname like '_a%';
```

empid	fullname	department	salary	age	experience	gender
103	Cathy woods	marketing	60000	28	4.2	female
104	David Lee	IT	72000	35	7.1	male
110	Jake Moon	IT	73000	29	4.9	male

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

```
mysql> _
```

```
mysql> select * from employees where fullname like '%n';
```

empid	fullname	department	salary	age	experience	gender
101	alice green	HR	55000	29	3.5	female
102	bob martin	it	75000	32	6.0	male
110	Jake Moon	IT	73000	29	4.9	male

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

```
mysql>
```

```
mysql> select * from employees where department!='marketing';
```

empid	fullname	department	salary	age	experience	gender
101	alice green	HR	55000	29	3.5	female
102	bob martin	it	75000	32	6.0	male
104	David Lee	IT	72000	35	7.1	male
105	Eva Stone	Finance	68000	30	5.8	female
106	Frank Johns	HR	52000	25	2.5	Male
108	Henry bolt	it	80000	40	10.0	male
109	Isla Ray	Finance	67000	33	6.5	Female
110	Jake Moon	IT	73000	29	4.9	male

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

```
mysql> _
```

8.

```
mysql> select fullname, age from employees where fullname like '_____';
+-----+-----+
| fullname | age |
+-----+-----+
| bob martin | 32 |
| Grace Park | 27 |
| Henry bolt | 40 |
+-----+-----+
3 rows in set (0.00 sec)

mysql> _
```

9.

```
mysql> select * from employees where age between 30 and 35 and 5<experience;
+-----+-----+-----+-----+-----+-----+-----+
| empid | fullname | department | salary | age | experience | gender |
+-----+-----+-----+-----+-----+-----+-----+
| 102 | bob martin | it | 75000 | 32 | 6.0 | male |
| 104 | David Lee | IT | 72000 | 35 | 7.1 | male |
| 105 | Eva Stone | Finance | 68000 | 30 | 5.8 | female |
| 109 | Isla Ray | Finance | 67000 | 33 | 6.5 | Female |
+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>
```

10.

```
mysql> select * from employees where salary>70000 or experience<4;
+-----+-----+-----+-----+-----+-----+-----+
| empid | fullname | department | salary | age | experience | gender |
+-----+-----+-----+-----+-----+-----+-----+
| 101 | alice green | HR | 55000 | 29 | 3.5 | female |
| 102 | bob martin | it | 75000 | 32 | 6.0 | male |
| 104 | David Lee | IT | 72000 | 35 | 7.1 | male |
| 106 | Frank Johns | HR | 52000 | 25 | 2.5 | Male |
| 107 | Grace Park | Marketing | 58000 | 27 | 3.8 | female |
| 108 | Henry bolt | it | 80000 | 40 | 10.0 | male |
| 110 | Jake Moon | IT | 73000 | 29 | 4.9 | male |
+-----+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)

mysql>
```