



# **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

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Lab Sheet 08

# Task 1

1.

```
MySQL 8.0 Command Line Client
mysql> create table students(student_id int,first_name varchar(50) not null,last_name varchar(50),age int,email varchar(50));
Query OK, 0 rows affected (0.02 sec)

mysql> drop table students;
Query OK, 0 rows affected (0.01 sec)

mysql> create table students(student_id int,first_name varchar(50) not null ,last_name varchar(50) not null,age int,email varchar(50) unique);
Query OK, 0 rows affected (0.04 sec)

mysql> desc students;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| student_id | int | YES | | NULL | |
| first_name | varchar(50) | NO | | NULL | |
| last_name | varchar(50) | NO | | NULL | |
| age | int | YES | | NULL | |
| email | varchar(50) | YES | UNI | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

2.

```
mysql> insert into students values(1,'john','doe',22,'john@example.com'),(2,'jane','smith',20,'jane@example.com'),(3,'michael','johnson',23,'michael@example.com'),(4,'Emily','Davis',21,'emily@example.com'),(5,'David','Martinez',24,'David@example.com'),(6,'Sarah','Brown',22,'sarah@example.com'),(7,'james','Wilson',25,'james@example.com');
Query OK, 7 rows affected (0.01 sec)
Records: 7 Duplicates: 0 Warnings: 0

mysql> select * from students;
+-----+-----+-----+-----+-----+
| student_id | first_name | last_name | age | email |
+-----+-----+-----+-----+-----+
| 1 | john | doe | 22 | john@example.com |
| 2 | jane | smith | 20 | jane@example.com |
| 3 | michael | johnson | 23 | michael@example.com |
| 4 | Emily | Davis | 21 | emily@example.com |
| 5 | David | Martinez | 24 | David@example.com |
| 6 | Sarah | Brown | 22 | sarah@example.com |
| 7 | james | Wilson | 25 | james@example.com |
+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)
```

3.

```
mysql> alter table students add phone_number varchar(20) not null;
Query OK, 0 rows affected (0.01 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc students;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| student_id | int | YES | | NULL | |
| first_name | varchar(50) | NO | | NULL | |
| last_name | varchar(50) | NO | | NULL | |
| age | int | YES | | NULL | |
| email | varchar(50) | YES | UNI | NULL | |
| phone_number | varchar(20) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
```

4.

```
mysql> alter table students add SGPA varchar(20) default 'pending';
Query OK, 0 rows affected (0.01 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql>
```

5.

```
mysql> alter table students drop phone_number;
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc students;
```

Field	Type	Null	Key	Default	Extra
student_id	int	YES		NULL	
first_name	varchar(50)	NO		NULL	
last_name	varchar(50)	NO		NULL	
age	int	YES		NULL	
email	varchar(50)	YES	UNI	NULL	
SGPA	varchar(20)	YES		pending	

6 rows in set (0.00 sec)

6.

```
mysql> alter table students modify column age int not null;
Query OK, 0 rows affected (0.10 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc students;
```

Field	Type	Null	Key	Default	Extra
student_id	int	YES		NULL	
first_name	varchar(50)	NO		NULL	
last_name	varchar(50)	NO		NULL	
age	int	NO		NULL	
email	varchar(50)	YES	UNI	NULL	
SGPA	varchar(20)	YES		pending	

6 rows in set (0.00 sec)

7.

```
mysql> insert into courses values(1,'Mathematics'),(2,'Science'),(3,'English'),(4,'History'),(5,'Art'),(6,'Computer Science'),(7,'Physical Education');
Query OK, 7 rows affected (0.02 sec)
Records: 7 Duplicates: 0 Warnings: 0

mysql> select * from courses;
+-----+-----+
| Course_id | Course_name |
+-----+-----+
| 1 | Mathematics |
| 2 | Science |
| 3 | English |
| 4 | History |
| 5 | Art |
| 6 | Computer Science |
| 7 | Physical Education |
+-----+-----+
7 rows in set (0.00 sec)
```

8.

```
mysql> alter table courses add student_id int;
Query OK, 0 rows affected (0.04 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> desc courses;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Course_id | int | NO | PRI | NULL | |
| Course_name | varchar(100) | NO | | NULL | |
| student_id | int | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

9.

```
mysql> alter table courses add constraint fork_student_id foreign key (student_id) references students(student_id);
Query OK, 7 rows affected (0.11 sec)
Records: 7 Duplicates: 0 Warnings: 0

mysql> select * from students;
+-----+-----+-----+-----+-----+-----+
| student_id | first_name | last_name | age | email | SGPA |
+-----+-----+-----+-----+-----+-----+
| 1 | john | doe | 22 | john@example.com | pending |
| 2 | jane | smith | 20 | jane@example.com | pending |
| 3 | michael | johnson | 23 | michael@example.com | pending |
| 4 | Emily | Davis | 21 | emily@example.com | pending |
| 5 | David | Martinez | 24 | David@example.com | pending |
| 6 | Sarah | Brown | 22 | sarah@example.com | pending |
| 7 | james | Wilson | 25 | james@example.com | pending |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)
```

10.

```
mysql> alter table students add constraint age_check check(age>=18);  
Query OK, 7 rows affected (0.12 sec)  
Records: 7 Duplicates: 0 Warnings: 0
```

```
mysql> desc students;
```

Field	Type	Null	Key	Default	Extra
student_id	int	NO	PRI	NULL	
first_name	varchar(50)	NO		NULL	
last_name	varchar(50)	NO		NULL	
age	int	NO		NULL	
email	varchar(50)	YES	UNI	NULL	
SGPA	varchar(20)	YES		pending	

6 rows in set (0.00 sec)