

# Group A

## Assignment No 1A

**Title of Assignment:** SQL DDL Statements

**Assignment Name:** - Design and Develop SQL DDL statements which demonstrate the use of SQL objects such as Table, View, Index, Sequence, Synonym, different constraints etc.

**Theory:** -

**Prerequisite:** Basics of RDBMS.

**Objective:**

- To learn and understand the concept and DDL queries of SQL Table, View and Index using MYSQL using 2-tier .

**New Concepts:**

**Introduction to MySQL Table DDL Commands.**

### CREATE Table

Use a CREATE TABLE statement to specify the layout of your table:

```
mysql> CREATE TABLE Student (roll_no int (3) Primary key  
auto_increment , name varchar(20) , age int(3));
```

[VARCHAR](#) is a good choice for the name, owner, and species columns because the column values vary in length. The lengths in those column definitions need not all be the same, and need not be 20. You can normally pick any length from 1 to 65535, whatever seems most reasonable to you.

### DESCRIBE Table

To verify that your table was created the way you expected, use a [DESCRIBE](#) statement:

```
mysql> DESC Student;
```

Field	Type	Null	Key	Default	Extra
roll_no	int (3)	NO	PRI	NULL	auto_increment
name	varchar(20)	NO		NULL	
age	int(3)	NO		NULL	

## Constraints

- **NOT NULL** - a value is required

### Example

```
Create table stud (name varchar (20) not null);
```

- **UNIQUE** - the attribute value must be unique in the table

### Example

```
Create table stud (rollno number(4) constraint uk1 unique key);
```

- **PRIMARY KEY** - unique and used to refer to tuples

### Example

```
Create table stud (rollno number(4)constraint pk1 primary key)
```

- **FOREIGN KEY** – It refers to the another column which is primary key

### Syntax:

```
Create table table_name(Attr_name Attr_type(size)references table_name(attr_name))
```

### Example

```
Create table stud1 (rollno number(4) references stud(rollno));
```

- **CHECK (condition)** - for general constraints on a table's contents.

### Example

```
CHECK (rollno BETWEEN 1 AND 60)
```

## **You can also add constraint after table creation using alter table option**

Eg Alter table stud add constraint **prk1** primary key(rollno);

## **You can also drop constraint using Drop command & name of constraint**

Eg Drop constraint **prk1**;

## **ALTER Table**

The ALTER TABLE statement is used to add, delete, or modify columns in an existing table

### Syntax

```
Alter table table_name  
add/modify/drop  
column_name data_type(size)
```

### Example

Following example shows use of Alter command. First example add new column Address in table and second example modify in size of age column. Third example shows how to drop column age.

```
1> Alter table Student add Address varchar(30);  
2> Alter table Student modify age int(5);  
3> Alter table Student drop column age;
```

## **DROP Table**

The DROP TABLE statement is used to delete a table.

```
DROP TABLE table_name
```

## **TRUNCATE TABLE**

What if we only want to delete the data inside the table, and not the table itself?

Then, use the TRUNCATE TABLE statement:

```
TRUNCATE TABLE table_name
```

## **VIEW in MySQL**

### **CREATE VIEW Statement**

In SQL, a view is a virtual table based on the result-set of an SQL statement. A view contains rows and columns, just like a real table. The fields in a view are fields from one or more real tables in the database.

### **SQL CREATE VIEW Syntax**

```
CREATE VIEW view_name AS  
SELECT column_name(s)  
FROM table_name  
WHERE condition
```

### **SQL Dropping a View**

You can delete a view with the DROP VIEW command.

```
DROP VIEW view_name
```

## **INDEX in MySQL**

### **Create Index Statement**

Index in SQL is created on existing tables to retrieve the rows quickly. When there are thousands of records in a table, retrieving information will take a long time. Therefore indexes are created

on columns which are accessed frequently, so that the information can be retrieved quickly. Indexes can be created on a single column or a group of columns. When a index is created, it first sorts the data and then it assigns a ROWID for each row.

### Syntax to create Index:

```
CREATE UNIQUE INDEX index_name  
ON table_name ( column1, column2,...);
```

```
ALTER TABLE table_name ADD INDEX index_name (column_name);
```

### Show Index Information

```
show index from table_name
```

Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type	Comment
-------	------------	----------	--------------	-------------	-----------	-------------	----------	--------	------	------------	---------

### Drop Index

```
ALTER TABLE table_name DROP INDEX index_name
```

## Group A: Lab Assignment No. 1

**TITLE: Design and Develop SQL DDL statements which demonstrate the use of SQL objects such as Table, View, Index, Sequence, Synonym**

-----  
**mysql> use Abhi;**

Database changed

**mysql> show tables;**

Empty set (0.02 sec)

**mysql> create table client\_master(client\_no int,client\_name varchar(20),address varchar(50),city varchar(10),pincode int,state varchar(20), bal\_due float,primary key(client\_no));**

Query OK, 0 rows affected (0.51 sec)

**mysql> select \* from client\_master;**

Empty set (0.02 sec)

**mysql> insert into client\_master values('001','abhi','nasik','nasik','422004','MH','5000');**

Query OK, 1 row affected (0.14 sec)

**mysql> insert into client\_master values('002','piyu','nasik','nasik','422004','MH','10000');**

Query OK, 1 row affected (0.09 sec)

**mysql> insert into client\_master values('003','abd','nasik','nasik','422003','MH','5000');**

Query OK, 1 row affected (0.06 sec)

**mysql> insert into client\_master values('004','abd','nasik','nasik','422003','MH','5000');**

Query OK, 1 row affected (0.05 sec)

**mysql> insert into client\_master values('005','abc','nasik','nasik','422003','MH','5000');**

Query OK, 1 row affected (0.06 sec)

**mysql> select \* from client\_master;**

```
+-----+-----+-----+-----+-----+-----+
+-----+
| client_no | client_name | address | city |
| bal_due |
| pincode | state |
+-----+-----+-----+-----+-----+-----+
+-----+
|
| 1 | abhi
5000 | | nasik | nasik | 422004 | MH
|
| 2 | piyu
10000 | | nasik | nasik | 422004 | MH
|
| 3 | abd
5000 | | nasik | nasik | 422003 | MH
|
| 4 | abd
5000 | | nasik | nasik | 422003 | MH
|
| 5 | abc
5000 | | nasik | nasik | 422003 | MH
+-----+-----+-----+-----+-----+-----+
+-----+
5 rows in set (0.00 sec)
```

**mysql> select client\_name,client\_no from client\_master;**

```
+-----+-----+
| client_name | client_no |
+-----+-----+
| abhi | 1 |
| piyu | 2 |
| abd | 3 |
| abd | 4 |
| abc | 5 | +-----+ ----- +
```

5 rows in set (0.00 sec)

**mysql> insert into client\_master values('006','xyz','nasik','nasik','422004','MH','6000');**

Query OK, 1 row affected (0.15 sec)

**mysql> select client\_name,client\_no from client\_master;**

```
+-----+-----+
| client_name | client_no |
+-----+-----+
| abhi | 1 |
| piyu | 2 |
| abd | 3 |
```

abd   4	
abc   5	
xyz   6	

6 rows in set (0.08 sec)

```
mysql> create table product_master(product_no int,description varchar(20),profit_per
float,unit_measure varchar(10),quantity int,reorder int,sell_price float,cost_price
float,primary key(product_no));
```

Query OK, 0 rows affected (0.77 sec)

```
mysql> insert into product_master values('001','shampoo','1','one','4','2','10','15');
```

Query OK, 1 row affected (0.17 sec)

```
mysql> insert into product_master values('002','oil','13','one','4','2','11','16');
```

Query OK, 1 row affected (0.06 sec)

```
mysql> alter table client_master add telephone_no int;
```

Query OK, 0 rows affected (1.04 sec)

Records: 0

Duplicates: 0

Warnings: 0

```
mysql> select * from client_master;
```

```
+-----+-----+-----+-----+-----+-----+
+-----+-----+
| client_no | client_name | address | city
| bal_due | telephone_no |
| pincode | state
+-----+-----+-----+-----+-----+-----+
+-----+-----+
|
| 1 | abhi
5000 |
|
| 2 | piyu
10000 |
|
| 3 | abd
5000 |
|
| 4 | abd
5000 |
```

```

|
| 5 | abc
5000 |
|
| 6 | xyz
6000 |
| nasik
| nasik | 422004 | MH
| nasik | 422004 | MH
| nasik | 422003 | MH
| nasik | 422003 | MH
| nasik | 422003 | MH
| nasik | 422004 | MH
NULL |
| nasik
NULL |
| nasik
NULL |
| nasik
NULL |
| nasik
NULL |
| nasik
NULL |
+-----+-----+-----+-----+
+-----+-----+
6 rows in set (0.00 sec)

```

**mysql> select \* from product\_master;**

```

+-----+-----+-----+-----+
+-----+-----+-----+-----+
| product_no | description | profit_per | unit_measure |
quantity | reorder | sell_price | cost_price |
+-----+-----+-----+-----+
+-----+-----+-----+-----+
|
4 |
1 | shampoo
|
2 |
10 |
1 | one
15 |
||
4 |
2 | oil
2 |
|
11 |
13 | one
16 |

```



```
|
+-----+-----+-----+-----+
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

**mysql> create index client\_search on client\_master(client\_no);**

Query OK, 0 rows affected (0.42 sec)

Records: 0

Duplicates: 0

Warnings: 0

**mysql> create table auto(roll\_no int NOT NULL AUTO\_INCREMENT,name  
varchar(20),primary key(roll\_no));**

Query OK, 0 rows affected (0.36 sec)

**mysql> select \* from auto;**

Empty set (0.01 sec)

**mysql> insert into auto values('1','abc');**

Query OK, 1 row affected (0.07 sec)

**mysql> insert into auto values('2','adc');**

Query OK, 1 row affected (0.08 sec)

**mysql> alter table auto auto\_increment=100;**

Query OK, 0 rows affected (0.07 sec)

Records: 0

Duplicates: 0

**mysql> select \* from auto;**

```
+-----+-----+
| roll_no | name |
+-----+-----+
| 1 | abc |
| 2 | adc |
```

Warnings: 0+-----+-----+

2 rows in set (0.00 sec)

**mysql> insert into auto values(null,'abd');**

Query OK, 1 row affected (0.05 sec)

**mysql> select \* from auto;**

```
+-----+-----+
| roll_no | name |
+-----+-----+
| 1 | abc |
| 2 | adc |
| 100 | abd |
+-----+-----+
3 rows in set (0.00 sec)
```

**mysql> insert into auto values(null,'reh');**

Query OK, 1 row affected (0.06 sec)

**mysql> select \* from auto;**

```
+-----+-----+
| roll_no | name |
+-----+-----+
| 1 | abc |
| 2 | adc |
| 100 | abd |
| 101 | reh |
+-----+-----+
4 rows in set (0.00 sec)
```

**mysql> update client\_master set client\_name="nut" where client\_no='4';**

Query OK, 1 row affected (0.09 sec)

Rows matched: 1

Changed: 1

Warnings: 0

**mysql> select \* from client\_master;**

```
+-----+-----+-----+-----+-----+-----+
+-----+-----+
| client_no | client_name | address | city
| bal_due | telephone_no |
| pincode | state
+-----+-----+-----+-----+-----+-----+
+-----+-----+
|
| 1 | abhi
5000 | NULL |
| nasik
|
| 2 | piyu
10000 | NULL |
|
| 3 | abd
```

```

5000 | NULL |
|
| 4 | nut
5000 | NULL |
|
| 5 | abc
5000 | NULL |
|
| 6 | xyz
6000 | NULL |
| nasik
| nasik
| nasik
| nasik
| nasik
| nasik | 422004 | MH
| nasik | 422004 | MH
| nasik | 422003 | MH
| nasik | 422003 | MH
| nasik | 422003 | MH
| nasik | 422004 | MH
+-----+-----+-----+-----+-----+
+-----+-----+
6 rows in set (0.00 sec)

```

**mysql> create index client\_find on client\_master(client\_name,city);**

```

affected (0.41 sec)
Records: 0
Duplicates: 0

```

**mysql> show tables;**

```

+-----+
| Tables_in_Abhi |
+-----+
| auto
|
Warnings: 0
Query OK, 0 rows | client_master
|
| product_master |
+-----+
3 rows in set (0.08 sec)

```

**mysql> select \* from product\_master;**

```

+-----+-----+-----+-----+
+-----+-----+-----+-----+
| product_no | description | profit_per | unit_measure |
quantity | reorder | sell_price | cost_price |
+-----+-----+-----+-----+

```

```

+-----+-----+-----+-----+
|
4 | 1 | shampoo
|
2 |
10 | 1 | one
15 | |
|
4 | 2 | oil
2 | 13 | one
16 | |
|
11 |
+-----+-----+-----+-----+
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

```

**mysql> desc product\_master;**

```

+-----+-----+-----+-----+-----+
| Field
| Type
| Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| product_no | int(11)
| description | profit_per
| NO
| PRI | NULL | | | | |
| varchar(20) | YES | | NULL | |
| float | YES | | NULL | |
| unit_measure | varchar(10) | YES | | NULL | |
| quantity | int(11) | YES | | NULL | |
| reorder | int(11) | YES | | NULL | |
| sell_price | float | YES | | NULL | |
| cost_price | float | YES | | NULL | |
+-----+-----+-----+-----+-----+
8 rows in set (0.05 sec)

```

**mysql> alter table client\_master rename to c\_master;**

Query OK, 0 rows affected (0.25 sec)

**mysql> insert into product\_master values('003','nutela','15','three','40','5','110','123');**

Query OK, 1 row affected (0.05 sec)

**mysql> alter table product\_master modify sell\_price float(10,2);**

Query OK, 0 rows affected (0.06 sec)

Records: 0

Duplicates: 0

Warnings: 0

**mysql> desc product\_master;**

```
+-----+-----+-----+-----+
| Field  
| Type  
| Null | Key | Default | Extra |  
+-----+-----+-----+-----+  
| product_no | int(11)  
| description | profit_per  
| NO  
| PRI | NULL | | | | |
| varchar(20) | YES | | NULL | |  
| float | YES | | NULL | |  
| unit_measure | varchar(10) | YES | | NULL | |  
| quantity | int(11) | YES | | NULL | |  
| reorder | int(11) | YES | | NULL | |  
| sell_price | float(10,2) | YES | | NULL | |  
| cost_price | float | | NULL | |  
| YES  
+-----+-----+-----+-----+  
8 rows in set (0.00 sec)
```

**mysql> create view client as select client\_no,client\_name from c\_master;**

Query OK, 0 rows affected (0.05 sec)

**mysql> select \* from client;**

```
+-----+-----+ | client_no | client_name |  
+-----+-----+  
| 5 | abc |  
| 3 | abd |  
| 1 | abhi |  
| 4 | nut |  
| 2 | piyu |  
| 6 | xyz |  
+-----+-----+  
6 rows in set (0.23 sec)
```

mysql>