Assignment No 1 : Implementation of SQL-DDL commands (Create,Alter,Drop)

```
mysql> create database employee_database;
Query OK, 1 row affected (0.80 sec)

mysql> use employee_database;
Database changed
```

//creating employee table
```
mysql> create table Employee(
 E_id int primary key auto_increment,
 Ename Varchar(30) not null,
 Post Varchar(30) not null,
 Address Varchar(50) not null,
 Phno dec(10) unique,
 Date_of_Joining Date,
 Annual_income double,
 Gender Varchar(10));
Query OK, 0 rows affected (2.77 sec)

mysql> create table Project(
 P_id int primary key auto_increment,
 client_name Varchar(30) not null,
 start_date Date,
 end_date Date,
 hours int);
Query OK, 0 rows affected (1.03 sec)

mysql> create table Department(
 Did int primary key auto_increment,
 Dname Varchar(30) not null);
Query OK, 0 rows affected (2.08 sec)

mysql> create table Income_Tax(
 Tax_id int not null, E_id int not null,
 slab varchar(255) not null,
 year char(4) not null,
 Tax_amount double not null,
 primary key(Tax_id,E_id));

mysql> show tables;
+----------------------------+
| Tables_in_employee_database |
+----------------------------+
| department                 |
| employee                   |
| income_tax                 |
| project                    |
+----------------------------+
4 rows in set (0.21 sec)
```

//Alter table command to add foreign key constraint
```
mysql> alter table Employee
    -> add Did int;
Query OK, 0 rows affected (1.82 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table Employee
    -> add foreign key (Did) references Department (Did);
Query OK, 0 rows affected (2.58 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table Project
    -> add Eid int;
Query OK, 0 rows affected (0.74 sec)
```

```
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table Project
    -> add foreign key (Eid) references Employee (E_id);
Query OK, 0 rows affected (3.50 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> describe employee;
+----------------+--------------+------+-----+---------+----------------+
| Field          | Type         | Null | Key | Default | Extra          |
+----------------+--------------+------+-----+---------+----------------+
| E_id           | int          | NO   | PRI | NULL    | auto_increment |
| Ename          | varchar(30)  | NO   |     | NULL    |                |
| Post           | varchar(30)  | NO   |     | NULL    |                |
| Address        | varchar(50)  | NO   |     | NULL    |                |
| Phno           | decimal(10,0)| YES  | UNI | NULL    |                |
| Date_of_Joining| date         | YES  |     | NULL    |                |
| Annual_income  | double       | YES  |     | NULL    |                |
| Gender         | varchar(10)  | YES  |     | NULL    |                |
| Did            | int          | YES  | MUL | NULL    |                |
+----------------+--------------+------+-----+---------+----------------+
9 rows in set (0.47 sec)
```

//Add new column and remove any one column
```
mysql> alter table project
    -> add project_type varchar(255) not null;
Query OK, 0 rows affected (0.78 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> describe project;
+--------------+--------------+------+-----+---------+----------------+
| Field        | Type         | Null | Key | Default | Extra          |
+--------------+--------------+------+-----+---------+----------------+
| P_id         | int          | NO   | PRI | NULL    | auto_increment |
| client_name  | varchar(30)  | NO   |     | NULL    |                |
| start_date   | date         | YES  |     | NULL    |                |
| end_date     | date         | YES  |     | NULL    |                |
| hours        | int          | YES  |     | NULL    |                |
| Eid          | int          | YES  | MUL | NULL    |                |
| project_type | varchar(255) | NO   |     | NULL    |                |
+--------------+--------------+------+-----+---------+----------------+
7 rows in set (0.23 sec)

mysql> alter table project
    -> drop column project_type;
Query OK, 0 rows affected (1.66 sec)
Records: 0  Duplicates: 0  Warnings: 0


//Increase the size of any attribute.
mysql> alter table employee
    -> modify Ename varchar(255);
Query OK, 0 rows affected (3.65 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table employee
    -> modify Address varchar(255);
Query OK, 0 rows affected (2.15 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> describe employee;
+----------------+--------------+------+-----+---------+----------------+
| Field          | Type         | Null | Key | Default | Extra          |
+----------------+--------------+------+-----+---------+----------------+
| E_id           | int          | NO   | PRI | NULL    | auto_increment |
| Ename          | varchar(255) | YES  |     | NULL    |                |
| Post           | varchar(30)  | NO   |     | NULL    |                |
| Address        | varchar(255) | YES  |     | NULL    |                |
| Phno           | decimal(10,0)| YES  | UNI | NULL    |                |
| Date_of_Joining| date         | YES  |     | NULL    |                |
| Annual_income  | double       | YES  |     | NULL    |                |
| Gender         | varchar(10)  | YES  |     | NULL    |                |
```

```
| Did             | int           | YES  | MUL | NULL     |                |
+----------------+--------------+------+-----+--------+----------------+
9 rows in set (0.00 sec)

mysql> describe income_tax;
+------------+--------------+------+-----+--------+-------+
| Field      | Type         | Null | Key | Default | Extra |
+------------+--------------+------+-----+--------+-------+
| Tax_id     | int          | NO   | PRI | NULL    |       |
| E_id       | int          | NO   | PRI | NULL    |       |
| slab       | varchar(255) | NO   |     | NULL    |       |
| year       | char(4)      | NO   |     | NULL    |       |
| Tax_amount | double       | NO   |     | NULL    |       |
+------------+--------------+------+-----+--------+-------+
5 rows in set (0.00 sec)

mysql> describe project;
+------------+-------------+------+-----+--------+----------------+
| Field      | Type        | Null | Key | Default | Extra          |
+------------+-------------+------+-----+--------+----------------+
| P_id       | int         | NO   | PRI | NULL    | auto_increment |
| client_name | varchar(30)| NO   |     | NULL    |                |
| start_date | date        | YES  |     | NULL    |                |
| end_date   | date        | YES  |     | NULL    |                |
| hours      | int         | YES  |     | NULL    |                |
| Eid        | int         | YES  | MUL | NULL    |                |
+------------+-------------+------+-----+--------+----------------+
6 rows in set (0.00 sec)

mysql> describe department;
+-------+-------------+------+-----+--------+----------------+
| Field | Type        | Null | Key | Default | Extra          |
+-------+-------------+------+-----+--------+----------------+
| Did   | int         | NO   | PRI | NULL    | auto_increment |
| Dname | varchar(30) | NO   |     | NULL    |                |
+-------+-------------+------+-----+--------+----------------+
2 rows in set (0.00 sec)
```

//use of Drop command
```
mysql> create table student(
    -> sno int,
    -> sname Varchar(10),
    -> phnno dec(10));
Query OK, 0 rows affected (0.62 sec)

mysql> describe student;
+-------+--------------+------+-----+--------+-------+
| Field | Type         | Null | Key | Default | Extra |
+-------+--------------+------+-----+--------+-------+
| sno   | int          | YES  |     | NULL    |       |
| sname | varchar(10)  | YES  |     | NULL    |       |
| phnno | decimal(10,0)| YES  |     | NULL    |       |
+-------+--------------+------+-----+--------+-------+
3 rows in set (0.01 sec)

mysql> alter table student
    -> drop column sname;
Query OK, 0 rows affected (1.41 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> describe student;
+-------+--------------+------+-----+--------+-------+
| Field | Type         | Null | Key | Default | Extra |
+-------+--------------+------+-----+--------+-------+
| sno   | int          | YES  |     | NULL    |       |
| phnno | decimal(10,0)| YES  |     | NULL    |       |
+-------+--------------+------+-----+--------+-------+
2 rows in set (0.01 sec)
```

```
//delete the table
mysql> drop table student;
Query OK, 0 rows affected (0.64 sec)

//use of Drop command to delete the database created
mysql> create database temp1;
Query OK, 1 row affected (0.19 sec)

mysql> drop database temp1;
Query OK, 0 rows affected (0.70 sec)
```

// inserting values in department table

```
mysql> insert into department values(1,"Finance");
Query OK, 1 row affected (0.40 sec)

mysql> insert into department values(2,"Production Support");
Query OK, 1 row affected (0.18 sec)

mysql> insert into department values(3,"Treasury");
Query OK, 1 row affected (0.15 sec)

mysql> insert into department values(4,"Software Development");
Query OK, 1 row affected (0.26 sec)

mysql> insert into department values(5,"Software Testing");
Query OK, 1 row affected (0.16 sec)

mysql> insert into Department(Dname) values ("Management");
Query OK, 1 row affected (0.21 sec)

mysql> insert into Department(Dname) values ("Legal");
Query OK, 1 row affected (0.17 sec)

mysql> insert into Department(Dname) values ("Back office");
Query OK, 1 row affected (0.23 sec)

mysql> insert into Department(Dname) values ("Front office");
Query OK, 1 row affected (0.07 sec)

mysql> insert into Department(Dname) values ("Machine Learning");
```

```
Query OK, 1 row affected (0.18 sec)

mysql> insert into Department(Dname) values ("Web Development");
Query OK, 1 row affected (0.26 sec)

mysql> insert into Department(Dname) values ("Customer Relations");
Query OK, 1 row affected (0.18 sec)

mysql> insert into Department(Dname) values ("Marketing");
Query OK, 1 row affected (0.20 sec)

mysql> insert into Department(Dname) values ("Advertising");
Query OK, 1 row affected (0.20 sec)

mysql> insert into Department(Dname) values ("manufacturing");
Query OK, 1 row affected (0.09 sec)

mysql> insert into Department(Dname) values ("Foreign exchange");
Query OK, 1 row affected (0.09 sec)

mysql> select * from department;
+-----+---------------------+
| Did | Dname               |
+-----+---------------------+
|   1 | Finance             |
|   2 | Production Support  |
|   3 | Treasury            |
|   4 | Software Development |
|   5 | Software Testing    |
|   6 | Management          |
|   7 | Legal               |
|   8 | Back office         |
|   9 | Front office        |
|  10 | Machine Learning    |
|  11 | Web Development      |
|  12 | Customer Relations  |
|  13 | Marketing           |
|  14 | Advertising         |
|  15 | manufacturing       |
|  16 | Foreign exchange    |
+-----+---------------------+
16 rows in set (0.00 sec)
```

// insert into employee table
```
mysql> insert into employee
values(1,"Vedika","analyst","Delhi",8756998756,"2010-07-09",50000,"F",1);
Query OK, 1 row affected (0.20 sec)
```

//check if the number is unique
```
mysql> insert into employee
values(2,"John","analyst","Pune",8756998756,"2000-09-01",50000,"M",4);
ERROR 1062 (23000): Duplicate entry '8756998756' for key 'employee.Phno'

mysql> insert into employee
values(2,"John","analyst","Pune",8234997656,"2000-09-01",50000,"M",4);
Query OK, 1 row affected (0.42 sec)

mysql> insert into employee
```

```
values(3,"Rajan","Manager","Mumbai",8009781256,"2005-02-12",90000,"M",3);
Query OK, 1 row affected (0.18 sec)

mysql> insert into employee values(4,"Ritika","Finance
head","Mumbai",7559081256,"2020-02-12",100000,"F",1);
Query OK, 1 row affected (0.23 sec)

mysql> insert into Employee(Ename,Post,Address,Phno,Date_of_Joining,Annual_income,Gender,Did)
values ("Neha","clerk","banglore",8638739922,"2020-04-04",20000,"F",13);
Query OK, 1 row affected (0.17 sec)

mysql> insert into Employee(Ename,Post,Address,Phno,Date_of_Joining,Annual_income,Gender,Did)
values ("Sam","clerk","banglore",8638712322,"2020-09-08",20000,"M",1);
Query OK, 1 row affected (0.30 sec)

mysql> insert into Employee(Ename,Post,Address,Phno,Date_of_Joining,Annual_income,Gender,Did)
values ("Anne","clerk","Hyderabad",6738712300,"2000-01-12",60000,"F",8);
Query OK, 1 row affected (0.17 sec)

mysql> insert into Employee(Ename,Post,Address,Phno,Date_of_Joining,Annual_income,Gender,Did)
values ("Anita","engineer","Hyderabad",9990012300,"2007-01-12",90000,"F",10);
Query OK, 1 row affected (0.22 sec)

mysql> insert into Employee(Ename,Post,Address,Phno,Date_of_Joining,Annual_income,Gender,Did)
values ("Asmita","clerk","Pune",9988712300,"2000-11-12",60000,"F",8)
    -> ;
Query OK, 1 row affected (0.26 sec)

mysql> insert into Employee(Ename,Post,Address,Phno,Date_of_Joining,Annual_income,Gender,Did)
values ("Manish","Cashier","Pune",9988714670,"2019-01-19",60000,"M",9);
Query OK, 1 row affected (0.19 sec)

mysql> insert into Employee(Ename,Post,Address,Phno,Date_of_Joining,Annual_income,Gender,Did)
values ("Rohit","Tech Lead","Pune",9983976670,"2019-08-19",90000,"M",10);
Query OK, 1 row affected (0.28 sec)

mysql> insert into Employee(Ename,Post,Address,Phno,Date_of_Joining,Annual_income,Gender,Did)
values ("Ritesh","Manager","Pune",9983112270,"2005-07-11",90000,"M",15);
Query OK, 1 row affected (0.16 sec)

mysql> insert into Employee(Ename,Post,Address,Phno,Date_of_Joining,Annual_income,Gender,Did)
values ("Soha","Manager","Nashik",7783112270,"2003-07-11",100000,"F",2);
Query OK, 1 row affected (0.14 sec)

mysql> insert into Employee(Ename,Post,Address,Phno,Date_of_Joining,Annual_income,Gender,Did)
values ("Saniya","Manager","Nashik",7783118760,"2003-07-11",90000,"F",7);
Query OK, 1 row affected (0.29 sec)

mysql> insert into Employee(Ename,Post,Address,Phno,Date_of_Joining,Annual_income,Gender,Did)
values ("anisha","Manager","Nashik",9879875656,"2008-07-12",90000,"F",11);
Query OK, 1 row affected (0.16 sec)
```

```
mysql> select* from employee;
+------+--------+--------------+-----------+------------+-----------------+--------------+--------+------+
| E_id | Ename  | Post         | Address   | Phno       | Date_of_Joining | Annual_income | Gender | Did  |
+------+--------+--------------+-----------+------------+-----------------+--------------+--------+------+
|    1 | Vedika | analyst      | Delhi     | 8756998756 | 2010-07-09      |        50000 | F      |    1 |
|    2 | John   | analyst      | Pune      | 8234997656 | 2000-09-01      |        50000 | M      |    4 |
|    3 | Rajan  | Manager      | Mumbai    | 8009781256 | 2005-02-12      |        90000 | M      |
```

```
|     3 |
|     4 | Ritika | Finance head | Mumbai   | 7559081256 | 2020-02-12     |        100000 | F
|     1 |
|     5 | Neha   | clerk        | banglore | 8638739922 | 2020-04-04     |         20000 | F
|    13 |
|     6 | Sam    | clerk        | banglore | 8638712322 | 2020-09-08     |         20000 | M
|     1 |
|     7 | Anne   | clerk        | Hyderabad | 6738712300 | 2000-01-12    |         60000 | F
|     8 |
|     8 | Anita  | engineer     | Hyderabad | 9990012300 | 2007-01-12    |         90000 | F
|    10 |
|     9 | Asmita | clerk        | Pune     | 9988712300 | 2000-11-12     |         60000 | F
|     8 |
|    10 | Manish | Cashier      | Pune     | 9988714670 | 2019-01-19     |         60000 | M
|     9 |
|    11 | Rohit  | Tech Lead    | Pune     | 9983976670 | 2019-08-19     |         90000 | M
|    10 |
|    12 | Ritesh | Manager      | Pune     | 9983112270 | 2005-07-11     |         90000 | M
|    15 |
|    13 | Soha   | Manager      | Nashik   | 7783112270 | 2003-07-11     |        100000 | F
|     2 |
|    14 | Saniya | Manager      | Nashik   | 7783118760 | 2003-07-11     |         90000 | F
|     7 |
|    15 | anisha | Manager      | Nashik   | 9879875656 | 2008-07-12     |         90000 | F
|    11 |
+------+--------+--------------+-----------+------------+----------------+---------------+----
----+------+
15 rows in set (0.11 sec)
```

// insert into income_tax table
```
mysql> insert into income_tax values(1,1,"first",2020,5000);
Query OK, 1 row affected (0.24 sec)

mysql> insert into income_tax values(2,2,"first",2020,5000);
Query OK, 1 row affected (0.28 sec)

mysql> insert into income_tax values(3,3,"first",2020,8000);
Query OK, 1 row affected (0.17 sec)

mysql> insert into income_tax values(4,4,"first",2021,10000);
Query OK, 1 row affected (0.20 sec)

mysql> insert into income_tax values(5,5,"first",2021,1000);
Query OK, 1 row affected (0.19 sec)

mysql> insert into income_tax values(6,6,"first",2021,1000);
Query OK, 1 row affected (0.23 sec)

mysql> insert into income_tax values(7,7,"first",2020,6000);
Query OK, 1 row affected (0.17 sec)

mysql> insert into income_tax values(8,8,"first",2020,9000);
Query OK, 1 row affected (0.16 sec)
```

```
mysql> insert into income_tax values(9,9,"first",2021,6000);
Query OK, 1 row affected (0.10 sec)

mysql> insert into income_tax values(10,10,"first",2021,6000);
Query OK, 1 row affected (0.08 sec)

mysql> insert into income_tax values(11,11,"first",2021,10000);
Query OK, 1 row affected (0.21 sec)

mysql> insert into income_tax values(12,12,"first",2019,17000);
Query OK, 1 row affected (0.08 sec)

mysql> insert into income_tax values(13,13,"first",2020,7000);
Query OK, 1 row affected (0.14 sec)

mysql> insert into income_tax values(14,14,"first",2021,7000);
Query OK, 1 row affected (0.24 sec)

mysql> insert into income_tax values(15,15,"first",2021,7000);
Query OK, 1 row affected (0.13 sec)

mysql> select * from income_tax;
+--------+------+-------+------+------------+
| Tax_id | E_id | slab  | year | Tax_amount |
+--------+------+-------+------+------------+
|      1 |    1 | first | 2020 |       5000 |
|      2 |    2 | first | 2020 |       5000 |
|      3 |    3 | first | 2020 |       8000 |
|      4 |    4 | first | 2021 |      10000 |
|      5 |    5 | first | 2021 |       1000 |
|      6 |    6 | first | 2021 |       1000 |
|      7 |    7 | first | 2020 |       6000 |
|      8 |    8 | first | 2020 |       9000 |
|      9 |    9 | first | 2021 |       6000 |
|     10 |   10 | first | 2021 |       6000 |
|     11 |   11 | first | 2021 |      10000 |
|     12 |   12 | first | 2019 |      17000 |
|     13 |   13 | first | 2020 |       7000 |
|     14 |   14 | first | 2021 |       7000 |
|     15 |   15 | first | 2021 |       7000 |
+--------+------+-------+------+------------+
15 rows in set (0.00 sec)
```

// insert into project table
```
mysql> insert into project values(1, "Shreya", "2020-07-01", "2021-11-10",90, 11);
Query OK, 1 row affected (1.46 sec)

mysql> insert into project values(2, "Nakul", "2020-09-18", "2020-11-10",80, 1);
Query OK, 1 row affected (0.22 sec)

mysql> insert into project values(3, "Riya", "2005-09-10", "2006-01-31",80, 2);
Query OK, 1 row affected (0.21 sec)
```

```
mysql> insert into project values(4, "Riya", "2003-01-19", "2007-05-31",100, 2);
Query OK, 1 row affected (0.25 sec)

mysql> insert into project values(5, "Lisa", "2020-01-19", "2020-07-21",200, 5);
Query OK, 1 row affected (0.07 sec)

mysql> insert into project values(6, "Minakshi", "2020-01-19", "2021-07-21",500, 12);
Query OK, 1 row affected (0.19 sec)

mysql> insert into project values(7, "Rishabh", "2019-03-14", "2020-12-12",300, 8);
Query OK, 1 row affected (0.09 sec)

mysql> insert into project values(8, "Anuja", "2014-03-14", "2016-12-12",70, 10);
Query OK, 1 row affected (0.16 sec)

mysql> insert into project values(9, "Mona", "2018-03-14", "2016-03-19",50, 7);
Query OK, 1 row affected (0.18 sec)

mysql> insert into project values(10, "Devika", "2021-08-21", "2021-09-10", 40, 15);
Query OK, 1 row affected (0.08 sec)

mysql> insert into project values(11, "Siya", "2021-07-21", "2021-09-10", 30, 5);
Query OK, 1 row affected (0.42 sec)

mysql> insert into project values(13, "Mihir", "2021-07-21", "2021-08-10", 90, 13);
Query OK, 1 row affected (0.08 sec)

mysql> insert into project values(12, "Manasi", "2021-08-01", "2021-09-10", 200, 6);
Query OK, 1 row affected (0.07 sec)

mysql> insert into project values(14, "Akshata", "2021-02-01", "2021-12-10", 700, 5);
Query OK, 1 row affected (0.26 sec)

mysql> insert into project values(15, "Pooja", "2021-07-01", "2021-09-10", 500, 9);
Query OK, 1 row affected (0.10 sec)

mysql> select * from project;
+------+-------------+------------+------------+-------+------+
| P_id | client_name | start_date | end_date   | hours | Eid  |
+------+-------------+------------+------------+-------+------+
|    1 | Shreya      | 2020-07-01 | 2021-11-10 |    90 |   11 |
|    2 | Nakul       | 2020-09-18 | 2020-11-10 |    80 |    1 |
|    3 | Riya        | 2005-09-10 | 2006-01-31 |    80 |    2 |
|    4 | Riya        | 2003-01-19 | 2007-05-31 |   100 |    2 |
|    5 | Lisa        | 2020-01-19 | 2020-07-21 |   200 |    5 |
|    6 | Minakshi    | 2020-01-19 | 2021-07-21 |   500 |   12 |
|    7 | Rishabh     | 2019-03-14 | 2020-12-12 |   300 |    8 |
|    8 | Anuja       | 2014-03-14 | 2016-12-12 |    70 |   10 |
|    9 | Mona        | 2018-03-14 | 2016-03-19 |    50 |    7 |
|   10 | Devika      | 2021-08-21 | 2021-09-10 |    40 |   15 |
|   11 | Siya        | 2021-07-21 | 2021-09-10 |    30 |    5 |
|   12 | Manasi      | 2021-08-01 | 2021-09-10 |   200 |    6 |
|   13 | Mihir       | 2021-07-21 | 2021-08-10 |    90 |   13 |
|   14 | Akshata     | 2021-02-01 | 2021-12-10 |   700 |    5 |
|   15 | Pooja       | 2021-07-01 | 2021-09-10 |   500 |    9 |
+------+-------------+------------+------------+-------+------+
15 rows in set (0.10 sec)
```