

# **Bachelors in Computer Application**



## **Lab Report**

**Of**

### **Database Management System (CACS 255)**

**4<sup>th</sup> Semester**

#### **Lab-1: Basics of DDL and DML Statements**

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**PASCAL NATIONAL COLLEGE (Affiliated to TU), SATDOBATO**  
**LALITPUR – NEPAL**

```
MariaDB [(none)]> create database Keshab_10_Company;
Query OK, 1 row affected (0.002 sec)
```

```
MariaDB [(none)]> use keshab_10_company;
Database changed
MariaDB [keshab_10_company]> |
```

```
MariaDB [keshab_10_company]> create table employee
-> (
-> ssn int auto_increment primary key,
-> ename varchar(25) not null,
-> gender char(1) check (gender in('M','F')),
-> bdate date,
-> address varchar(50),
-> salary decimal(10,2) default 0.00,
-> years_of_experience int,
-> ono int,
-> foreign key (ono) references office(onumber)
-> )engine=innodb;
Query OK, 0 rows affected (0.064 sec)
```

```
MariaDB [keshab_10_company]> desc employee;
```

Field	Type	Null	Key	Default	Extra
ssn	int(11)	NO	PRI	NULL	auto_increment
ename	varchar(25)	NO		NULL	
gender	char(1)	YES		NULL	
bdate	date	YES		NULL	
address	varchar(50)	YES		NULL	
salary	decimal(10,2)	YES		0.00	
years_of_experience	int(11)	YES		NULL	
ono	int(11)	YES	MUL	NULL	

```
8 rows in set (0.044 sec)
```

```
MariaDB [keshab_10_company]> create table office
-> (
-> onumber int primary key auto_increment,
-> oname varchar(25) not null,
-> country varchar(25)
-> )engine=innodb;
Query OK, 0 rows affected (0.040 sec)
```

```
MariaDB [keshab_10_company]> desc office;
```

Field	Type	Null	Key	Default	Extra
onumber	int(11)	NO	PRI	NULL	auto_increment
oname	varchar(25)	NO		NULL	
country	varchar(25)	YES		NULL	

```
3 rows in set (0.040 sec)
```

```

MariaDB [keshab_10_company]> create table project
-> (
-> pnumber int auto_increment primary key,
-> pname varchar(40) unique not null,
-> plocation varchar(40),
-> onumber int,
-> constraint fk_pro foreign key (onumber) references office(onumber)
-> )engine=innodb;
Query OK, 0 rows affected (0.061 sec)

```

```

MariaDB [keshab_10_company]> desc project;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra      |
+-----+-----+-----+-----+-----+-----+
| pnumber    | int(11)   | NO   | PRI | NULL    | auto_increment |
| pname      | varchar(40) | NO   | UNI | NULL    |               |
| plocation  | varchar(40) | YES  |     | NULL    |               |
| onumber    | int(11)   | YES  | MUL | NULL    |               |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.021 sec)

```

```

MariaDB [keshab_10_company]> create table works_on
-> (
-> essn int,
-> pno int,
-> primary key(essn,pno),
-> foreign key (essn) references employee(ssn) on delete cascade on update cascade,
-> foreign key (pno) references project(pnumber) on delete cascade on update cascade
-> )engine=innodb;
Query OK, 0 rows affected (0.055 sec)

```

```

MariaDB [keshab_10_company]> desc works_on;
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| essn  | int(11)   | NO   | PRI | NULL    |       |
| pno   | int(11)   | NO   | PRI | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.039 sec)

```

```

MariaDB [keshab_10_company]> create table dependents
-> (
-> did int auto_increment primary key,
-> dname varchar(25),
-> dage int,
-> constraint age_constraint CHECK (dage<16),
-> ssn int,
-> foreign key (ssn) references employee(ssn) on delete set null on update set null
-> )engine=innodb;
Query OK, 0 rows affected (0.064 sec)

```

```

MariaDB [keshab_10_company]> desc dependents;
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra      |
+-----+-----+-----+-----+-----+-----+
| did   | int(11)   | NO   | PRI | NULL    | auto_increment |
| dname | varchar(25) | YES  |     | NULL    |               |
| dage  | int(11)   | YES  |     | NULL    |               |
| ssn   | int(11)   | YES  | MUL | NULL    |               |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.039 sec)

```

```
MariaDB [keshab_10_company]> desc dependents;
```

Field	Type	Null	Key	Default	Extra
did	int(11)	NO	PRI	NULL	auto_increment
dname	varchar(25)	YES		NULL	
dage	int(11)	YES		NULL	
ssn	int(11)	YES	MUL	NULL	

```
4 rows in set (0.039 sec)
```

```
MariaDB [keshab_10_company]> alter table dependents
```

```
    -> add column drelation char(50);
```

```
Query OK, 0 rows affected (0.028 sec)
```

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

```
MariaDB [keshab_10_company]> desc dependents;
```

Field	Type	Null	Key	Default	Extra
did	int(11)	NO	PRI	NULL	auto_increment
dname	varchar(25)	YES		NULL	
dage	int(11)	YES		NULL	
ssn	int(11)	YES	MUL	NULL	
drelation	char(50)	YES		NULL	

```
5 rows in set (0.016 sec)
```

```
MariaDB [keshab_10_company]> desc dependents;
```

Field	Type	Null	Key	Default	Extra
did	int(11)	NO	PRI	NULL	auto_increment
dname	varchar(25)	YES		NULL	
dage	int(11)	YES		NULL	
ssn	int(11)	YES	MUL	NULL	
drelation	char(50)	YES		NULL	

```
5 rows in set (0.016 sec)
```

```
MariaDB [keshab_10_company]> alter table dependents
```

```
-> modify drelation varchar(50);
```

```
Query OK, 0 rows affected (0.081 sec)
```

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

```
MariaDB [keshab_10_company]> desc dependents;
```

Field	Type	Null	Key	Default	Extra
did	int(11)	NO	PRI	NULL	auto_increment
dname	varchar(25)	YES		NULL	
dage	int(11)	YES		NULL	
ssn	int(11)	YES	MUL	NULL	
drelation	varchar(50)	YES		NULL	

```
5 rows in set (0.028 sec)
```

```

MariaDB [Keshab_10_company]> insert into employee(ename,gender,bdate,address,salary,years_of_experience,ono)
-> values('Hari','M','2060-01-22','Thimi,Bhaktapur',20000,5,2),
-> ('Sita','F','2059-05-16','Putalisadak,Kathmandu',30000,2,3);
Query OK, 2 rows affected (0.023 sec)
Records: 2 Duplicates: 0 Warnings: 0

MariaDB [Keshab_10_company]>
MariaDB [Keshab_10_company]> insert into employee(ename,ono)
-> values('Ram',4),
-> ('Keshav',1);
Query OK, 2 rows affected (0.005 sec)
Records: 2 Duplicates: 0 Warnings: 0

MariaDB [Keshab_10_company]>
MariaDB [Keshab_10_company]> insert into employee(ssn,ename,gender,bdate,address,salary,years_of_experience,ono)
-> values(10,'Keshab','M','2059-11-27','Suryabinayak,Bhaktapur',100000,10,5);
Query OK, 1 row affected (0.023 sec)

MariaDB [Keshab_10_company]> select * from employee;
+-----+-----+-----+-----+-----+-----+-----+
| ssn | ename | gender | bdate | address | salary | years_of_experience | ono |
+-----+-----+-----+-----+-----+-----+-----+
| 1 | Hari | M | 2060-01-22 | Thimi,Bhaktapur | 20000.00 | 5 | 2 |
| 2 | Sita | F | 2059-05-16 | Putalisadak,Kathmandu | 30000.00 | 2 | 3 |
| 3 | Ram | NULL | NULL | NULL | 0.00 | NULL | 4 |
| 4 | Keshav | NULL | NULL | NULL | 0.00 | NULL | 1 |
| 10 | Keshab | M | 2059-11-27 | Suryabinayak,Bhaktapur | 100000.00 | 10 | 5 |
+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.001 sec)

```

```

MariaDB [Keshab_10_company]> insert into office(oname,country)
-> values('Keshab_Office_10','Nepal'),
-> ('Hari_Office','India'),
-> ('Sita_Office','Japan'),
-> ('Ram_Office','China');
Query OK, 4 rows affected (0.023 sec)
Records: 4 Duplicates: 0 Warnings: 0

MariaDB [Keshab_10_company]>
MariaDB [Keshab_10_company]> insert into office(oname)
-> values('Keshab_Ncell_10');
Query OK, 1 row affected (0.023 sec)

MariaDB [Keshab_10_company]> select * from office;
+-----+-----+-----+
| onumber | oname | country |
+-----+-----+-----+
| 1 | Keshab_Office_10 | Nepal |
| 2 | Hari_Office | India |
| 3 | Sita_Office | Japan |
| 4 | Ram_Office | China |
| 5 | Keshab_Ncell_10 | NULL |
+-----+-----+-----+
5 rows in set (0.001 sec)

```

```

MariaDB [Keshab_10_company]> insert into project(pname,plocation,onumber)
-> values('Hari_Project','Bkt',2),
-> ('Keshab_ProjBCA','Bkt',1),
-> ('Ram_Project','Llt',4),
-> ('Sita_Project','Ktm',3);
Query OK, 4 rows affected (0.010 sec)
Records: 4 Duplicates: 0 Warnings: 0

```

```

MariaDB [Keshab_10_company]>
MariaDB [Keshab_10_company]> insert into project (pname,onumber)
-> values('Keshab_Project',5);
Query OK, 1 row affected (0.023 sec)

```

```

MariaDB [Keshab_10_company]> select * from project;
+-----+-----+-----+-----+
| pnumber | pname          | plocation | onumber |
+-----+-----+-----+-----+
| 1       | Hari_Project   | Bkt       | 2       |
| 2       | Keshab_ProjBCA | Bkt       | 1       |
| 3       | Ram_Project    | Llt       | 4       |
| 4       | Sita_Project   | Ktm       | 3       |
| 5       | Keshab_Project | NULL      | 5       |
+-----+-----+-----+-----+
5 rows in set (0.001 sec)

```

```

MariaDB [Keshab_10_company]> insert into dependents(dname,dage,ssn,drelation)
-> values('Gary',15,1,'Brother'),
-> ('Rita',14,2,'Mother'),
-> ('Chhatra',12,10,'Father');
Query OK, 3 rows affected (0.023 sec)
Records: 3 Duplicates: 0 Warnings: 0

```

```

MariaDB [Keshab_10_company]>
MariaDB [Keshab_10_company]> insert into dependents(dname,ssn,drelation)
-> values('Indira',4,'Mother'),
-> ('Rom',3,'Uncle');
Query OK, 2 rows affected (0.023 sec)
Records: 2 Duplicates: 0 Warnings: 0

```

```

MariaDB [Keshab_10_company]> select * from dependents;
+-----+-----+-----+-----+
| did | dname  | dage | ssn | drelation |
+-----+-----+-----+-----+
| 1   | Gary   | 15   | 1   | Brother   |
| 2   | Rita   | 14   | 2   | Mother    |
| 3   | Chhatra | 12   | 10  | Father    |
| 4   | Indira | NULL | 4   | Mother    |
| 5   | Rom    | NULL | 3   | Uncle     |
+-----+-----+-----+-----+
5 rows in set (0.001 sec)

```

```
MariaDB [Keshab_10_company]> select * from office;
+-----+-----+-----+
| onumber | oname          | country |
+-----+-----+-----+
|        1 | Keshab_Office_10 | Nepal   |
|        2 | Hari_Office      | India   |
|        3 | Sita_Office      | Japan   |
|        4 | Ram_Office       | China   |
|        5 | Keshab_Ncell_10  | NULL    |
+-----+-----+-----+
5 rows in set (0.001 sec)
```

```
MariaDB [Keshab_10_company]> update office
-> set oname='Keshab_Ntc_10'
-> where oname='Keshab_Ncell_10';
Query OK, 1 row affected (0.023 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

```
MariaDB [Keshab_10_company]> select * from office;
+-----+-----+-----+
| onumber | oname          | country |
+-----+-----+-----+
|        1 | Keshab_Office_10 | Nepal   |
|        2 | Hari_Office      | India   |
|        3 | Sita_Office      | Japan   |
|        4 | Ram_Office       | China   |
|        5 | Keshab_Ntc_10    | NULL    |
+-----+-----+-----+
5 rows in set (0.001 sec)
```



```

MariaDB [Keshab_10_company]> select * from employee;
+-----+-----+-----+-----+-----+-----+-----+-----+
| ssn | ename | gender | bdate | address | salary | years_of_experience | ono |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | Hari | M | 2060-01-22 | Thimi,Bhaktapur | 20000.00 | 5 | 2 |
| 2 | Sita | F | 2059-05-16 | Putalisadak,Kathmandu | 30000.00 | 2 | 3 |
| 3 | Ram | NULL | NULL | NULL | 0.00 | NULL | 4 |
| 4 | Keshav | NULL | NULL | NULL | 0.00 | NULL | 1 |
| 10 | Keshab | M | 2059-11-27 | Suryabinayak,Bhaktapur | 100000.00 | 10 | 5 |
+-----+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.001 sec)

```

```

MariaDB [Keshab_10_company]> delete from employee
-> where ssn=1;
Query OK, 1 row affected (0.024 sec)

MariaDB [Keshab_10_company]> select * from employee;
+-----+-----+-----+-----+-----+-----+-----+-----+
| ssn | ename | gender | bdate | address | salary | years_of_experience | ono |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 2 | Sita | F | 2059-05-16 | Putalisadak,Kathmandu | 30000.00 | 2 | 3 |
| 3 | Ram | NULL | NULL | NULL | 0.00 | NULL | 4 |
| 4 | Keshav | NULL | NULL | NULL | 0.00 | NULL | 1 |
| 10 | Keshab | M | 2059-11-27 | Suryabinayak,Bhaktapur | 100000.00 | 10 | 5 |
+-----+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.001 sec)

```

```
MariaDB [Keshab_10_company]> desc project;
```

Field	Type	Null	Key	Default	Extra
pnumber	int(11)	NO	PRI	NULL	auto_increment
pname	varchar(40)	NO	UNI	NULL	
plocation	varchar(40)	YES		NULL	
onumber	int(11)	YES	MUL	NULL	

```
4 rows in set (0.035 sec)
```

```
MariaDB [Keshab_10_company]> alter table project
-> change plocation proj_location varchar(40);
Query OK, 0 rows affected (0.052 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [Keshab_10_company]> desc project;
```

Field	Type	Null	Key	Default	Extra
pnumber	int(11)	NO	PRI	NULL	auto_increment
pname	varchar(40)	NO	UNI	NULL	
proj_location	varchar(40)	YES		NULL	
onumber	int(11)	YES	MUL	NULL	

```
4 rows in set (0.045 sec)
```

```
MariaDB [Keshab_10_company]> select * from employee;
```

ssn	ename	gender	bdate	address	salary	years_of_experience	ono
2	Sita	F	2059-05-16	Putalisadak,Kathmandu	30000.00	2	3
3	Ram	NULL	NULL	NULL	0.00	NULL	4
4	Keshav	NULL	NULL	NULL	0.00	NULL	1
10	Keshab	M	2059-11-27	Suryabinayak,Bhaktapur	100000.00	10	5

```
4 rows in set (0.001 sec)
```

```
MariaDB [Keshab_10_company]> select * from office;
```

onumber	oname	country
1	Keshab_Office_10	Nepal
2	Hari_Office	India
3	Sita_Office	Japan
4	Ram_Office	China
5	Keshab_Ntc_10	NULL

```
5 rows in set (0.001 sec)
```

```
MariaDB [Keshab_10_company]> select * from project;
```

pnumber	pname	proj_location	onumber
1	Hari_Project	Bkt	2
2	Keshab_ProjBCA	Bkt	1
3	Ram_Project	Llt	4
4	Sita_Project	Ktm	3
5	Keshab_Project	NULL	5

```
5 rows in set (0.001 sec)
```

```
MariaDB [Keshab_10_company]> select * from works_on;  
Empty set (0.001 sec)
```

```
MariaDB [Keshab_10_company]> select * from dependents;
```

did	dname	dage	ssn	drelation
1	Gary	15	NULL	Brother
2	Rita	14	2	Mother
3	Chhatra	12	10	Father
4	Indira	NULL	4	Mother
5	Rom	NULL	3	Uncle

```
5 rows in set (0.001 sec)
```

```
MariaDB [Keshab_10_company]> drop table works_on;  
Query OK, 0 rows affected (0.031 sec)
```

```
MariaDB [Keshab_10_company]> alter table dependents  
-> drop constraint age_constraint;  
Query OK, 0 rows affected (0.026 sec)  
Records: 0 Duplicates: 0 Warnings: 0
```

```
MariaDB [Keshab_10_company]> drop database keshab_10_company;  
Query OK, 4 rows affected (0.133 sec)
```