Bachelors in Computer Application



Lab Report

Of
Database Management System (CACS 255)
4th Semester

Lab-1: Basics of DDL and DML Statements

Submitted To: Mr. Jagdish Bhatta DBMS Lecturer Submitted By: Keshab Poudel Roll No: 10

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
                                         | Null | Key | Default | Extra
                        | Type
  ssn
                          int(11)
                                           NO
                                                  PRI
                                                         NULL
                                                                    auto_increment
  ename
                          varchar(25)
                                           NO
                                                         NULL
  gender
                          char(1)
                                           YES
                                                         NULL
                                           YES
  bdate
                          date
                                                         NULL
  address
                          varchar(50)
                                           YES
                                                         NULL
                          decimal(10,2)
                                           YES
                                                         0.00
  salarv
  years_of_experience
                          int(11)
                                           YES
                                                         NULL
                         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
                          Null | Key | Default | Extra
            Type
            int(11)
 onumber
                          NO
                                 PRI
                                       NULL
                                                  auto_increment
            varchar(25)
  oname
                          NO
                                        NULL
                        YES
 country
            varchar(25)
                                       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
          int(11)
                    NO
                            PRI
                                  NULL
          int(11)
                    NO
                            PRI
                                  NULL
  pno
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 |
                       | Null | Key | Default | Extra
  did
          int(11)
                         NO
                                      NULL
                                                 auto_increment
          varchar(25)
                         YES
                                      NULL
  dname
  dage
          int(11)
                         YES
                                      NULL
                         YES
                                MUL
                                      NULL
          int(11)
  ssn
 rows in set (0.039 sec)
```

```
MariaDB [keshab_10_company]> desc dependents;
 Field | Type
                      | Null | Key | Default | Extra
  did
          int(11)
                               PRI
                                     NULL
                                                auto_increment
                        NO
  dname
          varchar(25)
                        YES
                                     NULL
          int(11)
                        YES
                                     NULL
  dage
  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
              int(11)
 dage
                            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;
                           | Null | Key | Default | Extra
 Field
            Type
  did
              int(11)
                                    PRI
                                          NULL
                                                     auto_increment
                             NO
                            YES
                                          NULL
  dname
              varchar(25)
  dage
              int(11)
                            YES
                                          NULL
              int(11)
                             YES
                                    MUL
                                          NULL
  ssn
  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
                            Null | Key | Default | Extra
            | Type
 did
              int(11)
                            NO
                                   PRI
                                         NULL
                                                    auto_increment
                            YES
 dname
              varchar(25)
                                         NULL
                            YES
              int(11)
                                         NULL
  dage
  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
                                                                                                                    salarv
                                                                                                                                       | years_of_experience | ono
       1 | Hari
2 | Sita
3 | Ram
4 | Kesha
                                               2060-01-22 | Thimi,Bhaktapur
2059-05-16 | Putalisadak,Kathmandu
                                                                                                                       20000.00
                                                                                                                       30000.00
                               NULL
                                                                       NULL
               Keshav
                               NULL
                                               NULL
                                                                       NULL
                                                                                                                              0.00
                                                                                                                                                                      NULL
     10 | Keshab |
                                               2059-11-27 | Suryabinayak, Bhaktapur
                               М
                                                                                                                     100000.00
                                                                                                                                                                         10
    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
            Keshab_Office_10
        1 I
                                  Nepal
             Hari_Office
        2
                                  India
        3
          | Sita_Office
                                  Japan
           Ram_Office
        4
                                  China
           | 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
            Hari_Project
                                                 2
        1
                              Bkt
                                                 1
        2
            Keshab_ProjBCA
                              Bkt
                                                 4
        3
            Ram_Project
                              Llt
        4
                                                 3
            Sita_Project
                              Ktm
        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
     1
          Gary
                          15
                                         Brother
     2
                          14
          Rita
                                    2
                                         Mother
     3
                          12
                                         Father
          Chhatra
                                  10
     4
          Indira
                       NULL
                                   4
                                         Mother
     5
          Rom
                       NULL
                                    3
                                        Uncle
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 2 3 4	Sita Ram Keshav		2059-05-16 NULL NULL	Thimi,Bhaktapur Putalisadak,Kathmandu NULL NULL Suryabinayak,Bhaktapur	20000.00 30000.00 0.00 0.00	5 2 NULL NULL	2 3 4 1 5					
++ 5 rows	++											

<pre>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;</pre>											
+ ssn	+ ename	+ gender	+ bdate	 address	 salary	 years_of_experience	 ono				
2 3 4 10	Ram Keshav	+ F NULL NULL M	2059-05-16 NULL NULL NULL	Putalisadak,Kathmandu NULL NULL Suryabinayak,Bhaktapur	30000.00 0.00 0.00 100000.00	2 NULL NULL 10	3 4 1 5				
4 rows in set (0.001 sec)											

```
MariaDB [Keshab_10_company]> desc project;
                           | Null | Key | Default | Extra
 Field
            | Type
  pnumber
              int(11)
                            NO
                                    PRI
                                         NULL
                                                    auto_increment
              varchar(40)
                            NO
                                   UNI
                                         NULL
  pname
  plocation
              varchar(40)
                            YES
                                         NULL
  onumber
              int(11)
                            YES
                                   MUL
                                         NULL
  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
                               Null | Key | Default |
                                                      Extra
                  Type
 pnumber
                  int(11)
                                NO
                                       PRI
                                             NULL
                                                       auto_increment
 pname
                  varchar(40)
                                NO
                                       UNI
                                             NULL
 proj_location
                  varchar(40)
                                YES
                                             NULL
                                YES
                  int(11)
 onumber
                                       MUL
                                             NULL
 rows in set (0.045 sec)
```

```
MariaDB [Keshab_10_company]> select * from employee;
                | gender | bdate
                                                                     salary
                                                                                  years_of_experience
 ssn l
        ename
                                         address
                                          Putalisadak, Kathmandu
                                                                      30000.00
        Sita
                            2059-05-16
        Ram
                            NULL
                                                                          0.00
                                                                                                  NULL
                                          NULL
        Keshav
                  NULL
                           NULL
                                                                          0.00
                                                                                                  NULL
        Keshab
                           2059-11-27
                                          Suryabinayak,Bhaktapur
                                                                     100000.00
                                                                                                    10
4 rows in set (0.001 sec)
MariaDB [Keshab_10_company]> select * from office;
 onumber | oname
                                country |
            Keshab_Office_10
Hari_Office
Sita_Office
                                 Nepal
                                 India
                                 Japan
            Ram_Office
                                 .
China
            Keshab_Ntc_10
5 rows in set (0.001 sec)
MariaDB [Keshab_10_company]> select * from project;
| pnumber | pname
                             | proj_location | onumber |
            Hari_Project
                               Bkt
            Keshab_ProjBCA
Ram_Project
                               Bkt
                              Llt
            Sita_Project
                               Ktm
            Keshab_Project
 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
                     15
                          NULL
    1
        Gary
                                  Brother
    2
                     14
                             2
        Rita
                                  Mother
                                  Father
    3
                            10
        Chhatra
                     12
    4
                             4
        Indira
                   NULL
                                  Mother
    5
                   NULL
                             3
                                  Uncle
        Rom
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)