PRACTICAL FILE

OF

DATABASE MANAGEMENT SYSTEM

SUB-CODE: BCSE-510L

[COMPUTER SCIENCE AND ENGINEERING]

Submitted To:
Dr. Neeraj Mangla
(Assistant professor)
Department: CSE
MMEC Mullana

Submitted By:
Sunidhi Saurabh
Roll no: 11202723 (B1)
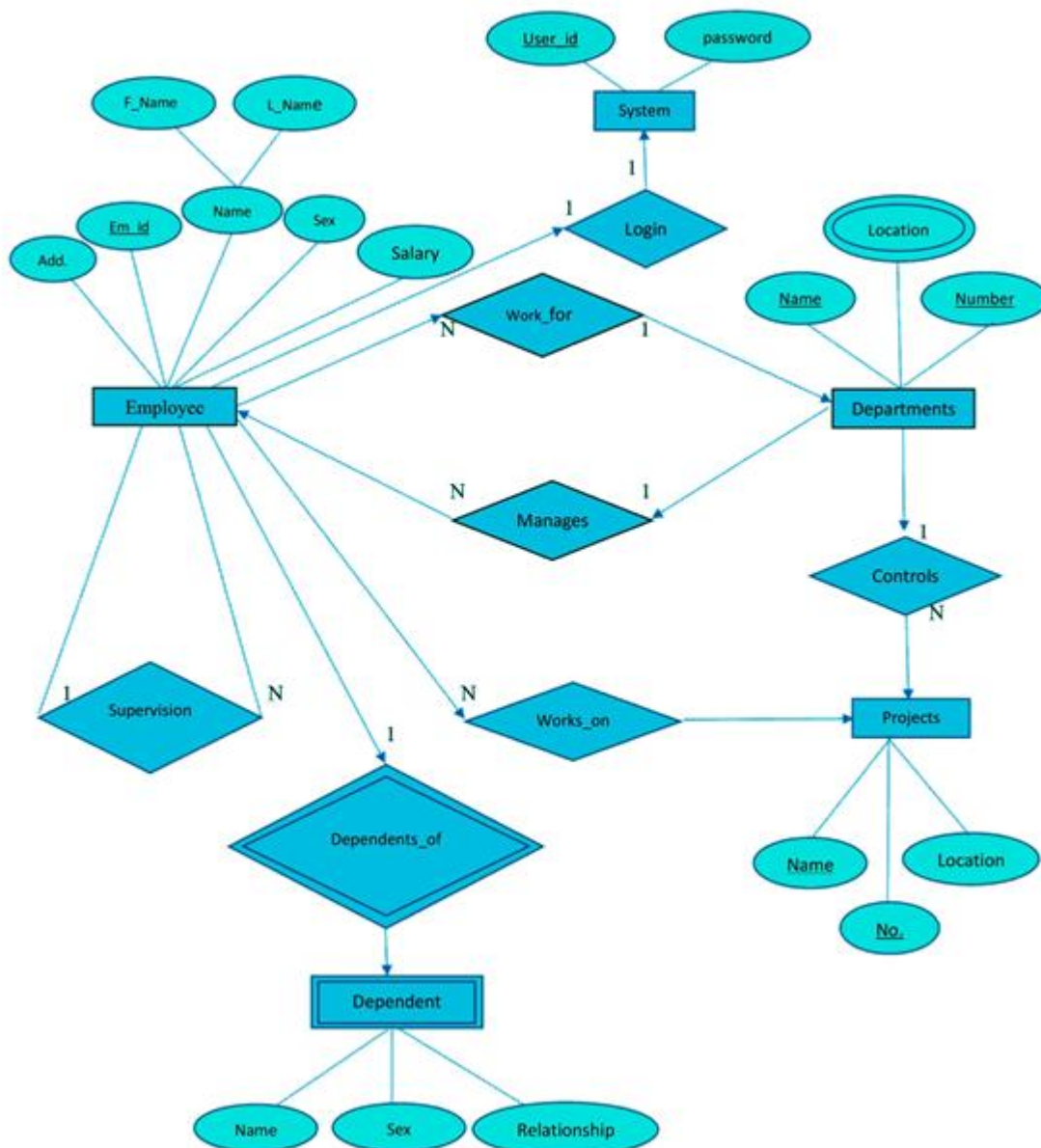Class: B. Tech. (2nd Y)
Session: 2021-2022

MAHARISHI MARKANDESHWAR ENGINEERING COLLAGE

MAHARISHI MARKANDESHWAR (DEEMED TO BE UNIVERSITY)

MULLANA-AMBALA, HARYANA (INDIA) – 133207

(Established Under Section 3 of the UGC Act, 1956)

(Accredited by NAAC with Grade 'A++')
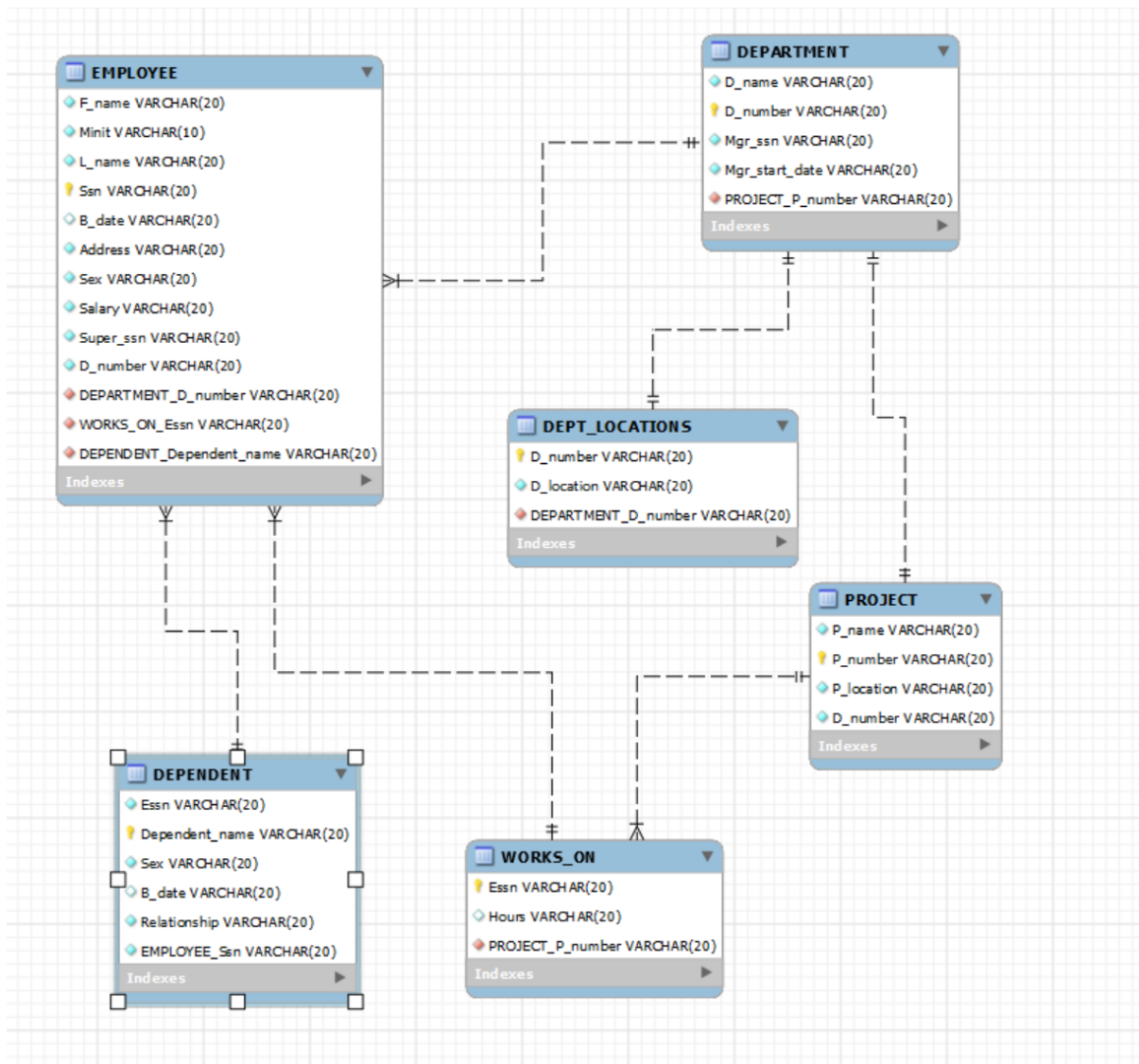
Practical No. – 1

Aim –To draw ER diagram for Company DBMS.

Practical No. – 2

Aim –To draw Relational model corresponding to ER Model.

Implementation :-

Practical No. – 3

Aim –To Create Tables for Company DBMS.

Steps :

1. Open the terminal and login to mysql.
2. Check the available databases.
3. Create a Company database.
4. Select this Company database.
5. Now, create the following tables in the Company database :-
   - I.   EMPOLYEE
   - II. DEPARTMENT
   - III. DEPT_LOCATIONS
   - IV. PROJECTS
   - V.   WORKS_ON
   - VI. DEPENDENT

Implementation :-

```
mysql> create table DEPARTMENT(D_name varchar(20), D_number varchar(20), Mgr_ssn varcha
r(20), Mgr_start_date varchar(20));
Query OK, 0 rows affected (0,07 sec)

mysql> create table DEPT_LOCATIONS(D_number varchar(20), D_location varchar(60));
Query OK, 0 rows affected (0,03 sec)

mysql> create table PROJECT(P_name varchar(20), P_number varchar(20),P_location varchar
(60),Dnum varchar(20));
Query OK, 0 rows affected (0,04 sec)

mysql> create table WORKS_ON(Essn varchar(20), Ph_no int(30),Hours varchar(20));
Query OK, 0 rows affected, 1 warning (0,04 sec)

mysql> create table DEPENDENT(Essn varchar(20), Dependent_name varchar(20), Sex varchar
(10), B_date varchar(20), Relationship varchar(20));
Query OK, 0 rows affected (0,06 sec)

mysql> show tables;
+-------------------+
| Tables_in_Company |
+-------------------+
| DEPARTMENT        |
| DEPENDENT         |
| DEPT_LOCATIONS    |
| EMPLOYEE          |
| PROJECT           |
| WORKS_ON          |
+-------------------+
6 rows in set (0,00 sec)

mysql>
```

Practical No. – 4

Aim – 4.   To Describe the Structure of Tables of Company DBMS.

Steps :

6. Open the terminal and login to mysql.
7. Check the available databases.
8. Create a Company database.
9. Select this Company database.
10. Now, describe the structure of the tables in the Company database :-

EMPLOYEE

```
mysql> show tables;
+-------------------+
| Tables_in_Company |
+-------------------+
| DEPARTMENT        |
| DEPENDENT         |
| DEPT_LOCATIONS    |
| EMPLOYEE          |
| PROJECT           |
| WORKS_ON          |
+-------------------+
6 rows in set (0,00 sec)

mysql> describe EMPLOYEE;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| F_name    | varchar(20) | YES  |     | NULL    |       |
| M_name    | varchar(20) | YES  |     | NULL    |       |
| L_name    | varchar(20) | YES  |     | NULL    |       |
| Ssn       | varchar(20) | YES  |     | NULL    |       |
| B_date    | varchar(20) | YES  |     | NULL    |       |
| Address   | varchar(60) | YES  |     | NULL    |       |
| Sex       | varchar(10) | YES  |     | NULL    |       |
| Salary    | varchar(20) | YES  |     | NULL    |       |
| Super_ssn | varchar(30) | YES  |     | NULL    |       |
| Dno       | varchar(20) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
10 rows in set (0,00 sec)

mysql> █
```


DEPARTMENT

```
mysql> describe DEPARTMENT;
+----------------+-------------+------+-----+---------+-------+
| Field          | Type        | Null | Key | Default | Extra |
+----------------+-------------+------+-----+---------+-------+
| D_name         | varchar(20) | YES  |     | NULL    |       |
| D_number       | varchar(20) | YES  |     | NULL    |       |
| Mgr_ssn        | varchar(20) | YES  |     | NULL    |       |
| Mgr_start_date | varchar(20) | YES  |     | NULL    |       |
+----------------+-------------+------+-----+---------+-------+
4 rows in set (0,00 sec)

mysql> █
```

DEPT_LOCATIONS

```
mysql> describe DEPT_LOCATIONS;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| D_number   | varchar(20) | YES  |     | NULL    |       |
| D_location | varchar(60) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
2 rows in set (0,00 sec)

mysql>
```

PROJECT

```
mysql> describe PROJECT;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| P_name     | varchar(20) | YES  |     | NULL    |       |
| P_number   | varchar(20) | YES  |     | NULL    |       |
| P_location | varchar(60) | YES  |     | NULL    |       |
| Dnum       | varchar(20) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
4 rows in set (0,00 sec)

mysql> █
```

WORKS_ON

```
mysql> describe WORKS_ON;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| Essn  | varchar(20) | YES  |     | NULL    |       |
| Ph_no | int         | YES  |     | NULL    |       |
| Hours | varchar(20) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
3 rows in set (0,00 sec)

mysql> █
```

DEPENDENT

```
mysql> describe DEPENDENT;
+----------------+-------------+------+-----+---------+-------+
| Field          | Type        | Null | Key | Default | Extra |
+----------------+-------------+------+-----+---------+-------+
| Essn           | varchar(20) | YES  |     | NULL    |       |
| Dependent_name | varchar(20) | YES  |     | NULL    |       |
| Sex            | varchar(10) | YES  |     | NULL    |       |
| B_date         | varchar(20) | YES  |     | NULL    |       |
| Relationship   | varchar(20) | YES  |     | NULL    |       |
+----------------+-------------+------+-----+---------+-------+
5 rows in set (0,00 sec)

mysql>
```

Practical No. – 5

Aim – To Insert Data in the Tables of Company DBMS.

Implementation :-

```
                                   fusion@fusion666: ~                          Q  ≡  _  □  ×
fusion@fusion666:~$ sudo mysql -u root
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 13
Server version: 8.0.28-0ubuntu0.21.10.3 (Ubuntu)

Copyright (c) 2000, 2022, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> tee Practical_5;
Logging to file 'Practical_5'
mysql> Show databases;
+--------------------+
| Database           |
+--------------------+
| Company            |
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
5 rows in set (0,00 sec)

mysql> use Company;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables;
```

```
Database changed
mysql> show tables;
+-------------------+
| Tables_in_Company |
+-------------------+
| DEPARTMENT        |
| DEPENDENT         |
| DEPT_LOCATIONS    |
| EMPLOYEE          |
| PROJECT           |
| WORKS_ON          |
+-------------------+
6 rows in set (0,00 sec)

mysql> insert into EMPLOYEE values('Riddle','K','Sharma','111333666',('10-AAA-2001'),'666_xyz','M','40000','98766
6543','6');
Query OK, 1 row affected (0,01 sec)

mysql> insert into EMPLOYEE values('Kalyan','T','Sharma','111222666',('20-A1A-2019'),'333_xyz','M','40000','98766
6763','7');
Query OK, 1 row affected (0,01 sec)

mysql> insert into EMPLOYEE values('Anmol','R','Sharma','111111111',('K2-A1A-2001'),'111_xyz','M','50000','987666
111','3');
Query OK, 1 row affected (0,01 sec)
```

```
mysql> insert into EMPLOYEE values('Ratan','S','Kumar','111777111',('#O-OAO-2013'),'xyz_212','M','30000','9876662
12','2');
Query OK, 1 row affected (0,01 sec)

mysql> insert into EMPLOYEE values('Tina','I','Kumari','777222333',('07-T21-2001'),'PNB_MG1','F','40000','9876668
76','5');
Query OK, 1 row affected (0,02 sec)

mysql> insert into EMPLOYEE values('Tanjlina','J','Antunes','234789456',('18-N31-2000'),'PNB_MG1','F','40000','98
7666456','8');
Query OK, 1 row affected (0,02 sec)

mysql> insert into EMPLOYEE values('Ronak','N','Kumar','111999000',('1R-9R1-2001'),'III_HYD6','M','50000','987666
000','4');
Query OK, 1 row affected (0,02 sec)

mysql> insert into EMPLOYEE values('Nitu','N','Kaur','987456321',('1U-5U2-2001'),'PNB_MG4','F','60000','987666246
','9');
Query OK, 1 row affected (0,02 sec)

mysql> select*from EMPLOYEE;
+----------+-------+---------+-----------+-------------+----------+-----+--------+-----------+------+
| F_name   | Minit | L_name  | Ssn       | B_date      | Address  | Sex | Salary | Super_ssn | Dno  |
+----------+-------+---------+-----------+-------------+----------+-----+--------+-----------+------+
| Riddle   | K     | Sharma  | 111333666 | 10-AAA-2001 | 666_xyz  | M   | 40000  | 987666543 | 6    |
| Kalyan   | T     | Sharma  | 111222666 | 20-A1A-2019 | 333_xyz  | M   | 40000  | 987666763 | 7    |
| Anmol    | R     | Sharma  | 111111111 | K2-A1A-2001 | 111_xyz  | M   | 50000  | 987666111 | 3    |
| Ratan    | S     | Kumar   | 111777111 | #O-OAO-2013 | xyz_212  | M   | 30000  | 987666212 | 2    |
| Tina     | I     | Kumari  | 777222333 | 07-T21-2001 | PNB_MG1  | F   | 40000  | 987666876 | 5    |
| Tanjlina | J     | Antunes | 234789456 | 18-N31-2000 | PNB_MG1  | F   | 40000  | 987666456 | 8    |
| Ronak    | N     | Kumar   | 111999000 | 1R-9R1-2001 | III_HYD6 | M   | 50000  | 987666000 | 4    |
| Nitu     | N     | Kaur    | 987456321 | 1U-5U2-2001 | PNB_MG4  | F   | 60000  | 987666246 | 9    |
+----------+-------+---------+-----------+-------------+----------+-----+--------+-----------+------+
8 rows in set (0,00 sec)

mysql>
```

```
mysql> describe DEPARTMENT;
+----------------+-------------+------+-----+---------+-------+
| Field          | Type        | Null | Key | Default | Extra |
+----------------+-------------+------+-----+---------+-------+
| D_name         | varchar(20) | YES  |     | NULL    |       |
| D_number       | varchar(20) | YES  |     | NULL    |       |
| Mgr_ssn        | varchar(20) | YES  |     | NULL    |       |
| Mgr_start_date | varchar(20) | YES  |     | NULL    |       |
+----------------+-------------+------+-----+---------+-------+
4 rows in set (0,00 sec)

mysql> insert into DEPARTMENT values('Headquarters','1','888665555','10-Jan-93');
Query OK, 1 row affected (0,02 sec)

mysql> insert into DEPARTMENT values('Administration','4','788665645','18-Jun-85');
Query OK, 1 row affected (0,01 sec)

mysql> insert into DEPARTMENT values('Research','5','333665645','22-may-95');
Query OK, 1 row affected (0,02 sec)

mysql> insert into DEPARTMENT values('Automation','7','123456789','08-sep-97');
Query OK, 1 row affected (0,01 sec)

mysql> select*from DEPARTMENT;
+----------------+----------+-----------+----------------+
| D_name         | D_number | Mgr_ssn   | Mgr_start_date |
+----------------+----------+-----------+----------------+
| Headquarters   | 1        | 888665555 | 10-Jan-93      |
| Administration | 4        | 788665645 | 18-Jun-85      |
| Research       | 5        | 333665645 | 22-may-95      |
| Automation     | 7        | 123456789 | 08-sep-97      |
+----------------+----------+-----------+----------------+
4 rows in set (0,01 sec)

mysql>
```

```
mysql> describe DEPT_LOCATIONS;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| D_number   | varchar(20) | YES  |     | NULL    |       |
| D_location | varchar(60) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
2 rows in set (0,00 sec)

mysql> insert into DEPT_LOCATIONS values('7','Houston');
Query OK, 1 row affected (0,03 sec)

mysql> insert into DEPT_LOCATIONS values('6','Stafford');
Query OK, 1 row affected (0,03 sec)

mysql> insert into DEPT_LOCATIONS values('5','Bellaire');
Query OK, 1 row affected (0,01 sec)

mysql> insert into DEPT_LOCATIONS values('4','Sugerland');
Query OK, 1 row affected (0,04 sec)

mysql> insert into DEPT_LOCATIONS values('4','Houston');
Query OK, 1 row affected (0,03 sec)

mysql> select*from DEPT_LOCATIONS;
+----------+------------+
| D_number | D_location |
+----------+------------+
| 7        | Houston    |
| 6        | Stafford   |
| 5        | Bellaire   |
| 4        | Sugerland  |
| 4        | Houston    |
+----------+------------+
5 rows in set (0,00 sec)

mysql>
```

```
mysql> describe PROJECT;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| P_name     | varchar(20) | YES  |     | NULL    |       |
| P_number   | varchar(20) | YES  |     | NULL    |       |
| P_location | varchar(60) | YES  |     | NULL    |       |
| Dnum       | varchar(20) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
4 rows in set (0,00 sec)

mysql> insert into PROJECT values('Project_A','1','Bellaire','5');
Query OK, 1 row affected (0,02 sec)

mysql> insert into PROJECT values('Project_B','2','Sugarland','5');
Query OK, 1 row affected (0,02 sec)

mysql> insert into PROJECT values('Project_C','3','Sugarland','4');
Query OK, 1 row affected (0,03 sec)

mysql> insert into PROJECT values('New_benefits','6','Houston','5');
Query OK, 1 row affected (0,02 sec)

mysql> insert into PROJECT values('Computerization','7','Stafford','1');
Query OK, 1 row affected (0,02 sec)

mysql> select*from PROJECT;
+-----------------+----------+------------+------+
| P_name          | P_number | P_location | Dnum |
+-----------------+----------+------------+------+
| Project_A       | 1        | Bellaire   | 5    |
| Project_B       | 2        | Sugarland  | 5    |
| Project_C       | 3        | Sugarland  | 4    |
| New_benefits    | 6        | Houston    | 5    |
| Computerization | 7        | Stafford   | 1    |
+-----------------+----------+------------+------+
5 rows in set (0,00 sec)

mysql> █
```

```
mysql> describe WORKS_ON;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| Essn  | varchar(20) | YES  |     | NULL    |       |
| Pno   | int         | YES  |     | NULL    |       |
| Hours | varchar(20) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
3 rows in set (0,00 sec)

mysql> insert into WORKS_ON values('123876890','1','7');
Query OK, 1 row affected (0,02 sec)

mysql> insert into WORKS_ON values('123876432','2','3.5');
Query OK, 1 row affected (0,04 sec)

mysql> insert into WORKS_ON values('123876123','11','12.4');
Query OK, 1 row affected (0,01 sec)

mysql> insert into WORKS_ON values('123876341','4','17.1');
Query OK, 1 row affected (0,02 sec)

mysql> insert into WORKS_ON values('123876872','1','20');
Query OK, 1 row affected (0,02 sec)

mysql> select*from WORKS_ON;
+-----------+------+-------+
| Essn      | Pno  | Hours |
+-----------+------+-------+
| 123876890 |    1 | 7     |
| 123876432 |    2 | 3.5   |
| 123876123 |   11 | 12.4  |
| 123876341 |    4 | 17.1  |
| 123876872 |    1 | 20    |
+-----------+------+-------+
5 rows in set (0,00 sec)

mysql>
```

```
mysql> describe DEPENDENT;
+----------------+-------------+------+-----+---------+-------+
| Field          | Type        | Null | Key | Default | Extra |
+----------------+-------------+------+-----+---------+-------+
| Essn           | varchar(20) | YES  |     | NULL    |       |
| Dependent_name | varchar(20) | YES  |     | NULL    |       |
| Sex            | varchar(10) | YES  |     | NULL    |       |
| B_date         | varchar(20) | YES  |     | NULL    |       |
| Relationship   | varchar(20) | YES  |     | NULL    |       |
+----------------+-------------+------+-----+---------+-------+
5 rows in set (0,00 sec)

mysql> insert into DEPENDENT values('123876872','Tina','F','31-jun-82','Daughter');
Query OK, 1 row affected (0,02 sec)

mysql> insert into DEPENDENT values('123876872','Anjali','F','09-04-99','Spouse');
Query OK, 1 row affected (0,02 sec)

mysql> insert into DEPENDENT values('123876873','Randhir','M','12-06-98','Son');
Query OK, 1 row affected (0,01 sec)

mysql> insert into DEPENDENT values('123876453','Sushil','M','02-11-96','Spouse');
Query OK, 1 row affected (0,02 sec)

mysql> insert into DEPENDENT values('123876403','Venkat','M','07-05-99','Son');
Query OK, 1 row affected (0,01 sec)

mysql> select*from DEPENDENT;
+-----------+----------------+------+-----------+--------------+
| Essn      | Dependent_name | Sex  | B_date    | Relationship |
+-----------+----------------+------+-----------+--------------+
| 123876872 | Tina           | F    | 31-jun-82 | Daughter     |
| 123876872 | Anjali         | F    | 09-04-99  | Spouse       |
| 123876873 | Randhir        | M    | 12-06-98  | Son          |
| 123876453 | Sushil         | M    | 02-11-96  | Spouse       |
| 123876403 | Venkat         | M    | 07-05-99  | Son          |
+-----------+----------------+------+-----------+--------------+
5 rows in set (0,00 sec)

mysql>
```