

EXPERIMENT-3

DBMS LAB

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a) Create the tables for Company database as per ER diagram of Exp 2

```
mysql> show databases;
+-----+
| Database |
+-----+
| company  |
| information_schema |
| mysql    |
| performance_schema |
| sys      |
+-----+
5 rows in set (0.00 sec)

mysql> USE company;
Database changed
mysql> CREATE TABLE DEPARTMENT (
->     Dname VARCHAR(15) NOT NULL,
->     Dnumber INT NOT NULL,
->     Mgr_ssn CHAR(9) NOT NULL,
->     Mgr_start_date DATE,
->     PRIMARY KEY (Dnumber),
->     UNIQUE (Dname)
-> );
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> CREATE TABLE EMPLOYEE (  
->     Fname VARCHAR(15) NOT NULL,  
->     Minit CHAR(1),  
->     Lname VARCHAR(15) NOT NULL,  
->     Ssn CHAR(9) NOT NULL,  
->     Bdate DATE,  
->     Address VARCHAR(30),  
->     Sex CHAR(1),  
->     Salary DECIMAL(10,2),  
->     Super_ssn CHAR(9),  
->     Dno INT NOT NULL,  
->     PRIMARY KEY (Ssn),  
->     FOREIGN KEY (Super_ssn) REFERENCES EMPLOYEE(Ssn),  
->     FOREIGN KEY (Dno) REFERENCES DEPARTMENT(Dnumber)  
-> );  
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> CREATE TABLE EMPLOYEE_NEW (  
->     Fname VARCHAR(15) NOT NULL,  
->     Minit CHAR(1),  
->     Lname VARCHAR(15) NOT NULL,  
->     Ssn CHAR(9) NOT NULL,  
->     Bdate DATE,  
->     Address VARCHAR(30),  
->     Sex CHAR(1),  
->     Salary DECIMAL(10,2),  
->     Super_ssn CHAR(9),  
->     Dno INT NOT NULL,  
->     PRIMARY KEY (Ssn),  
->     FOREIGN KEY (Super_ssn) REFERENCES EMPLOYEE(Ssn),  
->     FOREIGN KEY (Dno) REFERENCES DEPARTMENT(Dnumber)  
-> );  
Query OK, 0 rows affected (0.08 sec)
```

```

mysql> CREATE TABLE DEPT_LOCATIONS (
->     Dnumber INT NOT NULL,
->     Dlocation VARCHAR(15) NOT NULL,
->     PRIMARY KEY (Dnumber, Dlocation),
->     FOREIGN KEY (Dnumber) REFERENCES DEPARTMENT(Dnumber)
-> );
Query OK, 0 rows affected (0.04 sec)

mysql> CREATE TABLE PROJECT (
->     Pname VARCHAR(15) NOT NULL,
->     Pnumber INT NOT NULL,
->     Plocation VARCHAR(15),
->     Dnum INT NOT NULL,
->     PRIMARY KEY (Pnumber),
->     UNIQUE (Pname),
->     FOREIGN KEY (Dnum) REFERENCES DEPARTMENT(Dnumber)
-> );
Query OK, 0 rows affected (0.07 sec)

mysql> CREATE TABLE WORKS_ON (
->     Essn CHAR(9) NOT NULL,
->     Pno INT NOT NULL,
->     Hours DECIMAL(3,1) NOT NULL,
->     PRIMARY KEY (Essn, Pno),
->     FOREIGN KEY (Essn) REFERENCES EMPLOYEE(Ssn),
->     FOREIGN KEY (Pno) REFERENCES PROJECT(Pnumber)
-> );
Query OK, 0 rows affected (0.07 sec)

mysql> CREATE TABLE DEPENDENT (
->     Essn CHAR(9) NOT NULL,
->     Dependent_name VARCHAR(15) NOT NULL,
->     Sex CHAR(1),
->     Bdate DATE,
->     Relationship VARCHAR(8),
->     PRIMARY KEY (Essn, Dependent_name),
->     FOREIGN KEY (Essn) REFERENCES EMPLOYEE(Ssn)
-> );
Query OK, 0 rows affected (0.02 sec)

```

b. Insert the following data into their respective tables of Company database.

```
mysql> INSERT INTO DEPARTMENT (Dname, Dnumber, Mgr_ssn, Mgr_start_date)
-> VALUES
-> ('Research', 5, '333445555', '1988-05-22'),
-> ('Administration', 4, '987654321', '1995-01-01'),
-> ('Headquarters', 1, '888665555', '1981-06-19');
Query OK, 3 rows affected (0.03 sec)
Records: 3 Duplicates: 0 Warnings: 0
```

```
mysql> INSERT INTO EMPLOYEE (Fname, Lname, Ssn, Bdate, Address, Sex, Salary,
Super_ssn, Dno)
-> VALUES
-> ('James', 'Borg', '888665555', '1937-11-10', '450 Stone, Houston
TX', 'M', 55000, NULL, 1),
-> ('Jennifer', 'Wallace', '987654321', '1941-06-20', '291 Berry, Be
llaire TX', 'F', 43000, '888665555', 4),
-> ('Franklin', 'Wong', '333445555', '1965-12-08', '638 Voss, Housto
n TX', 'M', 40000, '888665555', 5);
Query OK, 3 rows affected (0.02 sec)
Records: 3 Duplicates: 0 Warnings: 0
```

```
mysql> INSERT INTO EMPLOYEE (Fname, Lname, Ssn, Bdate, Address, Sex, Salary,
Super_ssn, Dno)
-> VALUES
-> ('John', 'Smith', '123456789', '1965-01-09', '731 Fondren, Housto
n TX', 'M', 30000, '333445555', 5),
-> ('Alicia', 'Zelaya', '999887777', '1968-01-19', '3321 Castle, Spr
ing TX', 'F', 25000, '987654321', 4),
-> ('Ramesh', 'Narayan', '666884444', '1962-09-15', '975 Fire Oak, H
umble TX', 'M', 38000, '333445555', 5),
-> ('Joyce', 'English', '453453453', '1972-07-31', '5631 Rice, Houst
on TX', 'F', 25000, '333445555', 5),
-> ('Ahmad', 'Jabbar', '987987987', '1969-03-29', '980 Dallas, Houst
on TX', 'M', 25000, '987654321', 4);
Query OK, 5 rows affected (0.02 sec)
Records: 5 Duplicates: 0 Warnings: 0
```

```

mysql> INSERT INTO PROJECT (Pname, Pnumber, Plocation, Dnum)
-> VALUES
-> ('ProductX', 1, 'Bellaire', 5),
-> ('ProductY', 2, 'Sugarland', 5),
-> ('ProductZ', 3, 'Houston', 5),
-> ('Computerization', 10, 'Stafford', 4),
-> ('Reorganization', 20, 'Houston', 1),
-> ('Newbenefits', 30, 'Stafford', 4);
Query OK, 6 rows affected (0.02 sec)
Records: 6 Duplicates: 0 Warnings: 0

mysql> INSERT INTO WORKS_ON (Essn, Pno, Hours)
-> VALUES
-> ('123456789', 1, 32.5),
-> ('123456789', 2, 7.5),
-> ('666884444', 3, 40.0),
-> ('453453453', 1, 20.0),
-> ('453453453', 2, 20.0),
-> ('333445555', 2, 10.0),
-> ('333445555', 3, 10.0),
-> ('333445555', 10, 10.0),
-> ('333445555', 20, 10.0),
-> ('999887777', 30, 30.0),
-> ('999887777', 10, 10.0),
-> ('987987987', 10, 35.0),
-> ('987987987', 30, 5.0),
-> ('987654321', 30, 20.0),
-> ('987654321', 20, 15.0),
-> ('888665555', 20, NULL);
ERROR 1048 (23000): Column 'Hours' cannot be null
mysql> DELETE FROM WORKS_ON WHERE Essn = '888665555' AND Pno = 20;
Query OK, 0 rows affected (0.02 sec)

mysql> UPDATE WORKS_ON
-> SET Hours = 0 -- or another appropriate value
-> WHERE Essn = '888665555' AND Pno = 20;
Query OK, 0 rows affected (0.02 sec)
Rows matched: 0 Changed: 0 Warnings: 0

```

```

mysql> INSERT INTO WORKS_ON (Essn, Pno, Hours)
-> VALUES
-> ('123456789', 1, 32.5),
-> ('123456789', 2, 7.5),
-> ('6668884444', 3, 40.0),
-> ('453453453', 1, 20.0),
-> ('453453453', 2, 20.0),
-> ('333445555', 2, 10.0),
-> ('333445555', 3, 10.0),
-> ('333445555', 10, 10.0),
-> ('333445555', 20, 10.0), -- Fixed entry
-> ('999887777', 30, 30.0),
-> ('999887777', 10, 10.0),
-> ('987987987', 10, 35.0),
-> ('987987987', 30, 5.0),
-> ('987654321', 30, 20.0),
-> ('987654321', 20, 15.0);
Query OK, 15 rows affected (0.02 sec)
Records: 15 Duplicates: 0 Warnings: 0

mysql> INSERT INTO DEPENDENT (Essn, Dependent_name, Sex, Bdate, Relationship
)
-> VALUES
-> ('333445555', 'Alice', 'F', '1986-04-04', 'Daughter'),
-> ('333445555', 'Theodore', 'M', '1983-10-25', 'Son'),
-> ('333445555', 'Joy', 'F', '1958-05-03', 'Spouse'),
-> ('987654321', 'Abner', 'M', '1942-02-28', 'Spouse'),
-> ('123456789', 'Michael', 'M', '1988-01-04', 'Son'),
-> ('123456789', 'Alice', 'F', '1988-12-30', 'Daughter'),
-> ('123456789', 'Elizabeth', 'F', '1967-05-05', 'Spouse');
Query OK, 7 rows affected (0.02 sec)
Records: 7 Duplicates: 0 Warnings: 0

mysql> INSERT INTO DEPT_LOCATIONS (Dnumber, Dlocation)
-> VALUES
-> (1, 'Houston'),
-> (4, 'Stafford'),
-> (5, 'Bellaire'),
-> (5, 'Houston'),
-> (5, 'Sugarland');
Query OK, 5 rows affected (0.02 sec)

```

Display the tables:

```
mysql> SELECT * FROM DEPARTMENT;
```

Dname	Dnumber	Mgr_ssn	Mgr_start_date
Headquarters	1	888665555	1981-06-19
Administration	4	987654321	1995-01-01
Research	5	333445555	1988-05-22

```
3 rows in set (0.02 sec)
```

```
mysql> SELECT * FROM EMPLOYEE;
```

Fname	Minit	Lname	Ssn	Bdate	Address
Sex	Salary	Super_ssn	Dno		
John	NULL	Smith	123456789	1965-01-09	731 Fondren, Houston TX
M	30000.00	333445555	5		
Franklin	NULL	Wong	333445555	1965-12-08	638 Voss, Houston TX
M	40000.00	888665555	5		
Joyce	NULL	English	453453453	1972-07-31	5631 Rice, Houston TX
F	25000.00	333445555	5		
Ramesh	NULL	Narayan	666884444	1962-09-15	975 Fire Oak, Humble TX
M	38000.00	333445555	5		
James	NULL	Borg	888665555	1937-11-10	450 Stone, Houston TX
M	55000.00	NULL	1		
Jennifer	NULL	Wallace	987654321	1941-06-20	291 Berry, Bellaire TX
F	43000.00	888665555	4		
Ahmad	NULL	Jabbar	987987987	1969-03-29	980 Dallas, Houston TX
M	25000.00	987654321	4		
Alicia	NULL	Zelaya	999887777	1968-01-19	3321 Castle, Spring TX
F	25000.00	987654321	4		

```
8 rows in set (0.00 sec)
```



```
mysql> SELECT * FROM PROJECT;
```

Pname	Pnumber	Plocation	Dnum
ProductX	1	Bellaire	5
ProductY	2	Sugarland	5
ProductZ	3	Houston	5
Computerization	10	Stafford	4
Reorganization	20	Houston	1
Newbenefits	30	Stafford	4

```
6 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM WORKS_ON;
```

Essn	Pno	Hours
123456789	1	32.5
123456789	2	7.5
333445555	2	10.0
333445555	3	10.0
333445555	10	10.0
333445555	20	10.0
453453453	1	20.0
453453453	2	20.0
666884444	3	40.0
987654321	20	15.0
987654321	30	20.0
987987987	10	35.0
987987987	30	5.0
999887777	10	10.0
999887777	30	30.0

```
15 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM DEPENDENT;
```

Essn	Dependent_name	Sex	Bdate	Relationship
123456789	Alice	F	1988-12-30	Daughter
123456789	Elizabeth	F	1967-05-05	Spouse
123456789	Michael	M	1988-01-04	Son
333445555	Alice	F	1986-04-04	Daughter
333445555	Joy	F	1958-05-03	Spouse
333445555	Theodore	M	1983-10-25	Son
987654321	Abner	M	1942-02-28	Spouse

```
7 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM DEPT_LOCATIONS;
```

Dnumber	Dlocation
1	Houston
4	Stafford
5	Bellaire
5	Houston
5	Sugarland

```
5 rows in set (0.00 sec)
```