

## EXPERIMENT 03:

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**Experiment 03:** Create a relational database schema for the company DB schema

### Code:

```
show databases;
```

```
create database company;
```

```
show databases;
```

```
use company;
```

```
create table employee ( Fname varchar(20) not null , Minit varchar(20) not null, Lname varchar(20) not null, Ssn int primary key,
```

```
Bdate date not null, Address varchar(30) , sex char(1) check(sex in ('M', 'F' , 'T')), salary int not null, Super_ssn int , Dno int ,
```

```
foreign key(Super_ssn) references employee(Ssn));
```

```
create table department ( Dname varchar(20) not null, Dnumber int primary key, Mgr_ssn int not null,
```

```
Mgr_start_date date not null);
```

```
create table dept_locations(Dnumber int , Dlocation varchar(20),constraint pk_dloc PRIMARY key (Dnumber, Dlocation));
```

```
desc dept_locations;
```

```
create table project (Pname varchar(20) not null, Pnumber int , Plocation varchar(20) , Dnum int not null,
```

```
constraint pk_proj primary key (Pnumber, Plocation),
```

```
foreign key(Dnum) references department(Dnumber));
```

```
create table works_on(Essn int , Pno int , Hours int not null, foreign key(Essn) REFERENCES employee(Ssn), CONSTRAINT pk_work PRIMARY KEY
```

```
(Essn, Pno),
```

```
foreign key(Pno) REFERENCES project(Pnumber)) ;
```

```
create table dependent(Essn int not null, Dependent_name varchar(20) not null,  
sex char(1) not null check(sex in('M', 'F', 'T')),  
constraint pk_dependent PRIMARY KEY(Essn, Dependent_name),  
Bdate DATE , Relationship varchar(20) not NULL);
```

```
use company;
```

```
show tables;
```

```
desc department;
```

```
desc employee;
```

```
desc dept_locations;
```

```
alter table employee add foreign key(Dno) references Department(Dnumber);
```

```
alter table dependent add foreign key(Essn) references Employee(Ssn);
```

```
alter table dept_locations add foreign key(Dnumber) references department(Dnumber);
```

```
alter table project add FOREIGN KEY(Dnum) REFERENCES department(Dnumber);
```

```
alter table works_on add FOREIGN KEY(Essn) REFERENCES Employee(Ssn);
```

```
show databases;
```

```
use company;
```

```
show tables;
```

```
desc department;
```

```
INSERT INTO Employee VALUES('John', 'B', 'Smith', 123456789, '1965-01-09', '731 Fondren, Houston,  
TX', 'M', 30000, NULL, NULL);
```

```
INSERT INTO Employee VALUES('Franklin', 'T', 'Wong', 333445555, '1955-12-08', '638 Voss, Houston,  
TX', 'M', 40000, NULL, NULL);
```

```
INSERT INTO Employee VALUES('Alicia', 'J', 'Zelaya', 999887777, '1968-01-19', '3321 Castel,  
Spring, TX', 'F', 25000, NULL, NULL);
```

```
INSERT INTO Employee VALUES('Jeniffer', 'S', 'Wallace', 987654321, '1941-06-20', '291 Beny,  
Bellaire, TX', 'F', 43000, NULL, NULL);
```

```
INSERT INTO Employee VALUES('Ramesh', 'K', 'Narayan', 666884444, '1962-09-15', '975 Fine Oak,  
Humble, TX', 'M', 38000, NULL, NULL);
```

```
INSERT INTO Employee VALUES('Joyce', 'A', 'English', 453453453, '1972-07-31', '5631 Rice, Houston,
```

```
TX', 'F', 25000, NULL, NULL);
```

```
INSERT INTO Employee VALUES('Ahmad', 'V', 'Jabbar', 987987987, '1969-08-29', '980 Dallas, Houston,  
TX', 'M', 25000, NULL, NULL);
```

```
INSERT INTO Employee VALUES('James', 'E', 'Borg', 888665555, '1987-11-10', '450 Stone, Houston,  
TX',  
'M', 55000, NULL, NULL);
```

```
INSERT INTO Department VALUES('Research', 5, 333445555, '1988-05-22');
```

```
INSERT INTO Department VALUES('Administration', 4, 987654321, '1995-01-01');
```

```
INSERT INTO Department VALUES('Headquaters', 1, 888665555, '1981-06-19');
```

```
UPDATE Employee SET Super_ssn = 333445555, Dno = 5 WHERE Ssn = 123456789;
```

```
UPDATE Employee SET Super_ssn = 888665555, Dno = 5 WHERE Ssn = 333445555;
```

```
UPDATE Employee SET Super_ssn = 987654321, Dno = 4 WHERE Ssn = 999887777;
```

```
UPDATE Employee SET Super_ssn = 888665555, Dno = 4 WHERE Ssn = 987654321;
```

```
UPDATE Employee SET Super_ssn = 333445555, Dno = 5 WHERE Ssn = 666884444;
```

```
UPDATE Employee SET Super_ssn = 333445555, Dno = 5 WHERE Ssn = 453453453;
```

```
UPDATE Employee SET Super_ssn = 987654321, Dno = 4 WHERE Ssn = 987987987;
```

```
UPDATE Employee SET Dno = 1 WHERE Ssn = 888665555;
```

```
INSERT INTO DEPT_LOCATIONS VALUES(1, 'Hausion');
```

```
INSERT INTO DEPT_LOCATIONS VALUES(4, 'Headquaters');
```

```
INSERT INTO DEPT_LOCATIONS VALUES(5, 'Bellaire');
```

```
INSERT INTO DEPT_LOCATIONS VALUES(5, 'Sugarland');
```

```
INSERT INTO DEPT_LOCATIONS VALUES(5, 'Houston');
```

```
INSERT INTO Project VALUES('ProductX', 1, 'Bellaire', 5);
```

```
INSERT INTO Project VALUES('ProductY', 2, 'Sugarland', 5);
```

```
INSERT INTO Project VALUES('ProductZ', 3, 'Houston', 5);
```

```
INSERT INTO Project VALUES('Computerization', 10, 'Stafford', 4);
INSERT INTO Project VALUES('Reorganisation', 20, 'Hausion', 1);
INSERT INTO Project VALUES('Newbenefits', 30, 'Stafford', 4);
```

```
INSERT INTO WORKS_ON VALUES(123456789, 1, 32.5);
INSERT INTO WORKS_ON VALUES(123456789, 2, 7.5);
INSERT INTO WORKS_ON VALUES(666884444, 3, 40.0);
INSERT INTO WORKS_ON VALUES(453453453, 1, 20.0);
INSERT INTO WORKS_ON VALUES(453453453, 2, 20.0);
INSERT INTO WORKS_ON VALUES(333445555, 2, 10.0);
INSERT INTO WORKS_ON VALUES(333445555, 3, 10.0);
INSERT INTO WORKS_ON VALUES(333445555, 10, 10.0);
INSERT INTO WORKS_ON VALUES(333445555, 20, 10.0);
INSERT INTO WORKS_ON VALUES(999887777, 30, 30.0);
INSERT INTO WORKS_ON VALUES(999887777, 10, 10.0);
INSERT INTO WORKS_ON VALUES(987987987, 10, 35.0);
INSERT INTO WORKS_ON VALUES(987987987, 30, 5.0);
INSERT INTO WORKS_ON VALUES(987654321, 30, 20.0);
INSERT INTO WORKS_ON VALUES(987654321, 20, 15.0);
INSERT INTO WORKS_ON VALUES(888665555, 20, NULL);
```

```
INSERT INTO Dependent VALUES(333445555, 'Alice', 'F', '1986-04-05', 'Daughter');
INSERT INTO Dependent VALUES(333445555, 'Theodore', 'M', '1983-10-25', 'Son');
INSERT INTO Dependent VALUES(333445555, 'Joy', 'F', '1958-05-03', 'Spouse');
INSERT INTO Dependent VALUES(987654321, 'Abner', 'M', '1942-02-28', 'Spouse');
INSERT INTO Dependent VALUES(123456789, 'Micheal', 'M', '1988-01-04', 'Son');
INSERT INTO Dependent VALUES(123456789, 'Alice', 'F', '1988-12-30', 'Daughter');
INSERT INTO Dependent VALUES(123456789, 'Elizabeth', 'F', '1967-05-05', 'Spouse');
select * from employee;
```

## OUTPUT:

## EMPLOYEE TABLE:

	Field	Type	Null	Key	Default	Extra
►	Fname	varchar(20)	NO		NULL	
	Minit	varchar(20)	NO		NULL	
	Lname	varchar(20)	NO		NULL	
	Ssn	int	NO	PRI	NULL	
	Bdate	date	NO		NULL	
	Address	varchar(30)	YES		NULL	
	sex	char(1)	YES		NULL	
	salary	int	NO		NULL	
	Super_ssn	int	YES	MUL	NULL	
	Dno	int	YES	MUL	NULL	

[illegible]

## DEPARTMENT TABLE:

	Field	Type	Null	Key	Default	Extra
▶	Dname	varchar(20)	NO		NULL	
	Dnumber	int	NO	PRI	NULL	
	Mgr_ssn	int	NO		NULL	
	Mgr_start_date	date	NO		NULL	

	Dname	Dnumber	Mgr_ssn	Mgr_start_date
▶	Headquarters	1	888665555	1981-06-19
	Administration	4	987654321	1995-01-01
	Research	5	33445555	1988-05-22
•	NULL	NULL	NULL	NULL

## DEPT\_LOCATIONS TABLE:

	Field	Type	Null	Key	Default	Extra
▶	Dnumber	int	NO	PRI	NULL	
	Dlocation	varchar(20)	NO	PRI	NULL	

	Dnumber	Dlocation
▶	1	Hausion
	4	Headquarters
	5	Bellaire
	5	Houston
	5	Sugarland
•	NULL	NULL

## PROJECT TABLE:

	Field	Type	Null	Key	Default	Extra
►	Pname	varchar(20)	NO		NULL	
	Pnumber	int	NO	PRI	NULL	
	Plocation	varchar(20)	NO	PRI	NULL	
	Dnum	int	NO	MUL	NULL	

	Pname	Pnumber	Plocation	Dnum
►	ProductX	1	Bellaire	5
	ProductY	2	Sugarland	5
	ProductZ	3	Houston	5
	Computerization	10	Stafford	4
	Reorganisation	20	Hausion	1
	Newbenefits	30	Stafford	4
★	NULL	NULL	NULL	NULL

## WORKS\_ON TABLE:

	Field	Type	Null	Key	Default	Extra
►	Essn	int	NO	PRI	NULL	
	Pno	int	NO	PRI	NULL	
	Hours	int	NO		NULL	

	Essn	Pno	Hours
►	123456789	1	33
	123456789	2	8
	333445555	2	10
	333445555	3	10
	333445555	10	10
	333445555	20	10
	453453453	1	20
	453453453	2	20
	666884444	3	40
	987654321	20	15
	987654321	30	20
	987987987	10	35
	987987987	30	5
	999887777	10	10
	999887777	30	30
•	NULL	NULL	NULL



## DEPENDENT:

	Field	Type	Null	Key	Default	Extra
►	Essn	int	NO	PRI	NULL	
	Dependent_name	varchar(20)	NO	PRI	NULL	
	sex	char(1)	NO		NULL	
	Bdate	date	YES		NULL	
	Relationship	varchar(20)	NO		NULL	

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

### EER DIAGRAM :

