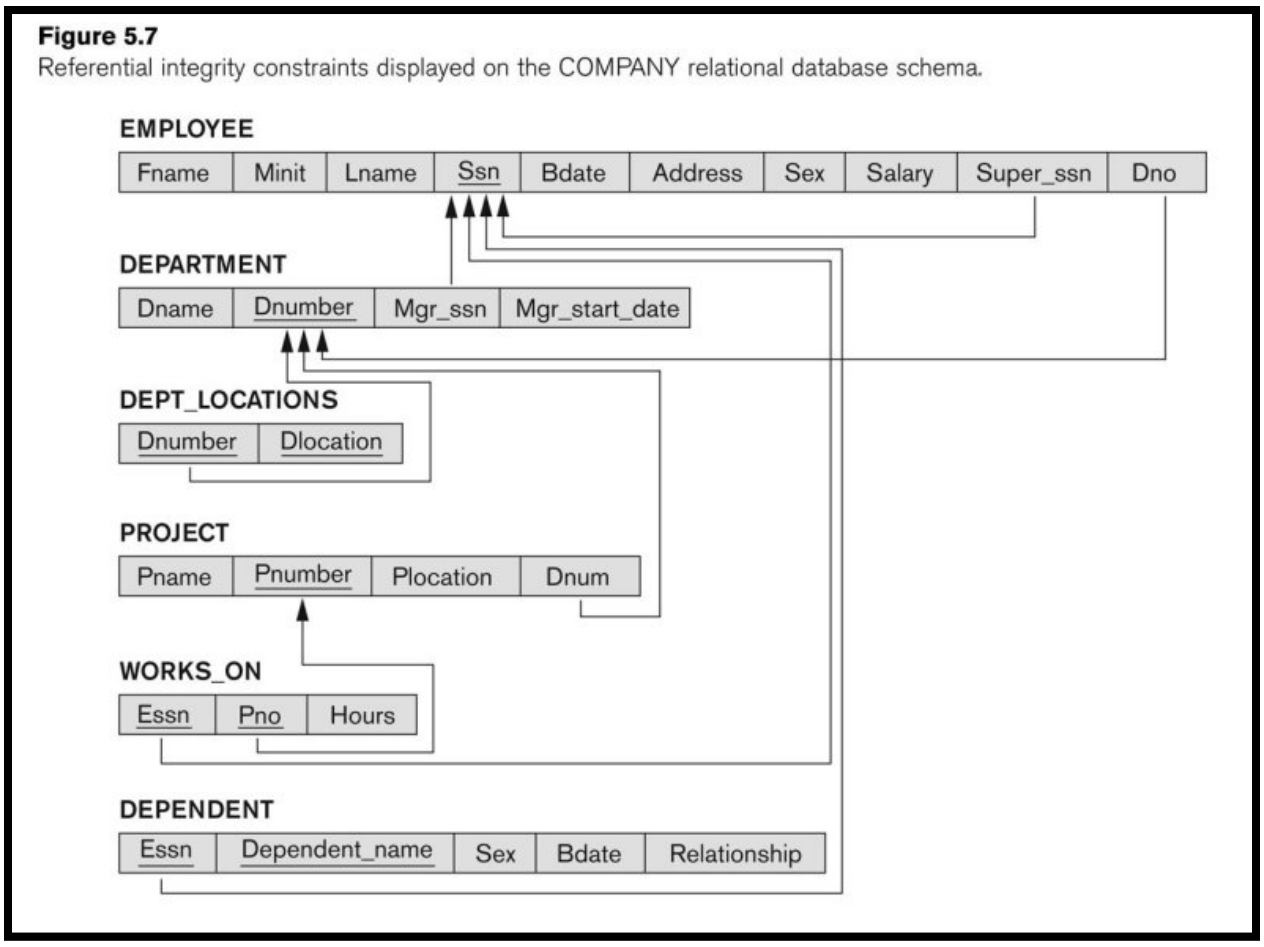
Question: Convert the given schema into Physical database model.



Number of tables: 6

Table Name	Primary Key/Keys	Foreign Key/Keys
EMPLOYEE	Ssn	(Super_ssn,Dno)
DEPARTMENT	Dnumber	
DEPT_LOCATION	(Dnumber,Dlocation)	Dnumber
PROJECT	Pnumber	Dnum
WORKS_ON	(Essn,Pno)	(Essn,Pno)
DEPENDENT	(Essn,Department_name)	Essn

TABLES SCHEMA:

```
create database db_kiran;
use db_kiran;

create table employee(
        Fname varchar(30),
        Minit varchar(40),
        Lname varchar(40),
        Ssn int primary key,
        Bdate date,
        Address varchar(60),
        Sex varchar(7),
        Salary decimal(6,2),
        Super_ssn int,
        Dno int
);
create table department(
        Dname varchar(30),
        Dnumber int primary key,
        Mgr_ssn int,
        Mgr_start_date date,
        foreign key(mgr_ssn) references employee(ssn) on delete set NULL
);

alter table employee modify salary decimal(8,2);
alter table employee add foreign key(Dno) references department(Dnumber) on delete set NULL;
alter table employee add foreign key(Super_ssn) references employee(ssn) on delete set NULL;
```

```
create table project(
        Pname varchar(50),
        Pnumber int primary key,
        Plocation varchar(50),
        Dnum int,
        foreign key(Dnum) references department(Dnumber) on delete set NULL
);

create table works_on(
        Essn int,
        Pno int,
        Hours decimal(5,2),
        primary key(Essn,Pno),
        foreign key(Essn) references employee(ssn) on delete cascade,
        foreign key(Pno) references project(Pnumber) on delete cascade
);

create table dependent(
        Essn int,
        dependent_name varchar(50),
        Sex varchar(7),
        Bdate date,
        Relationship varchar(40),
        primary key(Essn,Dependent_name),
        foreign key(Essn) references employee(ssn) on delete cascade
);
```

```
create table dept_locations(
        Dnumber int,
        Dlocation varchar(40),
        primary key(Dnumber,Dlocation),
        foreign key(Dnumber) references department(Dnumber)
);

update department
set Mgr_ssn = 2002
where dnumber =1;

update department
set Mgr_ssn = 2001
where dnumber =2;

update department
set Mgr_ssn = 2003
where dnumber =3;
```

EMPLOYEE TABLE:

Field Types

#	Field	Schema	Table	Type
1	Fname	db_kiran	employee	VARCHAR
2	Minit	db_kiran	employee	VARCHAR
3	Lname	db_kiran	employee	VARCHAR
4	Ssn	db_kiran	employee	INT
5	Bdate	db_kiran	employee	DATE
6	Address	db_kiran	employee	VARCHAR
7	Sex	db_kiran	employee	VARCHAR
8	Salary	db_kiran	employee	DECIMAL
9	Super_ssn	db_kiran	employee	INT
10	Dno	db_kiran	employee	INT

DEPARTMENT TABLE:

Field Types

#	Field	Schema	Table	Type
1	Dname	db_kiran	department	VARCHAR
2	Dnumber	db_kiran	department	INT
3	Mgr_ssn	db_kiran	department	INT
4	Mgr_start_date	db_kiran	department	DATE

PROJECT TABLE:

Field Types

#	Field	Schema	Table	Type
1	Pname	db_kiran	project	VARCHAR
2	Pnumber	db_kiran	project	INT
3	Plocation	db_kiran	project	VARCHAR
4	Dnum	db_kiran	project	INT

WORKS_ON TABLE:

Field Types

#	Field	Schema	Table	Type
1	Essn	db_kiran	works_on	INT
2	Pno	db_kiran	works_on	INT
3	Hours	db_kiran	works_on	DECIMAL

DEPENDENT TABLE:

Field Types

#	Field	Schema	Table	Type
1	Essn	db_kiran	dependent	INT
2	dependent_name	db_kiran	dependent	VARCHAR
3	Sex	db_kiran	dependent	VARCHAR
4	Bdate	db_kiran	dependent	DATE
5	Relationship	db_kiran	dependent	VARCHAR

DEPT_LOCATIONS TABLE:

Field Types

#	Field	Schema	Table	Type
1	Dnumber	db_kiran	dept_locations	INT
2	Dlocation	db_kiran	dept_locations	VARCHAR

Inserting Data

EMPLOYEE:

```
INSERT INTO employee
(Fname, Minit, Lname, Ssn, Bdate, Address, Sex, Salary, Super_ssn, Dno)
VALUES
('Ram', 'K', 'Sharma', 2001, '1980-01-15', 'Bagbazar', 'Male', 60000.00, NULL, 1),
('Sita', 'P', 'Thapa', 2002, '1985-02-20', 'Koteshwor', 'Female', 75000.00, 2001, 2),
('Hari', 'D', 'Magar', 2003, '1975-03-30', 'Lalitpur', 'Male', 50000.00, 2002, 1),
('Gita', 'B', 'Shrestha', 2004, '1990-07-25', 'Baneshwor', 'Female', 68000.00, 2001, 3);
```

Result Grid | Filter Rows: | Edit: | Export/Import:

Fname	Minit	Lname	Ssn	Bdate	Address	Sex	Salary	Super_ssn
Ram	K	Sharma	2001	1980-01-15	Bagbazar	Male	60000.00	NULL
Sita	P	Thapa	2002	1985-02-20	Koteshwor	Female	75000.00	2001
Hari	D	Magar	2003	1975-03-30	Lalitpur	Male	50000.00	2002
Gita	B	Shrestha	2004	1990-07-25	Baneshwor	Female	68000.00	2001
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

DEPARTMENT:

```
INSERT INTO department (Dname, Dnumber, Mgr_ssn, Mgr_start_date)
VALUES
('HR', 1, NULL, '2010-01-01'),
('Finance', 2, NULL, '2012-05-15'),
('Engineering', 3, NULL, '2014-11-20');
```

Result Grid | Filter Rows: | Edit: | Export/Import:

Dname	Dnumber	Mgr_ssn	Mgr_start_date
HR	1	NULL	2010-01-01
Finance	2	NULL	2012-05-15
Engineering	3	NULL	2014-11-20
NULL	NULL	NULL	NULL

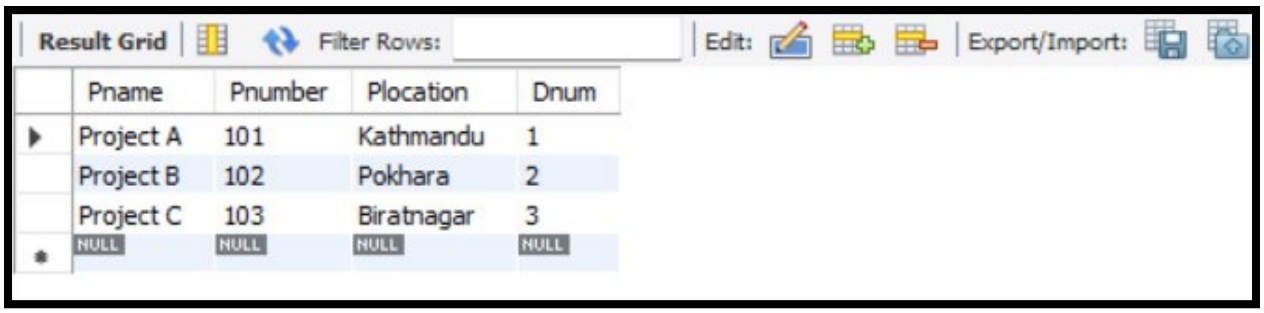
DEPT_LOCATIONS:

```
INSERT INTO dept_locations (Dnumber, Dlocation)
VALUES
(1, 'Kathmandu'),
(2, 'Pokhara'),
(3, 'Biratnagar');
```

Dnumber	Dlocation
1	Kathmandu
2	Pokhara
3	Biratnagar
NULL	NULL

PROJECT:

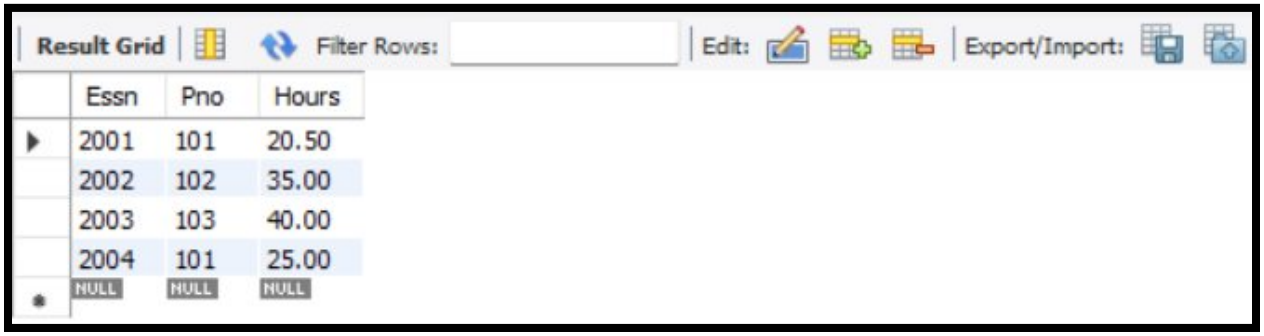
```
INSERT INTO project (Pname, Pnumber, Plocation, Dnum)
VALUES
('Project A', 101, 'Kathmandu', 1),
('Project B', 102, 'Pokhara', 2),
('Project C', 103, 'Biratnagar', 3);
```



Pname	Pnumber	Plocation	Dnum
Project A	101	Kathmandu	1
Project B	102	Pokhara	2
Project C	103	Biratnagar	3
NULL	NULL	NULL	NULL

WORKS_ON:

```
INSERT INTO works_on (Essn, Pno, Hours)
VALUES
(2001, 101, 20.5),
(2002, 102, 35.0),
(2003, 103, 40.0),
(2004, 101, 25.0);
```

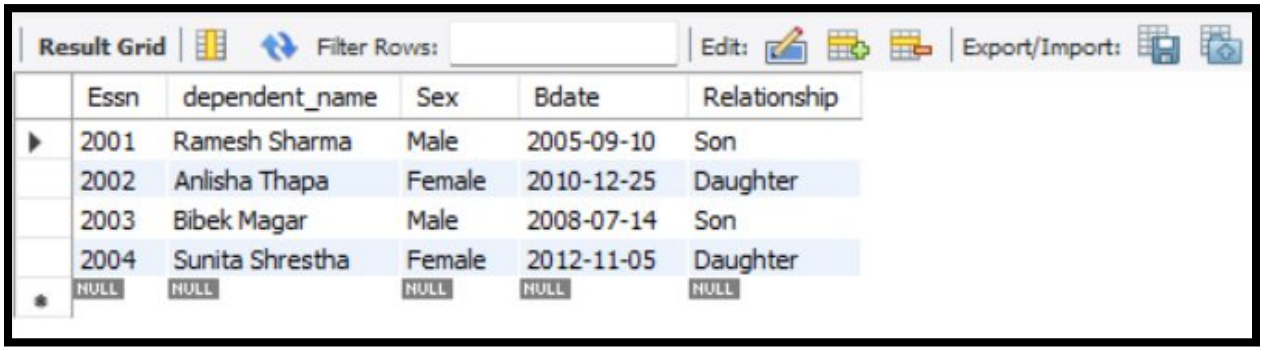


Result Grid | Filter Rows: | Edit: | Export/Import:

Essn	Pno	Hours
2001	101	20.50
2002	102	35.00
2003	103	40.00
2004	101	25.00
NULL	NULL	NULL

DEPENDENTS:

```
INSERT INTO dependent (Essn, dependent_name, Sex, Bdate, Relationship)
VALUES
(2001, 'Ramesh Sharma', 'Male', '2005-09-10', 'Son'),
(2002, 'Anlisha Thapa', 'Female', '2010-12-25', 'Daughter'),
(2003, 'Bibek Magar', 'Male', '2008-07-14', 'Son'),
(2004, 'Sunita Shrestha', 'Female', '2012-11-05', 'Daughter');
```



Result Grid | Filter Rows: | Edit: | Export/Import:

Essn	dependent_name	Sex	Bdate	Relationship
2001	Ramesh Sharma	Male	2005-09-10	Son
2002	Anlisha Thapa	Female	2010-12-25	Daughter
2003	Bibek Magar	Male	2008-07-14	Son
2004	Sunita Shrestha	Female	2012-11-05	Daughter
NULL	NULL	NULL	NULL	NULL