Database Lab Take Home Assignment - 3

Database Creation

First Part

```
create database 214161008_03;
```

```
mysql> create database 214161008_03;
Query OK, 1 row affected (0.17 sec)
```

```
use 214161008_03;
```

```
mysql> use 214161008_03;
Database changed
```

Employee Table Creation

```
create table employee
(
    first_name varchar(30) not null,
    middle_name varchar(30),
    last_name varchar(30),
    ssn integer,
    birth_date date,
    address varchar(30),
    sex char(1),
    salary integer,
    super_ssn integer,
    dept_no integer,
    primary key (ssn),
    check (sex in ('M' ,'F'))
);
```

```
mysql> create table employee
    -> (
    ->      first_name varchar(30) not null,
    ->      middle_name varchar(30),
    ->      last_name varchar(30),
    ->      ssn integer,
    ->      birth_date date,
    ->      address varchar(30),
    ->      sex char(1),
    ->      salary integer,
    ->      super_ssn integer,
    ->      dept_no integer,
    ->      primary key (ssn),
    ->      check (sex in ('M' ,'F'))
    -> );
Query OK, 0 rows affected (1.52 sec)

mysql> 
```

Department Table Creation

```
create table department
(
    dept_name varchar(30),
    dept_no integer,
    mgr_ssn integer,
    mgr_start_date date,
    primary key (dept_no),
    foreign key (mgr_ssn) references employee(ssn)
);
```

```
mysql> create table department
    -> (
    ->      dept_name varchar(30),
    ->      dept_no integer,
    ->      mgr_ssn integer,
    ->      mgr_start_date date,
    ->      primary key (dept_no),
    ->      foreign key (mgr_ssn) references employee(ssn)
    -> );
Query OK, 0 rows affected (1.42 sec)
```

Department Location Table Creation

```
create table department_location
(
    dept_no integer,
    location varchar(30),
    primary key (dept_no, location),
    foreign key (dept_no) references department(dept_no)
);
```

```
mysql> create table department_location
    -> (
    ->     dept_no integer,
    ->     location varchar(30),
    ->     primary key (dept_no, location),
    ->     foreign key (dept_no) references department(dept_no)
    -> );
Query OK, 0 rows affected (1.30 sec)
```

Project Table Creation

```
create table project
(
    project_name varchar(30),
    project_no integer,
    project_location varchar(30),
    dept_no integer,
    primary key (project_no),
    foreign key (dept_no) references department(dept_no)
);
```

```
mysql> create table project
    -> (
    ->     project_name varchar(30),
    ->     project_no integer,
    ->     project_location varchar(30),
    ->     dept_no integer,
    ->     primary key (project_no),
    ->     foreign key (dept_no) references department(dept_no)
    -> );
Query OK, 0 rows affected (1.52 sec)
```

Works_on Table Creation

```
create table works_on
(
    employee_ssn integer,
    project_no integer,
    hours float,
    primary key (employee_ssn, project_no)
);
```

```
mysql> create table works_on
    -> (
    ->      employee_ssn integer,
    ->      project_no integer,
    ->      hours float,
    ->      primary key (employee_ssn, project_no)
    -> );
Query OK, 0 rows affected (1.15 sec)
```

Dependent Table Creation

```
create table dependent
(
    employee_ssn integer,
    dependent_name varchar(30),
    sex char(1),
    birth_date date,
    relationship varchar(10),
    primary key (employee_ssn),
    check (relationship='Spouse' or relationship='Child' or relationship =
'Parent'),
    foreign key (employee_ssn) references employee(ssn)
);
```

```
mysql> create table dependent
    -> (
    ->      employee_ssn integer,
    ->      dependent_name varchar(30),
    ->      sex char(1),
    ->      birth_date date,
    ->      relationship varchar(10),
    ->      primary key (employee_ssn),
    ->      check (relationship='Spouse' or relationship='Child' or relationship = 'Parent'),
    ->      foreign key (employee_ssn) references employee(ssn)
    -> );
Query OK, 0 rows affected (0.84 sec)
```

Insert into Employee Table

```
insert into employee (first_name, middle_name, last_name, ssn, birth_date,
address, sex, salary, super_ssn, dept_no) values ('John', 'B', 'Smith',
123456789, '1965-01-09', '731 Fondren, Houston, TX', 'M', 6500, 999887777,5);
insert into employee (first_name, middle_name, last_name, ssn, birth_date,
address, sex, salary, super_ssn, dept_no) values ('Franklin', 'T', 'Wong',
333445555,  '1955-12-08', '638 Voss, Hoston, TX', 'M', 8000, 987654321, 5);
insert into employee (first_name, middle_name, last_name, ssn, birth_date,
address, sex, salary, super_ssn, dept_no) values ('Alicia', 'J', 'Zelaya',
999887777, '1968-07-19', '3321 Castle, Spring, TX', 'F', 7200, 888665555, 4);
insert into employee (first_name, middle_name, last_name, ssn, birth_date,
address, sex, salary, super_ssn, dept_no) values ('Jennifer', 'S', 'Wellas',
987654321, '1941-06-20', '291 Berry, Bellaire, TX', 'F', 6780, 987987987, 4);
insert into employee (first_name, middle_name, last_name, ssn, birth_date,
address, sex, salary, super_ssn, dept_no) values ('Ramesh', 'K', 'Narayan',
666884444, '1962-09-15', '975 Fire Oak, Humble, TX', 'M', 5700, 123456789, 5);
insert into employee (first_name, middle_name, last_name, ssn, birth_date,
address, sex, salary, super_ssn, dept_no) values ('Joyce', 'A', 'English',
453453453, '1972-07-31', '5631 Rice, Houston, TX', 'M', 8600, 666884444, 5);
insert into employee (first_name, middle_name, last_name, ssn, birth_date,
address, sex, salary, super_ssn, dept_no) values ('Ahmad', 'V', 'Jabbar',
987987987, '1969-03-29', '980 Dallas, Hoston, TX', 'M', 6950, 453453453, 4);
insert into employee (first_name, middle_name, last_name, ssn, birth_date,
address, sex, salary, super_ssn, dept_no) values ('James', 'E', 'Borg',
888665555, '1937-11-10', '450 Stone, Houston, TX', 'M', 7800, 987654321, 1);
```

```
mysql> insert into employee (first_name, middle_name, last_name, ssn, birth_date, address, sex, salary, super_ssn, dept_no) values ('Joh
n', 'B', 'Smith', 123456789, '1965-01-09', '731 Fondren, Houston, TX', 'M', 6500, 999887777,5);
Query OK, 1 row affected (0.15 sec)

mysql> insert into employee (first_name, middle_name, last_name, ssn, birth_date, address, sex, salary, super_ssn, dept_no) values ('Fra
nklin', 'T', 'Wong', 333445555, '1955-12-08', '638 Voss, Hoston, TX', 'M', 8000, 987654321, 5);
Query OK, 1 row affected (0.13 sec)

mysql> insert into employee (first_name, middle_name, last_name, ssn, birth_date, address, sex, salary, super_ssn, dept_no) values ('Ali
cia', 'J', 'Zelaya', 999887777, '1968-07-19', '3321 Castle, Spring, TX', 'F', 7200, 888665555, 4);
Query OK, 1 row affected (0.24 sec)

mysql> insert into employee (first_name, middle_name, last_name, ssn, birth_date, address, sex, salary, super_ssn, dept_no) values ('Jen
nifer', 'S', 'Wellas', 987654321, '1941-06-20', '291 Berry, Bellaire, TX', 'F', 6780, 987987987, 4);
Query OK, 1 row affected (0.18 sec)

mysql> insert into employee (first_name, middle_name, last_name, ssn, birth_date, address, sex, salary, super_ssn, dept_no) values ('Ram
esh', 'K', 'Narayan', 666884444, '1962-09-15', '975 Fire Oak, Humble, TX', 'M', 5700, 123456789, 5);
Query OK, 1 row affected (0.11 sec)

mysql> insert into employee (first_name, middle_name, last_name, ssn, birth_date, address, sex, salary, super_ssn, dept_no) values ('Joy
ce', 'A', 'English', 453453453, '1972-07-31', '5631 Rice, Houston, TX', 'M', 8600, 666884444, 5);
Query OK, 1 row affected (0.11 sec)

mysql> insert into employee (first_name, middle_name, last_name, ssn, birth_date, address, sex, salary, super_ssn, dept_no) values ('Ahm
ad', 'V', 'Jabbar', 987987987, '1969-03-29', '980 Dallas, Hoston, TX', 'M', 6950, 453453453, 4);
Query OK, 1 row affected (0.09 sec)

mysql> insert into employee (first_name, middle_name, last_name, ssn, birth_date, address, sex, salary, super_ssn, dept_no) values ('Jam
es', 'E', 'Borg', 888665555, '1937-11-10', '450 Stone, Houston, TX', 'M', 7800, 987654321, 1);
Query OK, 1 row affected (0.17 sec)
```

Insert into Department Table

```sql
insert into department(dept_name, dept_no, mgr_ssn, mgr_start_date) values
('Research', 5, 333445555, '1980-02-15');
insert into department(dept_name, dept_no, mgr_ssn, mgr_start_date) values
('Administration', 4, 987654321, '1982-05-30');
insert into department(dept_name, dept_no, mgr_ssn, mgr_start_date) values
('Headquarters', 1, 888665555, '1984-11-01');
insert into department(dept_name, dept_no, mgr_ssn, mgr_start_date) values
('Headquarters', 3, 123456789, '1987-12-23');
insert into department(dept_name, dept_no, mgr_ssn, mgr_start_date) values
('Headquarters', 2, 453453453, '1991-06-19');
```

```
mysql> insert into department(dept_name, dept_no, mgr_ssn, mgr_start_date) values ('Resear
ch', 5, 333445555, '1980-02-15');
Query OK, 1 row affected (0.12 sec)

mysql> insert into department(dept_name, dept_no, mgr_ssn, mgr_start_date) values ('Admini
stration', 4, 987654321, '1982-05-30');
Query OK, 1 row affected (0.12 sec)

mysql> insert into department(dept_name, dept_no, mgr_ssn, mgr_start_date) values ('Headqu
arters', 1, 888665555, '1984-11-01');
Query OK, 1 row affected (0.13 sec)

mysql> insert into department(dept_name, dept_no, mgr_ssn, mgr_start_date) values ('Headqu
arters', 3, 123456789, '1987-12-23');
Query OK, 1 row affected (0.09 sec)

mysql> insert into department(dept_name, dept_no, mgr_ssn, mgr_start_date) values ('Headqu
arters', 2, 453453453, '1991-06-19');
Query OK, 1 row affected (0.07 sec)
```

Insert into Department Location Table

```
insert into department_location(dept_no, location) values (1, 'Houston');
insert into department_location(dept_no, location) values (4, 'Stanford');
insert into department_location(dept_no, location) values (5, 'Bellaire');
insert into department_location(dept_no, location) values (2, 'Sugarland');
insert into department_location(dept_no, location) values (3, 'Priceton');
```

```
mysql> insert into department_location(dept_no, location) values (1, 'Houston');
Query OK, 1 row affected (0.19 sec)

mysql> insert into department_location(dept_no, location) values (4, 'Stanford');
Query OK, 1 row affected (0.08 sec)

mysql> insert into department_location(dept_no, location) values (5, 'Bellaire');
Query OK, 1 row affected (0.15 sec)

mysql> insert into department_location(dept_no, location) values (2, 'Sugarland');
Query OK, 1 row affected (0.10 sec)

mysql> insert into department_location(dept_no, location) values (3, 'Priceton');
Query OK, 1 row affected (0.07 sec)
```

Insert into Works on Table

```
insert into works_on(employee_ssn, project_no, hours) values (123456789, 1,
32.5);
insert into works_on(employee_ssn, project_no, hours) values (123456789, 2,
7.5);
insert into works_on(employee_ssn, project_no, hours) values (666884444, 3,
```

```sql
    40.0);
insert into works_on(employee_ssn, project_no, hours) values (453453453, 1,
    20.0);
insert into works_on(employee_ssn, project_no, hours) values (453453453, 2,
    20.0);
insert into works_on(employee_ssn, project_no, hours) values (333445555, 2,
    10.0);
insert into works_on(employee_ssn, project_no, hours) values (333445555, 3,
    10.0);
insert into works_on(employee_ssn, project_no, hours) values (333445555, 10,
    10.0);
insert into works_on(employee_ssn, project_no, hours) values (333445555, 20,
    10.0);
insert into works_on(employee_ssn, project_no, hours) values (999887777, 30,
    30.0);
insert into works_on(employee_ssn, project_no, hours) values (999887777, 10,
    10.0);
insert into works_on(employee_ssn, project_no, hours) values (987987987, 10,
    35.0);
insert into works_on(employee_ssn, project_no, hours) values (987987987, 30,
    5.0);
insert into works_on(employee_ssn, project_no, hours) values (987654321, 30,
    20.0);
insert into works_on(employee_ssn, project_no, hours) values (987654321, 20,
    15.0);
insert into works_on(employee_ssn, project_no, hours) values (888665555, 20,
    10.5);
```

```
mysql> insert into works_on(employee_ssn, project_no, hours) values (123456789, 1, 32.5);
Query OK, 1 row affected (0.18 sec)

mysql> insert into works_on(employee_ssn, project_no, hours) values (123456789, 2, 7.5);
Query OK, 1 row affected (0.18 sec)

mysql> insert into works_on(employee_ssn, project_no, hours) values (666884444, 3, 40.0);
Query OK, 1 row affected (0.19 sec)

mysql> insert into works_on(employee_ssn, project_no, hours) values (453453453, 1, 20.0);
Query OK, 1 row affected (0.20 sec)

mysql> insert into works_on(employee_ssn, project_no, hours) values (453453453, 2, 20.0);
Query OK, 1 row affected (0.16 sec)

mysql> insert into works_on(employee_ssn, project_no, hours) values (333445555, 2, 10.0);
Query OK, 1 row affected (0.16 sec)

mysql> insert into works_on(employee_ssn, project_no, hours) values (333445555, 3, 10.0);
Query OK, 1 row affected (0.09 sec)

mysql> insert into works_on(employee_ssn, project_no, hours) values (333445555, 10, 10.0);
Query OK, 1 row affected (0.11 sec)

mysql> insert into works_on(employee_ssn, project_no, hours) values (333445555, 20, 10.0);
Query OK, 1 row affected (0.13 sec)
```

```
mysql> insert into works_on(employee_ssn, project_no, hours) values (999887777, 30, 30.0);
Query OK, 1 row affected (0.29 sec)

mysql> insert into works_on(employee_ssn, project_no, hours) values (999887777, 10, 10.0);
Query OK, 1 row affected (0.21 sec)

mysql> insert into works_on(employee_ssn, project_no, hours) values (987987987, 10, 35.0);
Query OK, 1 row affected (0.10 sec)

mysql> insert into works_on(employee_ssn, project_no, hours) values (987987987, 30, 5.0);
Query OK, 1 row affected (0.14 sec)

mysql> insert into works_on(employee_ssn, project_no, hours) values (987654321, 30, 20.0);
Query OK, 1 row affected (0.08 sec)

mysql> insert into works_on(employee_ssn, project_no, hours) values (987654321, 20, 15.0);
Query OK, 1 row affected (0.12 sec)

mysql> insert into works_on(employee_ssn, project_no, hours) values (888665555, 20, 10.5);
Query OK, 1 row affected (0.10 sec)
```

Insert into Project Table

```
insert into project(project_name, project_no, project_location, dept_no) values
('ProductX', 1, 'Bellaire', 5);
insert into project(project_name, project_no, project_location, dept_no) values
```

```
('ProductY', 2, 'Sugarland', 5);
insert into project(project_name, project_no, project_location, dept_no) values
('ProductZ', 3, 'Houston', 5);
insert into project(project_name, project_no, project_location, dept_no) values
('Computerization', 10, 'Stafford', 4);
insert into project(project_name, project_no, project_location, dept_no) values
('Reorganization', 20, 'Hoston', 1);
insert into project(project_name, project_no, project_location, dept_no) values
('Newbenifits', 30, 'Stafford', 4);
```

```
mysql> insert into project(project_name, project_no, project_location, dept_no) values ('ProductX', 1, 'Bellaire'
, 5);
Query OK, 1 row affected (0.18 sec)

mysql> insert into project(project_name, project_no, project_location, dept_no) values ('ProductY', 2, 'Sugarland
', 5);
Query OK, 1 row affected (0.20 sec)

mysql> insert into project(project_name, project_no, project_location, dept_no) values ('ProductZ', 3, 'Houston',
 5);
Query OK, 1 row affected (0.25 sec)

mysql> insert into project(project_name, project_no, project_location, dept_no) values ('Computerization', 10, 'S
tafford', 4);
Query OK, 1 row affected (0.17 sec)

mysql> insert into project(project_name, project_no, project_location, dept_no) values ('Reorganization', 20, 'Ho
ston', 1);
Query OK, 1 row affected (0.13 sec)

mysql> insert into project(project_name, project_no, project_location, dept_no) values ('Newbenifits', 30, 'Staff
ord', 4);
Query OK, 1 row affected (0.12 sec)
```

Insert into Dependent Table

```
insert into dependent(employee_ssn, dependent_name, sex, birth_date,
relationship) values (666884444, 'Andrew', 'M', '1994-12-27', 'Child');
insert into dependent(employee_ssn, dependent_name, sex, birth_date,
relationship) values (999887777, 'Ellie', 'F', '1922-04-15', 'Parent');
insert into dependent(employee_ssn, dependent_name, sex, birth_date,
relationship) values (123456789, 'Perry', 'F', '1965-02-10', 'Spouse');
insert into dependent(employee_ssn, dependent_name, sex, birth_date,
relationship) values (453453453, 'Gillespe', 'M', '1974-07-30', 'Parent');
insert into dependent(employee_ssn, dependent_name, sex, birth_date,
relationship) values (987987987, 'Rashid', 'M', '1994-11-07', 'Child');
insert into dependent(employee_ssn, dependent_name, sex, birth_date,
relationship) values (888665555, 'Kane', 'M', '1992-08-08', 'Child');
insert into dependent(employee_ssn, dependent_name, sex, birth_date,
relationship) values (333445555, 'Adam', 'M', '1975-05-20', 'Spouse');
insert into dependent(employee_ssn, dependent_name, sex, birth_date,
relationship) values (987654321, 'Wilson', 'M', '1987-07-15', 'Spouse');
```

```
mysql> insert into dependent(employee_ssn, dependent_name, sex, birth_date, relationship) values (666884444, 'Andrew', 'M', '1994-12-27'
, 'Child');
Query OK, 1 row affected (0.19 sec)

mysql> insert into dependent(employee_ssn, dependent_name, sex, birth_date, relationship) values (999887777, 'Ellie', 'F', '1922-04-15',
 'Parent');
Query OK, 1 row affected (0.09 sec)

mysql> insert into dependent(employee_ssn, dependent_name, sex, birth_date, relationship) values (123456789, 'Perry', 'F', '1965-02-10',
 'Spouse');
Query OK, 1 row affected (0.15 sec)

mysql> insert into dependent(employee_ssn, dependent_name, sex, birth_date, relationship) values (453453453, 'Gillespe', 'M', '1974-07-3
0', 'Parent');
Query OK, 1 row affected (0.26 sec)

mysql> insert into dependent(employee_ssn, dependent_name, sex, birth_date, relationship) values (987987987, 'Rashid', 'M', '1994-11-07'
, 'Child');
Query OK, 1 row affected (0.12 sec)

mysql> insert into dependent(employee_ssn, dependent_name, sex, birth_date, relationship) values (888665555, 'Kane', 'M', '1992-08-08',
'Child');
Query OK, 1 row affected (0.10 sec)

mysql> insert into dependent(employee_ssn, dependent_name, sex, birth_date, relationship) values (333445555, 'Adam', 'M', '1975-05-20',
'Spouse');
Query OK, 1 row affected (0.09 sec)

mysql> insert into dependent(employee_ssn, dependent_name, sex, birth_date, relationship) values (987654321, 'Wilson', 'M', '1987-07-15'
, 'Spouse');
Query OK, 1 row affected (0.13 sec)
```

Alter Employee table and add foreign keys

```
alter table employee
add foreign key (dept_no) references department(dept_no);

alter table employee
add foreign key (super_ssn) references employee(ssn);
```

```
mysql> alter table employee
    -> add foreign key (dept_no) references department(dept_no);
Query OK, 0 rows affected (3.29 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql>
mysql> alter table employee
    -> add foreign key (super_ssn) references employee(ssn);
Query OK, 0 rows affected (2.02 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
select * from employee;
```

```
mysql> select * from employee;
+------------+-------------+-----------+-----------+------------+--------------------------+-----+--------+-----------+---------+
| first_name | middle_name | last_name | ssn       | birth_date | address                  | sex | salary | super_ssn | dept_no |
+------------+-------------+-----------+-----------+------------+--------------------------+-----+--------+-----------+---------+
| John       | B           | Smith     | 123456789 | 1965-01-09 | 731 Fondren, Houston, TX | M   |   6500 | 999887777 |       5 |
| Franklin   | T           | Wong      | 333445555 | 1955-12-08 | 638 Voss, Hoston, TX     | M   |   8000 | 987654321 |       5 |
| Joyce      | A           | English   | 453453453 | 1972-07-31 | 5631 Rice, Houston, TX   | M   |   8600 | 666884444 |       5 |
| Ramesh     | K           | Narayan   | 666884444 | 1962-09-15 | 975 Fire Oak, Humble, TX | M   |   5700 | 123456789 |       5 |
| James      | E           | Borg      | 888665555 | 1937-11-10 | 450 Stone, Houston, TX   | M   |   7800 | 987654321 |       1 |
| Jennifer   | S           | Wellas    | 987654321 | 1941-06-20 | 291 Berry, Bellaire, TX  | F   |   6780 | 987987987 |       4 |
| Ahmad      | V           | Jabbar    | 987987987 | 1969-03-29 | 980 Dallas, Hoston, TX   | M   |   6950 | 453453453 |       4 |
| Alicia     | J           | Zelaya    | 999887777 | 1968-07-19 | 3321 Castle, Spring, TX  | F   |   7200 | 888665555 |       4 |
+------------+-------------+-----------+-----------+------------+--------------------------+-----+--------+-----------+---------+
8 rows in set (0.00 sec)
```

select * from department;

```
mysql> select * from department;
+----------------+---------+-----------+----------------+
| dept_name      | dept_no | mgr_ssn   | mgr_start_date |
+----------------+---------+-----------+----------------+
| Headquarters   |       1 | 888665555 | 1984-11-01     |
| Headquarters   |       2 | 453453453 | 1991-06-19     |
| Headquarters   |       3 | 123456789 | 1987-12-23     |
| Administration |       4 | 987654321 | 1982-05-30     |
| Research       |       5 | 333445555 | 1980-02-15     |
+----------------+---------+-----------+----------------+
5 rows in set (0.00 sec)
```

select * from department_location;

```
mysql> select * from department_location;
+---------+-----------+
| dept_no | location  |
+---------+-----------+
|       1 | Houston   |
|       2 | Sugarland |
|       3 | Priceton  |
|       4 | Stanford  |
|       5 | Bellaire  |
+---------+-----------+
5 rows in set (0.00 sec)
```

select * from works_on;

```
mysql> select * from works_on;
+--------------+------------+--------+
| employee_ssn | project_no | hours  |
+--------------+------------+--------+
|    123456789 |          1 |   32.5 |
|    123456789 |          2 |    7.5 |
|    333445555 |          2 |     10 |
|    333445555 |          3 |     10 |
|    333445555 |         10 |     10 |
|    333445555 |         20 |     10 |
|    453453453 |          1 |     20 |
|    453453453 |          2 |     20 |
|    666884444 |          3 |     40 |
|    888665555 |         20 |   10.5 |
|    987654321 |         20 |     15 |
|    987654321 |         30 |     20 |
|    987987987 |         10 |     35 |
|    987987987 |         30 |      5 |
|    999887777 |         10 |     10 |
|    999887777 |         30 |     30 |
+--------------+------------+--------+
16 rows in set (0.00 sec)
```

```
select * from project;
```

```
mysql> select * from project;
+-------------------+------------+------------------+---------+
| project_name      | project_no | project_location | dept_no |
+-------------------+------------+------------------+---------+
| ProductX          |          1 | Bellaire         |       5 |
| ProductY          |          2 | Sugarland        |       5 |
| ProductZ          |          3 | Houston          |       5 |
| Computerization   |         10 | Stafford         |       4 |
| Reorganization    |         20 | Hoston           |       1 |
| Newbenifits       |         30 | Stafford         |       4 |
+-------------------+------------+------------------+---------+
6 rows in set (0.00 sec)
```

select * from dependent;

```
mysql> select * from dependent;
+--------------+----------------+-----+------------+--------------+
| employee_ssn | dependent_name | sex | birth_date | relationship |
+--------------+----------------+-----+------------+--------------+
|    123456789 | Perry          | F   | 1965-02-10 | Spouse       |
|    333445555 | Adam           | M   | 1975-05-20 | Spouse       |
|    453453453 | Gillespe       | M   | 1974-07-30 | Parent       |
|    666884444 | Andrew         | M   | 1994-12-27 | Child        |
|    888665555 | Kane           | M   | 1992-08-08 | Child        |
|    987654321 | Wilson         | M   | 1987-07-15 | Spouse       |
|    987987987 | Rashid         | M   | 1994-11-07 | Child        |
|    999887777 | Ellie          | F   | 1922-04-15 | Parent       |
+--------------+----------------+-----+------------+--------------+
8 rows in set (0.00 sec)
```

I.   Create a view that has the department name, manager name, and manager salary for every department

```
create view department_details(dept_name, employeeFName, employeeMidName,
employeeLName, employeeSalary)
as
   select D.dept_name, E.last_name, E.middle_name, E.first_name, E.salary
   from department D, employee E
   where D.mgr_ssn = E.ssn;
```

```
mysql> create view department_details(dept_name, employeeFName, employeeMidName, employeeLName, employeeSalary)
    -> as
    ->    select D.dept_name, E.last_name, E.middle_name, E.first_name, E.salary
    ->    from department D, employee E
    ->    where D.mgr_ssn = E.ssn;
Query OK, 0 rows affected (0.19 sec)
```

```
select * from department_details;
```

```
mysql> select * from department_details;
+----------------+---------------+-----------------+---------------+---------------+
| dept_name      | employeeFName | employeeMidName | employeeLName | employeeSalary |
+----------------+---------------+-----------------+---------------+---------------+
| Headquarters   | Borg          | E               | James         |          7800 |
| Headquarters   | English       | A               | Joyce         |          8600 |
| Headquarters   | Smith         | B               | John          |          6500 |
| Administration | Wellas        | S               | Jennifer      |          6780 |
| Research       | Wong          | T               | Franklin      |          8000 |
+----------------+---------------+-----------------+---------------+---------------+
5 rows in set (0.00 sec)
```

II. Create a view that has the Employee Name, Supervisor name and employee salary for each employee who works in the "Research" Department.

```
create view employee_details(employeeFName, employeeMidName, employeeLName,
SupervisorFName, SupervisorMidName, SupervisorLName, employeeSalary)
as
    select employee.first_name as employeeFName, employee.middle_name as
employeeMidept_name,
    employee.last_name as employeelast_name , Supervisor.first_name as
SupervisorFName,
    Supervisor.middle_name as SupervisorMidept_name, Supervisor.last_name as
Supervisorlast_name,
    employee.salary as employee_salary
    from employee, employee Supervisor
    where employee.dept_no =
    (
        select dept_no
        from department
        where dept_name = 'Research'
    )
    and employee.super_ssn = Supervisor.ssn;
```

```
mysql> create view employee_details(employeeFName, employeeMidName, employeeLName, SupervisorFName, SupervisorMid
Name, SupervisorLName, employeeSalary)
    -> as
    ->     select employee.first_name as employeeFName, employee.middle_name as employeeMidept_name,
    ->     employee.last_name as employeelast_name , Supervisor.first_name as SupervisorFName,
    ->     Supervisor.middle_name as SupervisorMidept_name, Supervisor.last_name as Supervisorlast_name,
    ->     employee.salary as employee_salary
    ->     from employee, employee Supervisor
    ->     where employee.dept_no =
    ->     (
    ->         select dept_no
    ->         from department
    ->         where dept_name = 'Research'
    ->     )
    ->     and employee.super_ssn = Supervisor.ssn;
Query OK, 0 rows affected (0.22 sec)
```

```
select * from employee_details;
```

```
mysql> select * from employee_details;
+--------------+----------------+--------------+-----------------+-----------------+----------------+---------------+
| employeeFName | employeeMidName | employeeLName | SupervisorFName | SupervisorMidName | SupervisorLName | employeeSalary |
+--------------+----------------+--------------+-----------------+-----------------+----------------+---------------+
| John         | B              | Smith        | Alicia          | J               | Zelaya          |          6500 |
| Franklin     | T              | Wong         | Jennifer        | S               | Wellas          |          8000 |
| Joyce        | A              | English      | Ramesh          | K               | Narayan         |          8600 |
| Ramesh       | K              | Narayan      | John            | B               | Smith           |          5700 |
+--------------+----------------+--------------+-----------------+-----------------+----------------+---------------+
4 rows in set (0.00 sec)
```

III.   A view that has the Project name, controlling department name, Number of employees, and total hours worked per week on the project, for each project.

```
create view project_details(project, department, number_of_employees,
hours_per_week)
as
    select P.project_name as project, D.dept_name, count(W.project_no) as
number_of_employees, sum(W.hours) as hours_per_week
    from project P, department D, works_on W
    where P.dept_no = D.dept_no and P.project_no = W.project_no
    group by (P.project_no);
```

```
mysql> create view project_details(project, department, number_of_employees, hours_per_week)
    -> as
    ->     select P.project_name as project, D.dept_name, count(W.project_no) as number_of_employees, sum(W.hours) as hours_per_week
    ->     from project P, department D, works_on W
    ->     where P.dept_no = D.dept_no and P.project_no = W.project_no
    ->     group by (P.project_no);
Query OK, 0 rows affected (0.12 sec)
```

```
select * from project_details;
```

```
mysql> select * from project_details;
+----------------+----------------+---------------------+----------------+
| project        | department     | number_of_employees | hours_per_week |
+----------------+----------------+---------------------+----------------+
| ProductX       | Research       |                   2 |           52.5 |
| ProductY       | Research       |                   3 |           37.5 |
| ProductZ       | Research       |                   2 |             50 |
| Computerization| Administration |                   3 |             55 |
| Reorganization | Headquarters   |                   3 |           35.5 |
| Newbenifits    | Administration |                   3 |             55 |
+----------------+----------------+---------------------+----------------+
6 rows in set (0.00 sec)
```

IV.   A view that has the project name, controlling department name, number of employees, and total hours worked per week on the project for each project with more than one employee working on it.

```
create view project_with_more_than_one_employee(project, department,
number_of_employees, hours_per_week)
as
    select P.project_name as project, D.dept_name, count(W.project_no) as
number_of_employees, sum(W.hours) as hours_per_week
    from project P, department D, works_on W
    where P.dept_no = D.dept_no and P.project_no = W.project_no
    group by (P.project_no)
    having count(W.project_no) > 1;
```

```
mysql> create view project_with_more_than_one_employee(project, department, number_of_employees, hours_per_week)
    -> as
    ->     select P.project_name as project, D.dept_name, count(W.project_no) as number_of_employees, sum(W.hours) as hours_per_week
    ->     from project P, department D, works_on W
    ->     where P.dept_no = D.dept_no and P.project_no = W.project_no
    ->     group by (P.project_no)
    ->     having count(W.project_no) > 1;
Query OK, 0 rows affected (0.22 sec)
```

```
select * from project_with_more_than_one_employee;
```

```
mysql> select * from project_with_more_than_one_employee;
+-------------------+----------------+---------------------+----------------+
| project           | department     | number_of_employees | hours_per_week |
+-------------------+----------------+---------------------+----------------+
| ProductX          | Research       |                   2 |           52.5 |
| ProductY          | Research       |                   3 |           37.5 |
| ProductZ          | Research       |                   2 |             50 |
| Computerization   | Administration |                   3 |             55 |
| Reorganization    | Headquarters   |                   3 |           35.5 |
| Newbenifits       | Administration |                   3 |             55 |
+-------------------+----------------+---------------------+----------------+
6 rows in set (0.00 sec)

mysql>
```

Second Part

```
create view dept_summary(D, C, total_s, average_s)
as select dept_no, count(*), sum(salary), avg(salary)
from employee
group by dept_no;
```

```
mysql> create view dept_summary(D, C, total_s, average_s)
    -> as select dept_no, count(*), sum(salary), avg(salary)
    -> from employee
    -> group by dept_no;
Query OK, 0 rows affected (0.24 sec)
```

I.   select * from dept_summary;

```
mysql> select * from dept_summary;
+--------+-----+-----------+------------+
| D      | C   | total_s   | average_s  |
+--------+-----+-----------+------------+
|      5 | 4   |     28800 | 7200.0000  |
|      1 | 1   |      7800 | 7800.0000  |
|      4 | 3   |     20930 | 6976.6667  |
+--------+-----+-----------+------------+
3 rows in set (0.00 sec)
```

II. select D, C
     from dept_summary
     where total_s > 100000

```
mysql> select D, C
    -> from dept_summary
    -> where total_s > 100000;
Empty set (0.00 sec)
```

Since no department is having total salary greater than 100000 hence it will return empty set

III.   select D, average_s
        from dept_summary
        where C > (
            select C
            from dept_summary
            where D = 4
        );

```
mysql> select D, average_s
    -> from dept_summary
    -> where C > (
    ->     select C
    ->     from dept_summary
    ->     where D = 4
    -> );
+-------+-----------+
| D     | average_s |
+-------+-----------+
|     5 | 7200.0000 |
+-------+-----------+
1 row in set (0.00 sec)
```

IV.   update dept_summary
        set D = 3
        where D = 4;

```
mysql> update dept_summary
    -> set D = 3
    -> where D = 4;
ERROR 1288 (HY000): The target table dept_summary of the UPDATE is not upda
table
mysql>
```

The view is not updatable since the view is using aggregate function
(group by).

    v.   delete from dept_summary
        where C > 4;

```
mysql> delete from dept_summary
    -> where C > 4;
ERROR 1288 (HY000): The target table dept_summary of the DELETE is not upda
table
mysql>
```

The view is not updatable since the view is using aggregate function
(group by).