Question:
1. create employee(emp_id,employee_name,department_name,location,salary),
   department(dept_id,department_name),
   locations (location_id, location_name) tables with relevant attributes.
2. create primary key on each table and foreign keys (location->department,
department->employee)
ex: emp_id is PK in emp table, dept_id is PK in dept table, loc_id is PK in location table.
3. insert 20 employees data, 4 departments data, 2 locations data.

SOLUTION:

```
create table locations(
        location_id int,
        location_name varchar(255),
        primary key (location_id)
);
```

```
create table department(
        dept_id int primary key,
        department_name varchar(255)
);
```

```
create table employee(
        emp_id int not null,
        employee_name varchar(255),
        department_id int,
        location_id int,
        salary int,
        primary key (emp_id),
        foreign key(department_id) references department(dept_id),
        foreign key(location_id) references locations(location_id)
);
```

```
INSERT INTO department(dept_id,department_name)
VALUES (1,'engineering');
INSERT INTO department(dept_id,department_name)
VALUES (2,'PV signal');
INSERT INTO department(dept_id,department_name)
VALUES (3,'PV report');
INSERT INTO department(dept_id,department_name)
VALUES (4,'PVSSCE');



INSERT INTO locations(location_id,location_name) VALUES (1,'noida');
INSERT INTO locations(location_id,location_name) VALUES (2,'delhi');
ALTER TABLE employee DROP COLUMN employee_id;
INSERT INTO employee VALUES (1,'i',1,2,2000);
INSERT INTO employee VALUES (2,'h',2,2,4000);
INSERT INTO employee VALUES (3,'g',3,1,5000);
INSERT INTO employee VALUES (4,'f',4,2,6000);
INSERT INTO employee VALUES (5,'e',1,1,7000);
INSERT INTO employee VALUES (6,'d',2,2,8000);
INSERT INTO employee VALUES (7,'c',3,2,2000);
INSERT INTO employee VALUES (8,'b',4,1,3000);
INSERT INTO employee VALUES (9,'a',1,2,4000);
INSERT INTO employee VALUES (10,'t',1,1,5000);
INSERT INTO employee VALUES (11,'s',2,2,6000);
INSERT INTO employee VALUES (12,'r',3,1,7000);
INSERT INTO employee VALUES (13,'q',4,1,8000);
INSERT INTO employee VALUES (14,'p',1,2,9000);
INSERT INTO employee VALUES (15,'u',1,2,2000);
INSERT INTO employee VALUES (16,'v',2,2,3000);
INSERT INTO employee VALUES (17,'w',2,1,4000);
INSERT INTO employee VALUES (18,'x',3,2,5000);
INSERT INTO employee VALUES (19,'y',3,1,6000);
INSERT INTO employee VALUES (20,'z',4,2,7000);
```

Question:
I - display all employees names and their department names

Query:

```
select employee_name,department_name from employee join department on
employee.department_id = department.dept_id;
```

II - display all location_name, department_name, employee_name, salary for all matching rows from 3 tables

Query:

```
select e.employee_name,d.department_name,l.location_name from employee e join department
d on e.department_id = d.dept_id join locations l on e.location_id = l.location_id;
```

III - select maximum salary earned from each department and department_name

Query:

```
select max(salary), d.department_name from employee e join department d on e.department_id
= d.dept_id group by department_name ;
```

IV - select 2nd highest salary from each department and department_name

Query:

```
select o, department_name from (select max(salary) o,department_id from (employee join
(select max(salary) s,department_id m from employee e group by department_id) t on
employee.department_id = t.m) where salary < s group by department_id ) join department on
department.dept_id = department_id;
```

V - select location_name, department_name, average_salary(of each location)

Query:

```
select avg(e.salary),d.department_name,l.location_name from employee e join department d on
e.department_id = d.dept_id join locations l on e.location_id = l.location_id group by
d.department_name,l.location_name;
```

VI - Show departments with no of employees

Query :
select count(emp_id),department_name from employee join department on employee.department_id = department.dept_id group by department.department_name;

VII - Show locations with no of department where no of department is 2

Query:
select count(distinct(employee.department_id)),locations.location_name from (locations join employee on locations.location_id = employee.location_id join department on employee.department_id = department.dept_id) group by locations.location_name having count(distinct(employee.department_id)) = 2;