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.

```
create table department(
    department_id int primary key,
    department_name varchar(30)
);
create table locations(
     location_id int primary key,
     location_name varchar(30)
);
create table employee(
    emp_id int primary key,
    employee_name varchar(30),
    department_id int,
    location_id int,
    salary int
);
```

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.

```
ALTER TABLE employee
ADD FOREIGN KEY(department_id)
REFERENCES department(department_id);
ALTER TABLE employee
ADD FOREIGN KEY(location_id)
REFERENCES locations(location_id);
```

3. insert 20 employees data, 4 departments data, 2 locations data.

```
INSERT INTO locations(location_id, location_name)
VALUES (123,'noida');
INSERT INTO locations(location_id, location_name)
VALUES (456,'goa');
INSERT INTO department(department_id, department_name)
VALUES (111,'cse');
INSERT INTO department(department_id, department_name)
VALUES (112,'ece');
INSERT INTO department(department_id, department_name)
VALUES (113,'ee');
INSERT INTO department(department_id, department_name)
VALUES (114,'it');
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (1,'Cardinl',111,123,2000);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (2,'abc',112,456,50000);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (3,'abhi',113,123,40000);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (4,'tanu',114,456,45000);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (5,'sam',111,123,20000);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (6,'sid',112,456,50000);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (7,'tim',113,123,40000);
```

```
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (8,'root',114,456,45000);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (9,'fam',111,123,25000);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (10,'kat',112,456,50500);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (11,'aman',113,123,47000);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (12,'tina',114,456,70000);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (13,'cat',111,123,25000);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (14,'jack',112,456,50000);INSERT INTO
employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (15,'rock',113,123,40600);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (16,'yam',114,456,45900);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (17,'deepak',111,123,20070);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (18,'saam',112,456,50000);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (19,'rohit',113,123,40090);
INSERT INTO employee(emp_id,employee_name,department_id,location_id,salary)
VALUES (20,'pqr',114,456,45000);
select * from employee;

4. write below queries:
a) display all employees names and their department names
select e.employee_name,d.department_name from employee e left join department d on
e.department_id = d.department_id;

b) display all location_name, department_name, employee_name, salary for all
matching rows from 3 tables
select l.location_name,d.department_name,e.employee_name,e.salary from employee e,
department d, locations l where e.department_id=d.department_id and
e.location_id=l.location_id;

a) select maximum salary earned from each department
select
   d.department_id,
   max(e.Salary)
from
   department d
   inner join employee e on d.department_id = e.department_id
group by
  d.department_id;

 b) select 2nd highest salary from each department.

select t.department_id, max(t.salary) as maxs
from employee t
where t.salary < (select max(salary)
                  from employee t2
                  where t2.department_id = t.department_id
                 )
group by t.department_id;
```

c) select location_name, department_name, average_salary(of each location)
  select l.location_name,d.department_name,avg(salary)
from employee e, department d, locations l
where e.department_id=d.department_id and e.location_id=l.location_id
group by l.location_name;

  additional queries:
>> Show departments with no of employees

  select department_id,count(*) from employee group by department_id;

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

select l.location_id, count(distinct(d.department_id))
from employee e, department d, locations l
where e.department_id=d.department_id and e.location_id=l.location_id
group by l.location_id having count(distinct(d.department_id)) = 2;