create table dealer  
(  
 id integer primary key,  
 name varchar(255),  
 location varchar(255),  
 charge float  
);  
  
INSERT INTO dealer (id, name, location, charge)  
VALUES (101, 'Ерлан', 'Алматы', 0.15);  
INSERT INTO dealer (id, name, location, charge)  
VALUES (102, 'Жасмин', 'Караганда', 0.13);  
INSERT INTO dealer (id, name, location, charge)  
VALUES (105, 'Азамат', 'Нур-Султан', 0.11);  
INSERT INTO dealer (id, name, location, charge)  
VALUES (106, 'Канат', 'Караганда', 0.14);  
INSERT INTO dealer (id, name, location, charge)  
VALUES (107, 'Евгений', 'Атырау', 0.13);  
INSERT INTO dealer (id, name, location, charge)  
VALUES (103, 'Жулдыз', 'Актобе', 0.12);  
  
create table client  
(  
 id integer primary key,  
 name varchar(255),  
 city varchar(255),  
 priority integer,  
 dealer\_id integer references dealer (id)  
);  
  
INSERT INTO client (id, name, city, priority, dealer\_id)  
VALUES (802, 'Айша', 'Алматы', 100, 101);  
INSERT INTO client (id, name, city, priority, dealer\_id)  
VALUES (807, 'Даулет', 'Алматы', 200, 101);  
INSERT INTO client (id, name, city, priority, dealer\_id)  
VALUES (805, 'Али', 'Кокшетау', 200, 102);  
INSERT INTO client (id, name, city, priority, dealer\_id)  
VALUES (808, 'Ильяс', 'Нур-Султан', 300, 102);  
INSERT INTO client (id, name, city, priority, dealer\_id)  
VALUES (804, 'Алия', 'Караганда', 300, 106);  
INSERT INTO client (id, name, city, priority, dealer\_id)  
VALUES (809, 'Саша', 'Шымкент', 100, 103);  
INSERT INTO client (id, name, city, priority, dealer\_id)  
VALUES (803, 'Маша', 'Семей', 200, 107);  
INSERT INTO client (id, name, city, priority, dealer\_id)  
VALUES (801, 'Максат', 'Нур-Султан', null, 105);  
  
create table sell  
(  
 id integer primary key,  
 amount float,  
 date timestamp,  
 client\_id integer references client (id),  
 dealer\_id integer references dealer (id)  
);  
  
INSERT INTO sell (id, amount, date, client\_id, dealer\_id)  
VALUES (201, 150.5, '2012-10-05 00:00:00.000000', 805, 102);  
INSERT INTO sell (id, amount, date, client\_id, dealer\_id)  
VALUES (209, 270.65, '2012-09-10 00:00:00.000000', 801, 105);  
INSERT INTO sell (id, amount, date, client\_id, dealer\_id)  
VALUES (202, 65.26, '2012-10-05 00:00:00.000000', 802, 101);  
INSERT INTO sell (id, amount, date, client\_id, dealer\_id)  
VALUES (204, 110.5, '2012-08-17 00:00:00.000000', 809, 103);  
INSERT INTO sell (id, amount, date, client\_id, dealer\_id)  
VALUES (207, 948.5, '2012-09-10 00:00:00.000000', 805, 102);  
INSERT INTO sell (id, amount, date, client\_id, dealer\_id)  
VALUES (205, 2400.6, '2012-07-27 00:00:00.000000', 807, 101);  
INSERT INTO sell (id, amount, date, client\_id, dealer\_id)  
VALUES (208, 5760, '2012-09-10 00:00:00.000000', 802, 101);  
INSERT INTO sell (id, amount, date, client\_id, dealer\_id)  
VALUES (210, 1983.43, '2012-10-10 00:00:00.000000', 804, 106);  
INSERT INTO sell (id, amount, date, client\_id, dealer\_id)  
VALUES (203, 2480.4, '2012-10-10 00:00:00.000000', 809, 103);  
INSERT INTO sell (id, amount, date, client\_id, dealer\_id)  
VALUES (212, 250.45, '2012-06-27 00:00:00.000000', 808, 102);  
INSERT INTO sell (id, amount, date, client\_id, dealer\_id)  
VALUES (211, 75.29, '2012-08-17 00:00:00.000000', 803, 107);  
INSERT INTO sell (id, amount, date, client\_id, dealer\_id)  
VALUES (213, 3045.6, '2012-04-25 00:00:00.000000', 802, 101);  
  
-- drop table client;  
-- drop table dealer;  
-- drop table sell;  
--1. Write a SQL query using Joins:  
--a. combine each row of dealer table with each row of client table  
select \*  
from dealer  
select \*  
from client  
select \*  
from dealer  
 join client c on dealer.id = c.dealer\_id  
-- b. find all dealers along with client name, city, grade, sell number, date, and amount  
  
select dealer.id,  
 dealer.name,  
 client.*name*,  
 client.city,  
 client.priority,  
 sell.id,  
 sell.*date*,  
 sell.amount  
from dealer  
 inner join client c on dealer.id = c.dealer\_id  
 inner join sell s on client\_id = s.client\_id;  
-- c. find the dealer and client who belongs to same city  
select dealer.id, dealer.name, client.id, client.name  
from dealer  
 inner join client on dealer.location = client.city;  
  
-- d. find sell id, amount, client name, city those sells where sell amount exists between  
-- 100 and 500  
select sell.id, sell.amount, client.name, client.city  
from sell  
 inner join client on sell.client\_id = client.id  
where sell.amount between 100 and 500;  
-- e. find dealers who works either for one or more client or not yet join under any of  
-- the clients  
select \*  
from dealer d  
 full outer join client c on d.id = c.dealer\_id  
-- f. find the dealers and the clients he service, return client name, city, dealer name,  
-- commission.)  
select \*  
from dealer  
select client.name, client.city, dealer.name, dealer.charge as Commision  
from dealer  
 inner join client on dealer.id = client.dealer\_id;  
  
-- g. find client name, client city, dealer, commission those dealers who received a  
-- commission from the sell more than 12%  
select \*  
from sell  
 full join dealer d on d.id = sell.dealer\_id;  
  
select client.name, client.city, dealer.name, dealer.charge as Commision  
from client  
 inner join dealer on dealer.id = client.dealer\_id and dealer.charge > 0.12  
-- h. make a report with client name, city, sell id, sell date, sell amount, dealer name  
-- and commission to find that either any of the existing clients haven’t made a  
-- purchase(sell) or made one or more purchase(sell) by their dealer or by own.  
select distinct on (client\_id) client.id,  
 client.name,  
 client.city,  
 sell.id,  
 sell.date,  
 sell.amount,  
 dealer.id,  
 dealer.name,  
 dealer.charge  
from client  
 left join public.sell on client.id = sell.client\_id  
 left join dealer on dealer.id = client.dealer\_id  
  
-- i. find dealers who either work for one or more clients. The client may have made,  
-- either one or more purchases, or purchase amount above 2000 and must have a  
-- grade, or he may not have made any purchase to the associated dealer. Print  
-- client name, client grade, dealer name, sell id, sell amount  
select client.name, client.priority, dealer.name, sell.id, sell.amount  
from dealer  
 join client on dealer.id = client.dealer\_id  
 join sell on client.id = sell.client\_id  
where amount > 2000  
 and priority is not null;  
  
  
  
-- 2. Create following views:  
-- a. count the number of unique clients, compute average and total purchase  
-- amount of client orders by each date.  
select \*  
from sell;  
  
create view all\_from\_clients as  
select *count*(client\_id), *avg*(amount), *sum*(amount)  
from sell;  
  
-- b. find top 5 dates with the greatest total sell amount  
create or replace view top\_five\_by\_sell as  
select date, amount  
from sell  
order by amount desc  
limit (5);  
select \*  
from sell  
select \*  
from top\_five\_by\_sell  
  
-- c. count the number of sales, compute average and total amount of all  
;  
  
-- sales of each dealer  
create view dealer\_info as  
select dealer\_id, *count*(id), *avg*(amount), *sum*(amount) from sell group by dealer\_id;  
select \* from dealer\_info  
  
  
-- d. compute how much all dealers earned from charge(total sell amount \*  
-- charge) in each location  
;  
drop view sum\_of\_dealers;  
create or replace view sum\_of\_dealers as  
select *count*(\*), dealer\_id, charge, (*sum*(amount) + *count*(\*) \* charge) as total\_sum  
from sell inner join dealer d on d.id = sell.dealer\_id  
group by dealer\_id, charge;  
  
select dealer.name, dealer.charge \* sum\_of\_dealers.*sum*(amount)  
from dealer  
 join sum\_of\_dealers sod on dealer.id = sod.dealer\_id  
-- e. compute number of sales, average and total amount of all sales dealers  
-- made in each location  
  
create view num\_of\_sales as  
select d.location, *count*(sell.id), *avg*(amount), *sum*(amount) + *count*(sell.id) \* charge as total\_sum  
from sell  
 left join dealer d on d.id = sell.dealer\_id  
group by location, charge;  
select \*  
from num\_of\_sales;  
-- f. compute number of sales, average and total amount of expenses in  
-- each city clients made.  
  
create view task\_f as  
select city, *count*(sell.id), *avg*(amount), *sum*(amount) + *count*(sell.id) \* charge as total\_expences  
from client as c  
 inner join sell on c.id = sell.client\_id  
 inner join dealer d on c.dealer\_id = d.id  
group by c.city, d.charge;  
-- g. find cities where total expenses more than total amount of sales in  
-- locations  
create view task\_g as  
select client.city, *sum*(amount \* (dealer.charge + 1)) as cities, *sum*(amount) as loc  
from client  
 join sell on client.id = sell.client\_id  
 join dealer on sell.dealer\_id = dealer.id and client.city = dealer.location  
group by city