Create below 3 tables called "Salespeople", "Customer" and "orders" and insert following records into the tables before writing the solutions for the Questions.

Note: Write SQL queries for all the exercises and push it to github.

Tables: Salespeople

snum	sname	city	comm
1001	Peel	London	0.12
1002	Serres	San Jose	0.13
1003	AxelRod	New York	0.10
1004	Motika	London	0.11
1005	Fran	London	0.26
1007	Rifkin	Barcelona	0.15
1008	Ramu	hyd	0.11

Table: Customer

cnum	cname	city	rating	snum
2001	Hoffman	London	100	1001
2002	Giovanni	Rome	200	1003
2003	Liu	San Jose	200	1002
2004	Grass	Berlin	300	1002
2006	Clemens	London	100	1001
2007	Satish	Rome	100	1004
2008	Cisneros	San Jose	300	1007
2010	Ram	hyd	100	1005

Table: Orders

onum	amt	odate	cnum
3001	18.69	1996-03-10	2008
3002	1800.09	2021-04-17	2007
3003	767.19	1996-03-10	2001
3005	5160.45	1996-03-12	2003
3006	1098.16	1996-04-10	2008
3007	75.75	1996-04-10	2002
3008	4723.00	1996-04-10	2006
3009	1713.23	1996-04-10	2002
3010	1309.95	1996-04-10	2004
3011	9891.88	1996-04-10	2006

Exercises:

1. List all the columns of the Salespeople table.

```
Select * from salespeople;
```

2. List all customers with a rating of 100.

```
select * from customer where rating=100;
```

3. Find all records in the Customer table with NULL values in the city column.

```
select * from customer where city='null';
```

4. Find the largest order taken by each salesperson on each date.

```
select a.onum,max(a.amt),a.odate,a.cnum,b.snum from orders a,customer b where a.cnum=b.cnum group by b,snum,a.odate;
```

5. Arrange the Orders table by descending customer number.

```
select * from orders order by cnum desc;
```

6. Find which salespeople currently have orders in the Orders table.

```
select a.onum,a.amt,a.odate,a.cnum,b.snum from orders a,customer b where a.cnum=b.cnum group by b.snum;
```

7. List names of all customers matched with the salespeople serving them.

```
select a.sname,a.city,b.cname from salespeople a,customer b where a.snum=b.snum;
```

8. Find the names and numbers of all salespeople who had more than one customer.

```
select a.snum,b.sname,count(*) as cust_count from customer a, salespeople b where a.snum=b.snum
group by a.snum;
9. Count the orders of each of the salespeople and output the results in descending order.
select b.snum,c.sname,count(*) as order_count from orders a,customer b,salespeople c where
a.cnum=b.snum and b.snum=c.snum group by snum;
10. Which salesperson(s) should be fired?
select a.cname,b.sname from customer a,salespeople b,orders c where a.sname=b.sname and
a.cnum=c.cnum;
11. Match salespeople to customers according to what city they lived in.
select a.sname,b.cname,b.city from salespeople a, customer b where a.snum=b.snum and
a.city=b.city;
12. Find the largest order taken by each salesperson.
select a.sname,a.snum,b.onum,b.amt from salespeople a,orders b,customer c where a.snum=c.snum and
c.cnum=b.cnum group by sname;
13. Find customers in San Jose who have a rating above 200.
select * from customer where rating>=200 and city='san jose';
14. List the names and commissions of all salespeople in London.
select distinct sname,comm,city from salespeople where city='london';
15. List all the orders of salesperson Motika from the Orders table.
select a.sname,b.onum,b.amt from salespeople a,orders b,customer c where a.snum=c.snum and
c.cnum=b.cnum and sname='motika';
16. Find all customers with orders on October 3.
select * from orders where odate='1996-03-10';
17. Give the sums of the amounts from the Orders table, grouped by date, eliminating all those
dates where the SUM was not at least 2000.00 above the MAX amount.
select odate,sum(amt) from orders group by odate;
18. Select all orders that had amounts that were greater than at least one of the orders from
October 6.
select * from orders where amt>(amt(odate='1996-06-10' order by cnum;
19. What is the total income for the company?
select sum(amt) from orders;
20. Find all pairs of customers having the same rating.
select * from rating order by rating;
21. Which is the date, order number, amt and city for each salesperson (by name) for the
maximum order he has obtained?
select odate,onum,amt,city from orders where amt=(select max(amt)from orders);
22. Give the salespeople’s commissions as percentages instead of decimal numbers.
select sname,comm*100 as comm from salespeople;
23. Give names and numbers of all salespersons who have more than one customer.
select sname,snum from salespeople where snum in(select snum from customer group by snum having
count(snum)>1);
24. List the largest orders for October 3, for each salesperson.
select b.sname,c.odate,c.onum,c.amt from customer a,salespeople b,orders c where a.snum=b.snum and
a.cnum=b.cnum and c.odate='1996-03-10' order by c.amt desc;
25. Find all customers located in cities where Serres (SNUM 1002) has customers.
select a.snum,a.sname,b.cname,b.city from salespeople a,customer b where a.snum=b.snum and
b.snum=1002;
26. Select all customers with a rating above 200.00.
select * from customer where rating>200;
27. Count the number of salespeople currently listing orders in the Orders table.
 select a.sname,c.onum from salespeople a, customer b,orders c where a.snum=b.snum and
b.cnum=c.cnum group by a.sname;
28. Write a query that produces all customers serviced by salespeople with a commission above
12%. Output the customer’s name and the salesperson’s rate of commission.
select a.cname,b.sname,b.comm from customer a,salespeople b where a.snum=b.snum and b.comm>'0.12';
29. Find salespeople who have multiple customers.
select a.sname,b.cname from salespeople a,customer b where a.snum=b.snum limit 4;
30. Find salespeople with customers located in their city.
select a.sname,a.city,b.cname from salespeople a,customer b where a.city=b.city;
31. Find all salespeople whose name starts with ‘P’ and the fourth character is ‘l’.
select * from salespeople where sname like 'p__l';
32. Write a query that uses a subquery to obtain all orders for the customer named Cisneros.
Assume you do not know his customer number.
select a.cname,b.onum from customer a, orders b where a.cnum=b.cnum and a.cname='cisneros' order
by a.cname;
33. Find the largest orders for Serres and Rifkin.
select a.sname,max(c.amt) as amt from salespeople a,customer b,orders c where a.snum=b.snum and
b.cnum=c.cnum and sname='serres' or sname='rifkin' group by a.snum;
34. Extract the Salespeople table in the following order : SNUM, SNAME, COMMISSION, CITY.
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select snum,sname,comm,city from salespeople;
35. Select all customers whose names fall in between ‘A’ and ‘G’ alphabetical range.
select a.sname,b.cname from salespeople a, customer b where sname and cname like 'a%g';
36. Select all the possible combinations of customers that you can assign.
select a.cname,b.cname from customer a,customer b where a.snum=b.snum;
37. Select all orders that are greater than the average for October 4.
select * from orders where amt>(select avg(amt) from orders where odate='1996-04-10');
38. Write a select command using a corelated subquery that selects the names and numbers of all
customers with ratings equal to the maximum for their city.
select cnum,cname,rating from customer where rating>=(select max(rating) from customer);
39. Write a query that totals the orders for each day and places the results in descending order.
selectsum(amt) as amt,odate from orders group by odate order by amt desc;
40. Write a select command that produces the rating followed by the name of each customer in
San Jose.
select cname,city,rating from customer where city='san jose';
41. Find all orders with amounts smaller than any amount for a customer in San Jose.
select a.cname,b.onum,b.amt from customer a,orders b where amt<(a.cname where city='sanjose')
order by cname;
42. Find all orders with above average amounts for their customers.
select a.cname,b.amt from customer a,orders b where a.cnum=b.cnum and amt>(select avg(amt) as amt
from orders)group by cname;
43. Write a query that selects the highest rating in each city.
select city,max(rating) as rating from customer group by city;
44. Write a query that calculates the amount of the salesperson’s commission on each order by a
customer with a rating above 100.00.
select a.amt,a.cnum,b.rating,b.snum,c.sname,c.comm,a.amt*c.comm from orders a,customer
b,salespeople c where a.cnum=b.cnum and b.snum=c.snum and b.rating>100;
45. Count the customers with ratings above San Jose’s average.
select * from customer where rating>(select avg(rating) from customer where city='san jose';
46. Write a query that produces all pairs of salespeople with themselves as well as duplicate rows
with the order reversed.
select a.sname,b.sname from salespeople a,salespeople b where a.snum=b.snum;
47. Find all salespeople that are located in either Barcelona or London.
select * from salespeople where city='barcelona' or 'london';
48. Find all salespeople with only one customer.
select a.sname,a.snum from salespeople a,(select snu,count(*) as cust_count from customer group b
snum having cust_count=1) b where a.snum=b.snum;
49. Write a query that joins the Customer table to itself to find all pairs of customers served by
a
single salesperson.
select a.cname,b.cname,c.sname from customer a,customer b,salespeople c where a.snum=b.snum and
a.snum=c.snum;
50. Write a query that will give you all orders for more than $1000.00
select * from orders where amt>1000;
51. Write a query that lists each order number followed by the name of the customer who made
that order.
select a.onum,b.cname from orders a,customer b where a.cnum=b.cnum;
52. Write 2 queries that select all salespeople (by name and number) who have customers in their
cities who they do not service, one using a join and one a corelated subquery. Which solution
is more elegant?
select a.sname,a.snum,b.city from orders a left outer join customer b on a.snum=b.snum;
53. Find all orders greater than the average for October 4th.
select odate,avg(amt) from orders where odate!='1996-04-10' group by odate;
54. Write 2 queries that will produce all orders taken on October 3 or October 4.
select * from orders where odate='1996-03-10' or odate='1996-04-10';
55. Write a query that produces all pairs of orders by a given customer. Name that customer and
eliminate duplicates.
select a.cname,b.onum from customer a,orders b where a.cnum=b.cnum;
56. Find only those customers whose ratings are higher than every customer in Rome.
select * from customer where rating>(select max(rating) from customer where city='Rome');
57. Write a query on the Customers table whose output will exclude all customers with a rating <=
100.00, unless they are located in Rome.
select * from customer where (rating<=100 and city='Rome') or rating>100;
58. Find all rows from the Customers table for which the salesperson number is 1001.
select * from customer where snum=1001;
59. Find the total amount in Orders for each salesperson for whom this total is greater than the
amount of the largest order in the table.
select * from customers where rating>200;
60. Write a query that selects all orders save those with zeroes or NULLs in the amount field.
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select * from orders;
61. Produce all combinations of salespeople and customer names such that the former precedes
the latter alphabetically, and the latter has a rating of less than 200.
select a.sname,b.cname,b.rating from salespeople a,customer b where a.snum=b.snum and
b.rating>200;
62. List all Salespeople’s names and the Commission they have earned.
select a.sname,sum(a.comm*c.amt) as commision from sales people a,customer b,orders c where
a.snum=b.snum and b.cnum=c.cnum group ny a.comm;
63. Write a query that produces the names and cities of all customers with the same rating as
Hoffman. Write the query using Hoffman’s CNUM rather than his rating, so that it would still be
usable if his rating changed.
select cname,city from customer where rating=(select rating from customer where cnum='2001');
64. Find all salespeople for whom there are customers that follow them in alphabetical order.
select a.sname,b.cname from salespeople a,customer b where a.snum=b.snum order by a.sname limit 2;
65. Write a query that produces the names and ratings of all customers of all who have above
average orders.
select a.cname,b.amt from customer a,orders b where a.cnum=b.cnum and amt>(select avg(amt) as amt
from orders)group by cname;
66. Find the SUM of all purchases from the Orders table.
select sum(amt) from orders;
67. Write a SELECT command that produces the order number, amount and date for all rows in
the order table.
select onum,amt,odate from orders;
68. Count the number of nonNULL rating fields in the Customers table (including repeats).
select count(distinct rating) from customer;
69. Write a query that gives the names of both the salesperson and the customer for each order
after the order number.
select a.cname,b.sname,c.onum from customer a,salespeople b,orders c where a.snum=b.snum and
a.cnum=c.cnum;
70. List the commissions of all salespeople servicing customers in London.
select a.sname,a.comm,b.city.b.cname from salespeople a,customer b where a.snum=b.snum and
b.city='London';
71. Who is the worst customer with respect to the company?
select a.cnum,b.cname,sum(a.amt) as totalspend from orders a,cutomer b where a.cnum=b.cnum group
by a.cnum order by totalspend limit 1;
72.  Who is the most successful salesperson?
select b.snum,c.sname,sum(a.amt) as totalsalesbySP from orders a,customer b,salespeople c where
a.cnum=b.cnum and b.snum=c.snum group by b.snum order by totasalesbySP desc;
73. Write a query that selects all customers serviced by Peel or Motika. (Hint : The SNUM field
relates the two tables to one another.)
select a.sname,b.cname from salespeople a,customer b where a.snum=b.snum and (a.sname='Peel' or
a.sname='Motika');
74. Count the number of salespeople registering orders for each day. (If a salesperson has more
than one order on a given day, he or she should be counted only once.)
select b.sname,c.onum,c.odate,count(distinct b.sname) from customer a,salespeople b,orders c where
a.snum=b.snum and a.cnum=c.cnum group by c.odate;
75. Find all orders attributed to salespeople in London.
select b.sname,b.city,c.onum from customer a,salespeople b,orders c where a.snum=b.snum and
a.cnum=c.cnum and b.city='London';
76. Find all orders by customers not located in the same cities as their salespeople.
select a.sname,a.city,b.cname,b.city as cus_city from salespeople a,customer b where a.snum=b.snum
and a.city!=b.city;
77. Find all salespeople who have customers with more than one current order.
select e.sname,d.count_cus from salespeople e,(select count(c.onum) as count_cus from salespeople
a,customer b,orders c where a.snum=b.snum and b.cnum=c.cnum group by a.sname) d where
e.sname=d.sname and count_cus>1;
78. Write a query that extracts from the Customers table every customer assigned to a
salesperson who currently has at least one other customer (besides the customer being
selected) with orders in the Orders table.
select e.sname,d.count_cus from salespeople e,(select count(c.onum) as count_cus from salespeople
a,customer b,orders c where a.snum=b.snum and b.cnum=c.cnum group by a.sname) d where
e.sname=d.sname and count_cus>1;
79. Write a query that selects all customers whose names begin with ‘C’.
select * from customer where cname like 'c%';
80. Write a query on the Customers table that will find the highest rating in each city. Put the
output
in this form : for the city (city) the highest rating is : (rating).
select city, max(rating) from customer group by city;
81. Write a query that will produce the SNUM values of all salespeople with orders currently in
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the
Orders table (without any repeats).
select b.snum,b.sname,c.onum from customer a,salespeople b,orders c where a.snum=b.snum and
a.cnum=c.cnum group by b.snum;
82. Write a query that lists customers in descending order of rating. Output the rating field
first,
followed by the customer’s names and numbers.
select rating,cname,cnum from customer order by rating desc;
83. Find the average commission for salespeople in London.
select city,avg(comm) from salespeople where city='London' group by city;
84. Find all orders credited to the same salesperson who services Hoffman (CNUM 2001).
select a.cname,b.sname,c.onum from customer a,salespeople b,orders c where a.snum=b.snum and
a.cnum=c.cnum and a.cnum='2001';
85. Find all salespeople whose commission is in between 0.10 and 0.12 (both inclusive).
select * from salespeople where comm between '0.10' and '0.12';
86. Write a query that will give you the names and cities of all salespeople in London with a
commission above 0.10.
select sname,city,comm from salespeople where (city='London' and comm>'0.10');
87. Which customers have the same rating?
select * from customer order by rating;
88. Write a query that selects each customer’s smallest order.
select a.cnum,a.cname,min(b.amt) from customer a,orders b where a.cnum=b.cnum group by a.cname
order by min(b.amt);
89. Write a query that selects the first customer in alphabetical order whose name begins with G.
select * from customer where cname like 'g%' orde by cname;
90. Write a query that counts the number of different nonNULL city values in the Customers table.
select count(distinct city) from customer;
91. Find the average amount from the Orders table.
select avg(amt) from orders;
92. Select the total amount in orders for each salesperson for whom the total is greater than the
amount of the largest order in the table.
select b.sname,c.onum,sum(c.amt) from customer a,salespeople b,orders c where a.snum=b.snum and
a.cnum=c.cnum group by b.sname order by sum(c.amt) limit 1;
93. Find all customers who are not located in San Jose and whose rating is above 200.
select * from customer where (city!='San Jose' and rating>200);
94. List all customers with ratings above San Jose’s average.
select cnum,rating from customer where rating>(select avg(rating) from customer where
city='sanjose');
95. Which customers have above average orders?
select * from orders where amt> (select avg(amt)from oreders);
96. Which salespersons attend to customers not in the city they have been assigned to?
select a.sname,a.city,b.cname,b.city as cus_city from salespeople a,customer b where a.snum=b.snum
and a.city!=b.city;
97. Which salespeople get commission greater than 0.11 are serving customers rated less than
250?
select a.sname,a.comm,b.cname,b.rating from salespeople a,customer b where a.snum=b.snum and
(a.comm>0.12 and b.rating<250);
98. Which salespeople have been assigned to the same city but get different commission
percentages?
select *,comm*100 from salespeople where city='London';
99. Which salesperson has earned the most by way of commission?
select a.cname,b.sname,b.comm,sum(c.amt)*b.comm as k from customer a,salespeople b,orders c where
a.snum=b.snum and a.cnum=c.cnum group by b.sname order by k desc;
100.Does the customer who has placed the maximum number of orders have the maximum rating?
select a.rating,b.onum,count(*) as orders_count from customer a,orders b where a.cnum=b.cnum group
by a.cnum order by a.rating desc;
101.Has the customer who has spent the largest amount of money been given the highest rating?
select a.rating,a.cnum,b.onum,b.amt from customer a,orders b where a.cnum=b.cnum order by b.amt
desc;
102.List all customers in descending order of customer rating.
select * from customer order by desc;
103.On which days has Hoffman placed orders?
select a.cname,b.onum,b.odate from customer a,orders b where a.cnum=b.cnum and a.cname='Hoffman';
104.Do all salespeople have different commissions?
select * from salespeople;
105.Which salespeople have no orders between 10/03/1996 and 10/05/1996?
select b.sname,c.odate from customer a,salespeople b,orders c where a.snum=b.snum and
a.cnum=c.cnum and odate not between '1996-03-10' and '1996-05-10';
106.How many salespersons have succeeded in getting orders?
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select b.sname,c.onum,c.odate from customer a,salespeople b,orders c where a.snum=b.snum and
a.cnum=c.cnum;
107.How many customers have placed orders?
select count(distinct cnum)from orders;
108.On which date has each salesperson booked an order of maximum value?
select b.sname,c.odate,c.onum,max(c.amt) from customer a,salespeople b,orders c where
a.snum=b.snum and a.cnum=c.cnum group by b.sname;
```