

# Question 1 - Non-local orders

You are given 3 tables *salesman*, *customer*, and *orders*.

## Task

Write an SQL query to get the following result:

- Find all the non-local orders by looking at the salesmen that generated orders for their customers but are located elsewhere unlike their customers, and fetch the details like order\_no, name of the customer, customer\_id, salesman\_id.

Arrange the final output in the increasing order of the order\_no.

## Table description

### Input format

**Table:** *salesman*

Field	Type	Description
id	Integer	Represents the unique id of the salesman
name	String	Represents the name of the salesman
city	String	Represents the city of the salesman
commission	Integer	Represents the commission of the salesman

**Table:** *customer*

Field	Type	Description
id	Integer	Represents the unique id of the customer
name	String	Represents the name of the customer
city	String	Represents the city of the city
grade	Integer	Represents the score of the customer for his consistency in orders

salesman_id	Integer	Represents the unique id of the salesman
-------------	---------	--

**Table:** *orders*

Field	Type	Description
order_no	Integer	Represents the id of the order
purchase_amount	Integer	Represents the amount spent on the order
order_date	Date	Represents the date of order
customer_id	Integer	Represents the unique id of the customer
salesman_id	Integer	Represents the unique id of the salesman

**Output format**

Field	Type	Description
order_no	Integer	Represents the id of the order
customer_name	String	Represents the name of the customer
customer_id	Integer	Represents the unique id of the customer
salesman_id	Integer	Represents the unique id of the salesman

**Example Sample Input**

**Table:** *salesman*

id	name	City	Commission
101	James	NewYork	150
102	Nail	Paris	130
103	Alex	London	110
104	Mcoy	Paris	140
105	Paul	Rome	130

106	Lauson	SanJose	120
-----	--------	---------	-----

**Table:** *customer*

id	name	City	grade	salesman_id
1	Nick	NewYork	100	101
2	Brad	NewYork	200	102
3	Graham	California	200	103
4	Julie	London	300	104
5	Fabian	Paris	300	105
6	Geoff	Berlin	300	106
7	Jos	Moscow	100	101
8	Guzan	London	200	102

**Table:** *orders*

order_no	purchase_amount	order_date	customer_id	salesman_id
7001	250	2012-10-05	5	105
7009	270	2012-12-10	1	101
7002	60	2012-10-05	5	105
7004	110	2012-08-17	2	102
7007	950	2012-09-10	3	103
7005	2450	2012-07-27	8	102
7008	5700	2012-09-10	4	104
7003	1980	2012-10-10	7	101
7006	75	2012-10-10	6	106
7010	3045	2012-06-27	1	101

### Sample output table

order_no	customer_name	customer_id	salesman_id
7001	Fabian	5	105
7002	Fabian	5	105
7003	Jos	7	101
7004	Brad	2	102
7005	Guzan	8	102
7006	Geoff	6	106
7007	Graham	3	103
7008	Julie	4	104

## Question 2 - Employee Incentive Calculation

A food store is planning to give incentive to its employees based on their monthly performance in sales.

Incentive is different for each position and each position has its max limit for incentive.

Sales target to avail the incentive is a milestone.

Employee makes incentive everytime he completes a milestone of sales.

Milestone is different for each position.

You are given the data for a month in the database *store\_data*.

### Task:

Find amount of incentive made by each employee.

### Table Description

#### Input Format:

**Table: employee**

Name	Type	Description
employee_id	int	Represents the unique id of employee
name	string	Represents the name of employee
pos_id	string	Represents the id of position of employee
emp_sale	int	Represents the sale of employee

**Table: incentive\_details**

Name	Type	Description
p_id	int	Represents the unique id of position
position_name	string	Represents the name of position
sales_milestone	int	Represents the sales target to achieve a milestone
incentive	int	Represents the amount of incentive made on completing single target
cap	int	Represents the maximum incentive of a position

#### Output Format:

Name	Type	Description
employee_id	int	Represents the id of employee
incentive_ma	int	Represents the incentive made by the employee

de		
----	--	--

**Sample Input:**

**Table: employee**

employee_id	name	pos_id	emp_sale
201	Jackson	P61	456
202	Nick	P62	267
203	Joffrey	P62	324
204	Misty	P63	154
205	Jack	P61	532

**Table: incentive\_details**

p_id	position_name	sales_milestone	incentive	cap
P61	GM	120	15000	50000
P62	AM	85	8000	23500
P63	Staff	45	5000	13000

**Sample Output:**

employee_id	incentive_made
201	45000
202	23500
203	23500
204	13000

205	50000
-----	-------

## Question 3 - Research papers in institute

There are research institutes with Researchers who have written papers under the guidance of their mentors. You are given a database named *ResearchInstitute* for one such Institution.

### Table description

The database *ResearchInstitute* consists of the following tables:

Table name	Description
researchers	A table that contains the list of all researchers at the institute
mentors	A table that contains the list of all mentors at the institute
papers	A table that contains the list of all papers written by researchers
research_paper	A table that contains a list of papers and their respective researchers
research_mentor	A table that contains a list of researchers and mentors they are taking guidance from

### Table: researchers

- *r\_id* represents the researcher ID
- *r\_name* represents the name of the researcher
- *r\_gender* represents the gender of the researcher (male or female)

### Table: mentors

- *m\_id* represents the mentor ID
- *m\_name* represents the name of the mentor
- *m\_gender* represents the gender of the mentor (male or female)

### Table: papers

- *p\_id* represents the paper ID
- *p\_subject* represents the name of the subject

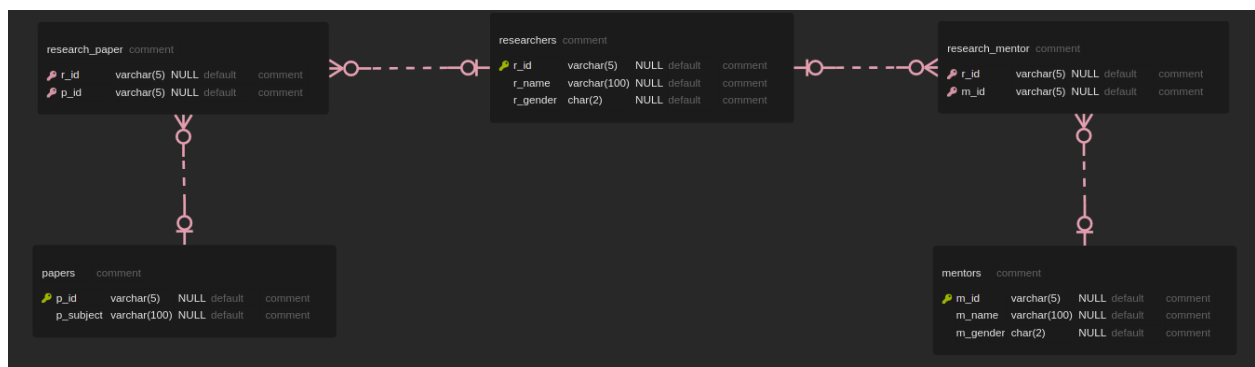
### Table: research\_paper

- *r\_id* represents the researcher ID
- *p\_id* represents the paper ID

### Table: research\_mentor

- *r\_id* represents the researcher ID
- *m\_id* represents the mentor ID

### Entity Relationship Diagram



### Task

Write an SQL Query to find subjects that contain the alphabet "b" and have papers written under the guidance of more female mentors than male mentors.

### Sample Input

#### Table: researchers

r_id	r_name	r_gender
R001	Mary	F
R002	Alice	F
R003	Bob	M
R004	Ben	M



R005	Mike	M
R006	Tara	F
R007	Anita	F
R008	Lisa	F
R009	Missy	F
R010	John	M

**Table: mentors**

m_id	m_name	m_gender
M001	Rob	M
M002	Jessica	F
M003	Rachel	F
M004	Joey	M
M005	Monica	F

**Table: papers**

p_id	p_subject
P001	Microbiology
P002	Theoretical Physics
P003	Theoretical Physics
P004	Microbiology
P005	Microbiology

**Table: research\_paper**

r_id	p_id
------	------

R001	P001
R002	P002
R003	P003
R004	P004
R005	P005
R006	P001
R007	P002
R008	P003
R009	P004
R010	P005

**Table: research\_mentor**

<b>r_id</b>	<b>m_id</b>
R001	M005
R002	M004
R003	M003
R004	M002
R005	M001
R006	M005
R007	M004
R008	M003
R009	M002
R010	M001

**Sample output:**

<b>p_subject</b>
Microbiology