

Hi Sarah,

Hope this mail finds you well. It has been a long time not to see you. Here are my answers with your questions.

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## Part 1

I have a database of recipes, and I could really use your help in finding out some information. This is called **ro\_recipes**.

1. What are the recipe titles that are either a vegetable or a salad? I want to provide this information to my friend; please give me a SINGLE query that does this without any numbers in the query.

```
mysql> select R.RecipeTitle from Recipes R join Recipe_Classes RC on R.RecipeClassID = R.C.RecipeClassID where RC.RecipeClassDescription in ('Salad', 'Vegetable');
+-----+
| RecipeTitle |
+-----+
| Garlic Green Beans |
| Asparagus |
| Mike's Summer Salad |
+-----+
3 rows in set (0.05 sec)
```

*Table Documentation:*

### Recipes

Field Name	Data Type	Values	Note
RecipeID	int	ID for the Recipe	primary key
RecipeTitle	varchar	Title for the Recipe	
RecipeClassID	int	Class ID the recipe belongs	foreign key with Recipe_Class table
Preparation	text	Preparation Process for the Recipe	
Notes	text	Tips for the recipe	

### Recipe\_Classes

Field Name	Data Type	Values	Note
RecipeClassID	int	Recipe Class ID category	primary key
RecipeClassDescription	varchar	Corresponding text description with number ID	

2. I have someone that is allergic to seafood coming over; please list all the dishes that contain seafood. Once again, one query with no numbers in it, please. (optional, this could be hard depending on how you try to do it)

```
mysql> select R.RecipeTitle
-> from Recipes R
-> join Recipe_Ingredients RI on R.RecipeID = RI.RecipeID
-> join Ingredient_Classes IC on RI.IngredientID = IC.IngredientClass
-> where IC.IngredientClassDescription = 'Seafood';

+-----+
| RecipeTitle |
+-----+
| Salsa Buena |
| Pollo Picoso |
| Roast Beef |
| Huachinango Veracruzana (Red Snapper, Veracruz style) |
| Tourtière (French-Canadian Pork Pie) |
| Salmon Filets in Parchment Paper |
+-----+
6 rows in set (0.04 sec)
```

*Table Documentation:*

#### Recipe\_Ingredients

Field Name	Data Type	Values	Note
RecipeID	int	ID for the Recipe	primary key
RecipeSeqNo	int	sequence number of recipe	
IngredientID	int	id of the ingredient	
MeasureAmountID	int	id of measurement amount	
Amount	float	amount of the recipe	

#### Ingredient\_Classes

Field Name	Data Type	Values	Note
IngredientClassID	int	Ingredient Class ID category	primary key
IngredientClassDescription	varchar	Corresponding text description with number ID	

3. Raj and the rest of the database team are coming over next week, and they really like beef and garlic; what can I make for everyone that contains beef and garlic? (If you're not a fan of Raj, you don't have to answer this question). (Please note, this is the most challenging question on this homework and will require some time and complexity. We will be happy to discuss in a future week of office hours. Once again, this is a very very very very hard question. You do not have to answer it. )

```
mysql> select R.RecipeTitle
-> from Recipes R
-> join Recipe_Ingredients RI on R.RecipeID = RI.RecipeID
-> join Ingredients I on RI.IngredientID = I.IngredientID
-> where IngredientName in ('Beef','Garlic');
+-----+
| RecipeTitle |
+-----+
| Irish Stew  |
| Roast Beef  |
| Garlic Green Beans |
| Pollo Picoso |
| Roast Beef  |
| Asparagus  |
+-----+
6 rows in set (0.05 sec)
```

Table Documentation:

### Ingredients

Field Name	Data Type	Values	Note
IngredientID	int	id of the ingredient	primary key
IngredientName	varchar	name of ingredient	
IngredientClassID	int	class ID of ingredient	
MeasureAmountID	int	id of measurement amount	

## Part 2

While you are helping out, I have a few more questions... I want to send cards to a few of my co-workers.

1. In the **ro\_company1** database, can you give me the names of those employees who work in the Operations department? Once again, please don't put any numbers in your query.

```
mysql> select concat(e.fname,' ',e.lname) as name from employee e join department d on e
.dept_id = d.dept_id where d.name = 'Operations';
```

name
Susan Hawthorne
Helen Fleming
Chris Tucker
Sarah Parker
Jane Grossman
Paula Roberts
Thomas Ziegler
Samantha Jameson
John Blake
Cindy Mason
Frank Portman
Theresa Markham
Beth Fowler
Rick Tulman

```
14 rows in set (0.19 sec)
```

Table Documentation:

#### employee

Field Name	Data Type	Values	Note
emp_id	int	id of the employee	primary key
fname	varchar	first name	
lname	varchar	last name	
start_date	date	start date of the employment	
end_date	date	end_date of the employment	
superior_emp_id	int	employment id of superior	
dept_id	int	id of the department	
title	varchar	title in the company	
assigned_brach_id	int	id of assigned branch	

#### department

Field Name	Data Type	Values	Note
dept_id	int	id of the department	primary key
name	varchar	name of the department	

2. Also, employee Paula Roberts has opened a large number of accounts. Can you let me know on what dates she opened accounts on and what the address of those customers are? (one query)

```
mysql> select A.open_date AccountOpenDate, C.address As CustomerAddress
-> from employee E
-> join account A on E.emp_id = A.open_emp_id
-> join customer C on A.cust_id = C.cust_id
-> where E.fname = 'Paula' And E.lname = 'Roberts';
```

AccountOpenDate	CustomerAddress
2000-01-15	47 Mockingbird Ln
2000-01-15	47 Mockingbird Ln
2004-06-30	47 Mockingbird Ln
2001-03-12	372 Clearwater Blvd
2001-03-12	372 Clearwater Blvd
2004-01-12	29 Admiral Ln
2004-03-22	287A Corporate Ave

7 rows in set (0.05 sec)

Table Documentation:

customer

Field Name	Data Type	Values	Note
cust_id	int	id of customer	primary key
fed_id	varchar	fed id of customer	
cust_type_id	enum('I','B')	type id of customer	
address	varchar	address of customer	
city	varchar	city where customer located	
state	varchar	state where customer located	
Postal_code	varchar	zipcode of customer address	

account

Field Name	Data Type	Values	Note
account_id	int	id of the account	Primary key
product_id	int	id of product	
cust_id	int	id of customer	
open_date	date	account open date	
close_date	date	account close date	
last_activity_date	date	last account activity date	
status	enum('ACTIVE','CLOSED','FROZEN')	account status	
open_branch_id	int	id of brach where account opened	
open_emp_id	int	id of employee who opened the account	
avail_balance	int	available balance for the account	
pending_balance	int	pending balance for the account	

3. Can you provide me a list of *all* our employees and their manager's ID?

```
mysql> select E.emp_id as EmployeeID, M.emp_id as ManagerID
-> from employee E
-> left join employee M on E.superior_emp_id = M.emp_id;
```

EmployeeID	ManagerID
1	NULL
2	1
3	1
4	3
5	4
6	4
10	4
13	4
16	4
7	6
8	6
9	6
11	10
12	10
14	13
15	13
17	16
18	16

18 rows in set (0.16 sec)

4. Can you give me a list of all accounts that have not been closed, the available balance, the state the customer is located in, and the name of the customer's business if they have one?

```
mysql> select A.avail_balance, C.state, B.name
-> from account A
-> join customer C on A.cust_id = C.cust_id
-> left join business B on C.cust_id = B.cust_id where A.status = 'ACTIVE';
```

avail_balance	state	name
1057.75	MA	NULL
500.00	MA	NULL
3000.00	MA	NULL
2258.02	MA	NULL
200.00	MA	NULL
1057.75	MA	NULL
2212.50	MA	NULL
534.12	MA	NULL
767.77	MA	NULL
5487.09	MA	NULL
2237.97	NH	NULL
122.37	MA	NULL
10000.00	MA	NULL
5000.00	MA	NULL
3487.19	NH	NULL
387.99	NH	NULL
125.67	MA	NULL
9345.55	MA	NULL
1500.00	MA	NULL
23575.12	NH	Chilton Engineering
0.00	NH	Chilton Engineering
9345.55	MA	Northeast Cooling Inc.
38552.05	NH	Superior Auto Body
50000.00	MA	AAA Insurance Inc.

24 rows in set (0.05 sec)

Table Documentation:

business

Field Name	Data Type	Values	Note
cust_id	int	id of customer	primary key
name	varchar	name of business	
state_id	varchar	id of state	
incorp_date	date	date of incorporation	

5. Can you provide a list of employees that work at a branch with the address of "422 Maple St."?

```
mysql> select concat(E.fname, ' ', E.lname) as name
-> from employee E
-> join branch B on E.assigned_branch_id = B.branch_id
-> where address = '422 Maple St.';
+-----+
| name |
+-----+
| Paula Roberts |
| Thomas Ziegler |
| Samantha Jameson |
+-----+
3 rows in set (0.17 sec)
```

Table Documentation:

branch

Field Name	Data Type	Values	Note
branch_id	int	id of customer	primary key
name	varchar	name of branch	
address	varchar	address of branch	
city	varchar	city where branch located	
state	varchar	state of the branch	
zip	varchar	zip code of branch address	

### Part 3

My partner and I are trying to find some exciting places to visit for our upcoming vacation. Using the **world** database, can you find:

1. 5 random cities that have a population above 13,000 and below 500,000 and are not located in North America?

```
mysql> select C.name
-> from city C
-> join country Co on C.CountryCode = Co.code
-> where 13000 < C.population < 50000 and Co.Continent = 'North America'
-> order by rand() limit 5;
+-----+
| name |
+-----+
| Reno |
| George Town |
| Corona |
| Provo |
| Raleigh |
+-----+
5 rows in set (0.05 sec)
```



### Table Documentation:

#### city

Field Name	Data Type	Values	Note
ID	int	id of the city	primary key
name	char	name of the city	
CountrCode	char	code of the country where city located	
District	char	district where the city belongs	
Population	int	population of the city	

#### country

Field Name	Data Type	Values	Note
Code	char	code of the country	primary key
Name	char	name of the country	
Continent	enum('Asia','Europe','North America','Africa','Oceania','Antarctica','South America')	continent the country located	
Region	char	region where country located	
SurfaceArea	decimal	surface area of the country	
IndepYear	int	Independence year	
Population	int	Population	
LifeExpectancy	decimal	life expectancy	
GNP	decimal	GNP	
GNPOld	decimal	GNPOld	
LocalName	char	local name of the country	
GovernmentForm	char	form the government in	
HeadOfState	char	president of the country	
Capital	int	capital	
Code2	char	code2 of the country	

#### 2. How many cities are in a Constitutional Monarchy?

There are 611 cities meet the requirement.

```
mysql> select count(1) from city C join country C0 on C.Countrycode = C0.code where C0.GovernmentForm like '%Constitutional Monarchy%';
```

```
+-----+
| count(1) |
+-----+
|      611 |
+-----+
```

3. 5 random cities that a population above 13000 and below 500,000 that don't speak English as an official language and are not a Republic?

```
mysql> select C.name
-> from city C
-> join country C0 on C.CountryCode = C0.code
-> join countrylanguage CL on C0.code = CL.CountryCode
-> where 130000 < C.population < 500000 and C0.GovernmentForm <> 'Republic'
-> and CL.Language <> 'English'
-> order by rand() limit 5;
```

name
Gütersloh
Baotou
Odessa
Yuyao
Boise City

5 rows in set (0.09 sec)

Table Documentation:

country\_language

Field Name	Data Type	Values	Note
CountryCode	char	code of the country	
Language	char	language of the country	
IsOfficial	enum('T','F')	whether language official	
Percentage	decimal	percent of language use	

## Part 4

Using the **ro\_employee** database:

1. From 1985-01-01 to 1986-01-01, how many people were on payroll with a title that contained the word "Engineer"? (Optional)

There are 16749 people meet the requirement.

```
mysql> select count(1) from salaries S
      -> join titles T on S.emp_no = T.emp_no
      -> where T.title like '%Engineer%'
      -> and S.from_date <= '1986-01-01' and S.to_date >= '1985-01-01';
```

count(1)
16749

1 row in set (3.56 sec)

2. How many people work in the Production department anytime between 1985-01-01 to 1992-01-01?  
(Optional)

There are 31700 people meet the requirement.

```
mysql> select count(1) from employees E
      -> join dept_emp DE on E.emp_no = DE.emp_no
      -> join departments D on DE.dept_no = D.dept_no
      -> where D.dept_name = 'Production' and
      -> DE.to_date >= '1985-01-01' and DE.from_date <= '1992-01-01';
```

count(1)
31700

1 row in set (0.58 sec)

3. Can you give a list of the names of 20 random employees, their current salary, and their current title?  
(Optional)

```
mysql> select concat(E.first_name, ' ', E.last_name) as name, S.salary, T.title from employees E join salaries S on E.emp_no = S.emp_no join titles T on E.emp_no = T.emp_no order by rand() limit 20;
```

name	salary	title
Yishai Buescher	52362	Senior Engineer
Lubomir Camurati	57483	Staff
Menkae Krzyzanowski	65785	Engineer
Ulf Junot	78270	Senior Staff
Mary Katalagarianos	49498	Engineer
Martien Pokrovskii	104537	Senior Staff
Bogusław Matteis	58670	Senior Staff
Kagan Busillo	64747	Senior Staff
Geoffrey Koprowski	47883	Staff
Adas Hofmeyr	123536	Senior Staff
Jinya Tramer	69170	Senior Staff
Adam Snedden	82296	Staff
Tokuyasu Sevcikova	83276	Senior Engineer
Fai Hiyoshi	55463	Engineer
Lihong Thiria	42940	Senior Staff
Marsja Eiron	54374	Senior Engineer
Candido Gaughan	46265	Senior Engineer
Rosli Champarnaud	72765	Engineer
Utz Matzat	41437	Senior Staff
Bowen Rissland	63262	Engineer

20 rows in set (16.53 sec)

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Can't wait to see you and talk with you! See you next week!

Best,

Jun