

Homework 1

SUBJECT: RE: Welcome to Borromean Team!

FROM: Jonas Zhonghan Xie

TO: Raj Kumar

Hi Raj,

Thank you for your email. I am also really excited to be part of the Borromean Team and working with you!

For your questions in Part 1:

1. The author defines three types of relationships in the reading: one-to-one, one-to-many, and many-to-many.
2. Similar relationships can be students to classes: one student enrolls in one class or multiple classes. There are many students in one single class. Also, for the example of schools and alumni, one student can be alumnus of multiple schools. A school can have many alumni.
3. There are two types of databases mentioned in the reading: operational database and analytical database. Operational databases are powerful for transactional processing. We may use this type of databases for daily operations. Analytical databases are more suitable for data analysis and reporting. We may want to use analytical database to pull, analyze data for business intelligence.

For questions in Part 2: I was able to connect to the MySQL server and found the following databases with the command `SHOW DATABASES;`. There are 14 databases on the server.

```
mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| bikes    |
| information_schema |
| kubedb_system |
| mysql    |
| performance_schema |
| ro_company1 |
| ro_employees |
| ro_query |
| ro_recipes |
| ro_research1 |
| ro_twitter |
| sakila   |
| sys      |
| world    |
+-----+
14 rows in set (0.05 sec)
```

For the tables in `ro_query`, I only found 2 tables in the database. They are `home_value_by_zip` and `taxdata`. Probably there are something wrong with the database or my query. Please point me to the right direction if I missed anything.

```
mysql> use ro_query
Database changed
mysql> SHOW TABLES;
+-----+
| Tables_in_ro_query |
+-----+
| home_value_by_zip  |
| taxdata            |
+-----+
2 rows in set (0.06 sec)
```

In the `taxdata` table, there are 12 columns in the table.

```
mysql> DESC taxdata;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
ein	int	YES		NULL	
name	varchar(255)	YES		NULL	
year	int	YES		NULL	
revenue	bigint	YES		NULL	
expenses	bigint	YES		NULL	
purpose	text	YES		NULL	
ptid	varchar(255)	YES		NULL	
ptname	varchar(255)	YES		NULL	
city	varchar(255)	YES		NULL	
state	varchar(255)	YES		NULL	
url	varchar(255)	YES		NULL	

```
12 rows in set (0.05 sec)
```

There are 443308 rows in the `titles` table.

```
mysql> USE ro_employees;
Reading table information for completion of table and column
You can turn off this feature to get a quicker startup with -

Database changed
mysql> SHOW TABLES;
```

Tables_in_ro_employees
departments
dept_emp
dept_manager
employees
salaries
titles

```
6 rows in set (0.05 sec)

mysql> SELECT * FROM titles;
```

emp_no	title	from_date	to_date
10001	Senior Engineer	1986-06-26	9999-01-01
10002	Staff	1996-08-03	9999-01-01
10003	Senior Engineer	1995-12-03	9999-01-01
10004	Engineer	1986-12-01	1995-12-01
10004	Senior Engineer	1995-12-01	9999-01-01
10005	Senior Staff	1996-09-12	9999-01-01
10005	Staff	1989-09-12	1996-09-12
10006	Senior Engineer	1990-08-05	9999-01-01
499992	Senior Staff	1992-05-09	9999-01-01
499992	Staff	1987-05-10	1992-05-09
499993	Engineer	1997-04-07	9999-01-01
499994	Engineer	1993-02-22	1993-10-27
499995	Engineer	1997-06-02	9999-01-01
499996	Engineer	1996-05-13	2002-05-13
499996	Senior Engineer	2002-05-13	9999-01-01
499997	Engineer	1987-08-30	1992-08-29
499997	Senior Engineer	1992-08-29	9999-01-01
499998	Senior Staff	1998-12-27	9999-01-01
499998	Staff	1993-12-27	1998-12-27
499999	Engineer	1997-11-30	9999-01-01

```
443308 rows in set (1.42 sec)
```

Please let me know if you have any additional questions. Thank you so much!

Best,
Jonas