

Tutorial Example

Let's consider the authors and books example with two tables:

Authors Table: (authors.txt)

<i>ID</i>	<i>SURNAME</i>	<i>NATIONALITY</i>	<i>DECEASED</i>
1	Tukey	US	Yes
2	Venables	Australia	No
3	Tierney	US	No
4	Ripley	UK	No
5	McNeil	Australia	No

Books Table: (books.txt)

<i>ID</i>	<i>NAME</i>	<i>TITLE</i>
1	Tukey	Exploratory Data Analysis
2	Venables	Modern Applied Statistics
3	Tierney	LISP-STAT
4	Ripley	Spatial Statistics
5	Ripley	Stochastic Simulation
6	McNeil	Interactive Data Analysis
7	R Core	An Introduction to R

RMySQL

```
library(RMySQL);
drv <- dbDriver("MySQL");

# establish a connection to the MySQL database
con <- dbConnect(drv, user = "student", password="student",
dbname="bmi217_winter0809");

# read the data into R
authors <- read.delim("authors.txt", sep = ",", header=T);
books <- read.delim("books.txt", sep = ",", header=T);

# load the data from R into MySQL creating the needed tables
# these two lines will not work for you, since you only have read
access
dbWriteTable(con, "authors", authors, row.names = F);
dbWriteTable(con, "books", books, row.names = F);

query = "SELECT * FROM authors WHERE nationality LIKE 'US'";
author_query <- dbSendQuery(con, query);
result <- fetch(author_query);
dbHasCompleted(author_query);
```

SQL

```
mysql -ustudent -pstudent;
```

SHOW DATABASES;

Database
information_schema
bmi217_pset3
bmi217_winter0809
test

4 rows in set (0.00 sec)

USE bmi217_winter0809;

Database changed

SHOW tables;

Tables_in_bmi217_winter0809
authors
books

2 rows in set (0.00 sec)

DESCRIBE authors;

Field	Type	Null	Key	Default	Extra
ID	bigint(20)	YES		NULL	
SURNAME	text	YES		NULL	
NATIONALITY	text	YES		NULL	
DECEASED	text	YES		NULL	

4 rows in set (0.00 sec)

DESCRIBE books;

Field	Type	Null	Key	Default	Extra
ID	bigint(20)	YES		NULL	
NAME	text	YES		NULL	
TITLE	text	YES		NULL	

3 rows in set (0.00 sec)

SELECT * FROM books;

ID	NAME	TITLE
1	Tukey	Exploratory Data Analysis
2	Venables	Modern Applied Statistics
3	Tierney	LISP-STAT
4	Ripley	Spatial Statistics
5	Ripley	Stochastic Simulation
6	McNeil	Interactive Data Analysis
7	R Core	An Introduction to R

7 rows in set (0.01 sec)

SELECT * FROM authors;

ID	SURNAME	NATIONALITY	DECEASED
1	Tukey	US	Yes
2	Venables	Australia	No
3	Tierney	US	No
4	Ripley	UK	No
5	McNeil	Australia	no

5 rows in set (0.00 sec)

SELECT COUNT(*) FROM authors;

COUNT(*)
5

1 row in set (0.05 sec)

SELECT DISTINCT name FROM books;

name
Tukey
Venables
Tierney
Ripley
McNeil
R Core

```
+-----+
6 rows in set (0.02 sec)
```

```
SELECT title FROM books WHERE name LIKE "Ripley";
```

```
+-----+
| title                |
+-----+
| Spatial Statistics   |
| Stochastic Simulation |
+-----+
2 rows in set (0.00 sec)
```

```
SELECT * FROM books WHERE title LIKE "S%";
```

```
+-----+-----+-----+
| ID  | NAME  | TITLE                |
+-----+-----+-----+
| 4   | Ripley | Spatial Statistics   |
| 5   | Ripley | Stochastic Simulation |
+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
SELECT name, COUNT(*) FROM books GROUP BY name;
```

```
+-----+-----+
| name      | COUNT(*) |
+-----+-----+
| McNeil    | 1        |
| R Core    | 1        |
| Ripley    | 2        |
| Tierney   | 1        |
| Tukey     | 1        |
| Venables  | 1        |
+-----+-----+
6 rows in set (0.00 sec)
```

```
SELECT title, name, nationality FROM books, authors WHERE books.name = authors.surname AND nationality LIKE "US";
```

```
+-----+-----+-----+
| title                | name    | nationality |
+-----+-----+-----+
| Exploratory Data Analysis | Tukey   | US         |
| LISP-STAT            | Tierney | US         |
+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
select authors.nationality from books, authors where books.name =  
authors.surname;
```

```
+-----+  
| nationality |  
+-----+  
| US          |  
| Australia  |  
| US         |  
| UK         |  
| UK         |  
| Australia  |  
+-----+
```

```
6 rows in set (0.01 sec)
```

```
#Where versus having, the following line won't work  
select surname as pickedName from authors where pickedName="Ripley";
```

```
ERROR 1064 (42000): You have an error in your SQL syntax; check the  
manual that corresponds to your MySQL server version for the right  
syntax to use near 'Ripley' at line 1
```

```
#Temporary variables (pickedName) require that you use "having"  
select surname as pickedName from authors having pickedName="Ripley";
```

```
#the following two lines won't work, since you have read access only  
DROP TABLE books;
```

```
DROP TABLE authors;
```