

Database

MySQL

What is database ?



Files (txt, excel and etc.)



users.txt

```
Hayk,Avdalyan,1994,info@ipc.com  
Vanik,Barseghyan,1998,vanik@gmail.com  
Aram,Hovsepyan,1964,aram64@mail.ru
```



Administration.txt



Companies.txt



Countries.txt



Users.txt



My Database

Table

Name	Surname	Birthday	Email
Hayk	Avdalyan	1994	info@ipc.com
Vanik	Barseghyan	1998	vanik@gmail.com
Aram	Hovsepyan	1964	aram64@mail.ru

MySQL

1. **MySQL Community Server**
<http://dev.mysql.com/downloads/mysql/>
2. **MySQL Workbench**
<http://dev.mysql.com/downloads/workbench/>

MySQL Create Database Command

```
CREATE DATABASE <Name of Database>;
```

Example:

```
CREATE DATABASE users;
```

MySQL Workbench

Local instance MySQL57 x

File Edit View Query Database Server Tools Scripting Help

Navigator

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

SCHEMAS

Filter objects

- sys
- user

SQL File 3*

1. CREATE DATABASE users;

SQLAdditions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Output

Action Output

Time	Action	Message	Duration / Fetch
------	--------	---------	------------------

Information

No object selected

Object Info Session

Create table syntax

```
CREATE TABLE table_name
(
  column_name1 data_type(size),
  column_name2 data_type(size),
  column_name3 data_type(size),
  ....
);
```

User table example

```
1 • CREATE TABLE users(  
2   firstname varchar(35),  
3   lastname  varchar(60),  
4   birthday  int,  
5   email     text  
6 );
```

INSERT INTO Statement

```
INSERT INTO table_name  
VALUES (value1,value2,value3,...);
```

OR

```
INSERT INTO table_name (column1,column2,column3,...)  
VALUES (value1,value2,value3,...);
```

Insert example

```
INSERT INTO users  
values ('Hayk', 'Avdalyan', 1994, 'info@ipc.com');
```

```
INSERT INTO users (users.firstname, users.birthday)  
values ('Hayk', 1994);
```

UPDATE Statement

```
UPDATE table_name  
SET column1=value1,column2=value2,...  
WHERE some_column=some_value;
```

Update example 1

```
UPDATE users  
SET email='avdalyanhayk@gmail.com'  
WHERE firstname='Hayk';
```

Update example 2

```
UPDATE users  
SET email='avdalyanhayk@gmail.com'  
WHERE firstname='Hayk' AND lastname='Avdalyan';
```

```
UPDATE users  
SET email='avdalyanhayk@gmail.com'  
WHERE firstname='Hayk' OR birthday=2000;
```


DELETE Syntax

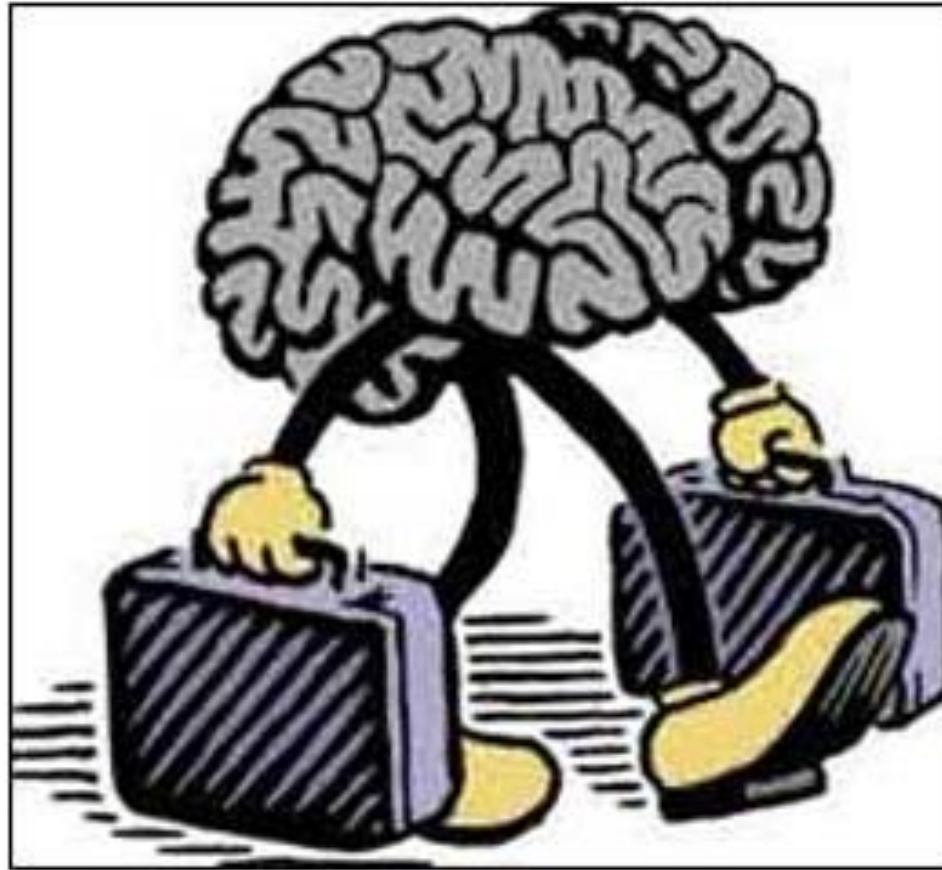
```
DELETE FROM table_name  
WHERE some_column=some_value;
```


Delete example

```
DELETE FROM users where  
birthday=2000;
```

```
DELETE FROM users where  
firstname='Hayk' AND birthday=2000;
```

Is your brain still with you ?



SELECT Statement

```
SELECT column_name,column_name  
FROM table_name;
```

```
SELECT * FROM table_name;
```

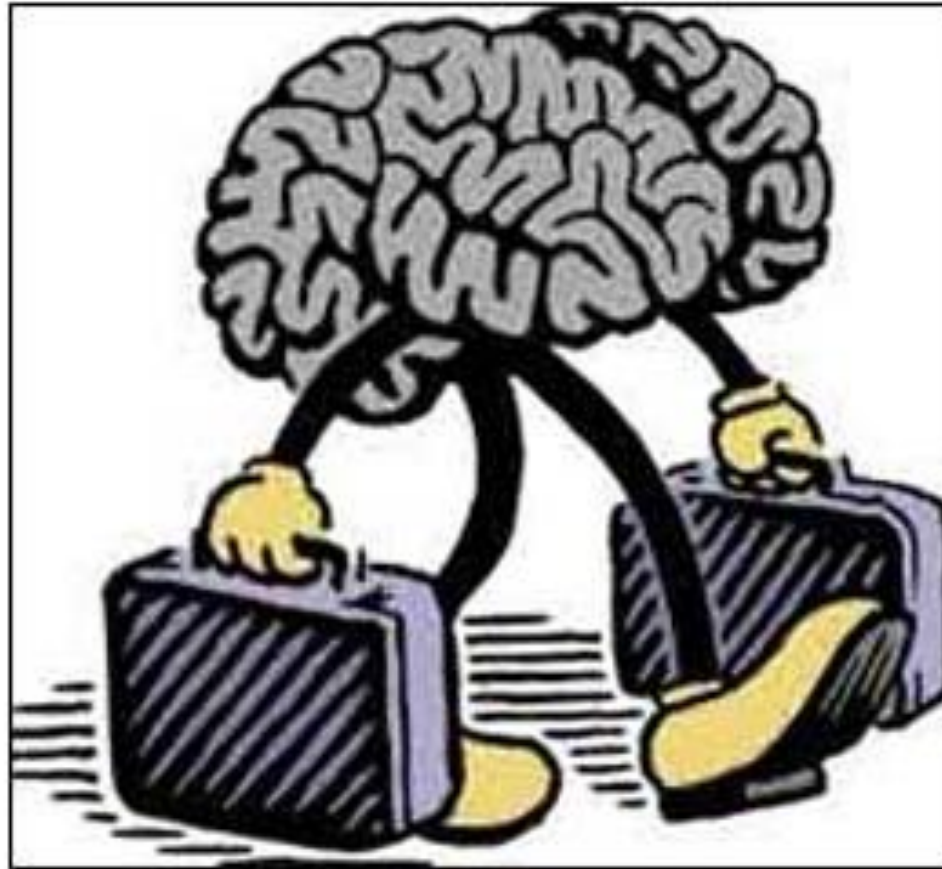
```
select * from users;
```

firstname	lastname	birthday	email
Hayk	Avdalyan	1994	info@ipc.com
Ani	Barseghyan	2000	ani@ipc.com
Anna	Kmrtchyan	1992	anna@ipc.com

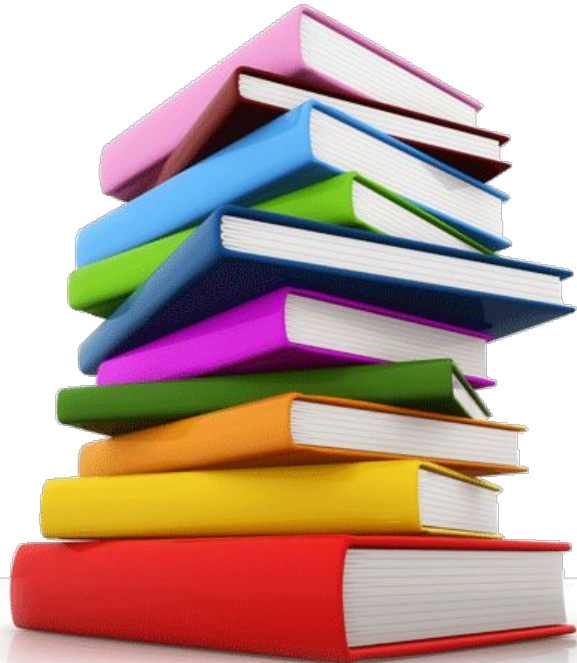
```
select firstname,email from users;
```

firstname	email
Hayk	info@ipc.com
Ani	ani@ipc.com
Anna	anna@ipc.com

And now ?



Library database



```
create database library;
```

Authors - Countries

many to one relationship

Author

1. Id
2. Name
3. Country_id



Country

1. Id
2. Name



one to many relationship

Create Table Country

```
create table countries(  
    id int NOT NULL AUTO_INCREMENT PRIMARY KEY,  
    country_name text  
);
```


Add countries

```
insert into countries (country_name)  
values ('Armenia');
```

```
insert into countries (country_name)  
values ('USA');
```

```
insert into countries (country_name)  
values ('Russia');
```

id	country_name
1	Armenia
2	USA
3	Russia

Create Table Authors

```
create table authors(  
    id int NOT NULL AUTO_INCREMENT PRIMARY KEY,  
    author_name text,  
    country_id int  
);
```

Add authors

```
insert into authors (author_name,country_id)
values ('Raffi',1);
```

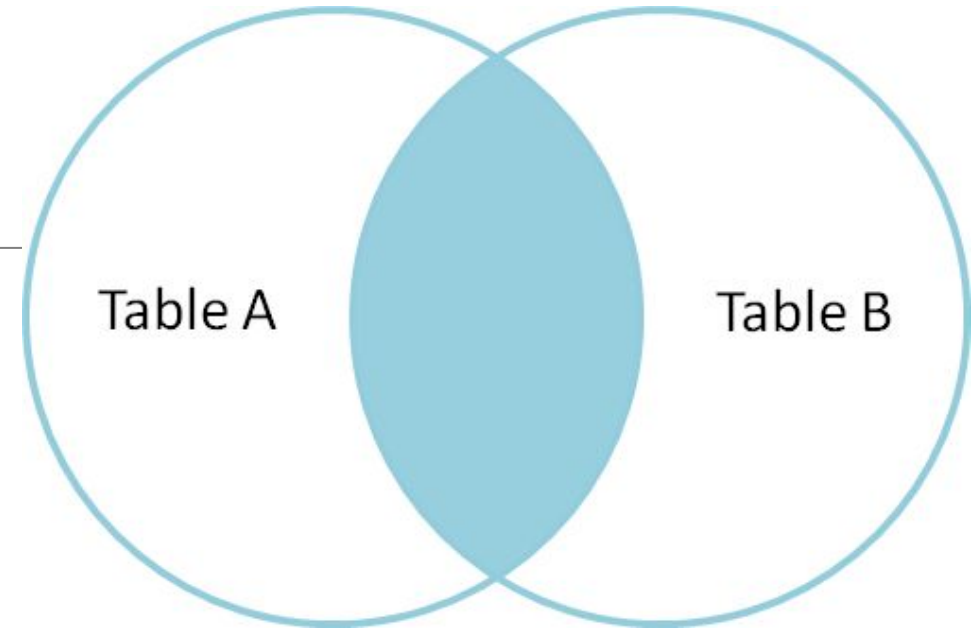
```
insert into authors (author_name,country_id)
values ('Muracan',1);
```

```
insert into authors (author_name,country_id)
values ('Pushkin',3);
```

```
insert into authors (author_name,country_id)
values ('Schildt',2);
```

id	author_name	country_id
1	Raffi	1
2	Muracan	1
3	Pushkin	3
4	Schildt	2

Inner join



```
SELECT column_name(s)
FROM table1
INNER JOIN table2
ON table1.column_name=table2.column_name;
```

Show all authors and their countries

```
select author_name,countries.country_name  
from authors inner join countries  
on country_id = countries.id;
```

author_name	country_name
Raffi	Armenia
Muracan	Armenia
Pushkin	Russia
Schildt	USA

Bu ha ha ha ...



Table books

Book

1. Id
2. Name
3. ISBN
4. Release_date

```
create table books(  
    id int NOT NULL AUTO_INCREMENT PRIMARY KEY,  
    book_name text,  
    isbn text,  
    release_date int  
);
```

But Book can have many authors

Add books

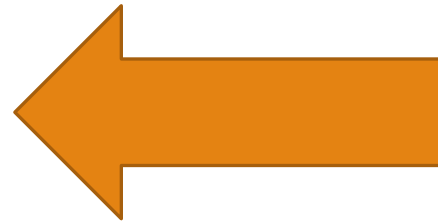
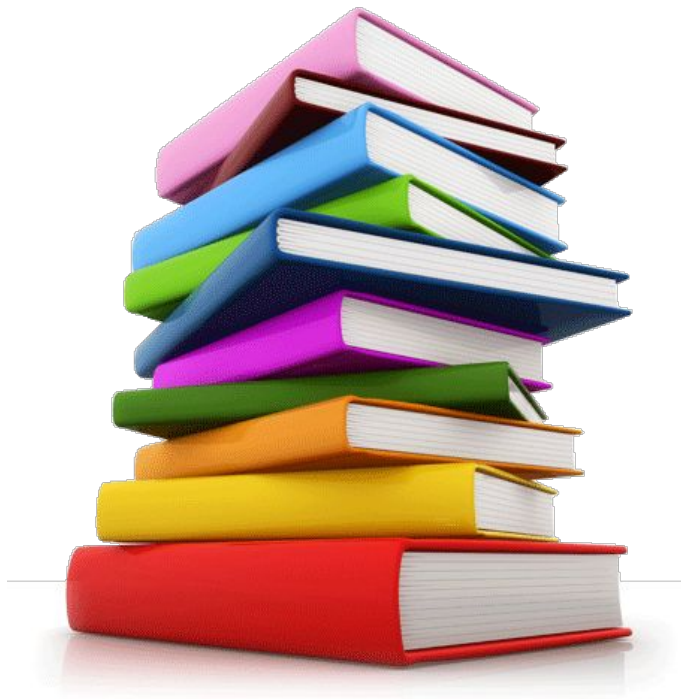
```
insert into books (book_name,isbn,release_date)  
values ('Samvel','ISBN-33-23Bnd',2000);
```

```
insert into books (book_name,isbn,release_date)  
values ('Java','ISBN-3ee3-33rs35',2015);
```

```
insert into books (book_name,isbn,release_date)  
values ('Poltava','ISBN-33-23erw34',1999);
```

id	book_name	isbn	release_date
1	Samvel	ISBN-33-23Bnd	2000
2	Java	ISBN-3ee3-33rs35	2015
3	Poltava	ISBN-33-23erw34	1999

Many to many



Solving many to many relationship

```
create table books_authors(  
    b_id int NOT NULL,  
    a_id int NOT NULL  
);
```

b_id	a_id
1	1
2	4
3	3

```
insert into books_authors (b_id,a_id)  
values (1,1);
```

```
insert into books_authors (b_id,a_id)  
values (2,4);
```

```
insert into books_authors (b_id,a_id)  
values (3,3);
```

Final Query

```
select author_name,countries.country_name,books.book_name
from authors inner join countries
on country_id = countries.id inner join books_authors
on authors.id = books_authors.a_id inner join books
on books_authors.b_id = books.id;
```

Result

author_name	country_name	book_name
Raffi	Armenia	Samvel
Pushkin	Russia	Poltava
Schildt	USA	Java