Database

MySQL

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What is database ?

Files (txt, excel and etc.)


```
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/

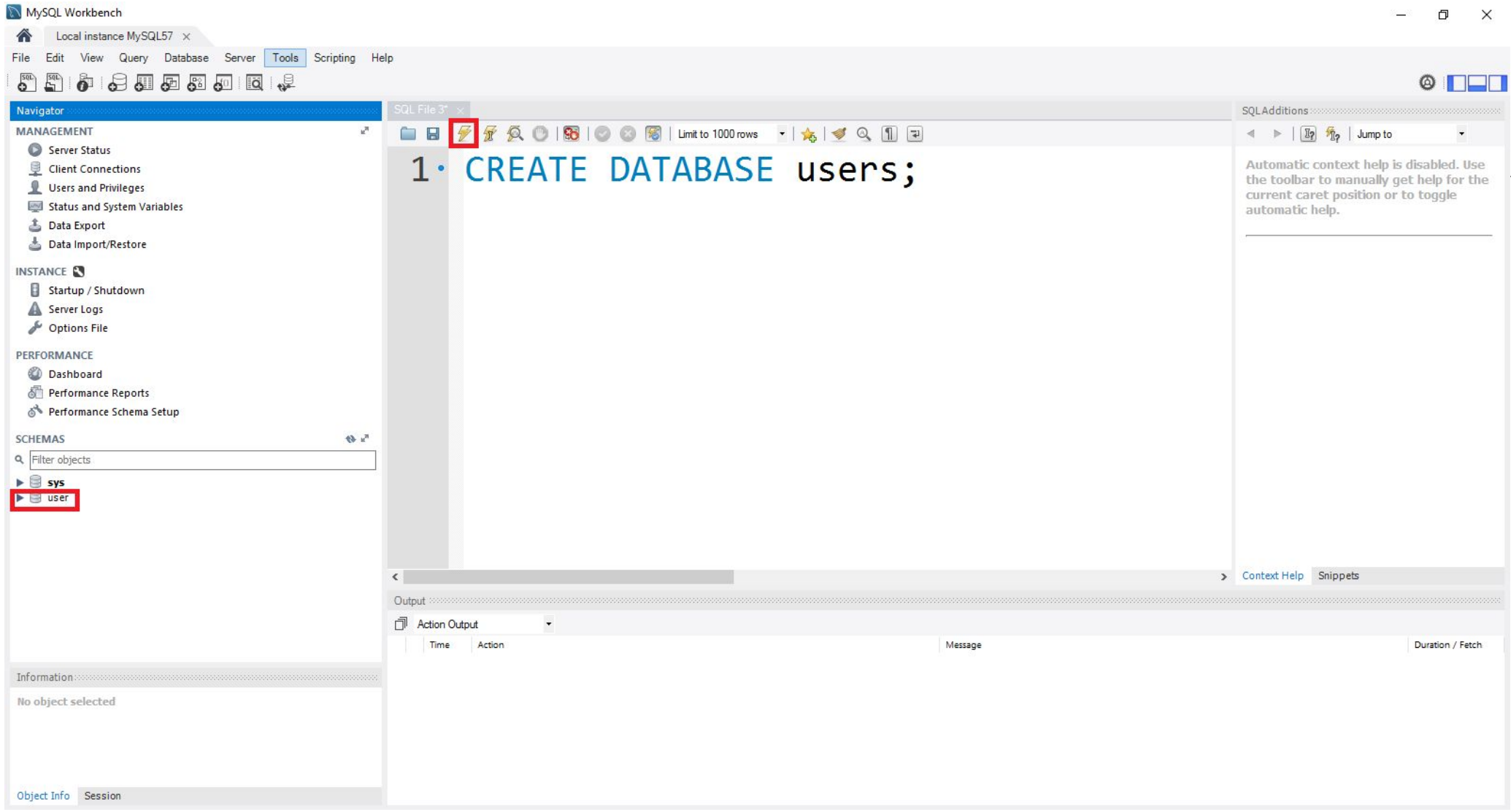
2. **MySQL Workbench**
   http://dev.mysql.com/downloads/workbench/

MySQL Create Database Command

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

Example:

```
CREATE DATABASE users;
```


MySQL Workbench
Local instance MySQL57
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
Information
No object selected
Object Info
Session
SQL File 3*
Limit to 1000 rows
1 CREATE DATABASE users;
SQLAdditions
Jump to
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Context Help
Snippets
Output
Action Output
Time
Action
Message
Duration / Fetch

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;
```

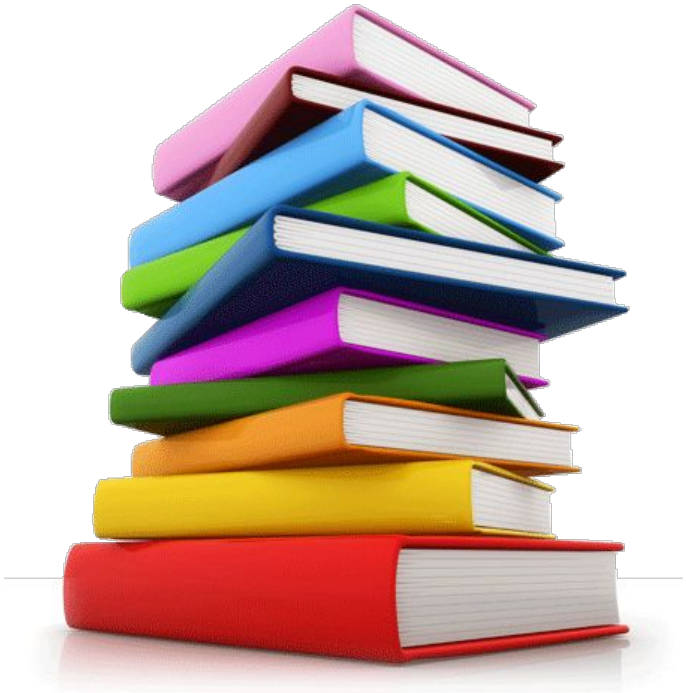
firstname	lastname	birthday	email
Hayk	Avdalyan	1994	info@ipc.com
Ani	Barseghyan	2000	ani@ipc.com
Anna	Kmrtchyan	1992	anna@ipc.com

```
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

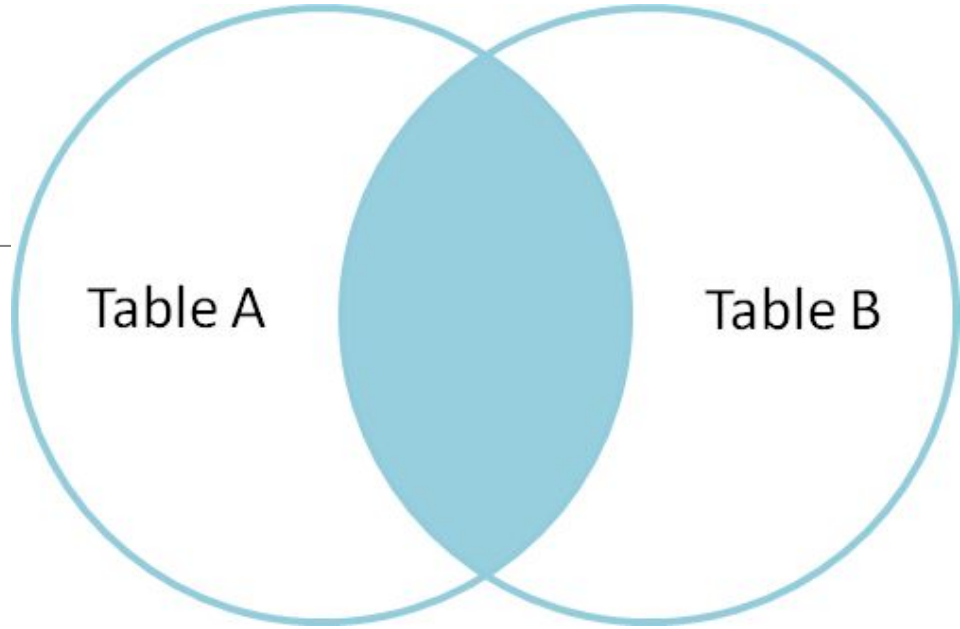
```
create table authors(
    id int NOT NULL AUTO_INCREMENT PRIMARY KEY,
    author_name text,
    country_id int
);
```

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
);
```

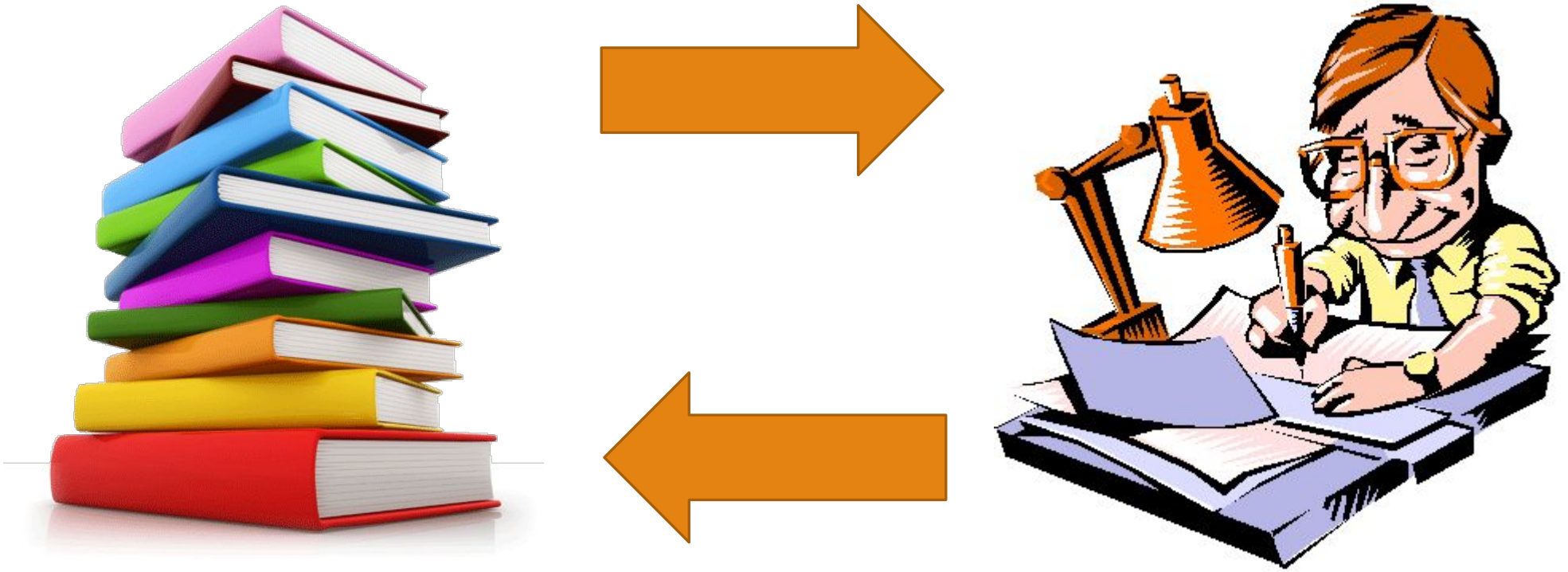
But Book can have many authors

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