



Tools for MySQL

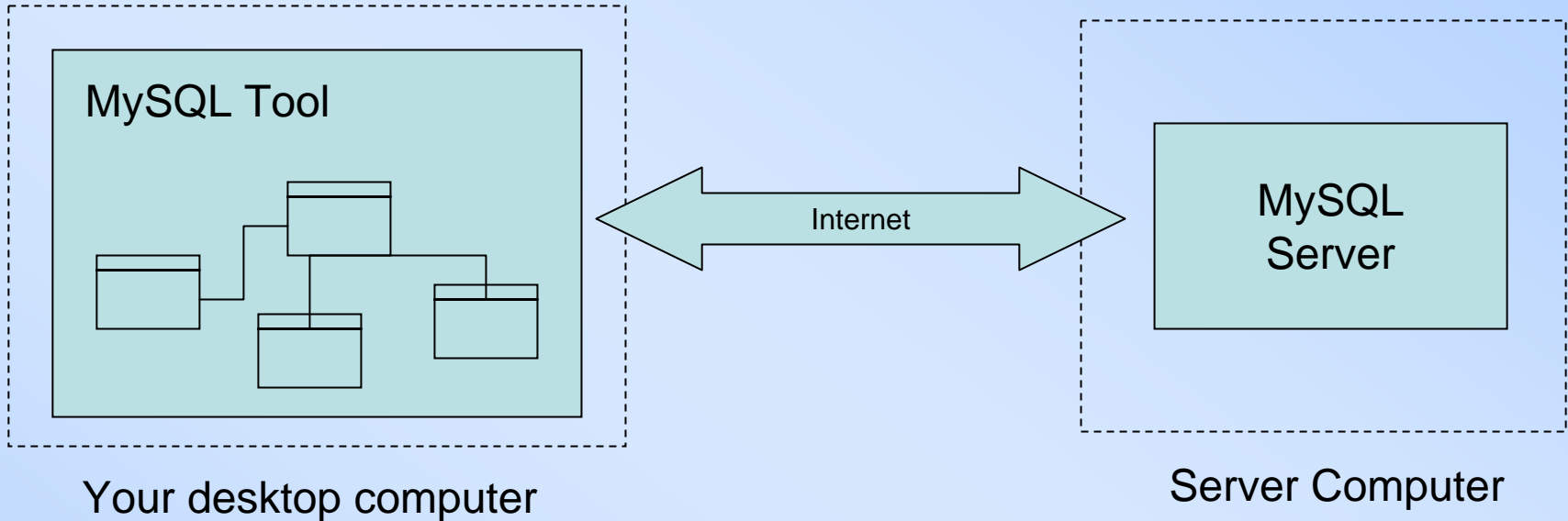
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Common Concepts



- Tools are usually graphical (whereas database software are not).
- Tools may run on a different computer than the database server software.
- Tools need to log into database programs in order to issue commands to it.
- Typical flow of work:
 1. Open tool
 2. Connect to database (requires server name, login, and password)
 3. View/modify database using the tool.



Tools for MySQL

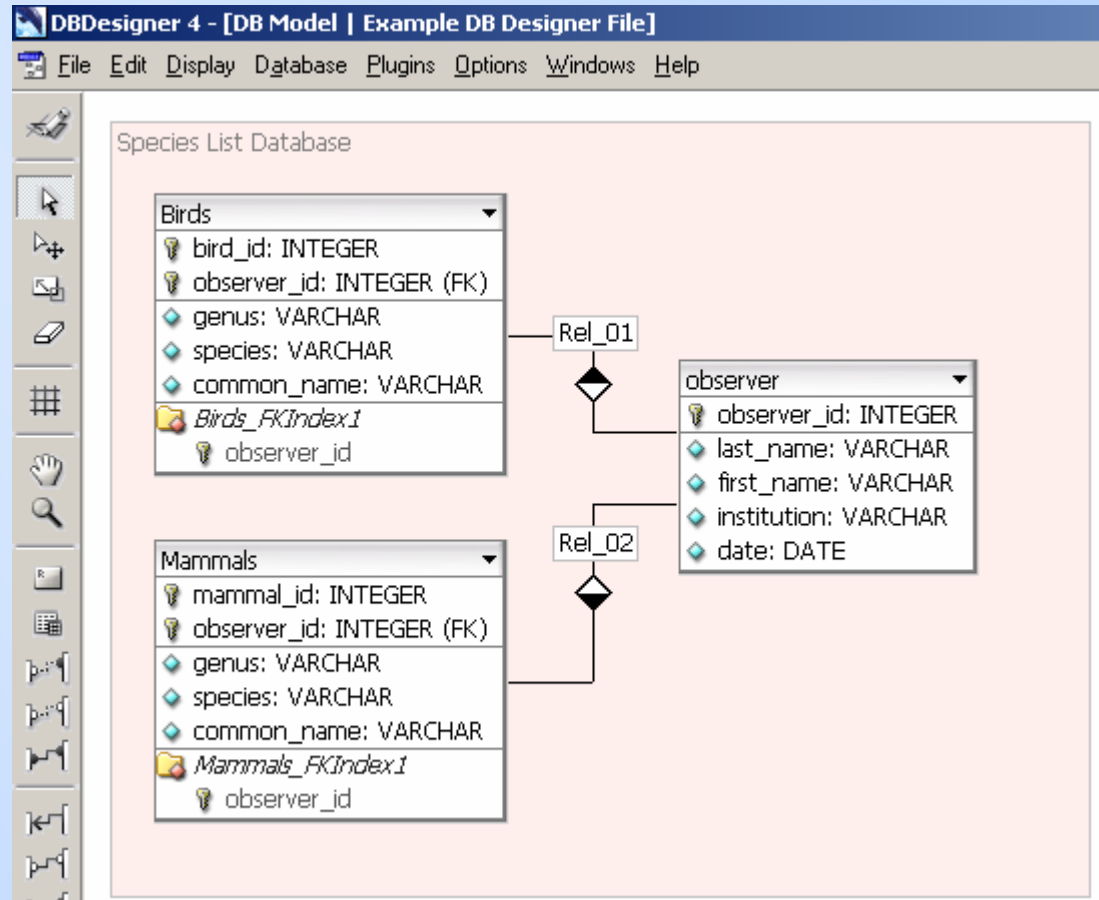
- PhpMyAdmin – general tool
- DB Designer – draw diagrams
- MySQL Admin – monitor database
- MySQL Query Browser – develop complex queries

Also: a good text editor: TextPad (pc) or BBEdit (Mac)



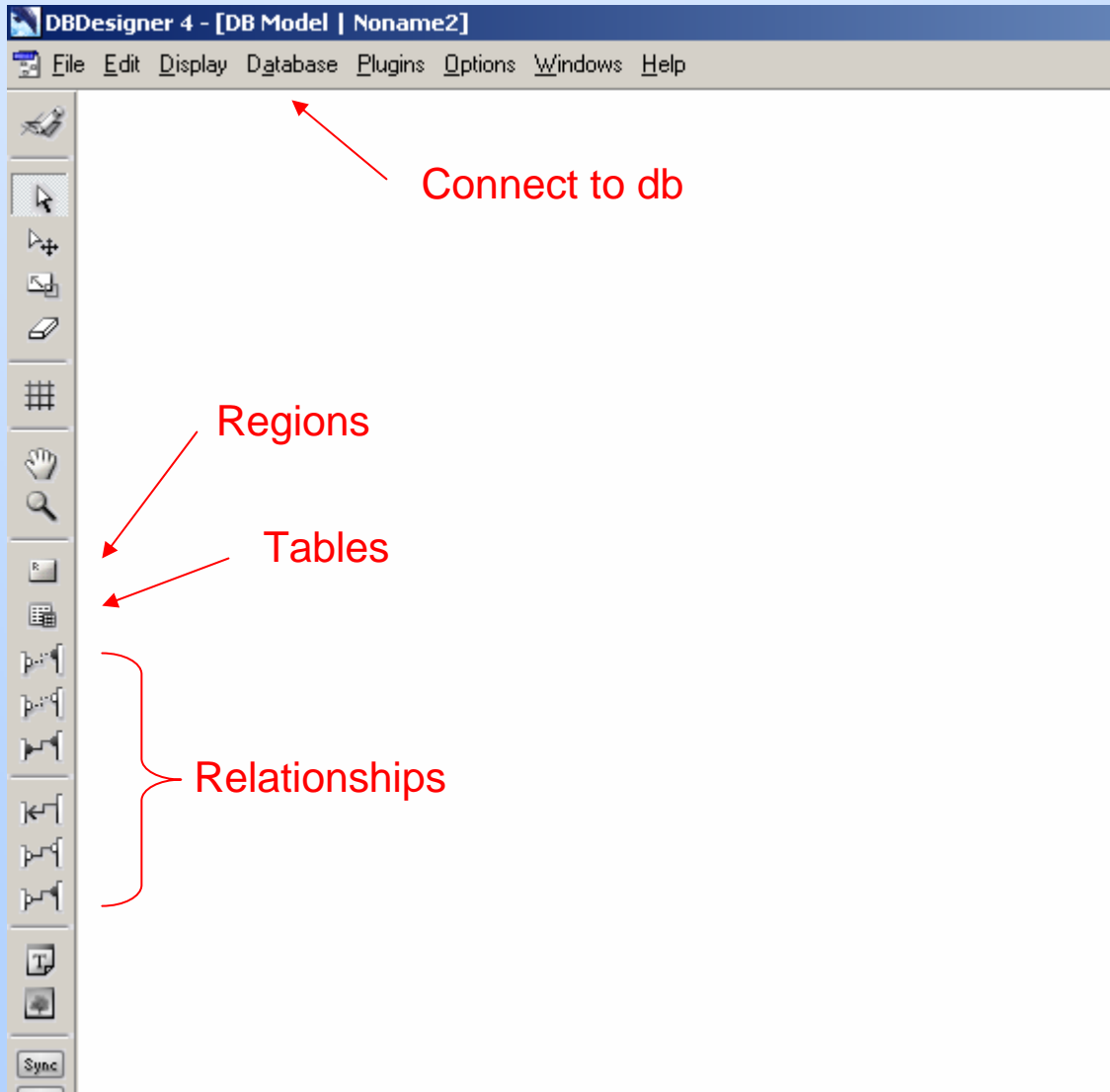
DB Designer Overview

- Lets you sketch out database design as a diagram (**Entity-Relationship Diagram**).
- Actual database is created/modified when you **synchronize** with the database.
- Can also **reverse-engineer a diagram** from an existing database.
- Good for visual documentation.





Using *DB Designer*

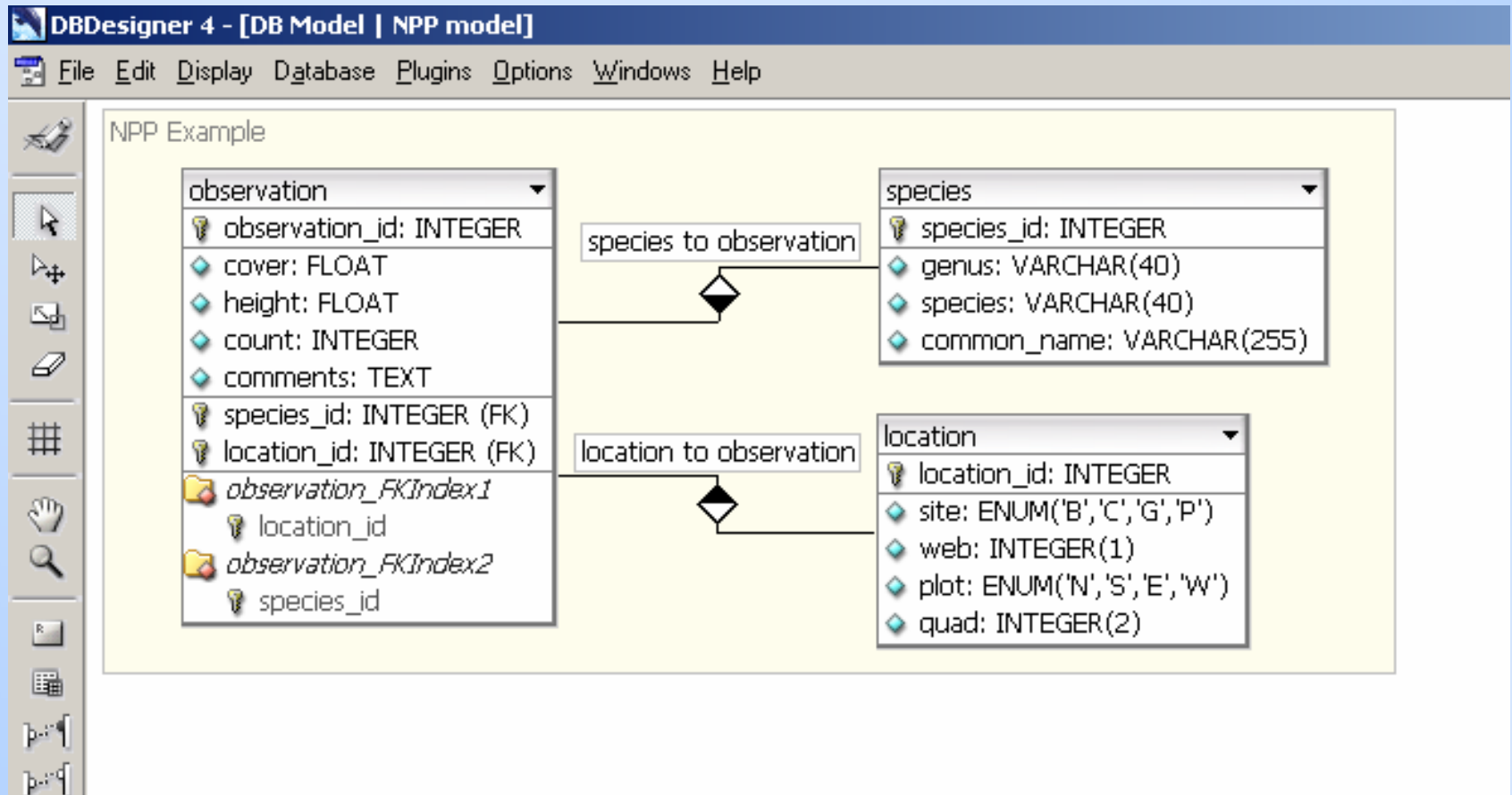


Works like a drawing program:

1. Pick an item to draw (e.g., table or relationship)
2. Draw it on canvas
3. When done, synchronize with database server



DB Designer Example





MySQL Admin Overview

- Configure server
- Set up MySQL users
- Monitor health
- Create & edit databases & tables (structures)
- Back-up & restore tables

The screenshot shows the MySQL Administrator application window titled "MySQL Administrator - root@localhost:3309". The interface includes a menu bar (File, Edit, View, Tools, Window, Help) and a left-hand navigation pane with the following items:

- Server Information (selected)
- Service Control
- Startup Variables
- User Administration
- Server Connections
- Health
- Server Logs
- Replication Status
- Backup
- Restore
- Catalogs

The main content area displays the following information:

Server status:
MySQL Server is running.

Connected to MySQL Server Instance

Username:	root
Hostname:	localhost
Port:	3309

Server Information

MySQL Version:	MySQL 5.0.24a-commun
Network Name:	localhost
IP:	127.0.0.1

Client Information

Version:	MySQL Client Version 5.0
Network Name:	computer
IP:	127.0.0.1
Operating System:	Windows XP
Hardware:	Intel(R) Pentium(R) M pro



Using *MySQL Admin*

major functions

The screenshot displays the MySQL Administrator application window titled "MySQL Administrator - root@localhost:3309". The interface includes a menu bar (File, Edit, View, Tools, Window, Help) and a left-hand navigation pane. The navigation pane contains the following items: Server Information, Service Control, Startup Variables, User Administration, Server Connections, Health, Server Logs, Replication Status, Backup, Restore, and Catalogs. A red dashed circle highlights the "Health" item, with a red arrow pointing from the text "major functions" to it. The main area of the application shows the "Connection Health" tab selected, displaying client connection information. It includes three monitoring sections: "Connection Usage" (Usage 2%, Current: 2, Min: 0, Max: 0), "Traffic" (6 kB, Current: 6,187, Min: 0, Max: 0), and "Number of SQL Queries" (0, Current: 0, Min: 0, Max: 0). Each section features a small icon, a numerical value, and a line graph showing trends over time.



Connecting *MySQL Admin*

Tools → Manage Connections

Manage multiple MySQL servers

Options

Category

- Administrator
- General Options
- Connections
- Editors

Connections

- Connections
 - RCN Training
 - fs.sdsu.edu
 - localhost
- History

Connection Parameters | Advanced Parameters

Connection: RCN Training

Username: rcn_admin

Password:

Hostname: marsh.lternet.edu

Port: 3306 Type: MySQL

Schema: rcn_admin

Notes:

Add new Connection Delete

Apply Discard Close

MySQL server,
login & passwd



Useful Feature: User Administration

User Administration → Select a user

What are they allowed to do?

The screenshot shows the MySQL Administrator interface. The 'User Administration' tab is selected in the left sidebar. The main window displays the configuration for the user 'testuser, (test user account)'. The 'Schema Privileges' tab is active, showing a list of schemas and their assigned privileges. The 'Assigned Privileges' list contains 'SELECT', which is circled in red. The 'Available Privileges' list includes various database operations like INSERT, UPDATE, DELETE, etc. The 'Users Accounts' list at the bottom left shows 'root' and 'testuser'.

Schemata	Assigned Privileges	Available Privileges
information_schema	SELECT	INSERT, UPDATE, DELETE, CREATE, DROP, GRANT, REFERENCES, INDEX, ALTER, CREATE_TMP_T..., LOCK_TABLES, CREATE_VIEW, SHOW_VIEW, CREATE_ROUTI..., ALTER_ROUTINE, EXECUTE
innodb		
mysql		
test		



Useful Feature: Disk Space Usage

Catalogs → Select a table

Disk space usages

The screenshot shows the MySQL Administrator interface. The left sidebar contains a 'Catalogs' section with a tree view showing the 'mysql' schema selected. The main window displays a table listing all tables in the 'mysql' schema, including their engine, row count, data length, and index length. A red dashed circle highlights the 'Data length' and 'Index length' columns, with a red arrow pointing to the text 'Disk space usages'.

Table Name	Engine	Rows	Data length	Index length
columns_priv	MyISAM	0	0 B	1 kB
db	MyISAM	2	0.9 kB	4 kB
func	MyISAM	0	0 B	1 kB
help_category	MyISAM	36	20.4 kB	3 kB
help_keyword	MyISAM	380	73.1 kB	15 kB
help_relation	MyISAM	729	6.4 kB	12 kB
help_topic	MyISAM	460	250 kB	16 kB
host	MyISAM	0	0 B	1 kB
proc	MyISAM	0	0 B	1 kB
procs_priv	MyISAM	0	0 B	1 kB
tables_priv	MyISAM	0	0 B	1 kB
time_zone	MyISAM	0	0 B	1 kB
time_zone_leap_second	MyISAM	0	0 B	1 kB
time_zone_name	MyISAM	0	0 B	1 kB
time_zone_transition	MyISAM	0	0 B	1 kB
time_zone_transition_type	MyISAM	0	0 B	1 kB
user	MyISAM	2	172 B	2 kB
user_info	MyISAM	1	44 B	3 kB



MySQL Query Browser Overview

Helps develop queries by:

- Keeping track of queries
- Let you compare query results side by side
- Let you edit data
- Providing drag-n-drop
- Easy reference

The screenshot shows the MySQL Query Browser interface. The title bar reads "MySQL Query Browser - zialab25@marsh.lternet.edu:3306 / zialab25". The menu bar includes File, Edit, View, Query, Script, Tools, Window, and Help. The query editor contains the text "SELECT * FROM authors". Below the query editor are buttons for "Go back", "Next", and "Refresh". To the right are "Execute" and "Stop" buttons. The main area displays "Resultset 1" with a table of data:

author_id	ISBN	name
1	4873895759	Smith, A.B.
2	4873895759	Gordon, D.A.
3	0493802020	Doe, J.
4	7482929292	Kim, J.B.
5	2234849302	Kim, J.B.

On the right side, the "Schemata" panel shows a tree view with "test" and "zialab25" databases. Under "zialab25", there are "authors", "books", and "publishers" tables. The "Syntax" panel at the bottom right lists categories: "Data Manipulation", "Data Definition", "MySQL Utility", and "Transactional and Locking". The status bar at the bottom indicates "5 rows fetched in 0.0236s (0.1987)" and includes buttons for "Edit", "Apply Changes", "Discard Changes", "First", "Last", and "Search".



Using *MySQL Query Browser*

Enter queries

The screenshot shows the MySQL Query Browser interface. The query editor at the top contains the text `SELECT * FROM authors`. Below the editor is a table with 5 rows of data. To the right is a 'Schemata' panel showing a tree view of databases and tables. At the bottom right is a 'Syntax' panel with a list of SQL command categories. Red dashed circles and arrows highlight the query editor, the result set table, the schema tree, and the syntax panel.

author_id	ISBN	name
1	4873895759	Smith, A.B.
2	4873895759	Gordon, D.A.
3	0493802020	Doe, J.
4	7482929292	Kim, J.B.
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Schemata: test, zialab25 (authors, books, publishers)

Syntax: Data Manipulation, Data Definition, MySQL Utility, Transactional and Locking

Drag & drop tables

View & edit results

Command reference



Recommended Uses of *MySQL Query Browser*

- Develop/evolve a complex query by trial & error
- Develop/evolve a series of queries
- Compare query results side by side
- Edit query results