***SERVER NOTES***

**SQL:** (Structured Query Language) is a standardized programming language used for managing relational databases and performing various operations on the data in them.

**mySQL:** a database engine (server) for the SQL language.

**GOOD PRACTICES**

*1. Remember the **CLIENT is NEVER SECURE** !*

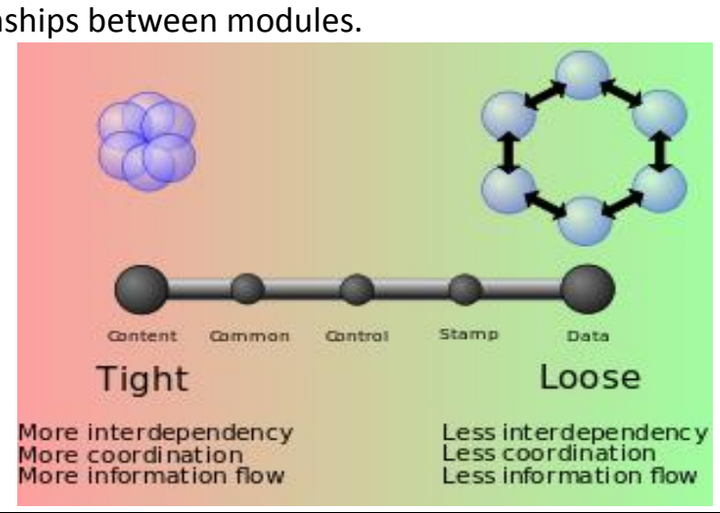
*2. W3schools has the best mySQL documentation.*

| SYMBOLS |
|---|
| -- (mySQL) 2 dashes and a space in front of text, comments code out. |
| **../** - (console) up one level |
| **cd ..//** - (console) root folder |
| **CTL/CMD + C** - Stops the server (*THE SERVER USES NODE SCRIPT* ) |

| SERVER DATABASE CONTENT | |
|---|---|
| ***STATIC*** | ***DYNAMIC*** |
| **Public Assets**<br>**Images**<br>**Files** | **jQuery**<br>**Data** |

| KEYWORDS |
|---|
| **app.use** - (UNIQUE TO EXPRESS) tells EXPRESS to use MIDDLEWARE. |
| **axios** - (Node.js) a Promise-based HTTP client for JavaScript which can be used in your front-end application and in your Node.js backend. By using Axios, it's easy to send asynchronous HTTP request to REST endpoints and perform CRUD operations. |
| **DESC (mySQL) -** When sorting your result set in descending order, you use the DESC attribute in your ORDER BY clause as follows: SELECT last_name, first_name, city FROM contacts WHERE last_name = 'Johnson' ORDER BY city DESC; This MySQL ORDER BY example would return all records sorted by the city field in descending order. |
| **dirname** - absolute path, relative to the file that it's written in. |
| **FOREIGN KEY** (mySQL) - Key that exists in a database table to reference another table. |
| **fs** (Node.js) - file system module allows you to work with the file system on your computer. To include the File System module, use the require() method: var fs = require('fs'); |
| **INNER JOIN** (SQL) - only returns cells where table queries intersect. |
| **NOT NULL** (SQL) - required |
| **path.join -** (SQL) A join path brings two tables together in a query by using one or more joins. There are two types of join paths—direct and indirect. If the two tables are directly related to each other (one table has a foreign key that references the primary key in the other table), then a direct join path is available that consists of a single join between the two tables. An indirect join path is one that consists of two or more joins through other tables. |
| **PRIMARY KEY** (mySQL) - builds index (should be auto-incremented). A specific choice of columns which uniquely identify rows is called the primary key. |
| **req** - Shorthand for request |
| **res** - Shorthand for response |
| **response.end -** Required to stop server from waiting for a response (stops response cycle). |

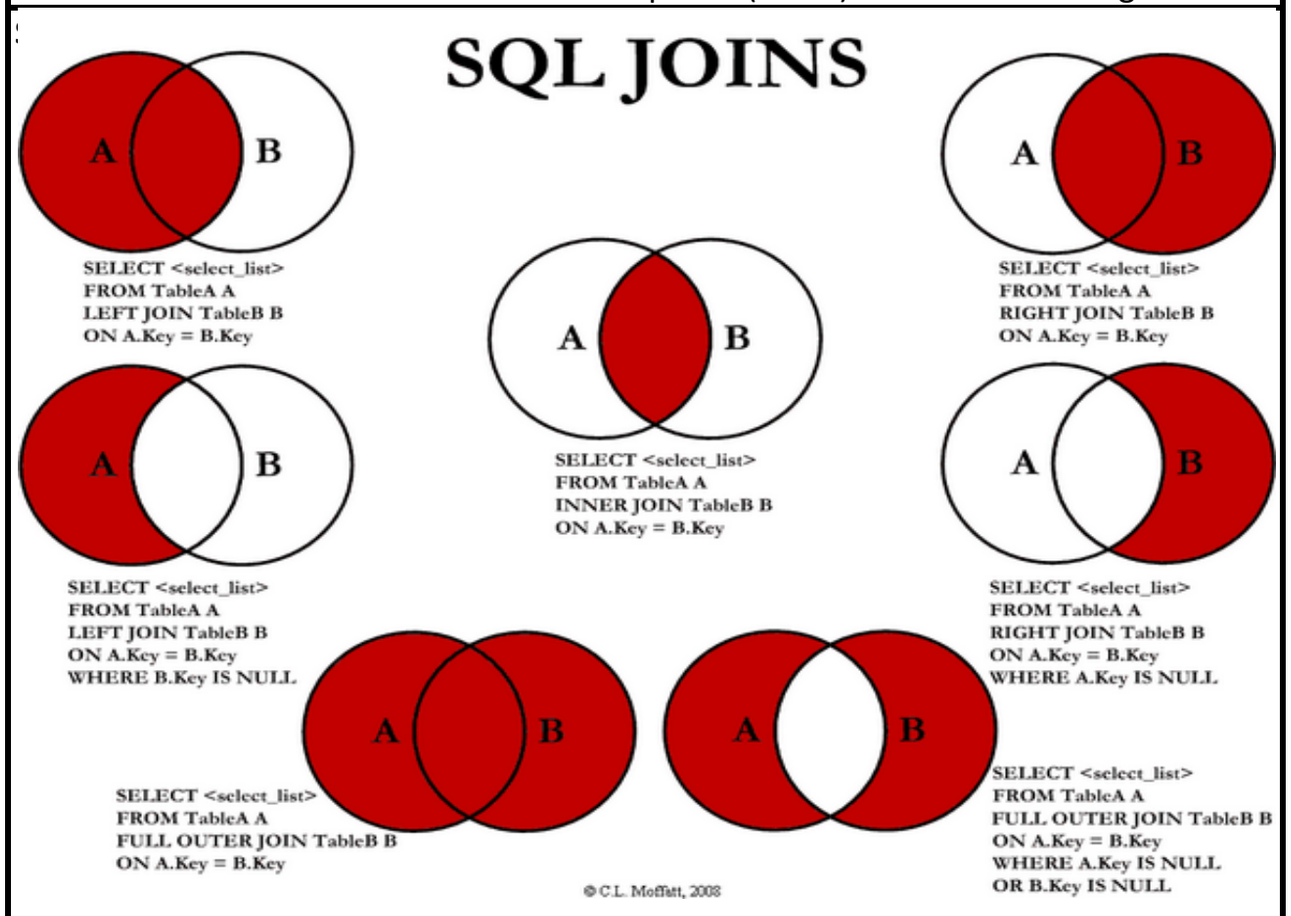
| CONCEPTS |
|---|
| **CLIENT SIDE LOGIC:** The client never ineracts with the database, only the server. Client side code is public, including: HTML pages and client-side javascript. |
| **LOCAL SERVER:** Only works when terminal is open and listening on PORT. |
| **MAPPING URLs:** to specific responses (CONDITIONALS), not dynamic location. Checking the request method and checking the request path. |
| **mySQL:** a server used to create databases, cannot store complex datatypes. |
| **POSTMAN:** Software used to test the response of HTTP requests, changing the method. |

| VOCABULARY |
|---|
| **DATABASE:** a structured set of data held in a computer, especially one that is accessible in various ways. |
| **DATA PERSISTENCE:** the data survives after the process with which it was created has ended. In other words, for a data store to be considered persistent, it must write to non-volatile storage. |
| **DATASET:** a collection of related sets of information that is composed of separate elements but can be manipulated as a unit by a computer. |
| **DECOUPLED:** In software engineering, coupling is the degree of interdependence between software modules; a measure of how closely connected two routines or modules are; the strength of the relationships between modules.   |
| **EXPRESS:** Framework for Node that writes servers. Is unopinionated (having minimal requirements). EXPRESS is a built in package like FS (must be required in code). |
| **GUI:** Graphical User Interface |
| **HAPI.js:** an EXPRESS alternative. |
| **MIDDLEWARE:** (Unique to EXPRESS) stands between client & server and performs a function. |
| **MIME TYPES:** Ways to alert the browser how to render content (read/display the data). Different datatypes use different MIME types. |
| **NODE MON:** NPM package to watch for changes to the server.js and restart server. |
| **REST:** Representational State Transfer, set of practices to create a good user experience. |
| **RESTFUL APIs:** APIs that use HTTP requests to GET, PUT, POST, & DELETE. |
| **SCHEMA:** Database structure |
| **SEEDS:** Database content |
| **SEED DATA:** set of data that is provided to a database when it is being installed . |

**RELATIVE PATH:** Not relative to the file location, BUT the folder where the code is executed.

**SERVER REQUIREMENTS: 1. CREATE** the server; **2. INSTRUCT** the server; **3. LISTEN** for requests.

**SERVER SIDE LOGIC:** Not accessible to the public (client). aka "Business Logic"




**SQL QUIRIES**

sheet of several basic SQL queries for CRUD (Create, Read, Update, Delete) operations:

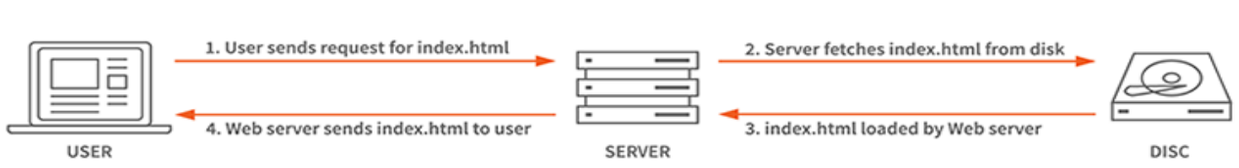
C --> `INSERT INTO <<table_name>> (<<column>>, <<column>>) VALUES (<<value>>, <<value>>);`

R --> `SELECT <<desired_columns>> FROM <<table_name>>;`

U --> `UPDATE <<table_name>> SET <<column>>=<<value>> WHERE <<condition>>;`

D --> `DELETE FROM <<table_name>> WHERE <<condition>>;` (edited)

**STATIC ASSET SERVICING:** Static content is any content that can be delivered to an end user without having to be generated, modified, or processed. The server delivers the same file to each user, making static content one of the simplest and most efficient content types to transmit over the Internet.




**SERVER:** a computer or computer program that manages access to a centralized resource or service in a network.

**TABLE:** A table is a collection of related data held in a structured format within a database. It consists of columns, and rows.

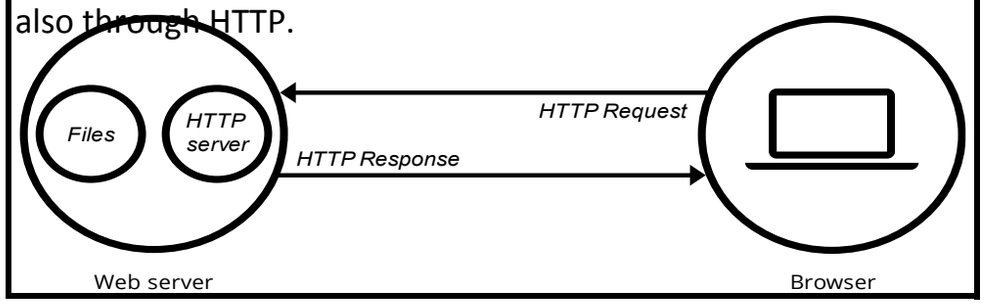
In relational databases, and flat file databases, a *table* is a set of data elements (values) using a model of vertical columns (identifiable by name) and horizontal rows, the cell being the unit where a row and column intersect. A table has a specified number of columns, but can have any number of rows. Each row is identified by one or more values appearing in a particular column subset.

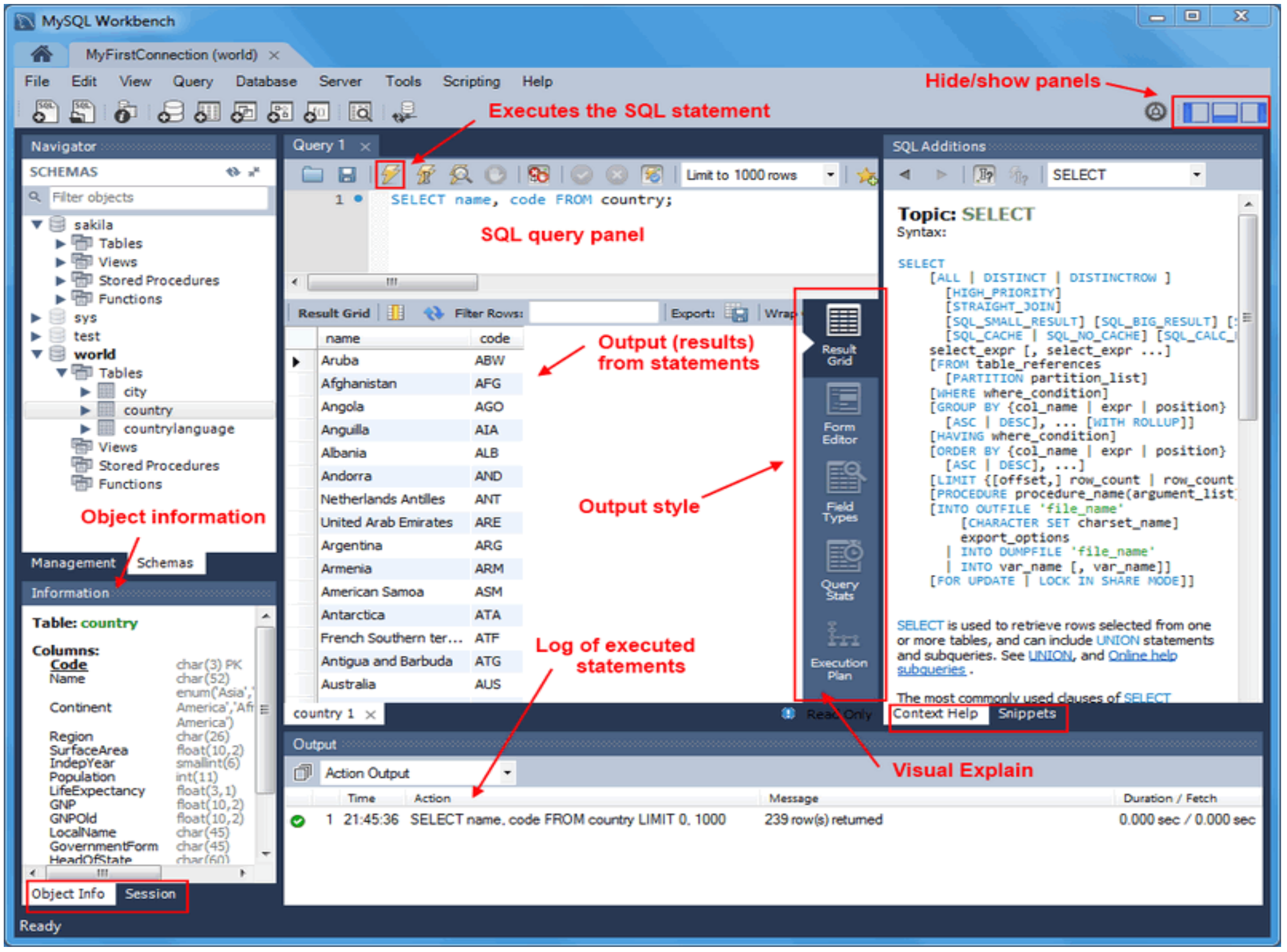
"Table" is another term for "relation"; although there is the difference in that a table is usually a multiset (bag) of rows where a relation is a set and does not allow duplicates. Besides the actual data rows, tables generally have associated with them some metadata, such as constraints on the table or on the values within particular columns.

The data in a table does not have to be physically stored in the database. Views also function as relational tables, but their data are calculated at query time. External tables (in Informix or Oracle, for example) can also be thought of as views.

**UX:** User experience

**WEB SERVER:** At the most basic level, whenever a browser needs a file which is hosted on a web server, the browser requests the file via HTTP. When the request reaches the correct web server (hardware), the HTTP server (software) accepts request, finds the requested document (if it doesn't then a 404 response is returned), and sends it back to the browser, also through HTTP.




MySQL Workbench
MyFirstConnection (world)
File Edit View Query Database Server Tools Scripting Help
Hide/show panels
Executes the SQL statement
Navigator
SCHEMAS
Filter objects
sakila
Tables
Views
Stored Procedures
Functions
sys
test
world
Tables
city
country
countrylanguage
Views
Stored Procedures
Functions
Object information
Management
Schemas
Information
Table: country
Columns:
Code char(3) PK
Name char(52)
Continent enum('Asia','America','Afr America')
Region char(26)
SurfaceArea float(10,2)
IndepYear smallint(6)
Population int(11)
LifeExpectancy float(3,1)
GNP float(10,2)
GNPOld float(10,2)
LocalName char(45)
GovernmentForm char(45)
HeadOfState char(60)
Object Info
Session
Query 1
Limit to 1000 rows
1 SELECT name, code FROM country;
SQL query panel
Result Grid
Filter Rows:
Export:
Wrap
name code
Aruba ABW
Afghanistan AFG
Angola AGO
Anguilla AIA
Albania ALB
Andorra AND
Netherlands Antilles ANT
United Arab Emirates ARE
Argentina ARG
Armenia ARM
American Samoa ASM
Antarctica ATA
French Southern ter... ATF
Antigua and Barbuda ATG
Australia AUS
Output (results) from statements
Output style
Log of executed statements
Result Grid
Form Editor
Field Types
Query Stats
Execution Plan
Visual Explain
country 1
Read Only
SQL Additions
SELECT
Topic: SELECT
Syntax:
SELECT
[ALL | DISTINCT | DISTINCTROW ]
[HIGH_PRIORITY]
[STRAIGHT_JOIN]
[SQL_SMALL_RESULT] [SQL_BIG_RESULT]
[SQL_CACHE | SQL_NO_CACHE] [SQL_CALC_
select_expr [, select_expr ...]
[FROM table_references
[PARTITION partition_list]
[WHERE where_condition]
[GROUP BY {col_name | expr | position}
[ASC | DESC], ... [WITH ROLLUP]]
[HAVING where_condition]
[ORDER BY {col_name | expr | position}
[ASC | DESC], ...]
[LIMIT {[offset,] row_count | row_count
[PROCEDURE procedure_name(argument_list
[INTO OUTFILE 'file_name'
[CHARACTER SET charset_name]
export_options
| INTO DUMPFILE 'file_name'
| INTO var_name [, var_name]]
[FOR UPDATE | LOCK IN SHARE MODE]]
SELECT is used to retrieve rows selected from one or more tables, and can include UNION statements and subqueries. See UNION, and Online help subqueries .
The most commonly used clauses of SELECT
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 21:45:36 SELECT name, code FROM country LIMIT 0, 1000 239 row(s) returned 0.000 sec / 0.000 sec
Ready