MySQL and Assignment

Just IT Skills Team

Areas of focus

- Creating database
- Writing SQL query and execution
- SQL query debugging
- Creating EER Diagram
- Understanding relationships
- Identifying primary and foreign key

Task 1: List the different types of relationships in relational databases and provide examples.

Task 2: What is Normalization and why is it important to database development?

Database

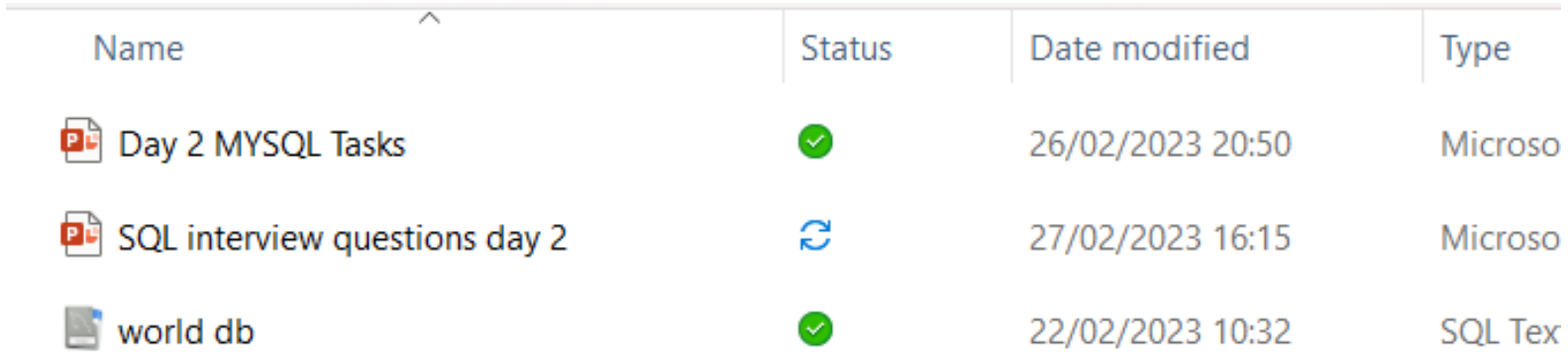
You will work on with “world” database from mysql website resources. Please refer to the link to learn more about this database.

Link: https://dev.mysql.com/doc/world-setup/en/

Please read Preface and Legal Notices.

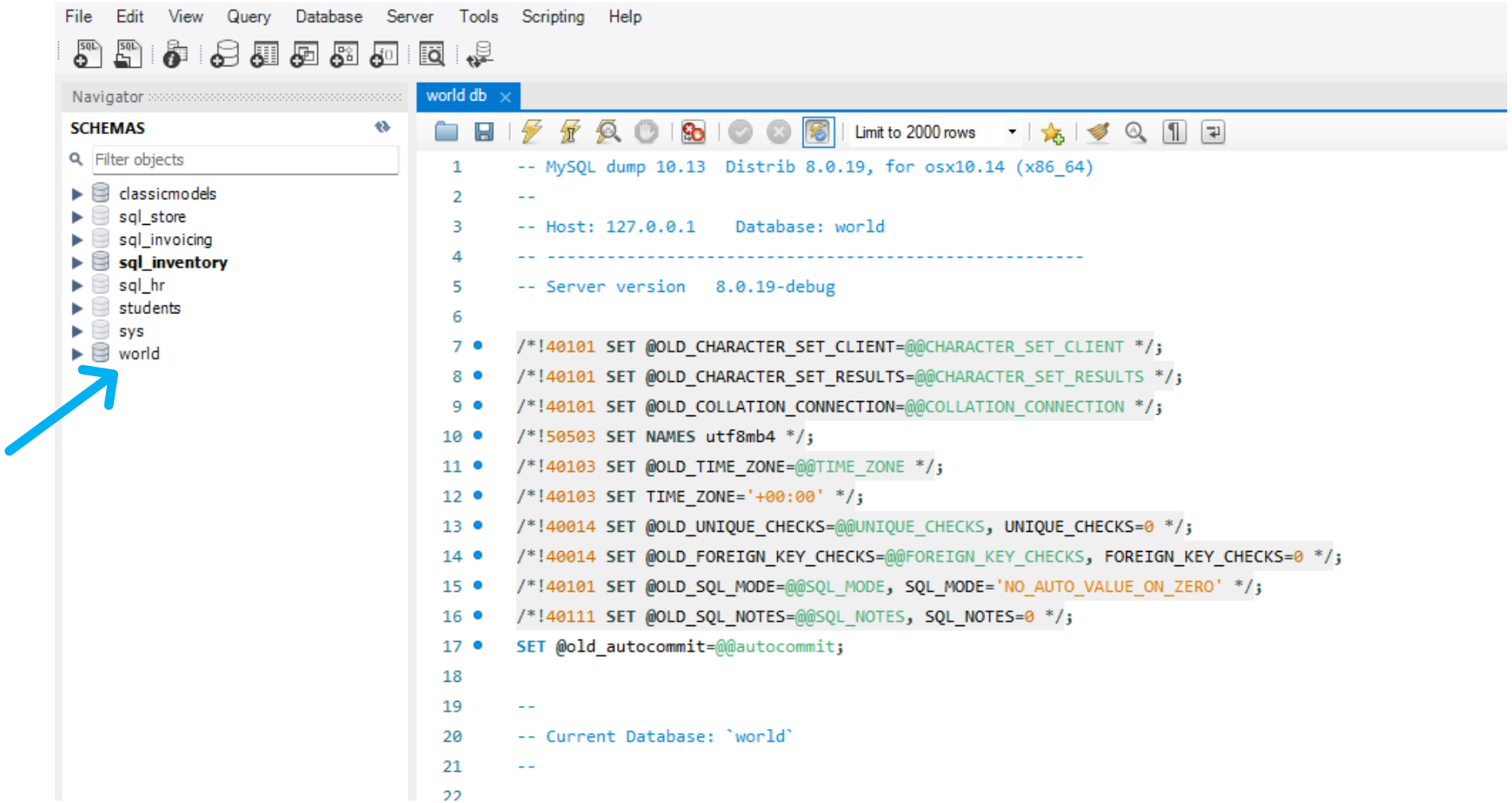
Download Database SQL Script

- You can find database in Teams files.



Import and Execute

- Import SQL Script “world db” and then execute the script. Refresh schemas and check if db “world” exits.



Once executed you will see the below actioned Output

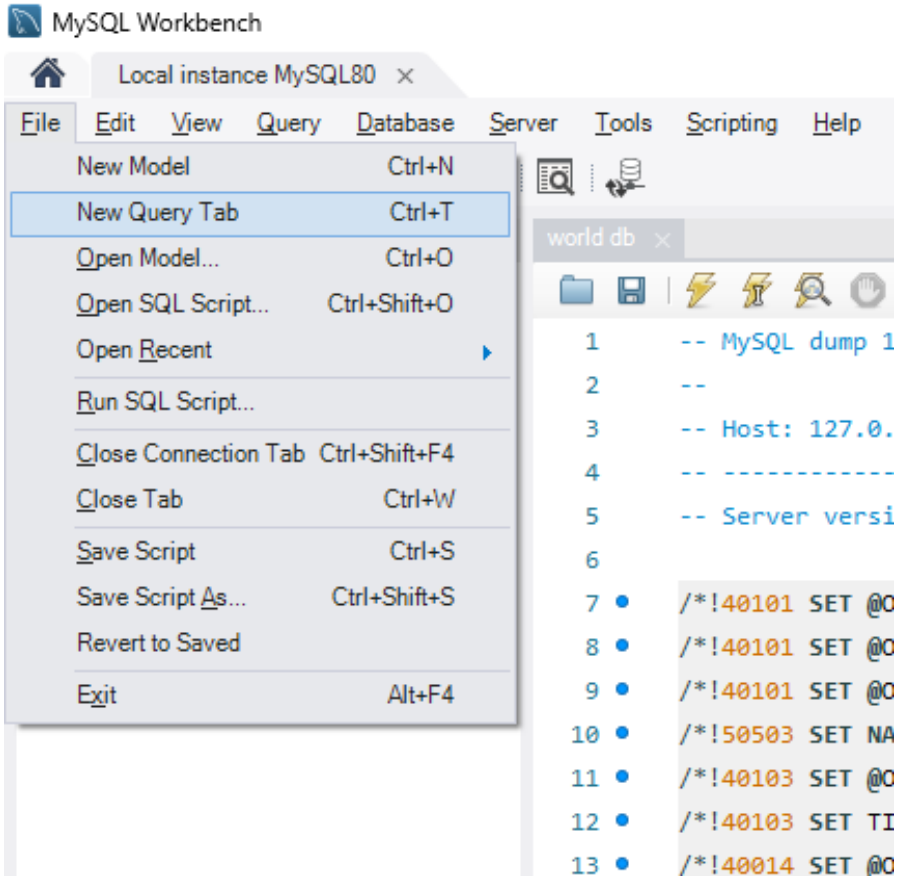
Output

Action Output

#	Time	Action	Message	Duration / Fetch
10844	11:51:00	INSERT INTO `countrylanguage` VALUES ('ZMB','Lozi','F',6.4)	1 row(s) affected	0.000 sec
10845	11:51:00	INSERT INTO `countrylanguage` VALUES ('ZMB','Nsenga','F',4.3)	1 row(s) affected	0.000 sec
10846	11:51:00	INSERT INTO `countrylanguage` VALUES ('ZMB','Nyanja','F',7.8)	1 row(s) affected	0.000 sec
10847	11:51:00	INSERT INTO `countrylanguage` VALUES ('ZMB','Tongan','F',11.0)	1 row(s) affected	0.000 sec
10848	11:51:00	INSERT INTO `countrylanguage` VALUES ('ZWE','English','T',2.2)	1 row(s) affected	0.000 sec
10849	11:51:00	INSERT INTO `countrylanguage` VALUES ('ZWE','Ndebele','F',16.2)	1 row(s) affected	0.000 sec
10850	11:51:00	INSERT INTO `countrylanguage` VALUES ('ZWE','Nyanja','F',2.2)	1 row(s) affected	0.000 sec
10851	11:51:00	INSERT INTO `countrylanguage` VALUES ('ZWE','Shona','F',72.1)	1 row(s) affected	0.000 sec
10852	11:51:00	commit	0 row(s) affected	0.016 sec
10853	11:51:00	/*!40103 SET TIME_ZONE=@OLD_TIME_ZONE */	0 row(s) affected	0.000 sec
10854	11:51:00	/*!40101 SET SQL_MODE=@OLD_SQL_MODE */	0 row(s) affected	0.000 sec
10855	11:51:00	/*!40014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS */	0 row(s) affected	0.000 sec
10856	11:51:00	/*!40014 SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS */	0 row(s) affected	0.000 sec
10857	11:51:00	/*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */	0 row(s) affected	0.000 sec
10858	11:51:00	/*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */	0 row(s) affected, 1 warning(s): 1287 'utf8mb3' is deprecated and will be removed in a future release. Please use utf8mb4 instead	0.000 sec
10859	11:51:00	/*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */	0 row(s) affected, 1 warning(s): 3778 'utf8mb3_general_ci' is a collation of the deprecated character set UTF8MB3. Please consider using UTF8MB...	0.000 sec
10860	11:51:00	/*!40111 SET SQL_NOTES=@OLD_SQL_NOTES */	0 row(s) affected	0.000 sec
10861	11:51:00	SET autocommit=@old_autocommit	0 row(s) affected	0.000 sec

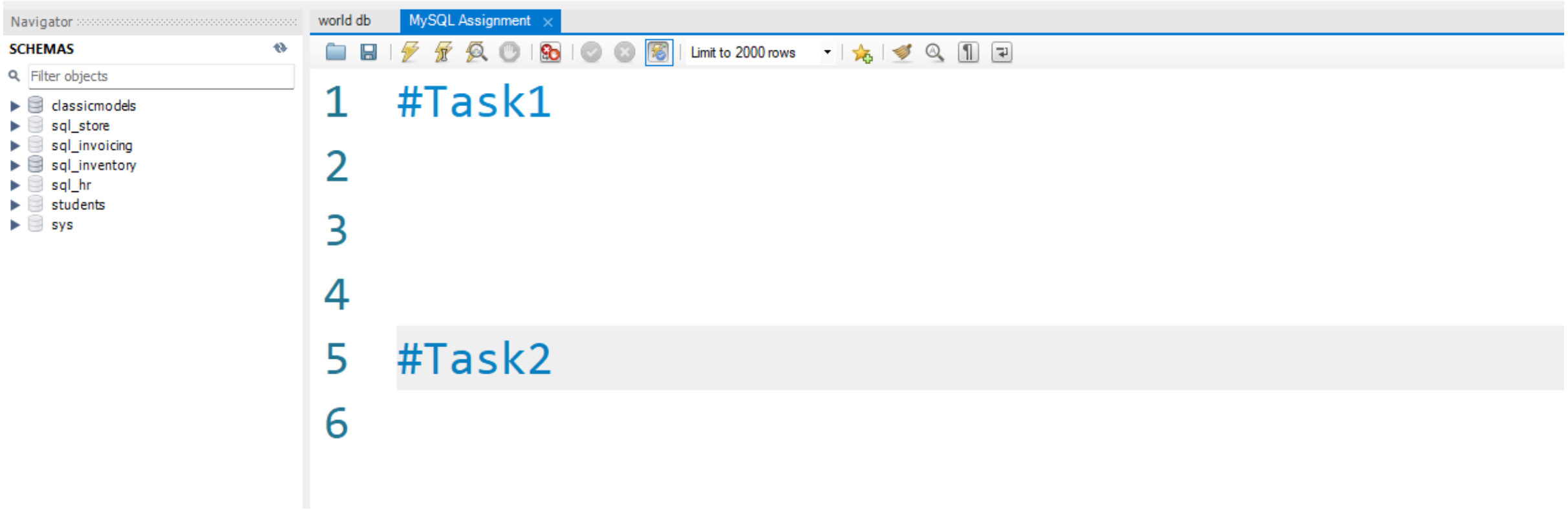
New Query Tab

- On your keyboard hold down Ctrl and T keys to open new query tab.
- Or you can do it from task bar



Saving Task and Queries

- Use # key to comment your tasks. You will need to save this query tab for trainers review later. Please use same query tab for all your tasks.



Task 3

Using `count`, get the number of cities in the USA

Task 4

Find out what the population and life expectancy for people in Argentina (ARG) is

Task 5

Using `ORDER BY`, `LIMIT`, what country has the highest life expectancy?

Task 6

Select 25 cities around the world that start with the letter 'F' in a single SQL query.

Task 7

Create a SQL statement to display columns `Id`, `Name`, `Population` from the `city` table and limit results to first `10` rows only.

Task 8

- Create a SQL statement to find only those cities from `city` table whose population is larger than `2000000`.

Task 9

- Create a SQL statement to find all city names from city table whose name begins with “Be” prefix.

Task 10

- Create a SQL statement to find only those cities from city table whose population is between 500000-1000000.

Task 11

- Create a SQL statement to find a city with the lowest population in the city table.

Task 12

- Create a SQL statement to show the population of Switzerland and all the languages spoken there.

Challenge Yourself

- **Task 13: Create a SQL statement to find the capital of Spain (ESP).**
- **Task 14: Create a SQL statement to find the country with the highest life expectancy.**
- **Task 15: Create a SQL statement to find all cities from the Europe continent.**
- **Task 16: Create a SQL statement to find the most populated city in the city table.**

Task 13: Creating an EER Diagram

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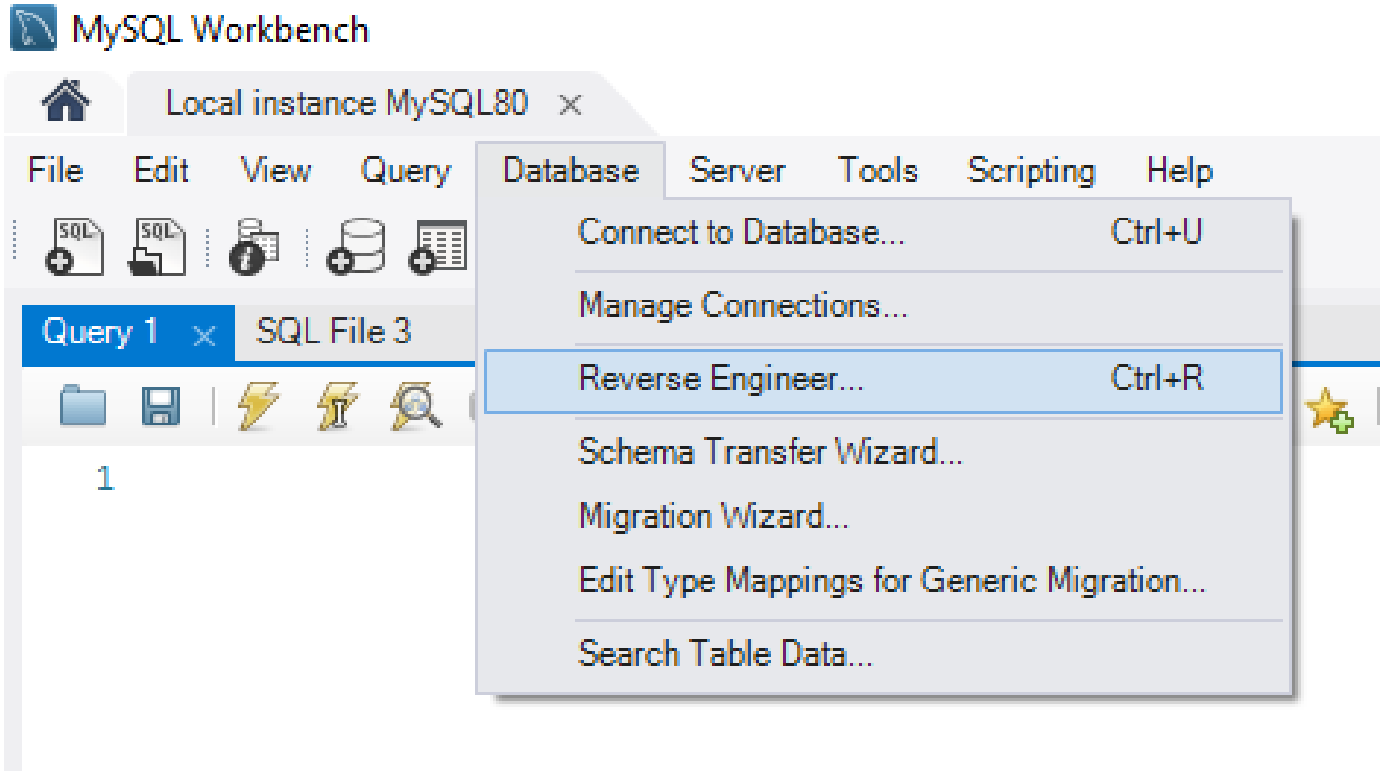
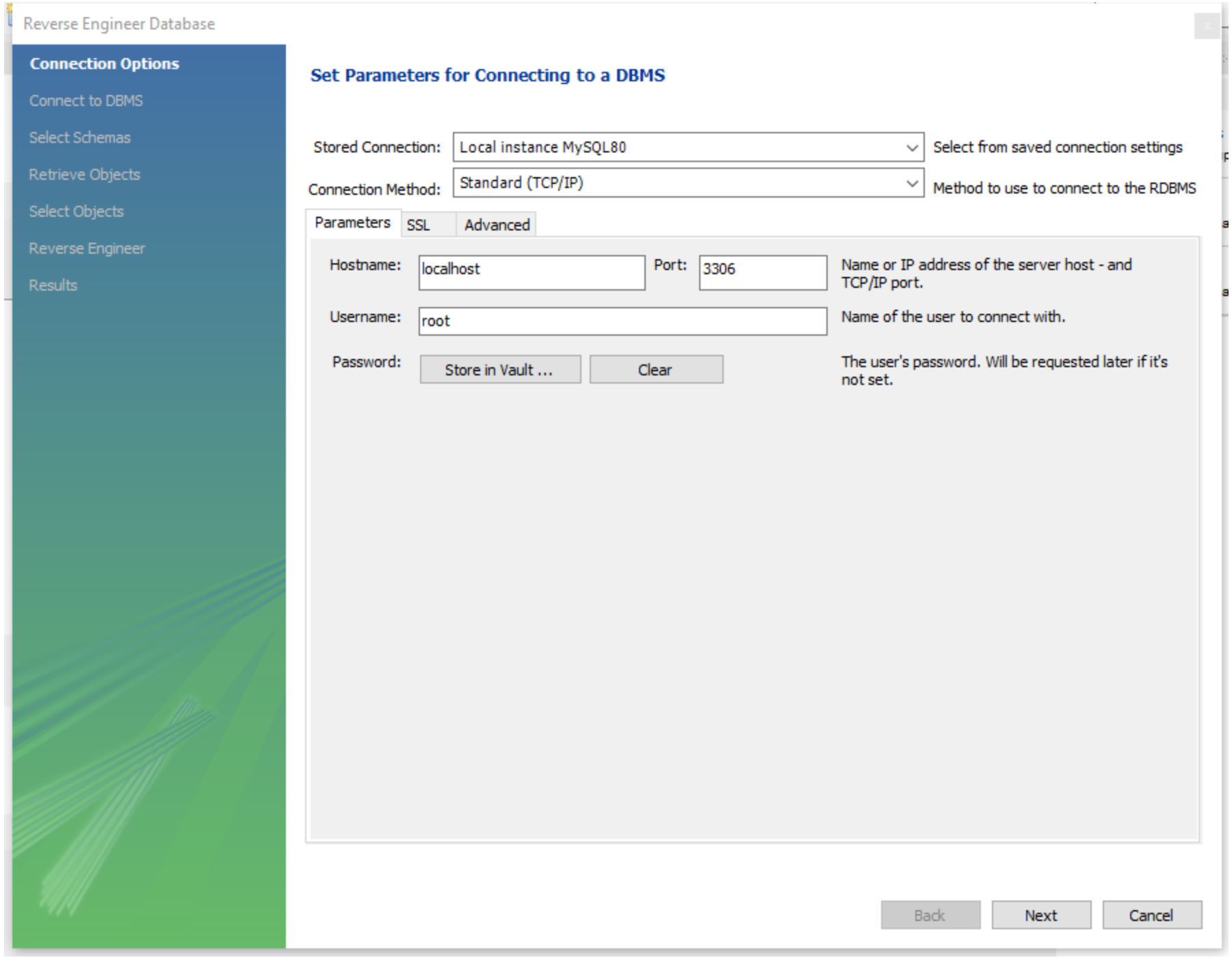

MySQL Workbench
Local instance MySQL80
File
Edit
View
Query
Database
Server
Tools
Scripting
Help
Connect to Database... Ctrl+U
Manage Connections...
Reverse Engineer... Ctrl+R
Schema Transfer Wizard...
Migration Wizard...
Edit Type Mappings for Generic Migration...
Search Table Data...
Query 1
SQL File 3
1


Reverse Engineer Database
Connection Options
Connect to DBMS
Select Schemas
Retrieve Objects
Select Objects
Reverse Engineer
Results
Set Parameters for Connecting to a DBMS
Stored Connection:
Local instance MySQL80
Select from saved connection settings
Connection Method:
Standard (TCP/IP)
Method to use to connect to the RDBMS
Parameters
SSL
Advanced
Hostname:
localhost
Port:
3306
Name or IP address of the server host - and TCP/IP port.
Username:
root
Name of the user to connect with.
Password:
Store in Vault ...
Clear
The user's password. Will be requested later if it's not set.
Back
Next
Cancel

Reverse Engineer Database

Connection Options

Connect to DBMS

Select Schemas

Retrieve Objects

Select Objects

Reverse Engineer

Results

Connect to DBMS and Fetch Information

The following tasks will now be executed. Please monitor the execution.
Press Show Logs to see the execution logs.

- Connect to DBMS
- Retrieve Schema List from Database
- Check Common Server Configuration Issues

Execution Completed Successfully

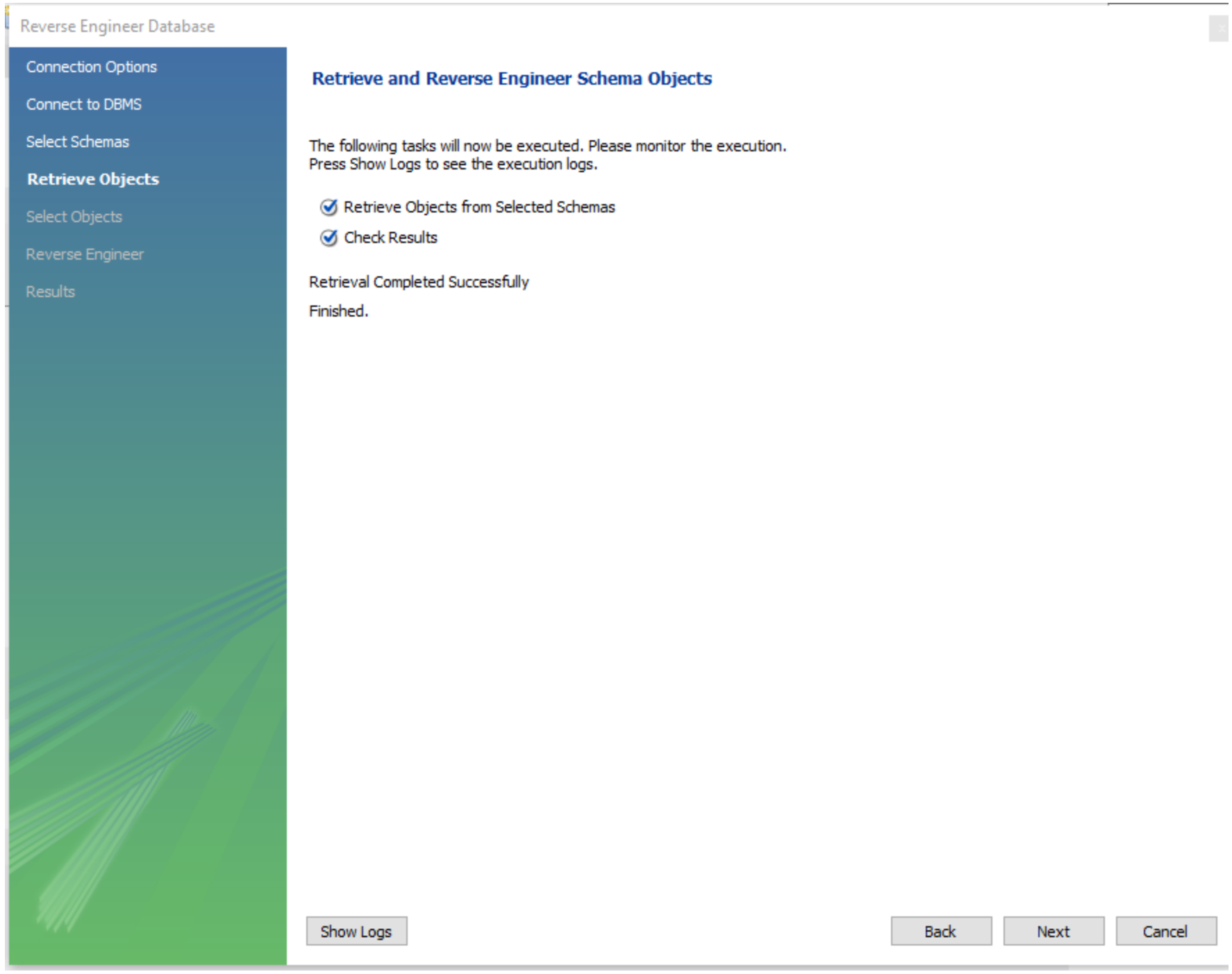
Fetch finished.

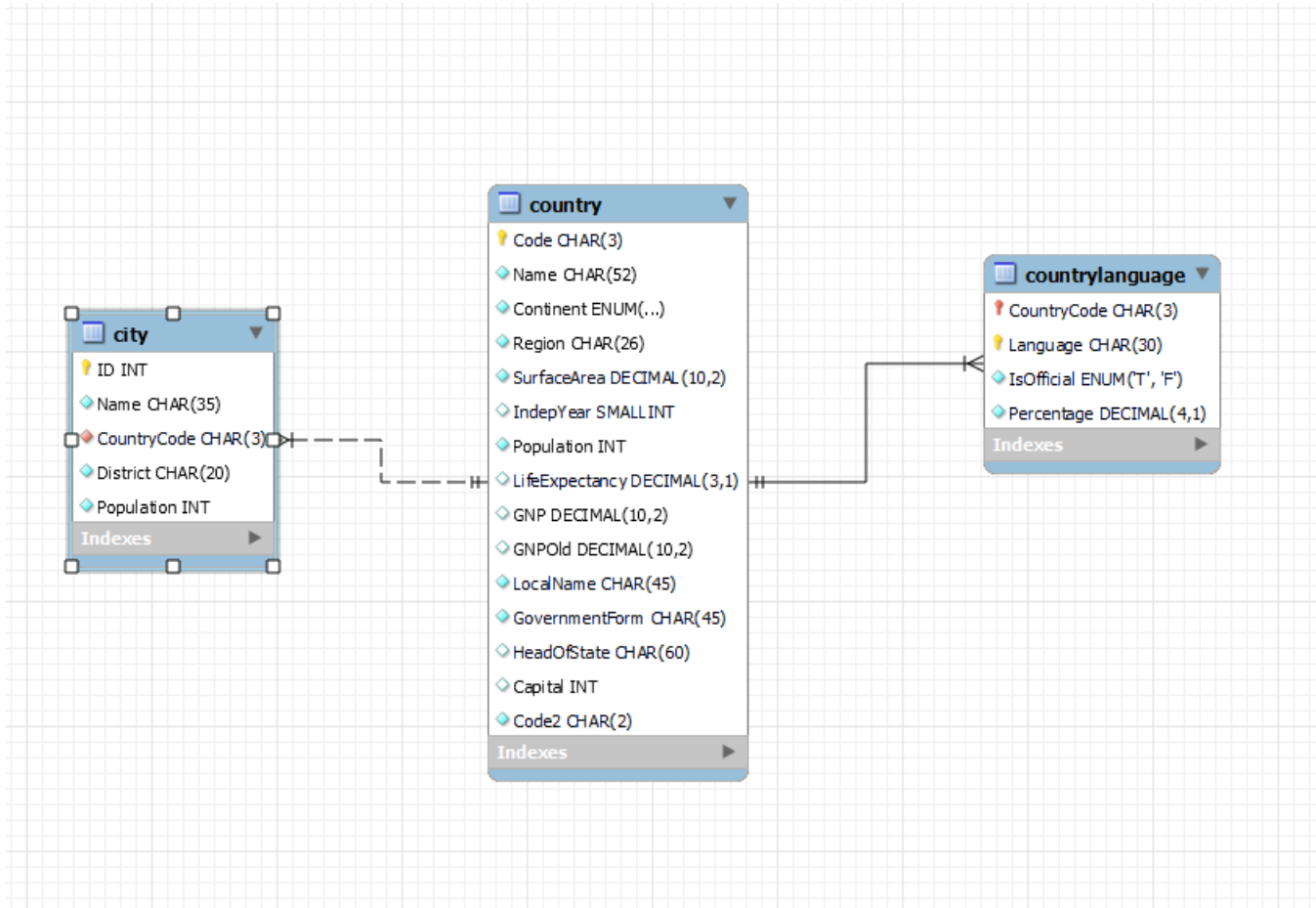
Show Logs | Back | Next | Cancel

Select Schemas to Reverse Engineer

Select the schemas you want to include:

- [ ] classicmodels
- [ ] sql_hr
- [ ] sql_inventory
- [ ] sql_invoicing
- [ ] sql_store
- [ ] students
- [x] world


Reverse Engineer Database
Connection Options
Connect to DBMS
Select Schemas
Retrieve Objects
Select Objects
Reverse Engineer
Results
Retrieve and Reverse Engineer Schema Objects
The following tasks will now be executed. Please monitor the execution.
Press Show Logs to see the execution logs.
Retrieve Objects from Selected Schemas
Check Results
Retrieval Completed Successfully
Finished.
Show Logs
Back
Next
Cancel


city
ID INT
Name CHAR(35)
CountryCode CHAR(3)
District CHAR(20)
Population INT
Indexes
country
Code CHAR(3)
Name CHAR(52)
Continent ENUM(...)
Region CHAR(26)
SurfaceArea DECIMAL(10,2)
IndepYear SMALLINT
Population INT
LifeExpectancy DECIMAL(3,1)
GNP DECIMAL(10,2)
GNPOld DECIMAL(10,2)
LocalName CHAR(45)
GovernmentForm CHAR(45)
HeadOfState CHAR(60)
Capital INT
Code2 CHAR(2)
Indexes
countrylanguage
CountryCode CHAR(3)
Language CHAR(30)
IsOfficial ENUM('T', 'F')
Percentage DECIMAL(4,1)
Indexes

Task 14

Create a MS Word file name it as - Name for your answers.

- Identify the primary key in country table.
- Identify the primary key in city table.
- Identify the primary key in countrylanguage table.
- Identify the foreign key in city table.
- Identify the foreign key in countrylanguage table.