

ORACLE  
DevLive

Level Up

MySQL Summit

# MySQL Summit Day

## Introduction to MySQL Shell for VS Code

- **Kenny Gryp**
- MySQL Product Management Director
- March 23, 2023



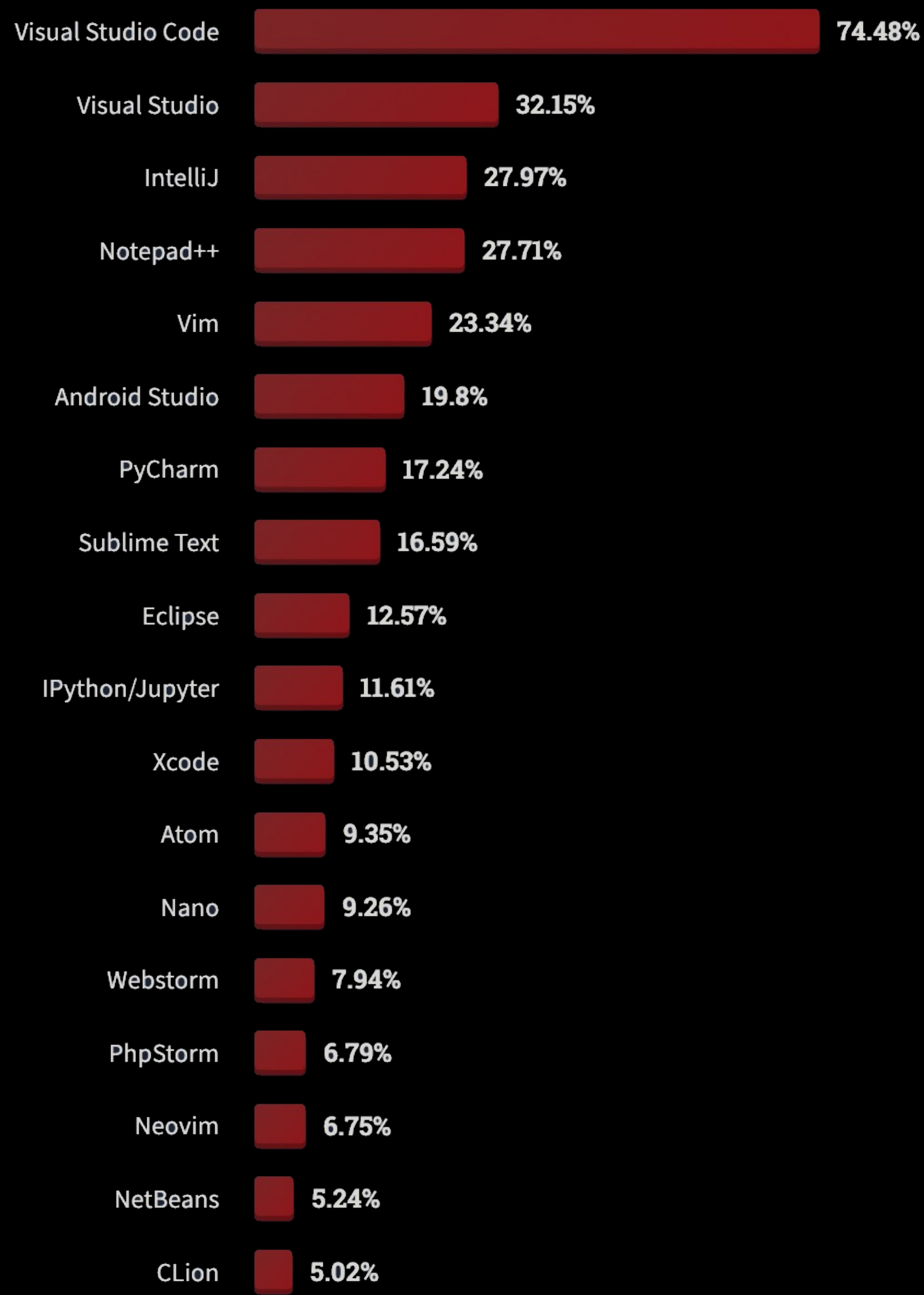




Kenny Gryp

MySQL Product Manager  
Oracle





“In the Stack Overflow 2022 Developer Survey, Visual Studio Code was ranked the most popular developer environment tool, with 74% of 71,000 respondents reporting that they use it.”



CodeFileEditSelectionViewGoRunTerminalWindowHelp

MySQL SHELL FOR VS CODE

DATABASE CONNECTIONS

Localhost 8.0

MySQL Administration

information\_schema

performance\_schema

sakila

Tables

actor

address

category

city

country

customer

film

film\_actor

film\_category

film\_text

inventory

language

payment

rental

staff

ORACLE CLOUD INFRASTRUCTURE

MYSQL SHELL CONSOLES

MYSQL SHELL TASKS

Localhost 8.0

DB Notebook

performance\_schema

sakila

sys

OK, 5 records retrieved in 2.549ms

sql>SELECT \* FROM `sakila`.`actor`  
WHERE actor\_id |

actor_id ▲	first_name ▲	last_name ▲	last_update ▲
1	PENELOPE	GUINESSS	2021-09-28 22:18:53
2	NICK	WAHLBERG	2006-02-15 04:34:33
3	ED	CHASE	2006-02-15 04:34:33
4	JENNIFER	DAVIS	2006-02-15 04:34:33
5	JOHNNY	LOLLOBRIGIDA	2006-02-15 04:34:33
6	BETTE	NICHOLSON	2006-02-15 04:34:33
7	GRACE	MOSTEL	2006-02-15 04:34:33
8	MATTHEW	JOHANSSON	2006-02-15 04:34:33
9	JOE	SWANK	2006-02-15 04:34:33
10	CHRISTIAN	GABLE	2006-02-15 04:34:33
11	7580	CAGE	2006-02-15 04:34:33

OK, 200 records retrieved in 5.924ms

sql>SELECT \* FROM `sakila`.`address`

address_id ▲	address ▲	address2 ▲	district ▲	city_id ▲	postal_code ▲	p
1	47 MySakila Drive	NULL	Alberta	300		
2	28 MySQL Boulevard	NULL	QLD	576		
3	23 Workhaven Lane	NULL	Alberta	300		1
4	1411 Lillydale Drive	NULL	QLD	576		6
5	1913 Hanoi Way		Nagasaki	463	35200	2
6	1121 Loja Avenue		California	449	17886	8
7	692 Joliet Street		Attika	38	83579	4
8	1566 Inegl Manor		Mandalay	349	53561	7
9	53 Idfu Parkway		Nantou	361	42399	1
10	1795 Santiago de Compostela Way		Texas	295	18743	8

OK, 603 records retrieved in 1.533ms






# Extension Installation

## Install MySQL Shell for VSCode directly in Marketplace


mysql shell

**MySQL**

1M ★ 3.5

MySQL management tool  
Jun Han


Install

**MySQL**

630K ★ 4

Database manager for MySQL...  
Weijian Chen


Install

**Shell**

168K ★ 3

Execute shell commands from...  
Baptist BENOIST


Install

**shell-format**

810K ★ 4

shellscrip, Dockerfile, pro...  
foxundermoon


Install

**MySQL Syntax**

390K ★ 3

MySQL syntax highlighting s...  
Jake Bathman

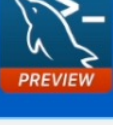
Install

**SQLTools MyS...**

413K ★ 5

SQLTools MySQL/MariaDB  
Matheus Teixeira

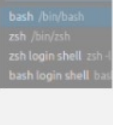
Install

**MySQL Shell fo...**

10K ★ 3.5

The power of MySQL Shell a...  
Oracle Corporation


Install

**Shell Launcher**

144K ★ 5

Easily launch multiple shell c...  
Daniel Imms

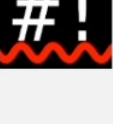
Install

**mysql-inline-d...**

100K ★ 3

Add color coding to inline M...  
odubuc


Install

**Shell Syntax**

40K ★ 5

Lint syntax errors in bash, zs...  
Brian Malehorn

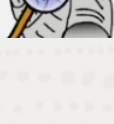
Install

**AutoComplete s...**

43K ★ 5


AutoComplete shell script  
truman

Install

**ShellCheck**

433K ★ 5

Integrates ShellCheck into V...

**MySQL Shell for VS Code**

v1.4.1

Oracle Corporation | 10,182 | ★★★★★ (10)  
The power of MySQL Shell as part of your VS Code workflow.

Install

Details

Feature Contributions

Changelog

### MySQL Shell for VS Code 1.4.1+8.0.30 Preview

This extension enables interactive editing and execution of SQL for MySQL Databases and the MySQL Database Service. It integrates the MySQL Shell directly into VS Code development workflows.

**IMPORTANT: Please note that this is a PREVIEW release which is not meant to be used in production.**

MYSQL SHELL FOR VS CODE

Localhost 8.0

DATABASE

Localhost 8.0

information\_schema

performance\_schema

sakila

Tables

actor

address

category

city

country

customer

film

film\_actor

Columns

actor\_id

film\_id

last\_update

Indexes

Foreign Keys

Triggers

film\_category

film\_text

inventory

language

payment

rental

staff

ORACLE CLOUD INFRASTRUCTURE

DEFAULT (us-ashburn-1)

mysqltooling (us-ashburn-1)

SQL Notebook: Localhost 8.0

sql> \about

Welcome to the MySQL Shell - SQL Notebook.

Press Cmd+Enter to execute the current statement.

Execute \sql to switch to SQL, \js to Javascript and \ts to Typescript mode.

Execute \help or \? for help;

sql> SELECT \* FROM 'sakila'. 'actor'

actor_id	first_name	last_name	last_update
1	PENELOPE	GUINESS	2021-09-28 22:18:53
2	NICK	WAHLBERG	2006-02-15 04:34:33
3	ED	CHASE	2006-02-15 04:34:33
4	JENNIFER	DAVIS	2006-02-15 04:34:33
5	JOHNNY	LOLLOBRIGIDA	2006-02-15 04:34:33
6	BETTE	NICHOLSON	2006-02-15 04:34:33
7	GRACE	MOSTEL	2006-02-15 04:34:33
8	MATTHEW	JOHANSSON	2006-02-15 04:34:33
9	JOE	SWANK	2006-02-15 04:34:33
10	CHRISTIAN	GABLE	2006-02-15 04:34:33

OK, 200 records retrieved in 2.379ms

sql> \ts

runSql("SELECT l.name as label, count(f.film\_id) as value FROM sakila.language l, sakila.film f " + "WHERE f.language\_id = l.language\_id GROUP BY f.language\_id", (res: ResultSetRows) => { const graph = new PieGraph(PieGraph.layout.mediumPie, res); });





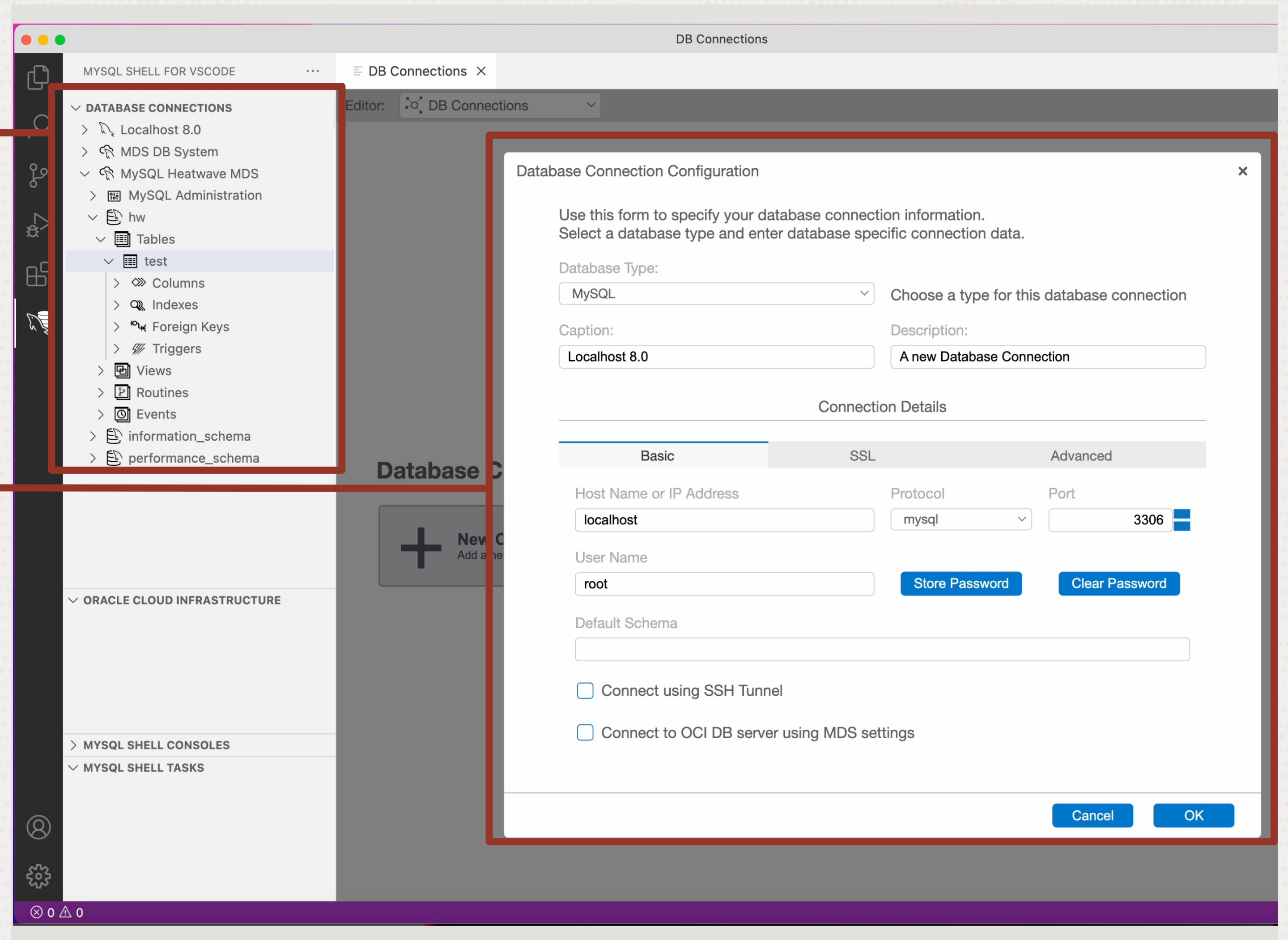




# Adding DB Connections

Database Editor  
Connections View

Create Remote  
MySQL Connections









# SQL Notebook Interface

Write, Execute, Edit, Execute  
within Notebook

TypeScript  
(JS & py Support)

Localhost 8.0

Editor: DB Notebook

OK, 5 records retrieved in 2.549ms

sql>•

SELECT \* FROM `sakila`.`actor`  
WHERE actor\_id > 35

actor_id ▲	first_name ▲	last_name ▲	last_update ▲
36	BURT	DUKAKIS	2006-02-15 04:34:33
37	VAL	BOLGER	2006-02-15 04:34:33
38	TOM	MCKELLEN	2006-02-15 04:34:33
39	GOLDIE	BRODY	2006-02-15 04:34:33
40	JOHNNY	CAGE	2006-02-15 04:34:33
41	JODIE	DEGENERES	2006-02-15 04:34:33
42	TOM	MIRANDA	2006-02-15 04:34:33
43	KIRK	JOVOVICH	2006-02-15 04:34:33
44	NICK	STALLONE	2006-02-15 04:34:33
45	REESE	KILMER	2006-02-15 04:34:33
46	PARKER	COLDFEED	2006-02-15 04:34:33

OK, 165 records retrieved in 1.179ms

sql>•

SELECT \* FROM `sakila`.`address`

address_id ▲	address ▲	address2 ▲	district ▲	city_id ▲	postal_code ▲	p
1	47 MySakila Drive	NULL	Alberta	300		
2	28 MySQL Boulevard	NULL	QLD	576		
3	23 Workhaven Lane	NULL	Alberta	300		1
4	1411 Lillydale Drive	NULL	QLD	576		6
5	1913 Hanoi Way		Nagasaki	463	35200	2
6	1121 Loja Avenue		California	449	17886	8
7	692 Joliet Street		Attika	38	83579	4
8	1566 Inegl Manor		Mandalay	349	53561	7
9	53 Idfu Parkway		Nantou	361	42399	1
10	1795 Santiago de Compostela Way		Texas	295	18743	8

OK, 603 records retrieved in 1.533ms

sql>•

\ts

Switched to TypeScript mode

runSql("SELECT \* FROM sakila.actor", (res) => {})







# OCI MySQL HeatWave

Connect Directly to DBSystem via OCI Bastion Service

Access OCI MySQL Infrastructure

MySQL SHELL FOR VS CODE

config

DB Connections

DATABASE CONNECTIONS

Localhost 8.0

ORACLE CLOUD INFRASTRUCTURE

mysqltooling (us-ashburn-1)

MDS-Development (Default)

MySQL Shell HW Dev

MDS DB System

REST Endpoint AD1

REST Endpoint AD2

Bastion2208171158

MYSQL SHELL CONSOLES

MYSQL SHELL TASKS

DB Connections

Editor: DB Connections

Database Connection Configuration

Use this form to specify your database connection information. Select a database type and enter database specific connection data.

Database Type:

MySQL

Choose a type for this database connection

Caption:

MDS DB System

Description:

DB System to test MRS.

Connection Details

Basic

SSL

Advanced

MDS

Host Name or IP Address

10.0.1.35

Protocol

mysql

Port

3306

User Name

dba

Store Password

Clear Password

Default Schema

☐ Connect using SSH Tunnel

☒ Connect to OCI DB server using MDS settings

Cancel

OK

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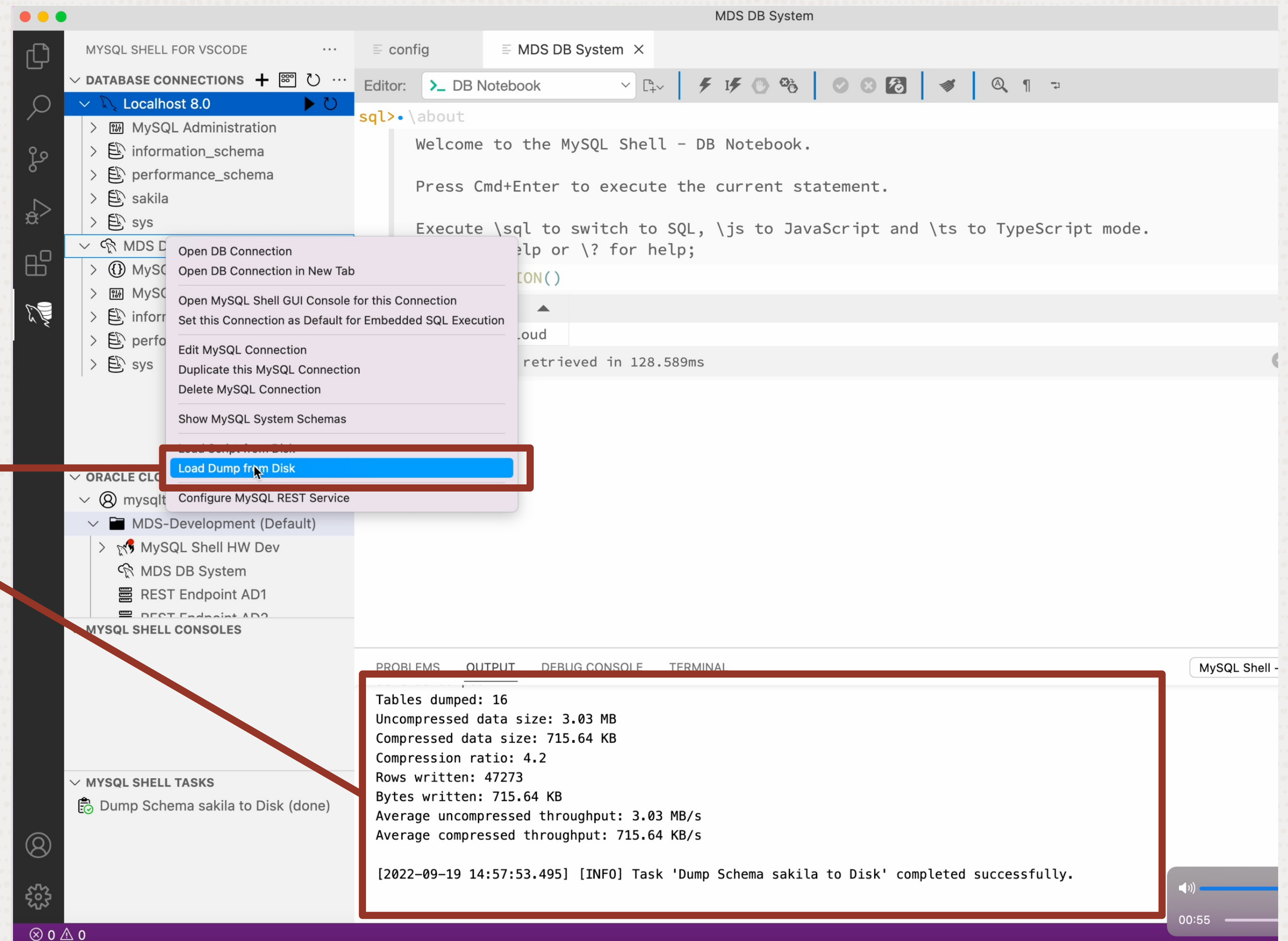






# Lift and Shift

## MySQL Shell Dump & Load Within VS Code









# Integration MySQL HeatWave for OLAP

## Execute Directly with HeatWave

# Connect Directly from Customers On-Premise Network via Bastion

# MDS/Heatwave Management

# HeatWave Cluster Tuning

The screenshot displays the MySQL Shell for VS Code interface. On the left, the 'DATABASE CONNECTIONS' sidebar shows a tree view of connections. The 'MySQL Heatwave MDS' connection is selected, and the 'test' database is open. The main editor area shows the MySQL prompt 'sql>' and a query: 'SELECT \* FROM `hw`.`test`'. The query results are displayed in a table with columns 'id', 'name', 'age', and 'profession'. The table contains 1000 records. Below the table, the status 'OK, 1000 records retrieved in 211.101ms' is shown. The bottom console area shows the MySQL prompt 'sql>' and a query: 'SELECT COUNT(\*) FROM hw.test;'. The query results are displayed in a table with columns 'COUNT(\*)' and '2000792'. The status 'OK, 1 record retrieved in 144.559ms' is shown. The bottom console area also shows the MySQL prompt 'sql>' and a query: 'SELECT age % 7, COUNT(age) FROM `hw`.`test` GROUP BY age % 7 ORDER BY age % 7;'. The status 'OK, 1 record retrieved in 144.559ms' is shown.

MySQL Shell for VS Code

DATABASE CONNECTIONS

- Localhost 8.0
- MDS DB System
- MySQL Heatwave MDS
  - MySQL Administration
  - hw
    - Tables
      - test
        - Columns
        - Indexes
        - Foreign Keys
        - Triggers
        - Views
        - Routines
        - Events
        - information\_schema
        - performance\_schema

ORACLE CLOUD INFRASTRUCTURE

- mysqltooling (us-ashburn-1)
  - MDS Development (Default)
    - MySQL Heatwave MDS
      - MDS DB System
      - REST Endpoint AD1
      - REST Endpoint AD2
      - Bastion2208171158
      - MRSloadBalancer
    - / (Root Compartment)

MYSQL SHELL CONSOLES

MYSQL SHELL TASKS

- Rescale HeatWave Cluster (done)

MySQL Heatwave MDS

DB Notebook

sql> \about

Welcome to the MySQL Shell - DB Notebook

Press Cmd+Enter to execute the current statement.

Execute \sql to switch to SQL, \js to JavaScript and \ts to TypeScript

Execute \help or \? for help;

sql> SELECT \* FROM `hw`.`test`

id	name	age	profession
1182652		0	xXyvIfzhpZezgixKmauVwszrkceQtsHkdLxbC
1184603		0	zOvIhIZUBUYoyyYyswcWDdDHDWWRxKjPyVkmEp
1185585		0	IXPismkmGvh cLCBbCJNLuKuSeSdKq DqTyIV
1187806		0	dIhMmYiSPySYlluqtXFkinNdaUvrwjDtervaT
1191323		0	NLr BgcTnGuekOobqzxQLhECYjaACjoRrhKgza
1193768		0	Rjr iPCrbfzfdaTqYUBbAzUbynRwFNaMLsETGL
1194169		0	pmqRmLUpMTiirjVZlgWrQhnRxIbgBqWLQYsRk
1195602		0	Vc rlcFUHEbsFcwXzCrbfxWsVDeLvPPFGsSk>
1196063		0	tdlWZgG0aJyLLYHrMM mHCPtvX JUwybMHcnf
1196554		0	UjkwBusEVPnUKQZBIKCHGhQKftAzR0tzsorQe
1197375		0	7LD77cMTA...GACF1...DAishM...Ab...17

OK, 1000 records retrieved in 211.101ms

sql> SELECT COUNT(\*) FROM hw.test;

COUNT(*)
2000792

OK, 1 record retrieved in 144.559ms

sql> SELECT age % 7, COUNT(age) FROM `hw`.`test` GROUP BY age % 7 ORDER BY age % 7;

sql>









# Executing Embedded SQL

Execute SQL Snippets in MySQL Shell

DB Notebook interface

Update SQL Snippets into source

EXPLORER

MRS\_PLUGIN

> \_\_pycache\_\_

> .vscode

> db\_schema

> internal

> tests

\_\_init\_\_.py

.coveragerc

.gitignore

auth\_apps.py

content\_files.py

content\_sets.py

core.py

cspell.json

db\_objects.py2

general.py

init.py

LICENSE

pytest-coverage.ini

pytest.ini

python.env

readme.md

requirements.txt

run\_tests.py

schemas.py

services.py

db\_objects.py 2

db\_objects.py > add\_db\_object

189

190

191

192

193

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195

196

197

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202

203

204

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207

208

else:

sql = '''

SELECT ROUTINE\_NAME AS OBJECT\_NAME

FROM INFORMATION\_SCHEMA.ROUTINES

WHERE ROUTINE\_SCHEMA = ? /\*=sakila\*/

AND ROUTINE\_TYPE = 'PROCEDURE'

ORDER BY ROUTINE\_NAME

'''

res = session.run\_sql(

sql, [schema.get("name")])

rows = res.fetch\_all()

db\_objects = \

[row.get\_field("OBJECT\_NAME") for row in rows]

if len(db\_objects) == 0:

raise ValueError(

f"No database objects of type {db\_object\_type} in the "

f"database schema {schema.get('name')}")

Localhost 8.0

Editor: DB Notebook

sql> SELECT ROUTINE\_NAME AS OBJECT\_NAME

FROM INFORMATION\_SCHEMA.ROUTINES

WHERE ROUTINE\_SCHEMA = /\*=sakila\*/

AND (ROUTINE\_TYPE = 'PROCEDURE'

OR ROUTINE\_TYPE = 'FUNCTION')

ORDER BY ROUTINE\_NAME

OBJECT\_NAME

film\_in\_stock

film\_not\_in\_stock

get\_customer\_balance

inventory\_held\_by\_customer

inventory\_in\_stock

rewards\_report

Go to Definition ⌘F12

Go to References ⇧F12

Peek >

Rename Symbol F2

Change All Occurrences ⌘F2

Format Document ⇧⌘F

Execute Block ⇧Enter

Execute Block and Advance ⌘Enter

Execute Current Statement ⇧⌘Enter

Update SQL in Original Source File ⌘⌘U

Cut





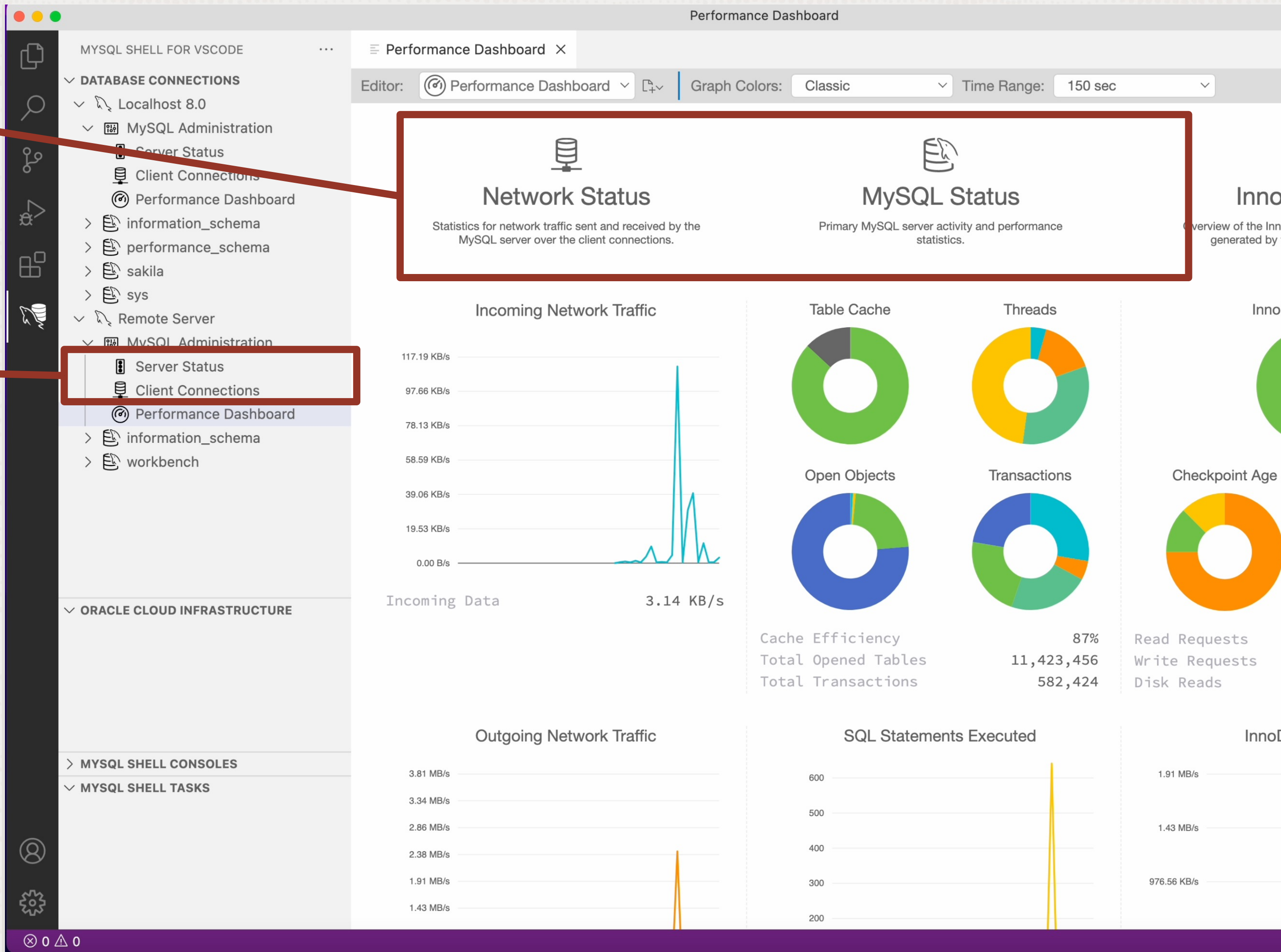




# MySQL Administration

## MySQL Performance Metrics

## Quick overview of Server Status







# MySQL REST Service

## Fast, Secure HTTPS Access for your MySQL Data

### RESTful Web Services

- Auto REST for tables, views and procedures
- {JSON} responses
- Paged results
- Developer support (GUI, CLI, API)

### MySQL Shell for VS Code

- GUI frontend for MRS management
- RESTful Web Service creation
- Interactive documentation
- CLI & scripting support

### Built in User Management

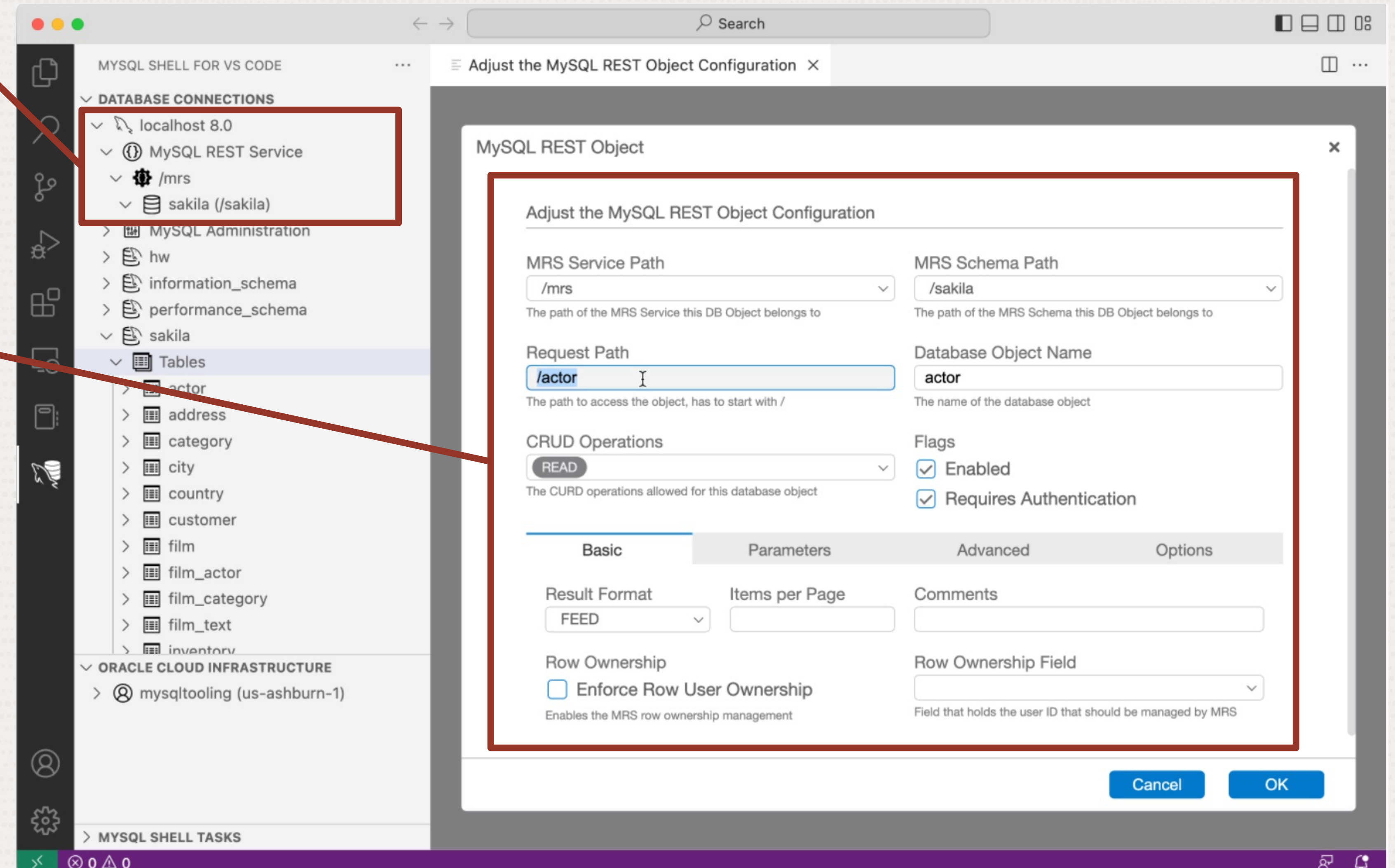
- Support for popular OAuth2 services
- Use Role, Group & Hierarchy Management
- User management GUI
- CLI & scripting support

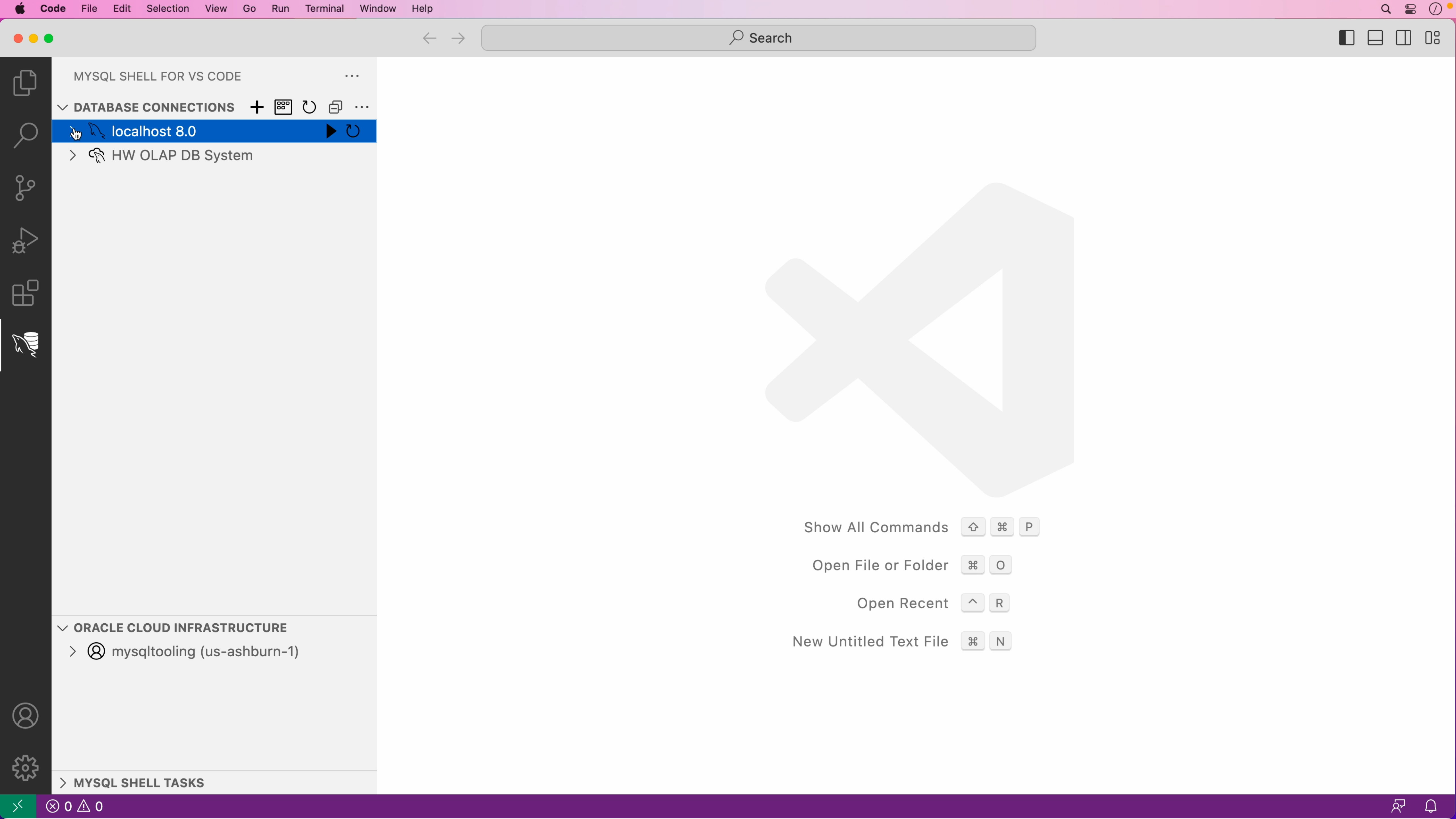


# MySQL REST Service

Manage REST Service

Create REST Objects by mapping them to database objects







# Download MySQL Shell for VSCode now on VSCode Marketplace

MySQL SHELL FOR VSCODE

Localhost 8.0

Editor: DB Notebook

performance\_schema  
sakila  
sys

OK, 5 records retrieved in 2.549ms

```
sql> SELECT * FROM `sakila`.`actor`  
WHERE actor_id |
```

	actor_id	first_name	last_name	last_update
1	1	PENELOPE	GUINESSS	2021-09-28 22:18:53
2	2	NICK	WAHLBERG	2006-02-15 04:34:33
3	3	DENNIS	CHASS	2006-02-15 04:34:33
4	4	ENRIQUE	LOUIS	2006-02-15 04:34:33
5	5	JOHNNY	LOLLOBRIGIDA	2006-02-15 04:34:33
6	6	BETTE	NICHOLSON	2006-02-15 04:34:33
7	7	GEORGE	MARTIN	2006-02-15 04:34:33
8	8	MATTHEW	JOHNSON	2006-02-15 04:34:33
9	9	JOE	SWANK	2006-02-15 04:34:33
10	10	CHRISTIAN	GABLE	2006-02-15 04:34:33
11	11	TERESA	CASE	2006-02-15 04:34:33

OK, 200 records retrieved in 5.924ms

```
sql> SELECT * FROM `sakila`.`address`
```

address_id	address	address2	district	city_id	postal_code	phone
1	47 MySakila Drive	NULL	Alberta	300		
2	28 MySQL Boulevard	NULL	QLD	576		
3	23 Workhaven Lane	NULL	Alberta	300		1
4	1411 Lillydale Drive	NULL	QLD	576		6
5	1913 Hanoi Way		Nagasaki	463	35200	2
6	1121 Loja Avenue		California	449	17886	8
7	692 Joliet Street		Attika	38	83579	4
8	1566 Inegl Manor		Mandalay	349	53561	7
9	53 Idfu Parkway		Nantou	361	42399	1
10	1795 Santiago de Compostela Way		Texas	295	18743	8

OK, 603 records retrieved in 1.533ms

MYSQL SHELL CONSOLES

MYSQL SHELL TASKS

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