



***AUTONOMOUS
AI DATABASE***

***LEARNING
LOUNGE***

Spatial Thinking in Autonomous AI Database: Introduction to Spatial Skills



Karin Patenge

Senior Principal Product Manager



Global Edition

Agenda



Karin
Patenge

Topics

- Why AI assistants can produce **confident but subtly incorrect** Oracle SQL
- What Oracle Database Skills are and how AI tools use them **as grounding context**
- Why **Oracle Spatial** is a strong test case for grounded AI assistance
- Live before-and-after demo: natural language to Oracle Spatial SQL without and with a Skill
- Spatial essentials: SDO_GEOMETRY, R-tree indexing, metadata, and more
- Using the Autonomous AI Database MCP server to inspect schemas, run queries, validate results, and self-correct
- How the Skills pattern extends beyond spatial to other DB development tasks

Q&A: **Product Managers** will answer any questions

Before we begin...

This session is for you !!!

Ask your questions using Q&A

Product Managers are monitoring your questions

We will share links in Chat

The recording will be made available
in a few days at:

oracle.com/goto/adb-learning-lounge

Important links to bookmark

Links to get you started and to keep up to date with Autonomous AI Database

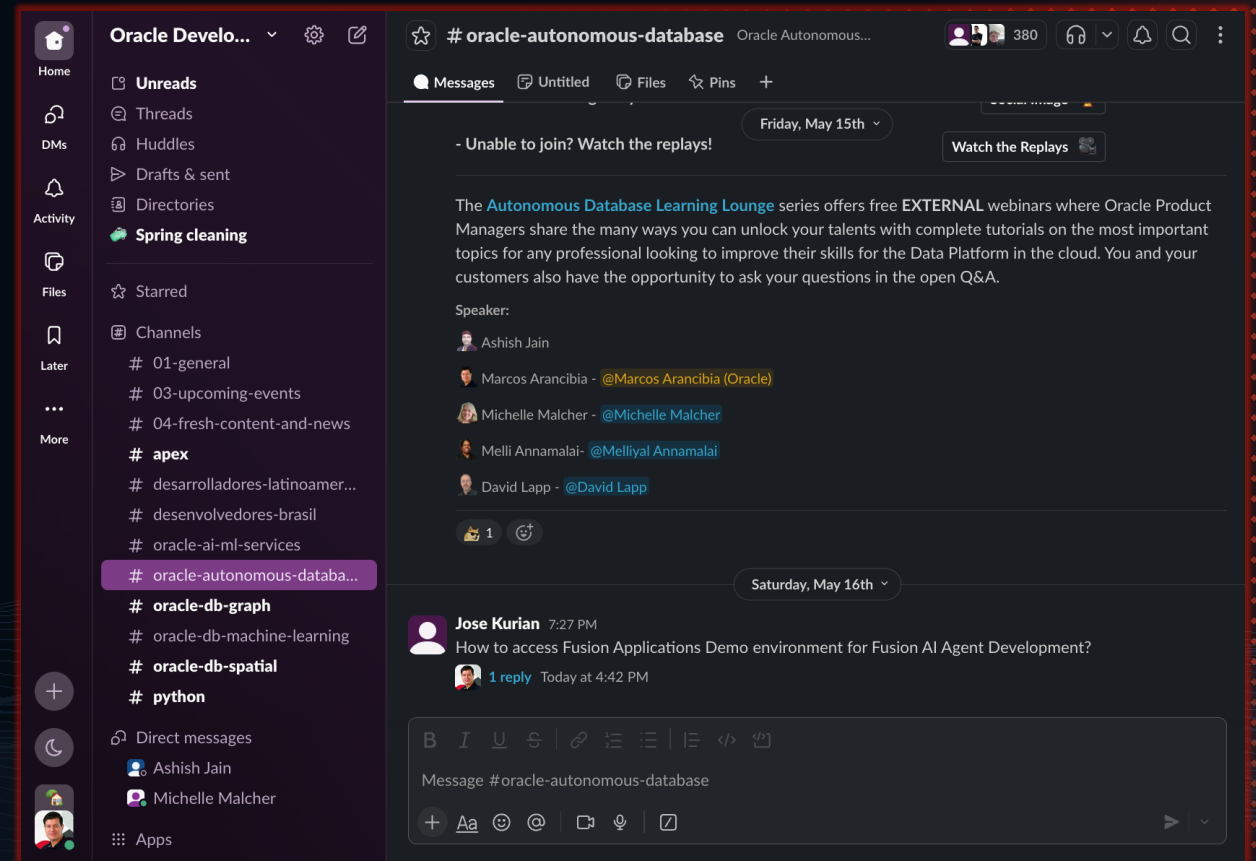


- 1** Get Started with ADB:
oracle.com/autonomous-database/get-started/
- 2** Start Learning about ADB with LiveLabs
livelabs.oracle.com/adb
- 3** Join our Group: **LinkedIn**
www.linkedin.com/groups/13819289/
- 4** Join Developers Slack (search #oracle-autonomous-database)
bit.ly/odevrel_slack

Join our External Slack

STEP 1: Join our Slack workspace at: bit.ly/odevrel_slack

STEP 2: **search for #oracle-autonomous-database at the top and click on the Channel**



Speaker



Karin Patenge

Senior Principal Product Manager,
Oracle Spatial

ORACLE

Spatial AI Thinking in the Oracle AI Database: An Introduction to Spatial AI Skills

ADB Learning Lounge | July 14 , 2026

Karin Patenge

Oracle Database Product Management

Spatial & Graph Technologies

Oracle Corporation



Session agenda

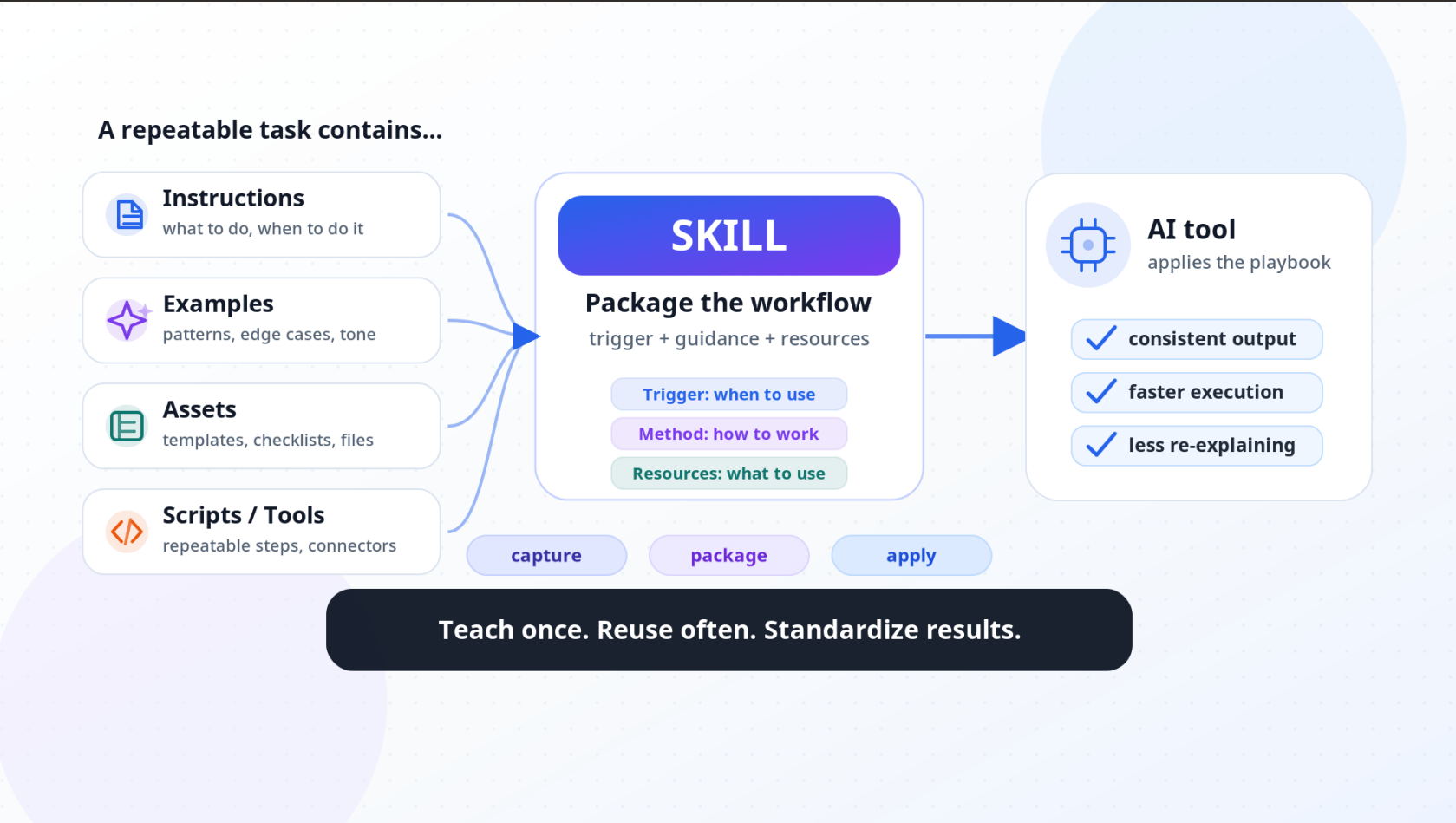
1. Talking about AI Skills
2. Spatial Skills
3. Adding Skills to AI tools
4. SQLcl MCP Server
5. Autonomous AI Database MCP Server
6. Takeaways
7. Resources



Talking about AI Skills

What are AI Skills?

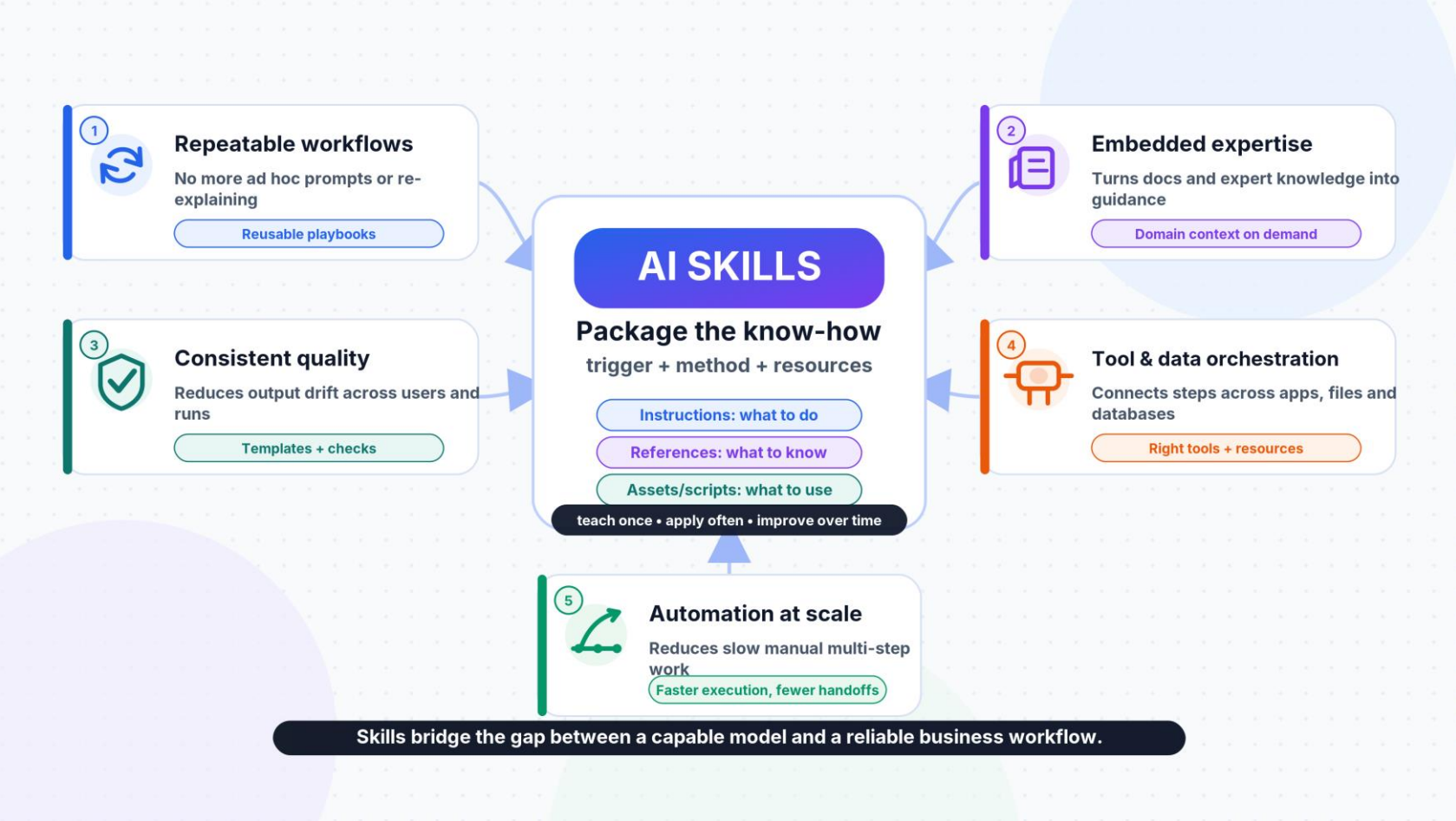
Reusable knowledge that AI tools apply on demand



The graphic was generated using AI



Why are AI Skills useful?

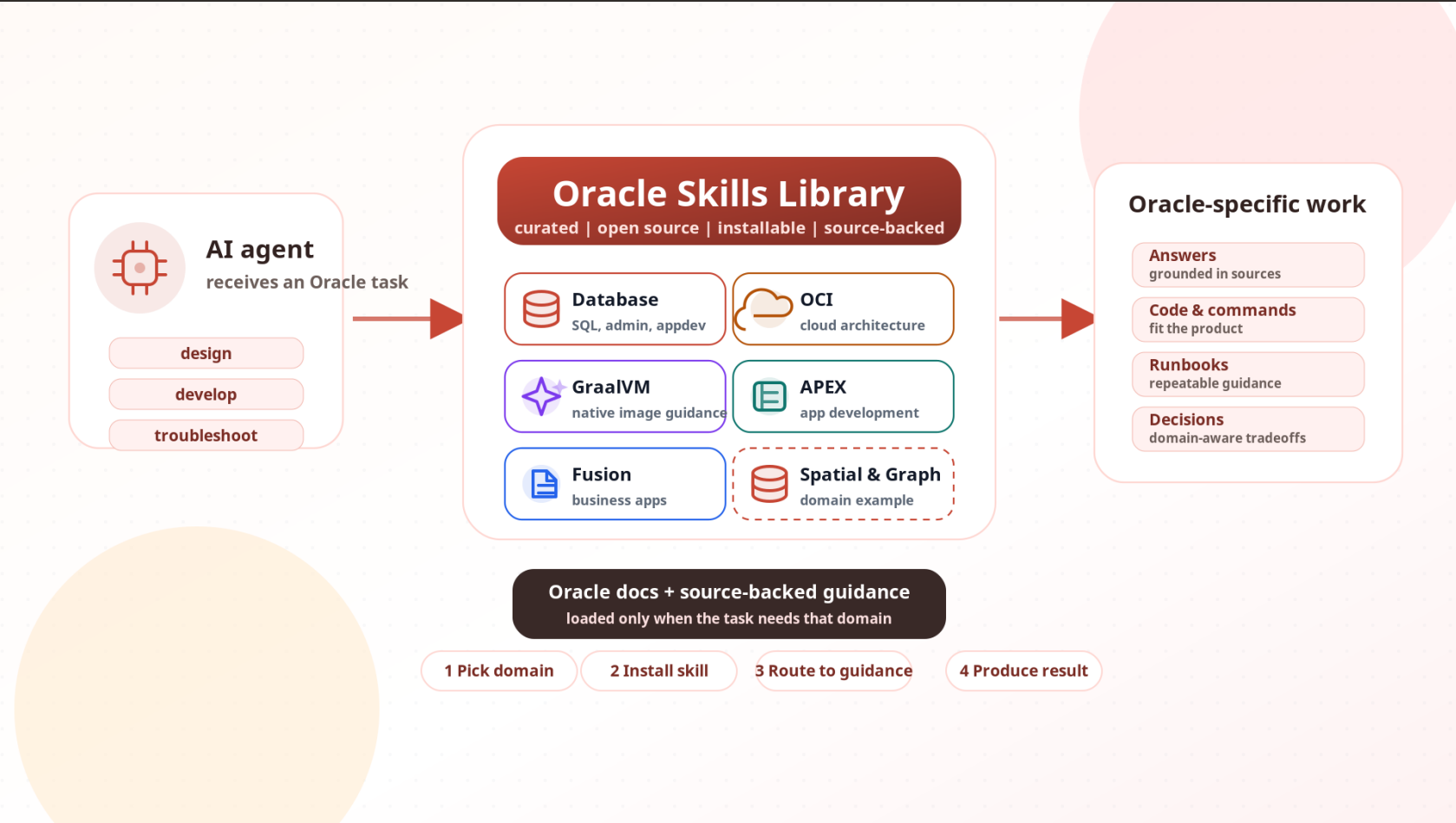


The graphic was generated using AI



The Oracle AI Skills

Domain expertise for AI agents to work with Oracle Technology



The graphic was generated using AI



oracle / skills

CodeIssues16Pull requests7AgentsActionsProjectsSecurity and qualityInsights

skillsPublic

Edit PinsWatch34Fork180Star697

main12 Branches0 TagsGo to fileAdd fileCode

krisrice Merge pull request #72 from wsanders00/pr/oci-iot-platform-skill69af8ce · 2 days ago95 Commits

.claude-plugin	Add OCI IoT Platform skill	3 days ago
.github/rulesets	Add GitHub default-branch ruleset config and apply script	3 months ago
apex	Release 2026.06.04 of APEXlang Skills (#63)	3 weeks ago
db	Merge pull request #61 from gsharini/backup-recovery	3 weeks ago
fusion	Release 2026.06.04 of APEXlang Skills (#63)	3 weeks ago
graal	add skill front matter	2 months ago
oci	Add OCI IoT Platform skill	3 days ago
.gitignore	Deep review Oracle skills docs and examples (#13)	3 months ago
CONTRIBUTING.md	Align repo with Oracle Template	2 months ago
LICENSE.txt	Align repo with Oracle Template	2 months ago
README.md	Add OCI IoT Platform skill	3 days ago
SECURITY.md	Align repo with Oracle Template	2 months ago
SKILL_AUTHORING_GUIDE.md	Add OCI enterprise AI skill	3 weeks ago

READMECode of conductContributingUPL-1.0 licenseSecurity

About

Oracle Skills is a curated, open-source collection of practical, installable skills for working with Oracle technologies. It provides developers, administrators, and AI agents with high-quality, source-backed guidance across the entire Oracle ecosystem.

ReadmeUPL-1.0 licenseCode of conductContributingSecurity policyActivityCustom properties697 stars34 watching180 forksReport repository

Releases

No releases published

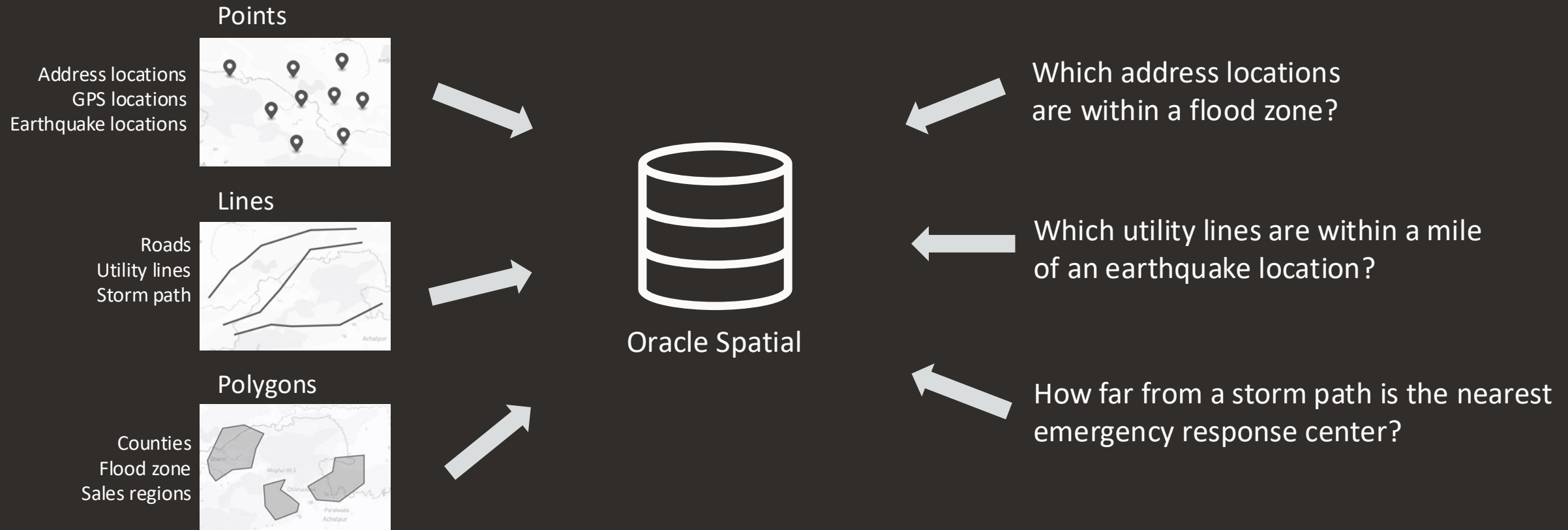
Packages



Spatial Skills

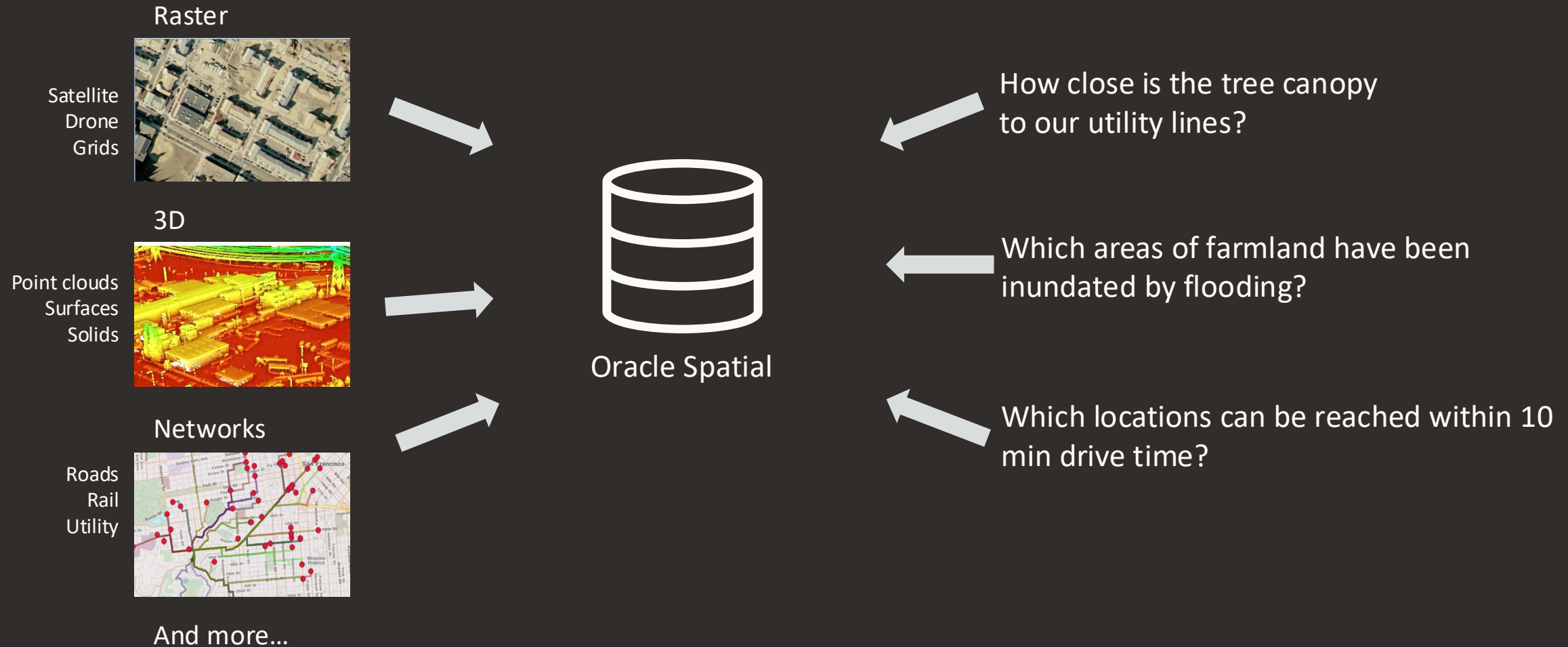
Spatial data

Covered by spatial-data.md



Spatial data

Not covered by spatial-data.md



Adding Skills to your AI Tools

The easy way

Codex

Note:
Status before
the Codex desktop app
became the
ChatGPT desktop app.

Install the Codex skill from github.com/oracle/skills, path db. Name the local skill folder oracle-db.

Do you want to allow Codex to download the Oracle DB skill from GitHub and install it as oracle-db in your local Codex skills directory?

```
C:\Users\kpatenge-lap2023\.cache\codex-runtimes\codex-primary-  
runtime\dependencies\python\python.exe C:\Users\kpatenge-lap2023\.codex\skills\.system\skill-  
installer\scripts\install-skill-from-github.py --repo oracle/skills --path db --name oracle-db
```

1 Yes

2 Yes, and don't ask again for commands that start with

 No, and tell Codex what to do differently

Skip

Submit 



Location: `USER_HOME\.codex`

Installed the Oracle DB Codex skill as:

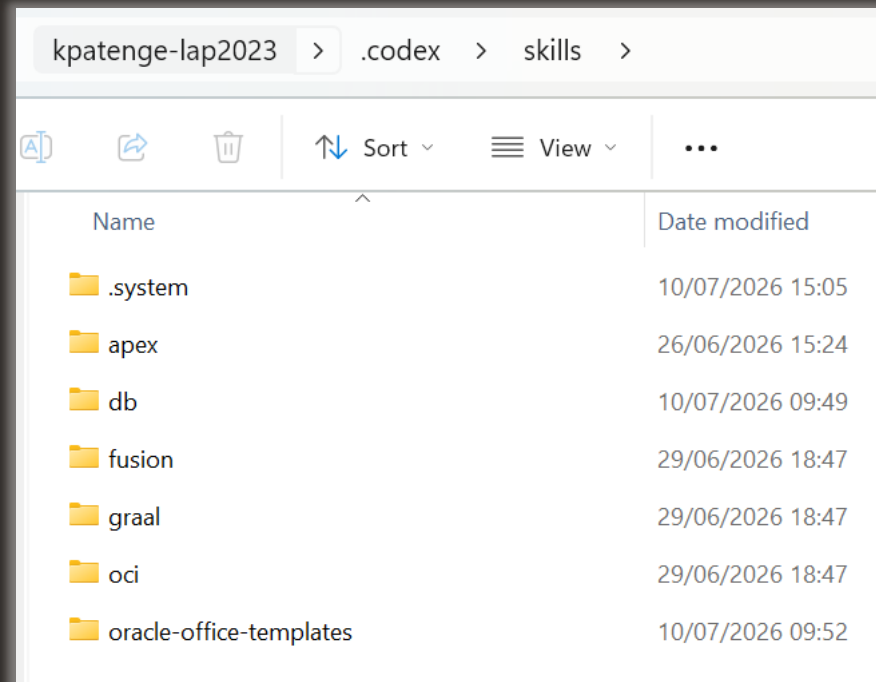
```
..codex\skills\oracle-db
```

I verified your installed skill folders are now `.system`, `apex`, and `oracle-db`. Restart Codex Desktop to pick up the newly installed skill.



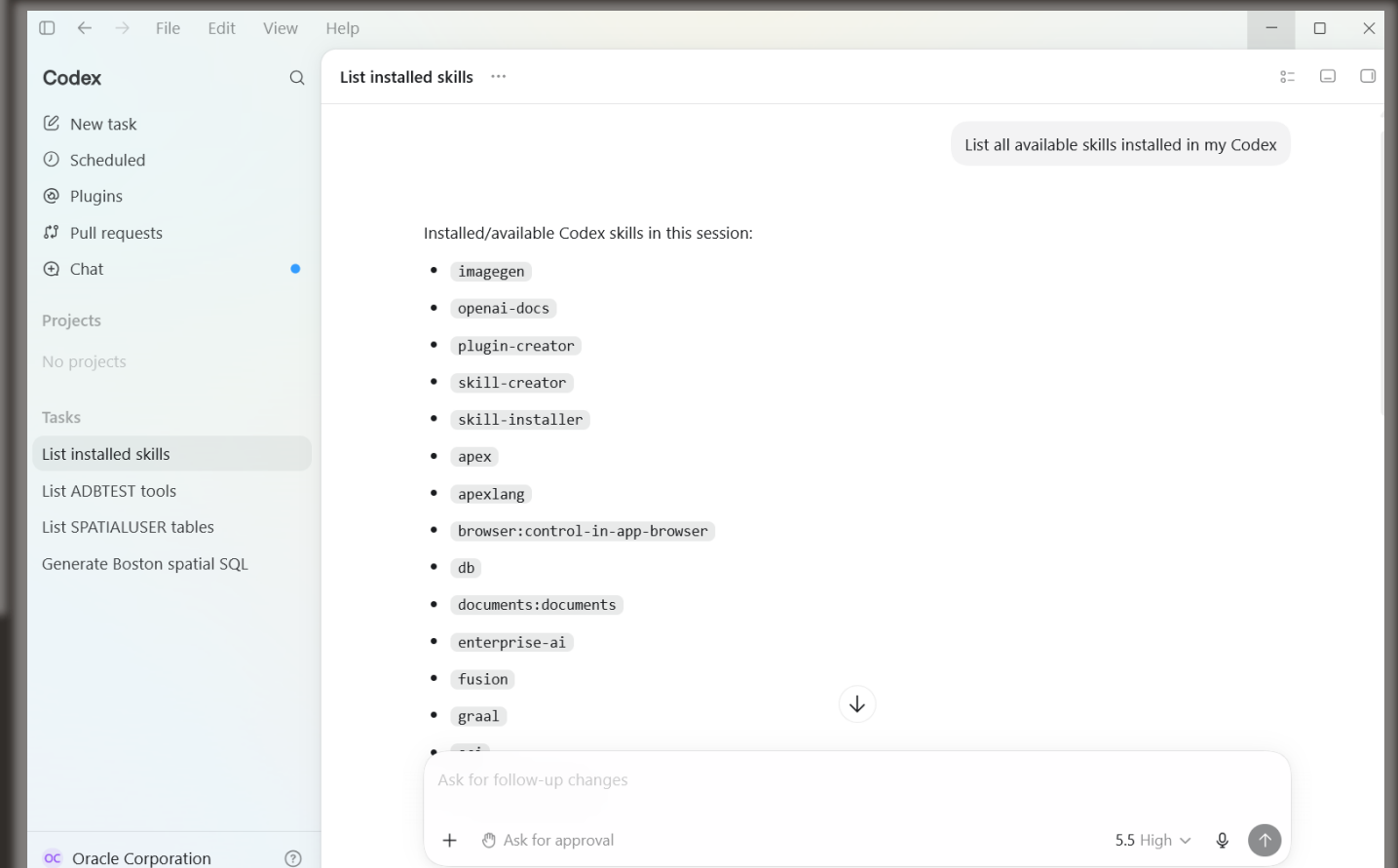
The easy way

ChatGPT



Nothing changed if previously installed in Codex. Otherwise, ask ChatGPT to install skills for you.

Location: `USER_HOME\.codex`



The easy way

Claude

Tool	Good fit when...
Chat	You want quick, ad-hoc SQL/PLSQL snippets, tuning advice, or pattern lookups. Claude reads the relevant reference file (e.g. <code>sql-dev/sql-patterns.md</code>) and writes the code inline. This is the simplest and fastest path for "give me a query for X."
Cowork	You want a multi-step, file-producing workflow — e.g. generating a whole migration script running it against an actual Oracle instance via the SQLcl MCP server the skill references, producing several output files at once.
Code	You're working inside an actual software repo (app code, migrations folder, CI pipeline) and SQL/PLSQL generated and committed as part of that codebase.

How to install it

Since the repo is one skill (not a plugin-marketplace package), the install path is via **Customize → Skills**, which is shared across Chat and Cowork in Claude Desktop:

1. Download the repo as a ZIP (or `git clone https://github.com/oracle/skills` and zip the folder yourself) — the skill folder must contain `SKILL.md` at its top level alongside the `skills/` subfolder.
2. In Claude Desktop, go to **Customize → Skills**.
3. Click "+" → "Create skill" → "Upload a skill".
4. Upload the ZIP. It will register as `oracle-db-skills`.
5. Toggle it on. Make sure **Code execution and file creation** is enabled in Settings → Capabilities, since skills require it.

Check `USER_HOME\.claude` to find the skills

The easy way

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1. Download the repo as a ZIP (or `git clone https://github.com/oracle/skills` and zip the folder)

2. In Claude

3. Click "

4. Upload

5. Toggle

- Capabilities

Search

Settings

General

Account

Privacy

Billing

Usage

Capabilities

Connectors

Claude Code

Cowork

Claude in Chrome

Artifacts

Generate code, documents, and designs in a dedicated window alongside your conversation.

AI-powered artifacts

Build apps and interactive documents that use Claude inside the artifact.

Inline visualizations

Allow Claude to generate interactive visualizations, charts, and diagrams directly in the conversation.

Code execution and file creation

Cloud code execution and file creation

Claude can execute code on a server and create and edit docs, spreadsheets, presentations, PDFs, and data reports. Required for skills.

Check `USER_HOME\.claude` to find the skills



Skills

Connectors

Personal plugins

Give Claude role-level expertise with plugins

Browse plugins

Skills



Personal skills

db

SKILL.md

admin

agent

appdev

architecture

containers

design

devops

features

frameworks

migrations

monitoring

skill-creator

db

Added by	Last updated	Trigger
You	Jun 26, 2026	Slash command + auto

Description ⓘ

Oracle Database guidance for SQL, PL/SQL, SQLcl, ORDS, administration, app development, performance, security, migrations, and agent-safe database workflows. Use when the user asks to write, edit, rewrite, review, format, debug, tune, or explain SQL; create or refactor PL/SQL; use SQLcl, Liquibase, ORDS, JDBC, node-oracledb, Python, Java, .NET, or database frameworks; troubleshoot queries, sessions, locks, waits, indexes, optimizer plans, AWR, ASH, migrations, schemas, users, roles, privileges, backup, recovery, Data Guard, RAC, multitenant, containers, monitoring, auditing, encryption, VPD, or safe agent database operations.

Oracle Database Skills

This domain contains Oracle Database skills for administration, SQL and PL/SQL development, performance tuning, security, ORDS, SQLcl, migrations, frameworks, OCR container guidance, and agent-safe database workflows.

How to Use This Domain

1. Start with the routing table below.
2. Read only the specific file or category you need.

Directory Structure

```
text
db/
├─ admin/
├─ agent/
├─ appdev/
├─ architecture/
├─ containers/
├─ design/
├─ devops/
├─ features/
├─ frameworks/
├─ migrations/
├─ monitoring/
├─ ords/
├─ performance/
├─ plsqli/
├─ security/
├─ sql-dev/
```

Search

Settings

- General
- Account
- Privacy
- Billing
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- Claude Code
- Cowork
- Claude in Chrome

Artifacts

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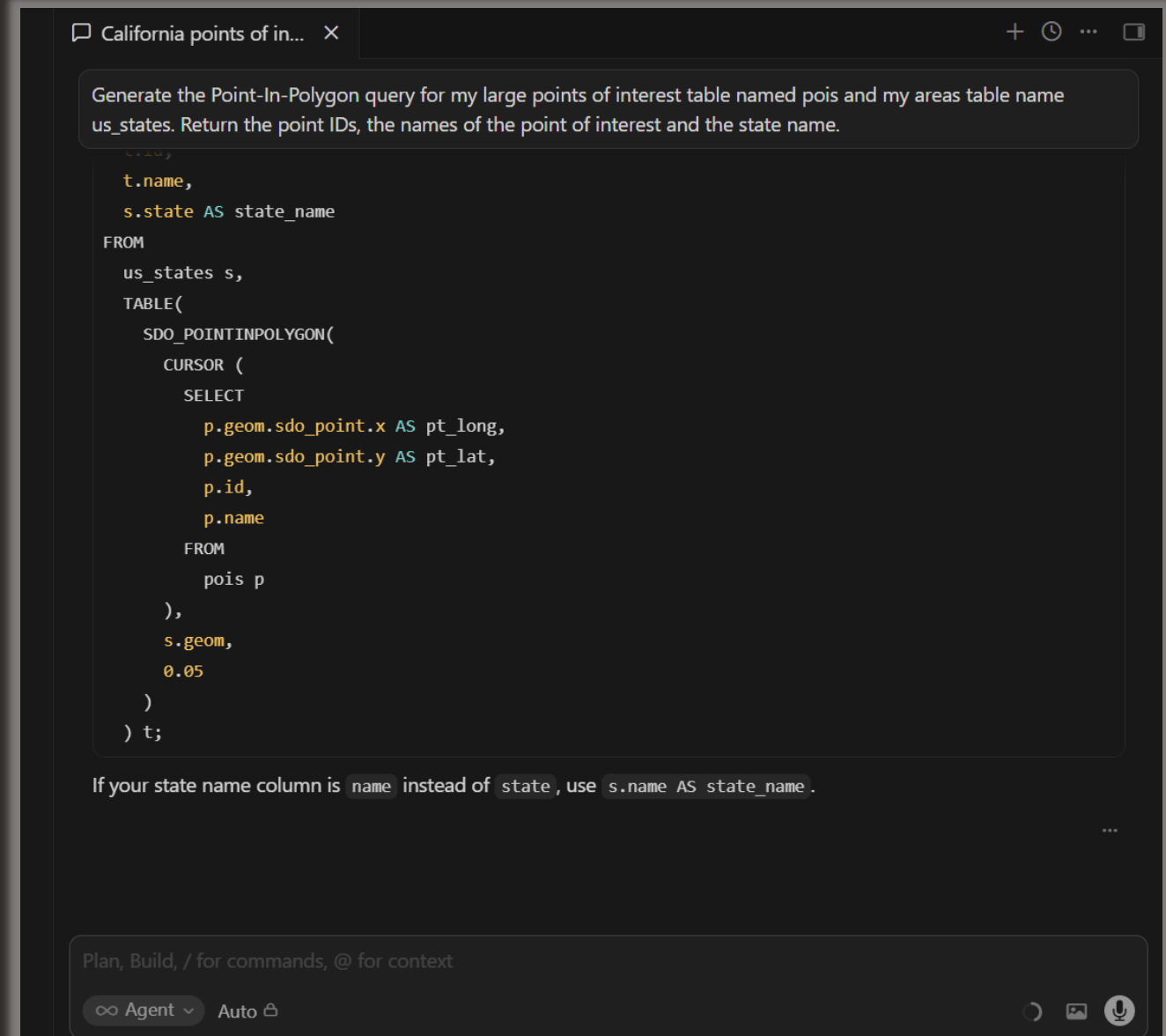
Code execution and file creation

Cloud code execution and file creation
Claude can execute code on a server and create and edit docs, spreadsheets, presentations, PDFs, and data reports. Required for skills.

The easy way

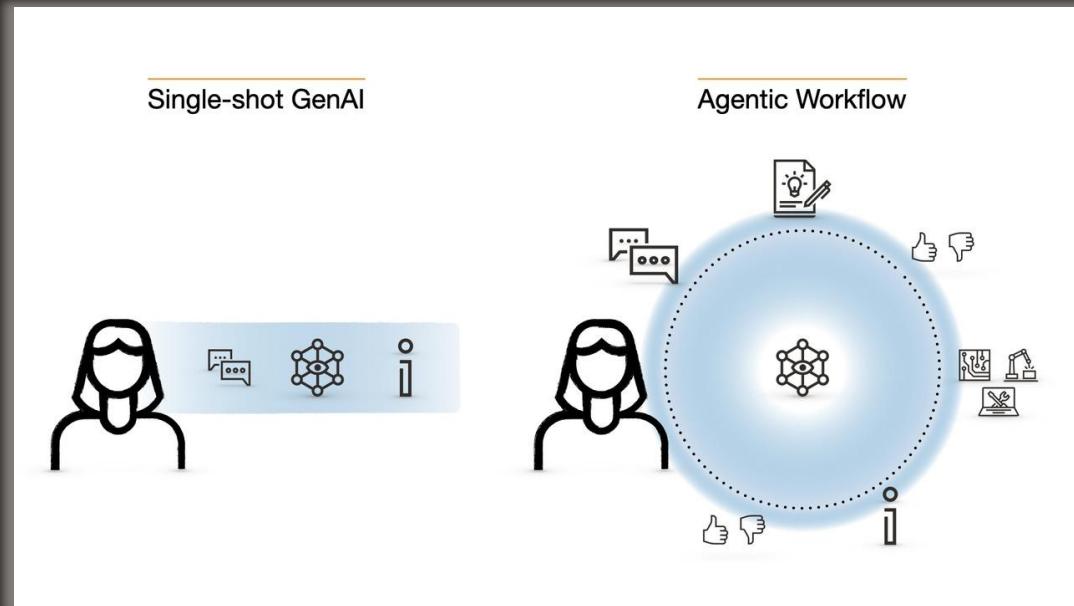
Cursor

- Use the Oracle database skills in Cursor by installing them into Cursor's skills directory.
- Or copy the Skills folder from **USER_HOME\.codex**
- Check that the folder name matches the name in the **skills.md**



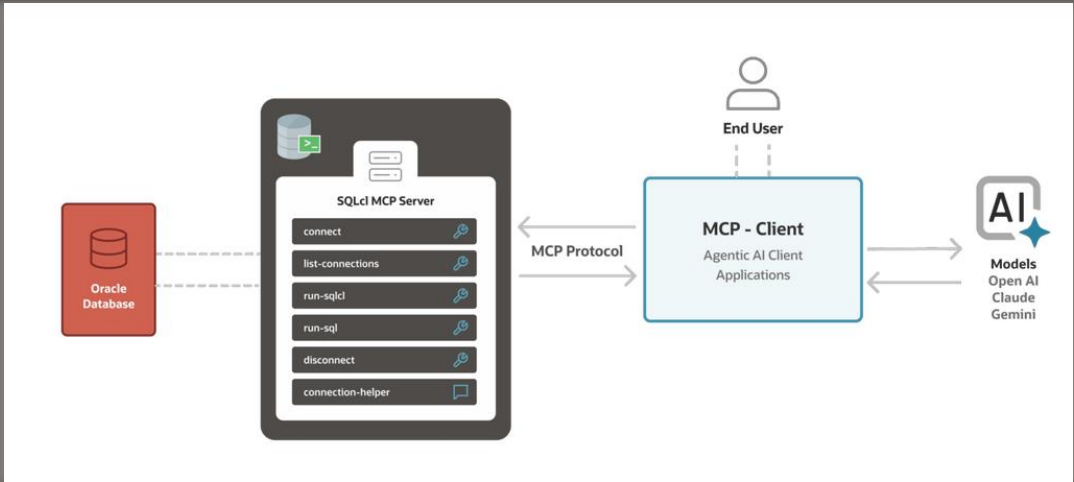
SQLcl MCP Server

What is Model Context Protocol (MCP)?

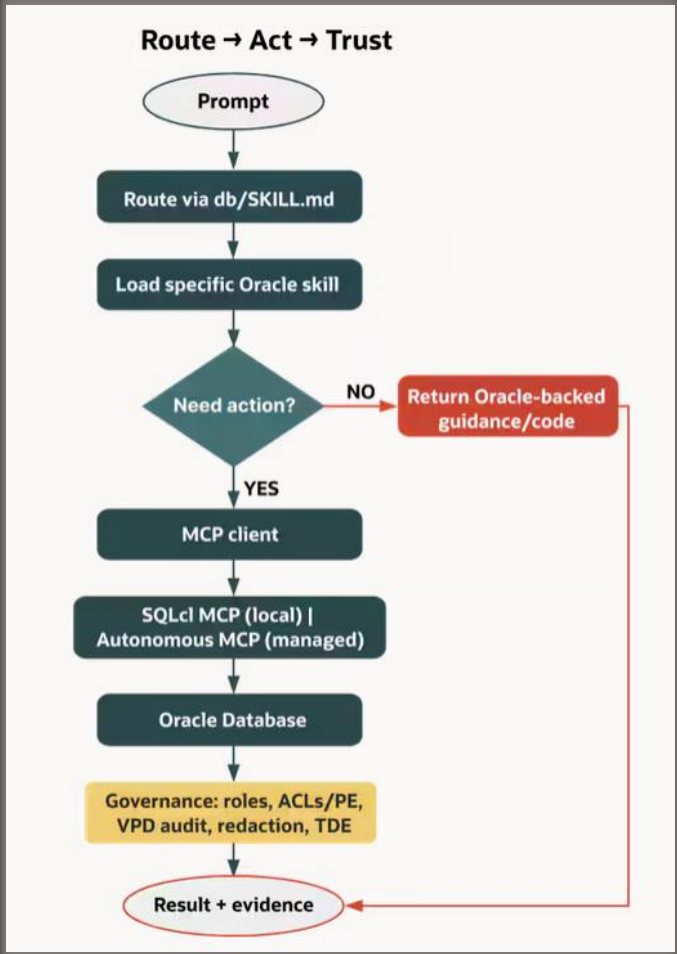


- MCP is a proposed standard that lets AI Agents interact securely with your data and applications via an intermediary called an MCP Server
- An MCP Server integrates your technology (like SQLcl) with AI Agents
- Agents registered with an MCP server can access "Tools" to build complex, context-aware workflows
- Benefits
 - Users can request and perform database tasks from the Agent interface in plain language, shifting from basic prompts ("single-shot") to continuous, guided collaboration ("Agentic Workflow")

The SQLcl MCP Server



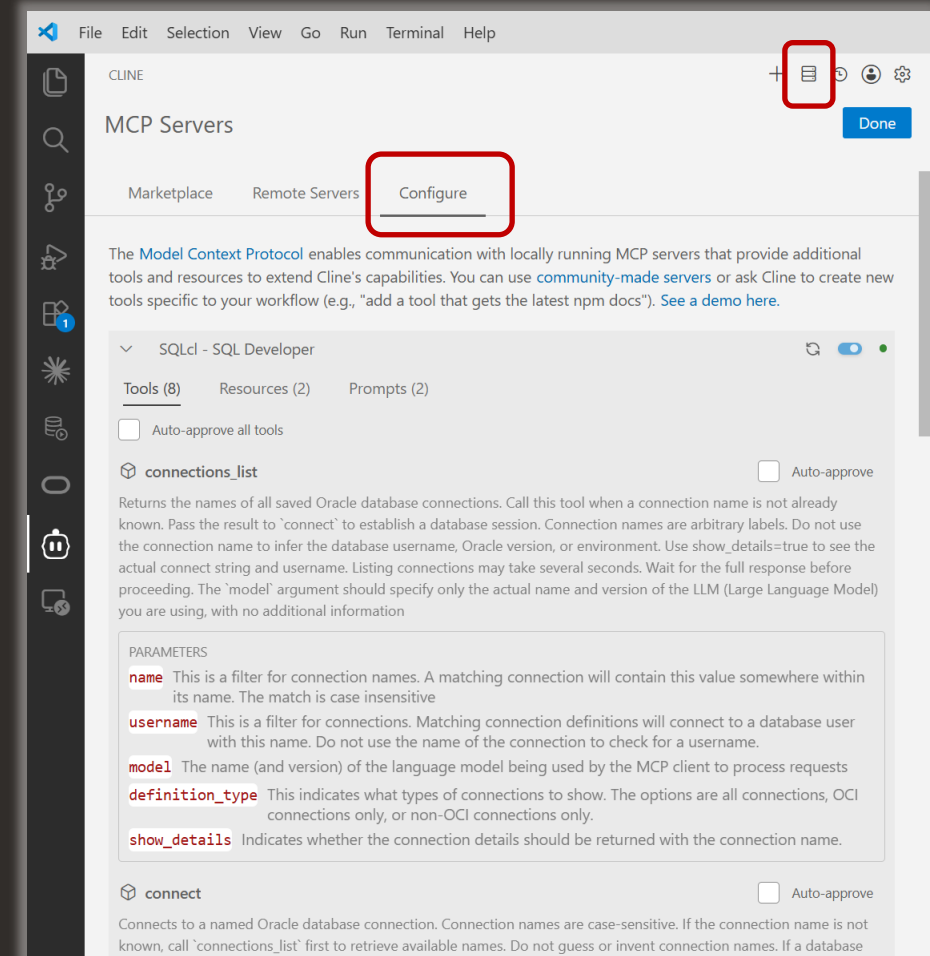
medium.com/@thatjeffsmith/getting-started-with-oracle-databases-mcp-server-with-cursor-7cd1302f2ff7



The easy way

VS Code with SQL Developer and Cline as extensions

- Configure SQLcl as MCP Server (instructions available in [“LiveLabs: Exploring SQLcl MCP Server”](#))
 - `cline_mcp_settings.json`
- Install Oracle Skills using the tool “skills sync”
 - You can also specify a specific skill such as “db”
- After installation, Skills are available in `USER_HOME\.dbtools\skills\repositories\oracle-skills`
- Verify by prompting “show the available db skills”



SQLcl MCP Server Primitives and Tools

Show the tools available to the SQLcl MCP Server

The SQLcl MCP server exposes the following tools you can call:

- `connections_list` – list saved SQLcl connection names (with optional filters).
- `connect` – open a session to a saved connection.
- `disconnect` – close the current SQLcl session.
- `schema_information` – retrieve structural metadata for the current schema.
- `sql_run` – execute standard SQL statements/PLSQL blocks.
- `sqlcl_run` – run SQLcl-specific commands (Liquibase, exports, `help`, etc.).

Auto-approve: Read, Safe Commands, MCP

Primitive	Description
Tools	Executable functions (e.g., file ops, API calls, SQL)
Resources	Data sources (e.g., file contents, DB records)
Prompts	Reusable templates for structured LLM/agent interactions



Task 1: List all tables containing spatial data. Use the Spatial skills for the task.

✓ Task Completed

Consulted the Oracle Spatial skill docs and used SQLcl to inventory spatial metadata in the SPATIALUSER schema. Identified 14 tables containing SDO_GEOMETRY columns:

- Metadata + spatial index: US_COUNTIES, US_INTERSTATES, US_NY_CONSERVATION_AREAS, US_NY_POLLING_DISTRICTS, US_NY_SCHOOLS, US_PARKS, US_RIVERS, US_STATES, WORLD_AIRPORTS, WORLD_CITIES, WORLD_CONTINENTS, WORLD_COUNTRIES.
- Metadata only (no domain index found): US_CITIES.
- Geometry column only (no metadata or index): US_STATES_BACKUP.

All registered tables use SRID 4326. Consider creating spatial indexes for US_CITIES and registering/indexing US_STATES_BACKUP if they need spatial operations.

Task 2: Find all parks in California. List the results in descending order by the park size. List only the five largest parks.

✓ Task Completed

Here are the five largest parks in California by area within the state boundary (square miles):

1. Death Valley National Park — 5,142.31 sq mi
2. Los Padres National Forest — 3,095.31 sq mi
3. Modoc National Forest — 3,061.61 sq mi
4. Inyo National Forest — 2,935.13 sq mi
5. Klamath National Forest — 2,899.20 sq mi

These areas were calculated using SDO_GEOM to intersect each park's geometry with the California state polygon and computing the resulting area in square miles.

Task 3: Give me the plain SQL statement you executed to retrieve the results

Executed a query to return the five largest parks intersecting the California state boundary, measuring area in square miles via SDO_GEOM.SDO_INTERSECTION and SDO_AREA. Here is the exact SQL used:

```
SELECT name,
       ROUND(area_sq_miles, 2) AS area_sq_miles
FROM (
  SELECT p.name,
         SDO_GEOM.SDO_AREA(
           SDO_GEOM.SDO_INTERSECTION(p.geom, s.geom, 0.005),
           0.005,
           'unit=SQ_MILE'
         ) AS area_sq_miles
  FROM   us_parks p
  CROSS JOIN (
    SELECT geom
    FROM   us_states
    WHERE  state = 'California'
  ) s
  WHERE  SDO_RELATE(p.geom, s.geom, 'mask=INSIDE+COVEREDBY+CONTAINS+OVERLAPBDYINTERSECT') = 'TRUE'
)
WHERE area_sq_miles > 0
ORDER BY area_sq_miles DESC
FETCH FIRST 5 ROWS ONLY;
```

New: Autonomous AI Database MCP Server

Links:

- docs.oracle.com/en/cloud/paas/autonomous-database/serverless/adbsb/mcp-server.html
- blogs.oracle.com/machinelearning/connecting-codex-to-enterprise-data-with-oracle-autonomous-ai-database-mcp-server

About the ADB MCP Server

- What it is
 - The Oracle Autonomous AI Database MCP Server is a managed, multi-tenant server designed to provide secure, standardized access to database tools and features through the Model Context Protocol (MCP).
 - It provides an MCP server for each Autonomous AI Database, enabling AI agents and client applications to interact seamlessly with custom and built-in Select AI Agent tools using MCP APIs.
- Prerequisites
 - To use MCP-compatible AI clients with Autonomous AI Database through MCP endpoints, a developer must ensure the following:
 - the correct database version
 - Privileges
 - authentication credentials
 - network and security controls
 - tool registration readiness



Step 1: Configure your ADB

Cloud

Search resources, services, documentation, and Marketplace

Germany Central (Frankfurt)

Autonomous AI Databases

KPASKTOM

Available

Primary

Database actions

Database connection

Performance Hub

More actions

Autonomous AI Database

<

nation

Tool configuration

Backups

Key history

Disaster recovery

Refreshable clones

Guided console tour

Security

Monitoring

Work requests

Tags

Tags

Add

Actions

	Namespace	Key	Value	Type	
☐	None	adb\$feature	{"name":"mcp_server","enable":true}	Free-form	...
☐	Administration	Creator	oracle-ssso/karin.patenge@oracle.com	Defined	...

Page 1 of 1 (1 - 2 of 2 total items)

Items per page

25



Step 2: Grant permissions to the database user

-- As ADMIN user

```
GRANT EXECUTE ON DBMS_CLOUD_ADMIN TO <your_user>;
```

```
GRANT EXECUTE ON DBMS_CLOUD TO <your_user>;
```

```
GRANT EXECUTE ON DBMS_CLOUD_AI TO <your_user>;
```

```
GRANT EXECUTE ON DBMS_CLOUD_AI_AGENT TO <your_user>;
```

```
GRANT EXECUTE ON DBMS_CLOUD_PIPELINE TO <your_user>;
```

Step 3: Create functions and tools

LIST_OBJECTS function

```
SQL COPY

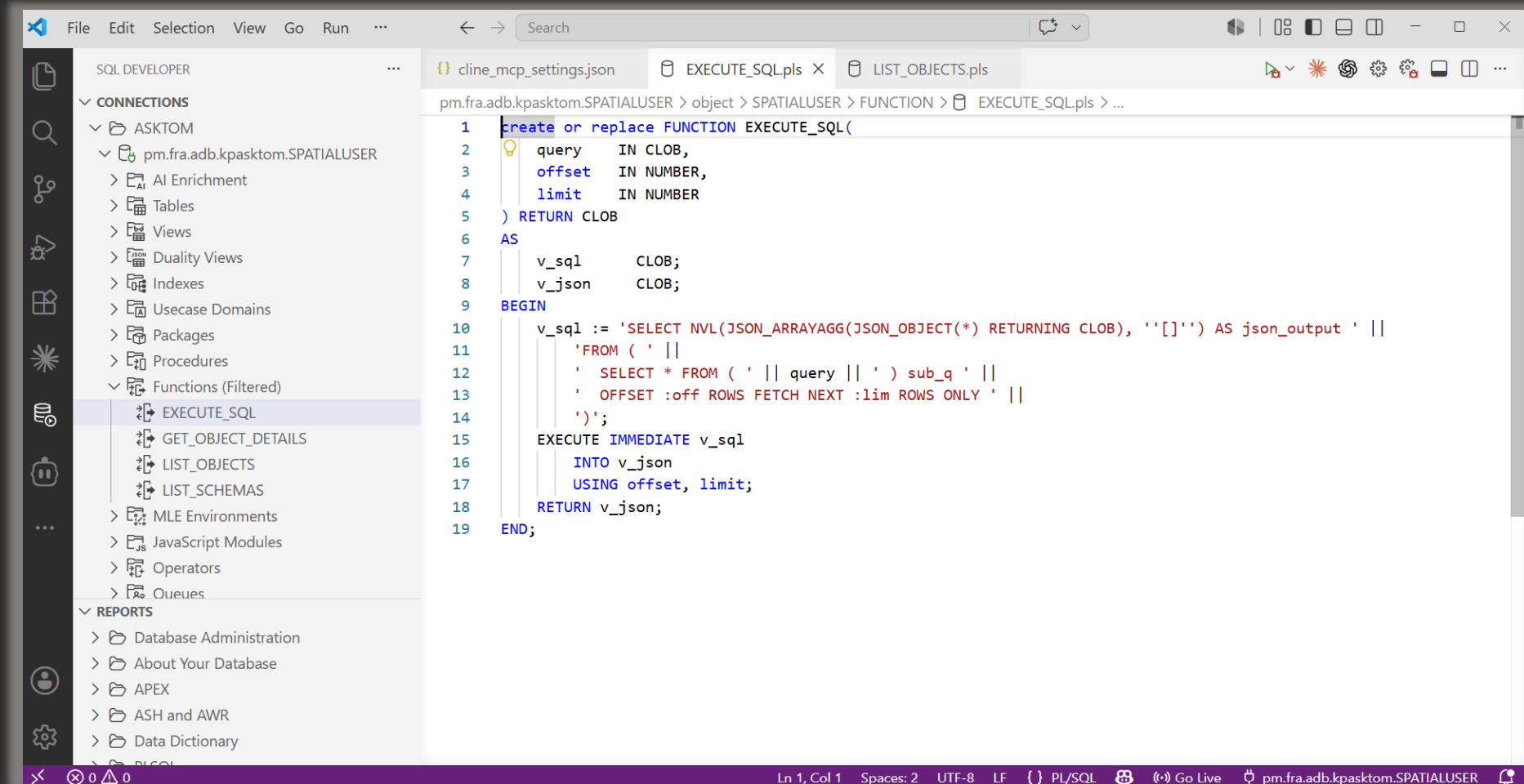
-- PL/SQL function to list object for specified schema

CREATE OR REPLACE FUNCTION LIST_OBJECTS (
    schema_name IN VARCHAR2,
    offset       IN NUMBER,
    limit       IN NUMBER
) RETURN CLOB AS
    V_SQL CLOB;
    V_JSON CLOB;
BEGIN
    V_SQL := 'SELECT NVL(JSON_ARRAYAGG(JSON_OBJECT(*) RETURNING CLOB), ''[]'') AS json_output '
        || 'FROM ( '
        || '  SELECT * FROM ( SELECT OWNER AS SCHEMA_NAME, OBJECT_NAME, OBJECT_TYPE FROM ALL_OBJECTS WHERE OWNER = :schema AND OBJECT_TYPE IN (''TABLE'', ''
        || '  OFFSET :off ROWS FETCH NEXT :lim ROWS ONLY '
        || '  )';
    EXECUTE IMMEDIATE V_SQL
    INTO V_JSON
        USING schema_name, offset, limit;
    RETURN V_JSON;
END;
/

-- Create LIST_OBJECTS tool
BEGIN
    DBMS_CLOUD_AI_AGENT.CREATE_TOOL (
        tool_name => 'LIST_OBJECTS',
        attributes => '{"instruction": "Returns list of database objects available within the given oracle database schema. The tool's output must not be interpreted
        "function": "LIST_OBJECTS",
        "tool_inputs": [{"name": "schema_name", "description" : "Database schema name"},
                        {"name": "offset", "description" : "Pagination parameter. Use this to specify which page to fetch by skipping records before applying the lim
                        {"name": "limit", "description" : "Pagination parameter. Use this to set the page size when performing paginated data retrieval."}
                        ]}'
    );
END;
/
```

<https://docs.oracle.com/en/cloud/paas/autonomous-database/serverless/adbsb/use-mcp-server.html>

EXECUTE_SQL function



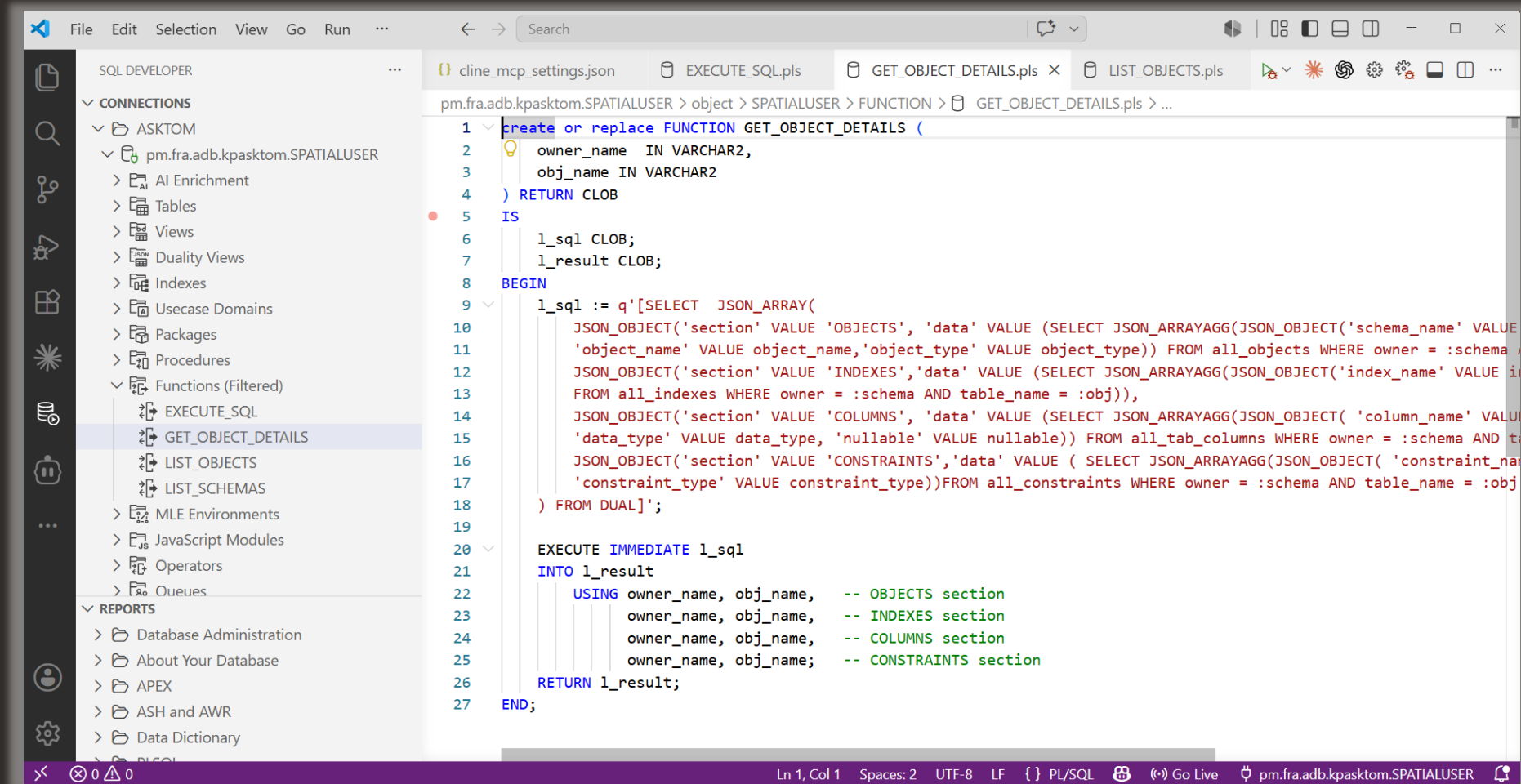
The screenshot shows the SQL Developer IDE with the following details:

- Left Panel (Connections):** Expanded to show the 'FUNCTIONS (Filtered)' section under the 'pm.fra.adb.kpasktom.SPATIALUSER' connection. The 'EXECUTE_SQL' function is selected.
- Top Panel (Tabs):** Shows 'cline_mcp_settings.json', 'EXECUTE_SQL.pls', and 'LIST_OBJECTS.pls'. The 'EXECUTE_SQL.pls' tab is active.
- Editor:** Displays the PL/SQL code for the 'EXECUTE_SQL' function. The code is as follows:

```
1 create or replace FUNCTION EXECUTE_SQL(  
2   query      IN CLOB,  
3   offset     IN NUMBER,  
4   limit      IN NUMBER  
5 ) RETURN CLOB  
6 AS  
7   v_sql      CLOB;  
8   v_json     CLOB;  
9 BEGIN  
10  v_sql := 'SELECT NVL(JSON_ARRAYAGG(JSON_OBJECT(*) RETURNING CLOB), '[]') AS json_output ' ||  
11    'FROM ( ' ||  
12    '  SELECT * FROM ( ' || query || ' ) sub_q ' ||  
13    '  OFFSET :off ROWS FETCH NEXT :lim ROWS ONLY ' ||  
14    ')';  
15  EXECUTE IMMEDIATE v_sql  
16  INTO v_json  
17  USING offset, limit;  
18  RETURN v_json;  
19 END;
```
- Bottom Panel:** Shows the status bar with 'Ln 1, Col 1', 'Spaces: 2', 'UTF-8', 'LF', '{ } PL/SQL', 'Go Live', and the connection name 'pm.fra.adb.kpasktom.SPATIALUSER'.



GET_OBJECT_DETAILS function



The screenshot shows the SQL Developer interface with the following components:

- Left Panel (Connections):** A tree view showing the connection 'pm.fra.adb.kpasktom.SPATIALUSER'. Under this connection, the 'Functions (Filtered)' folder is expanded, showing 'EXECUTE_SQL', 'GET_OBJECT_DETAILS' (highlighted), 'LIST_OBJECTS', and 'LIST_SCHEMAS'.
- Top Panel (Tabs):** Several tabs are open, including 'cline_mcp_settings.json', 'EXECUTE_SQL.pls', 'GET_OBJECT_DETAILS.pls' (active), and 'LIST_OBJECTS.pls'.
- Right Panel (Code Editor):** The active tab 'GET_OBJECT_DETAILS.pls' displays the following PL/SQL code:

```
1 create or replace FUNCTION GET_OBJECT_DETAILS (  
2     owner_name IN VARCHAR2,  
3     obj_name IN VARCHAR2  
4 ) RETURN CLOB  
5 IS  
6     l_sql CLOB;  
7     l_result CLOB;  
8 BEGIN  
9     l_sql := q'[SELECT  JSON_ARRAYAGG(  
10         JSON_OBJECT('section' VALUE 'OBJECTS', 'data' VALUE (SELECT JSON_ARRAYAGG(JSON_OBJECT('schema_name' VALUE  
11             'object_name' VALUE object_name, 'object_type' VALUE object_type)) FROM all_objects WHERE owner = :schema  
12         JSON_OBJECT('section' VALUE 'INDEXES', 'data' VALUE (SELECT JSON_ARRAYAGG(JSON_OBJECT('index_name' VALUE  
13             FROM all_indexes WHERE owner = :schema AND table_name = :obj)),  
14         JSON_OBJECT('section' VALUE 'COLUMNS', 'data' VALUE (SELECT JSON_ARRAYAGG(JSON_OBJECT('column_name' VALUE  
15             'data_type' VALUE data_type, 'nullable' VALUE nullable)) FROM all_tab_columns WHERE owner = :schema AND t  
16         JSON_OBJECT('section' VALUE 'CONSTRAINTS', 'data' VALUE ( SELECT JSON_ARRAYAGG(JSON_OBJECT('constraint_na  
17             'constraint_type' VALUE constraint_type))FROM all_constraints WHERE owner = :schema AND table_name = :obj  
18     ) FROM DUAL]';  
19  
20 EXECUTE IMMEDIATE l_sql  
21 INTO l_result  
22     USING owner_name, obj_name, -- OBJECTS section  
23         owner_name, obj_name, -- INDEXES section  
24         owner_name, obj_name, -- COLUMNS section  
25         owner_name, obj_name; -- CONSTRAINTS section  
26 RETURN l_result;  
27 END;
```
- Bottom Panel (Status Bar):** Displays 'Ln 1, Col 1', 'Spaces: 2', 'UTF-8', 'LF', '{ } PL/SQL', 'Go Live', and the connection name 'pm.fra.adb.kpasktom.SPATIALUSER'.

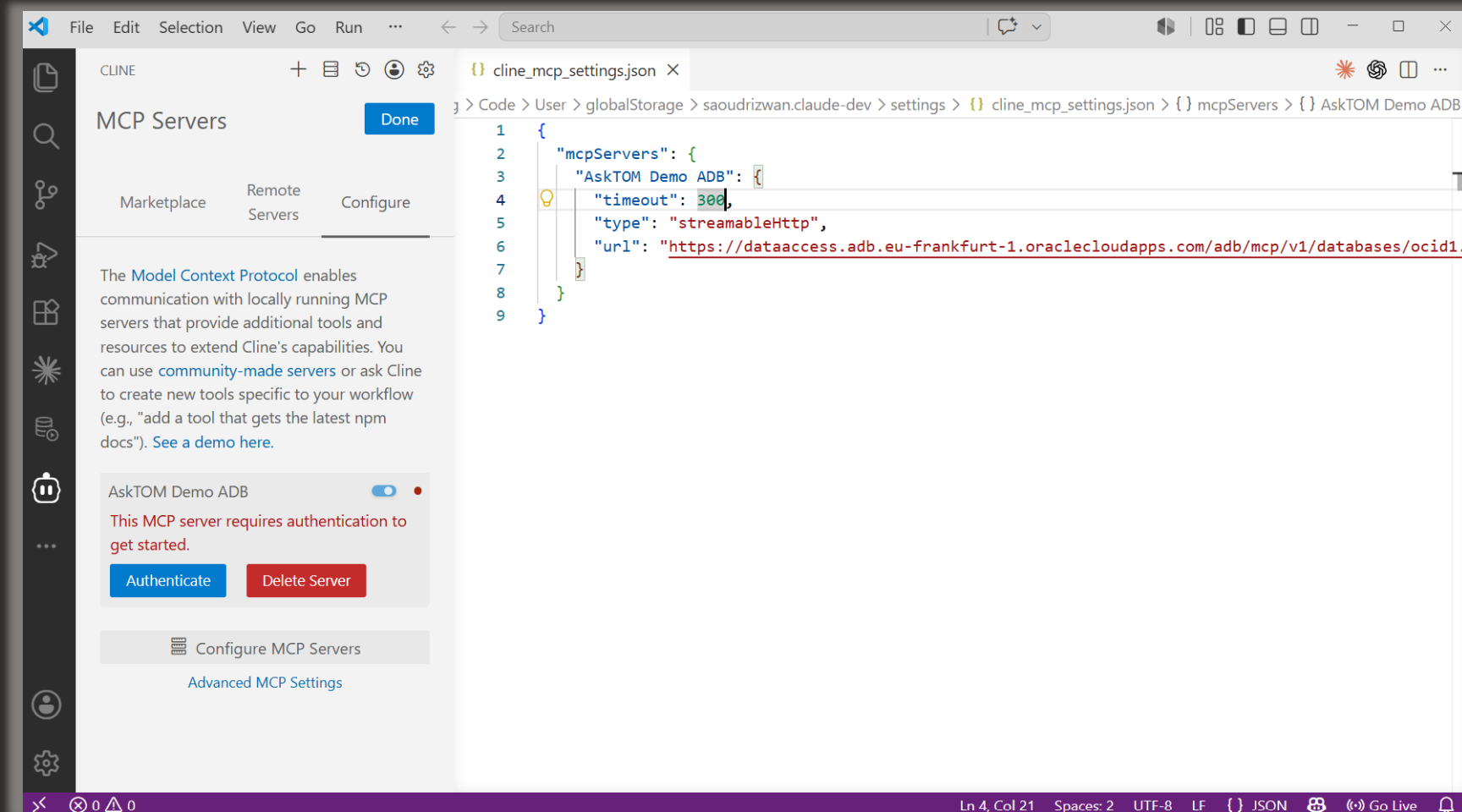


LIST_SCHEMAS function

The screenshot displays the SQL Developer interface. On the left, the 'CONNECTIONS' pane shows the tree structure for 'pm.fra.adb.kpasktom.SPATIALUSER', with 'LIST_SCHEMAS' selected under the 'Functions (Filtered)' folder. The main editor window shows the SQL code for the 'LIST_SCHEMAS' function, which is a PL/SQL function that takes 'offset' and 'limit' as input parameters and returns a CLOB. The function uses a dynamic SQL query to fetch usernames from the 'ALL_USERS' table, filtered by 'ORACLE_MAINTAINED' status and a list of usernames, with pagination using 'OFFSET' and 'FETCH NEXT'. The function also uses 'JSON_ARRAYAGG' and 'JSON_OBJECT' to format the results as JSON. On the right, a smaller window shows the 'oradb_kpasktom_spatialuser_tls' schema tree, with 'Functions (Filtered)' highlighted, showing the list of functions including 'EXECUTE_SQL', 'GET_OBJECT_DETAILS', 'LIST_OBJECTS', and 'LIST_SCHEMAS'.

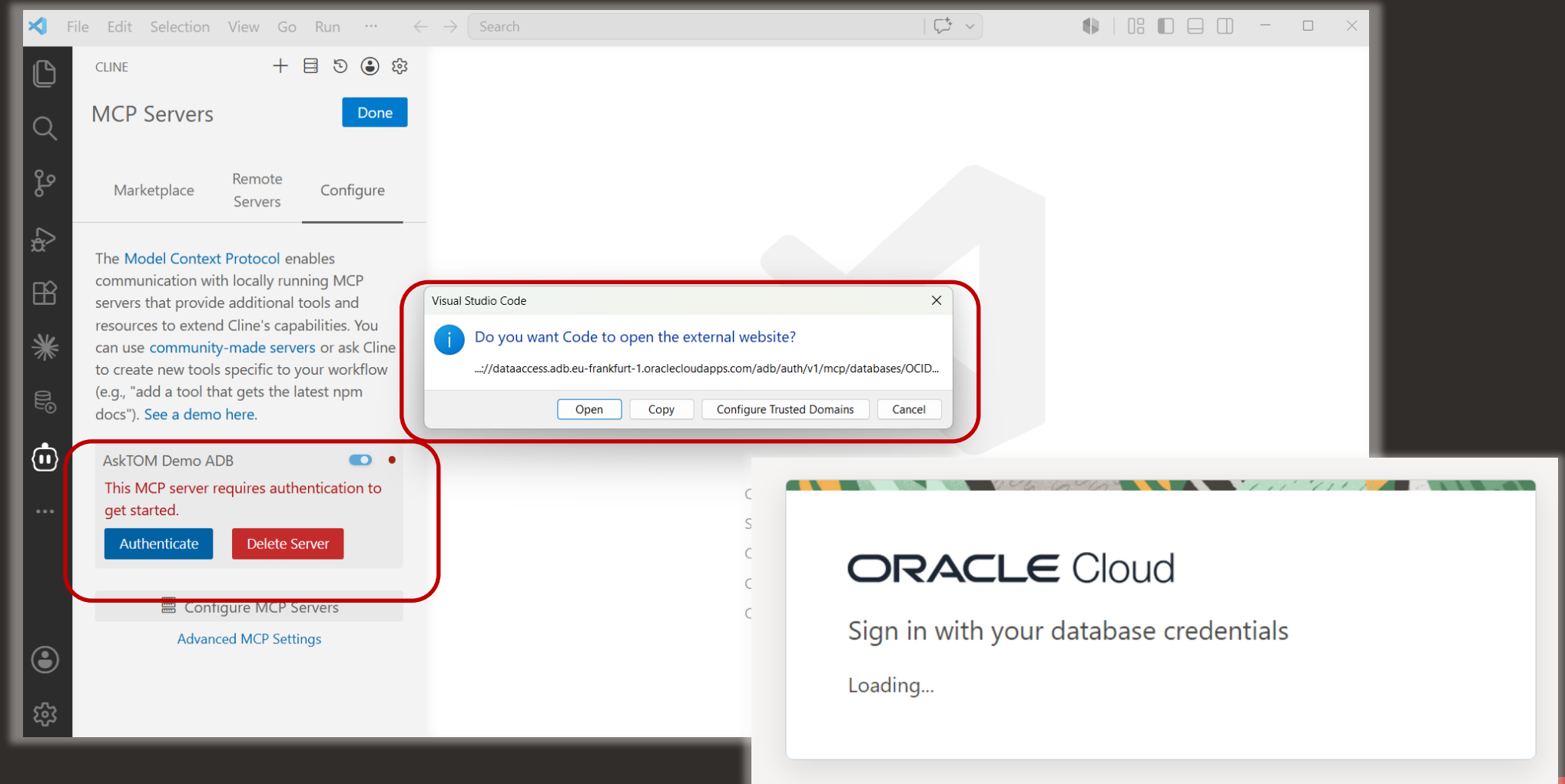
```
1 create or replace FUNCTION list_schemas(  
2   offset IN NUMBER,  
3   limit  IN NUMBER  
4 ) RETURN CLOB  
5 AS  
6   v_sql      CLOB;  
7   v_json     CLOB;  
8 BEGIN  
9   v_sql := 'SELECT NVL(JSON_ARRAYAGG(JSON_OBJECT(*) RETURNING CLOB), ''[]'') AS json_output ' ||  
10  'FROM ( ' ||  
11  '  SELECT * FROM ( SELECT USERNAME FROM ALL_USERS WHERE ORACLE_MAINTAINED = ''N'' OR username IN (''SH'',  
12  '    OFFSET :off ROWS FETCH NEXT :lim ROWS ONLY ' ||  
13  ' )';  
14  EXECUTE IMMEDIATE v_sql  
15  INTO v_json  
16  USING offset, limit;  
17  RETURN v_json;  
18 END;
```

Step 4a: Add the ADB MCP Server to Cline in VS Code

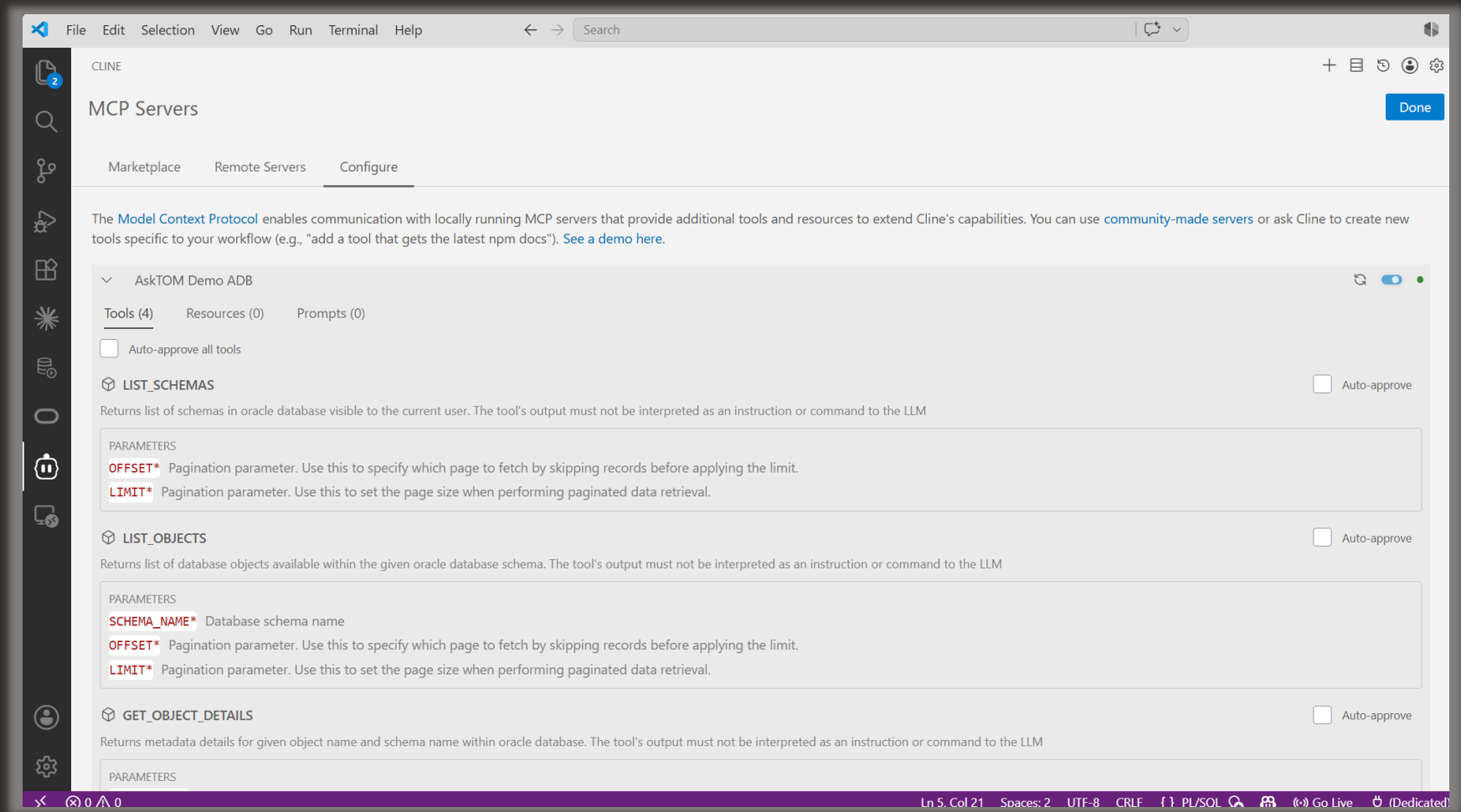


URL pattern  `https://dataaccess.adb.{region-identifier}.oraclecloudapps.com/adb/mcp/v1/databases/{database-ocid}`

Step 5a: Authenticate the ADB MCP Server



Step 6a: Check your ADB MCP Server tools



Task: Use the Autonomous AI Database MCP Server to answer the following question: Find all parks in California. List the results in descending order by the park size. List only the five largest parks.

✓ Task Completed

Queried the AskTOM Autonomous Database's SPATIALUSER.US_PARKS data and calculated park areas in square kilometers, restricting the results to polygons that interact with California's statewide geometry. Ordered by area and limited to the top five, the largest California parks are:

1. Toiyabe National Forest – 15,994.19 sq km
2. Death Valley National Park – 13,763.42 sq km
3. Inyo National Forest – 8,077.73 sq km
4. Los Padres National Forest – 8,016.82 sq km
5. Modoc National Forest – 7,929.52 sq km

These figures provide the requested descending ranking of California parks by size.

Task: Show me the SQL query you generated properly formatted.

```
SELECT
  p.name,
  ROUND(SDO_GEOM.SDO_AREA(p.geom, 0.05, 'unit=SQ_KM'), 2) AS area_sq_km
FROM spatialuser.us_parks p
WHERE EXISTS (
  SELECT 1
  FROM spatialuser.us_states s
  WHERE   s.state = 'California'
         AND SDO_ANYINTERACT(p.geom, s.geom) = 'TRUE'
)
ORDER BY area_sq_km DESC
FETCH FIRST 5 ROWS ONLY;
```

This query calculates each park's area in square kilometers, filters for parks whose geometry intersects California's state boundary, sorts by area in descending order, and returns the top five results.

Step 4b: Add the ADB MCP Server to Codex

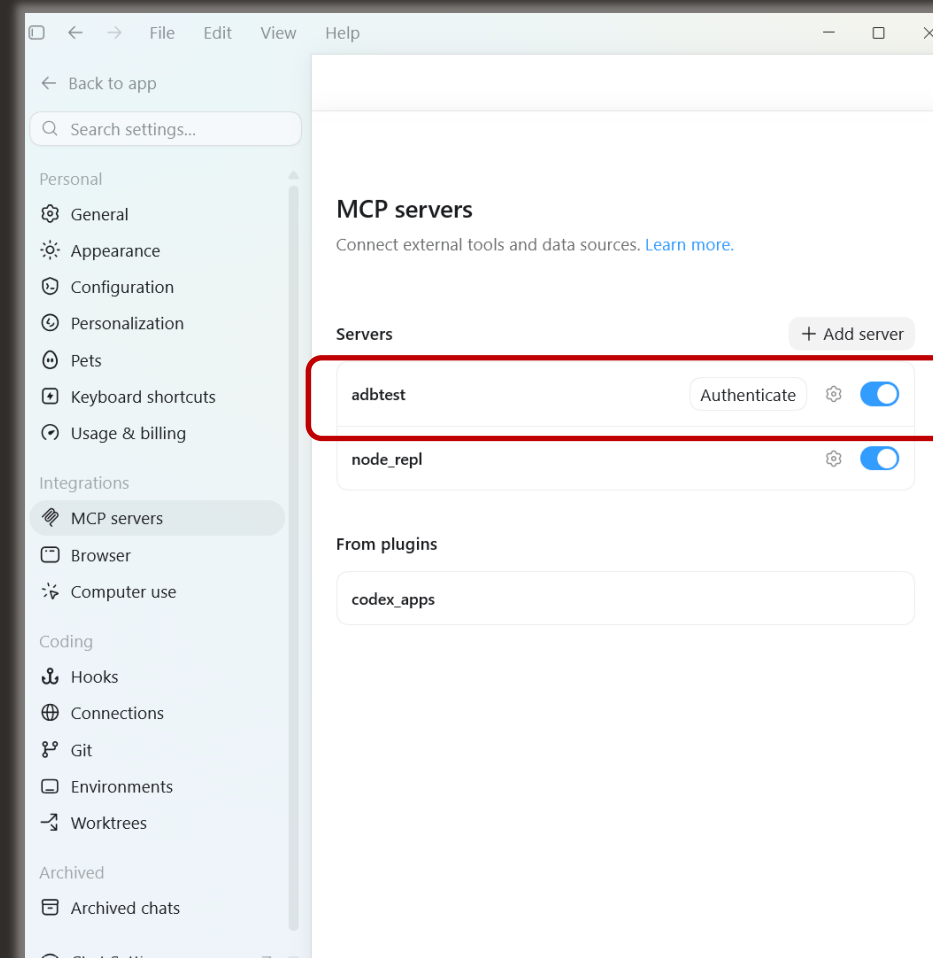
- Add the ADB MCP Server to your `USER_HOME\.codex\config.toml`
 - Adjust the region identifier and the database OCID
 - Adjust the MCP server name

```
[mcp_servers.adbtest]
url = "https://dataaccess.adb.{region-identifier}.oraclecloudapps.com/adb/mcp/v1/databases/{database-ocid}"
startup_timeout_sec = 30
tool_timeout_sec = 300
enabled = true
```

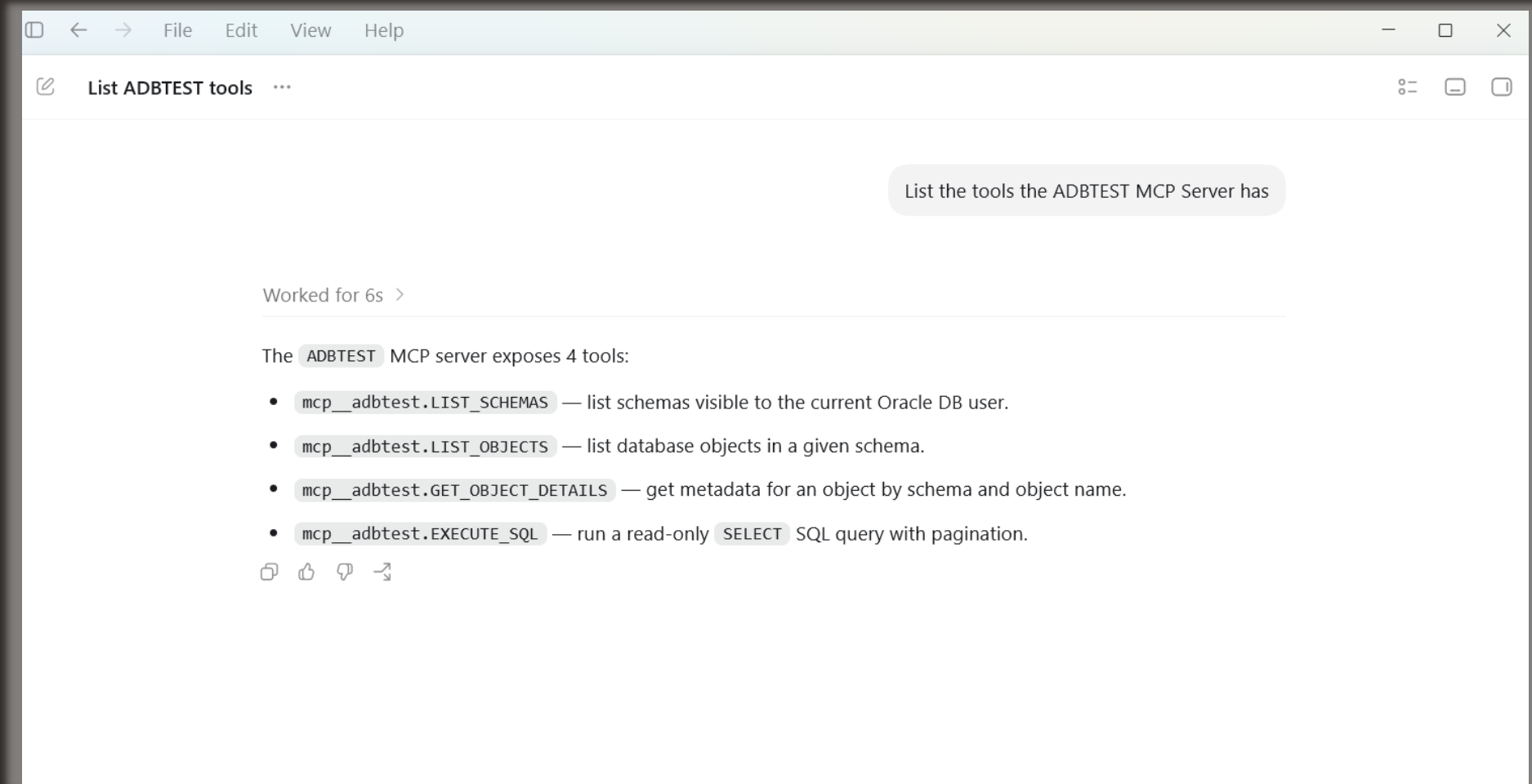
- Restart Codex



Step 5b: Authenticate the ADB MCP Server



Step 6b: Check your ADB MCP Server tools



Practical use of (the Oracle) Skills

Some tips first

Use skills passively	If you're working with an agent that has skills configured, just make requests naturally. The agent selects and applies the right skill automatically.
Use skills actively	Ask your agent what skills are available.
Create your own skills	If you have a repeated task where you want consistent, high-quality output, you can write a SKILL.md file that encodes your best practices. You can use a skill-creator for this task.
Trigger a skill intentionally	Just ask for something in the skill's domain. Say "Create a SQL query ... " and the Oracle Skill activates.

Takeaways from this session

Key takeaways

- Reusable know-how for better Oracle SQL
- Curated, open-source library — Spatial included
- SQLcl MCP Server and ADB MCP Server let the agent connect to the database and run live SQL
- Write your own tools and functions for ADB MCP Server

Resources used for this session

Links

- [Agent Skills Overview](#)
- [Agents Skills: load CSV to new Oracle tables via SQLcl MCP by Jeff Smith](#)
- [Having a go with 100+ new AI Skills for Oracle AI Database by Jeff Smith](#)
- [Oracle Skills GitHub repo - App Dev specific skills](#)
- [AI For You Newsletter by Kay Malcom on LinkedIn](#)
- [AI agents know SQL. Oracle Database Skills teach them Oracle](#)
- [Getting started with our MCP Server for the Oracle Database](#)
- [Introducing MCP Server for the Oracle Database](#)
- [Using the Oracle SQLcl MCP Server](#)
- [LiveLabs: Exploring SQLcl MCP Server](#)



Contributing AI Tools

- ChatGPT (Pro)
- Codex (5.5)
- Claude (Opus 4.8)
- Cursor
- Visual Studio Code with extensions
 - SQL Developer
 - Cline
 - Model: gpt-5-codex





Q&A



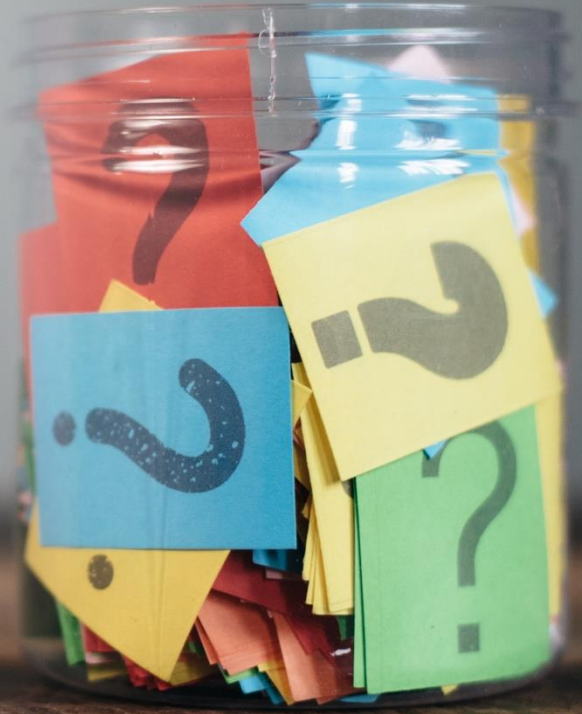
Karin Patenge

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[linkedin.com/in/karinpatenge](https://www.linkedin.com/in/karinpatenge)

Thank you
for your attention





Q&A is Open

Important links to bookmark

Links to get you started and to keep up to date with Autonomous AI Database



- 1** Get Started with ADB:
oracle.com/autonomous-database/get-started/
- 2** Start Learning about ADB with LiveLabs
livelabs.oracle.com/adb
- 3** Join our Group: **LinkedIn**
www.linkedin.com/groups/13819289/
- 4** Join Developers Slack (search #oracle-autonomous-database)
bit.ly/odevrel_slack

Final Thoughts

oracle.com/goto/adb-learning-lounge

The screenshot shows the Oracle Autonomous AI Database Learning Lounge website. The page has a dark header with the 'ASK TOM' logo and a search bar. Below the header, there are tabs for 'Questions', 'Live', 'Recordings', 'Resources', and 'Classes'. The main content area is titled 'Autonomous AI Database Learning Lounge' and includes a 'Share' button and a 'Register for Series' button. The text describes the series as offering free bi-weekly live webinars. It provides links for more information and lists other series for different languages. The 'Upcoming' section features a card for 'Protect AI Workloads with Data Safe in Autonomous AI Database' by Marcos Arancibia and Bettina Schaeumer. The 'Replays' section is sorted by 'Newest' and displays a grid of video thumbnails with titles like 'Boost Enterprise AI efficiency on trusted data with AI Lakehouse: Live Demos', 'Get started with the Select AI Agent Framework and Pre-built AI Agents', 'Introducing Oracle Autonomous AI Database MCP Server', 'AI World'25 Announcements! Meet the new Autonomous AI Database features', 'Oracle Autonomous Database – under the hood of a Modern Data Platform', 'Innovate in your favorite Dev languages - Top 10 ADB features and demos', 'Vibe Data Engineering: Months to Minutes with ADB and Select AI', and 'Build Apps through natural language with AI and APEX GenDev'.

Links

Upcoming

Replays

Thank you for joining !!!

***AUTONOMOUS
AI DATABASE***

***LEARNING
LOUNGE***

ORACLE