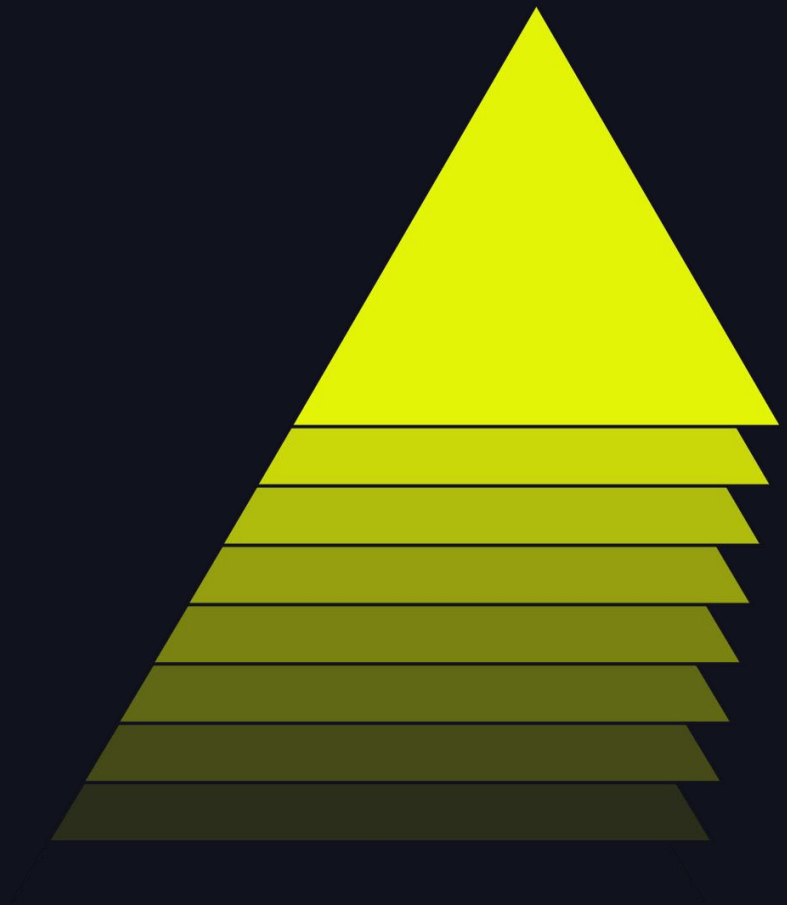
DATA+AI SUMMIT BY databricks

BUILDING SMART INDUSTRIAL AUTOMATIONS WITH THE DATABRICKS API



JOYCE LIN, VIAM
JUNE 12, 2024

SMART INDUSTRIAL AUTOMATIONS

With the Databricks Statement Execution API

Joyce Lin
Head of Developer Relations at Viam
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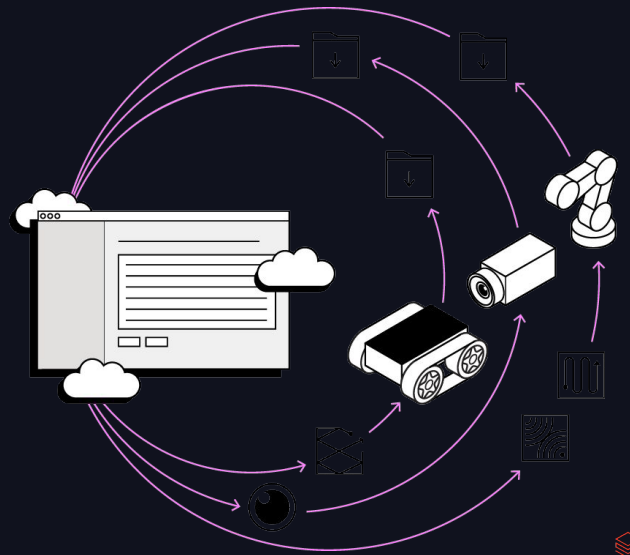
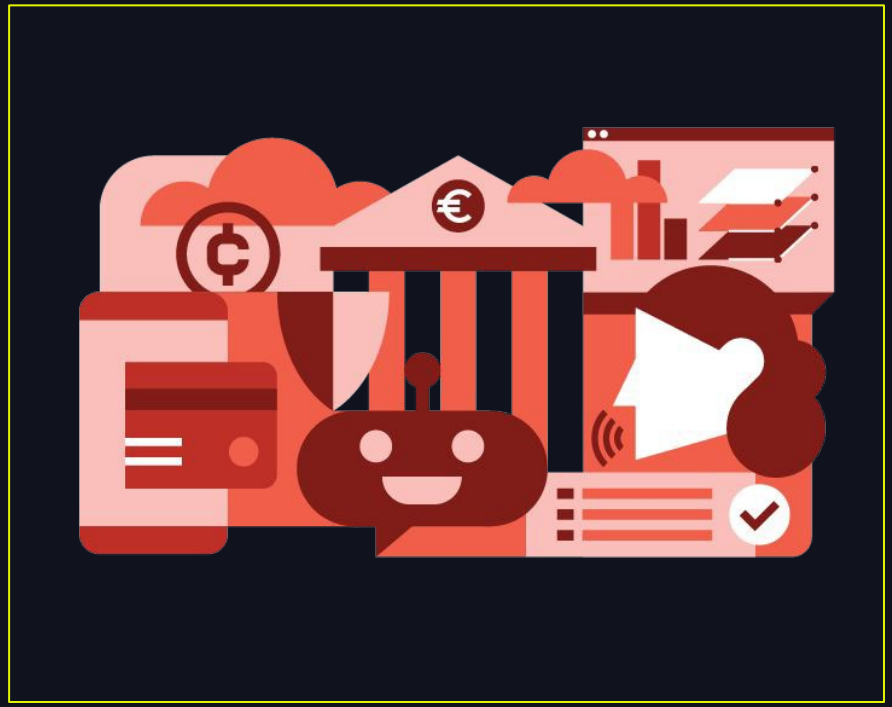


SMART INDUSTRIAL AUTOMATIONS

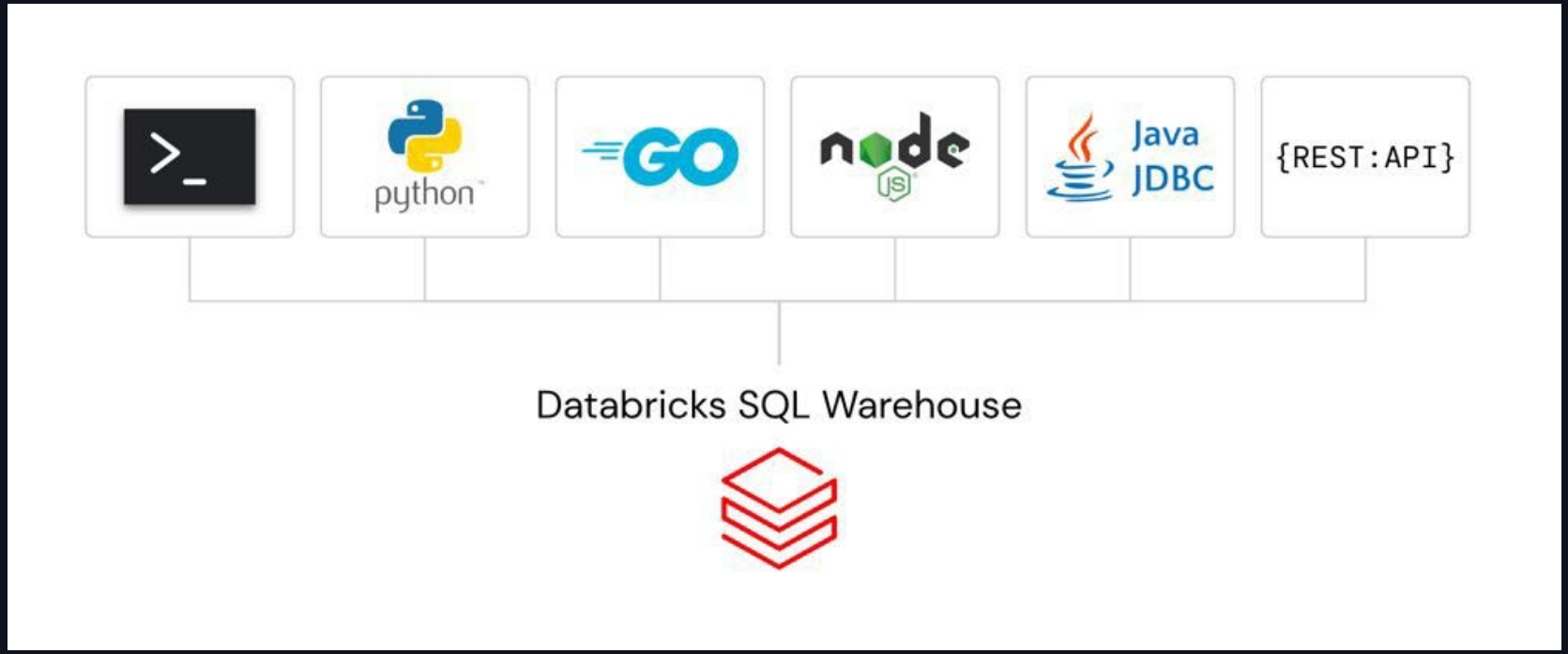
With the Databricks Statement Execution API

- **Databricks Statement Execution API**
- **API automation example**
  - send notification for long-running query
- **Code generation**



WAYS TO CONNECT TO DATABRICKS SQL

Native connectors



THE DATABRICKS STATEMENT EXECUTION API

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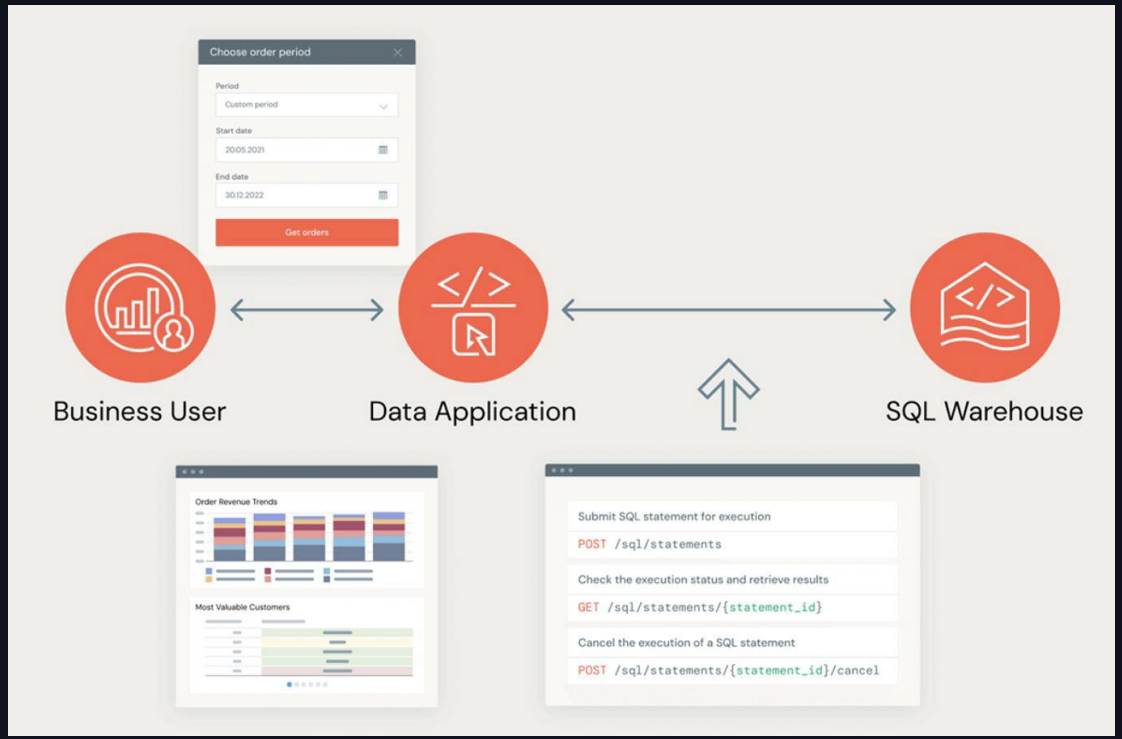
DATABRICKS SQL STATEMENT EXECUTION API

HTTP API

- Use the API to connect to your Databricks SQL warehouse over a REST API to access and manipulate data managed by the Databricks Lakehouse Platform.
- Availability
  - Databricks Premium and Enterprise tiers
  - AWS, Azure, GCP (coming soon)



DATABRICKS SQL STATEMENT EXECUTION API

Endpoints

Submit a SQL statement for execution	POST **/sql/statements**
Check the status and retrieve results	GET **/sql/statements/{statement_id}** **/sql/statements/{statement_id}/result/chunks/{chunk_index}**
Cancel a SQL statement execution	POST **/sql/statements/{statement_id}/cancel**

THREE EXECUTION MODES

Submit a SQL statement for execution

Default	Asynchronous	Synchronous
☯️	🔀	⏯️
POST	POST	POST
/sql/statements	/sql/statements	/sql/statements
wait_timeout: "15s"	**wait_timeout: "0s"**	**wait_timeout: "15s"**
on_wait_timeout: "CONTINUE"		**on_wait_timeout: "CANCEL"**
Fetch results with ID	Fetch results with ID	Receive results in same call

API AUTOMATION EXAMPLE

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Home Workspaces API Network Search Postman Invite Upgrade

Team Workspace New Import

Collections Environments History

Data

Databricks SQL St... joycejetson's fork

- Databricks Tutorial
- Automation example
  - POST Long-running query
  - GET Check status
  - POST Send notification

POST Long-running query

No environment

Databricks SQL Statement Execution API / Automation example / **Long-running query**

Save Share

POST https://{{DATABRICKS_HOST}}/api/2.0/sql/statements/ Send

Params Authorization Headers (11) Body Scripts Settings Cookies

none form-data x-www-form-urlencoded raw binary GraphQL JSON Beautify

```
{
  "warehouse_id": "{{DATABRICKS_SQL_WAREHOUSE_ID}}",
  "catalog": "samples",
  "schema": "nyctaxi",
  "statement": "SELECT * FROM trips",
  "wait_timeout": "0s"
}
```

Response

Click Send to get a response

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Online Console Postbot Runner Capture requests Desktop Agent Cookies Vault Trash

SMART INDUSTRIAL AUTOMATIONS

API automation example: send notification for long-running query

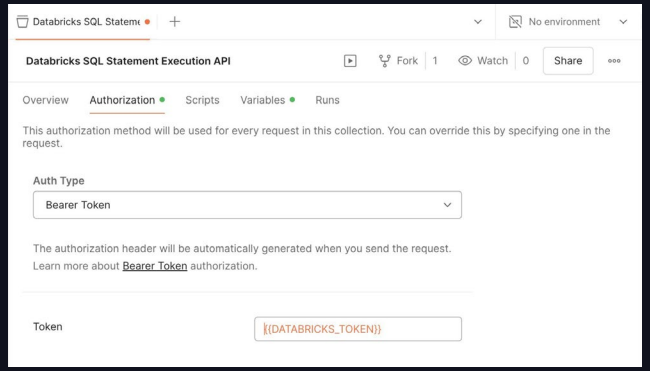
Submit long-running query

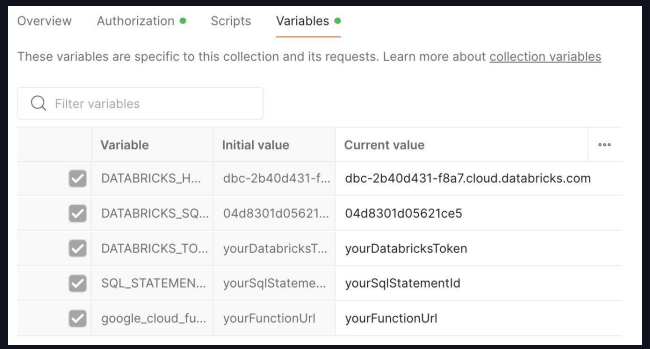
Check status, and keep checking every so often, until execution completed

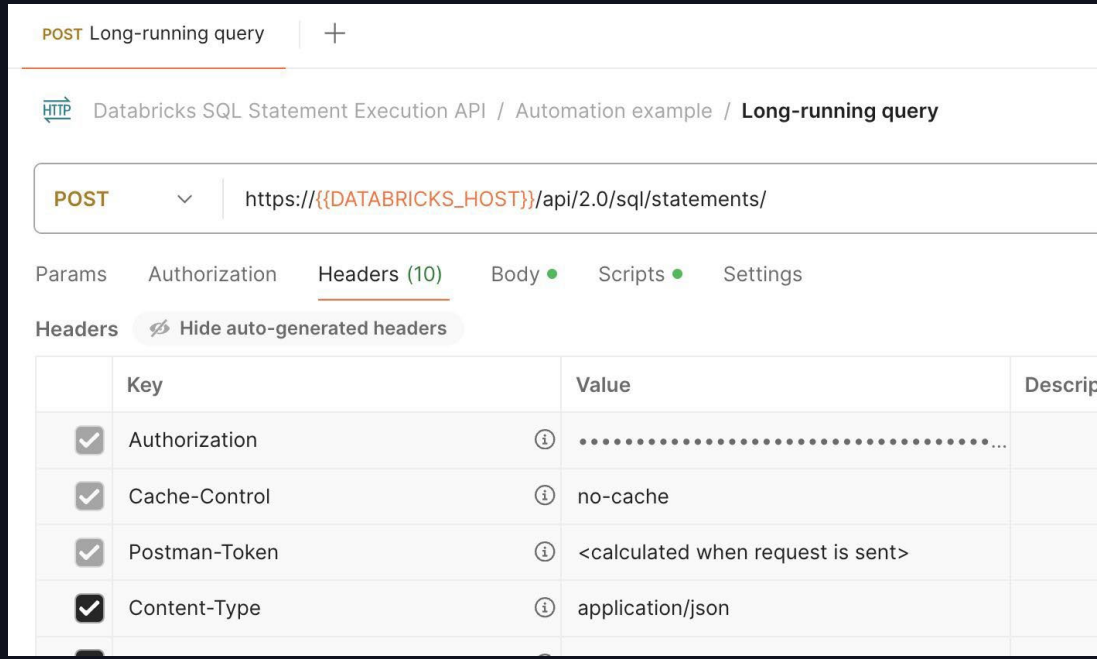
Trigger notification on a physical device (or email, SMS, push notif, etc)

SMART INDUSTRIAL AUTOMATIONS

API automation example: authorization

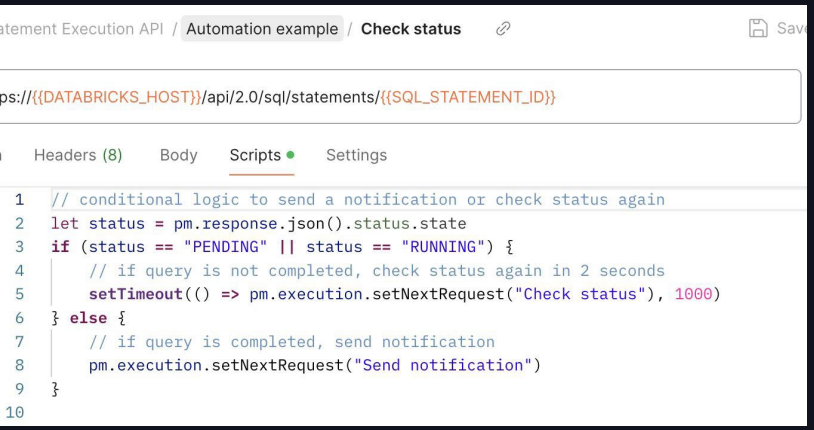


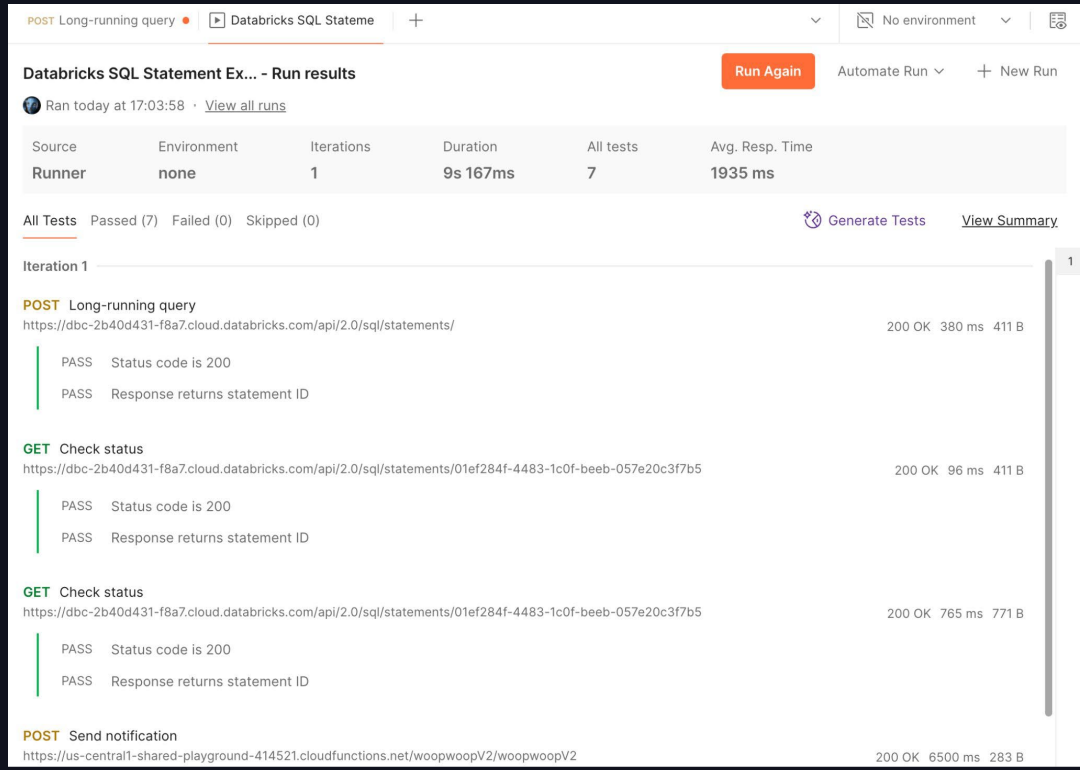




SMART INDUSTRIAL AUTOMATIONS

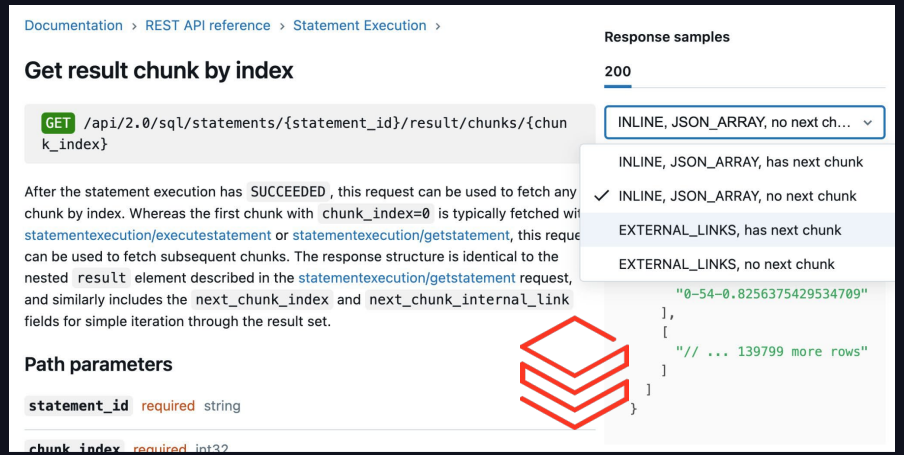
API automation example: scripts and execution

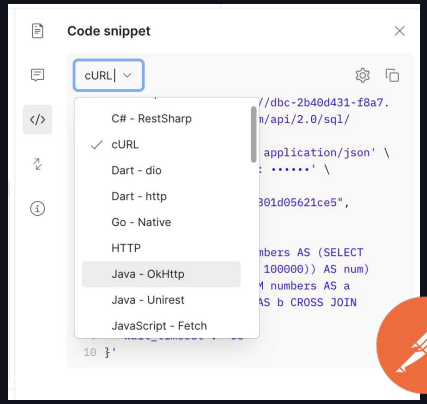


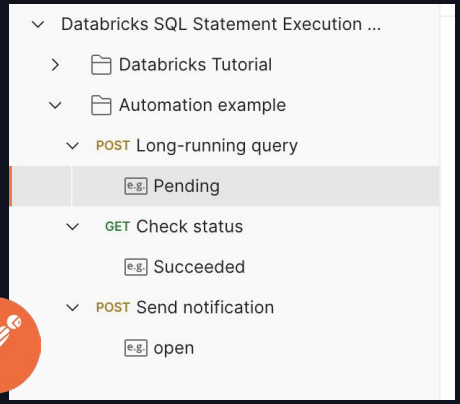


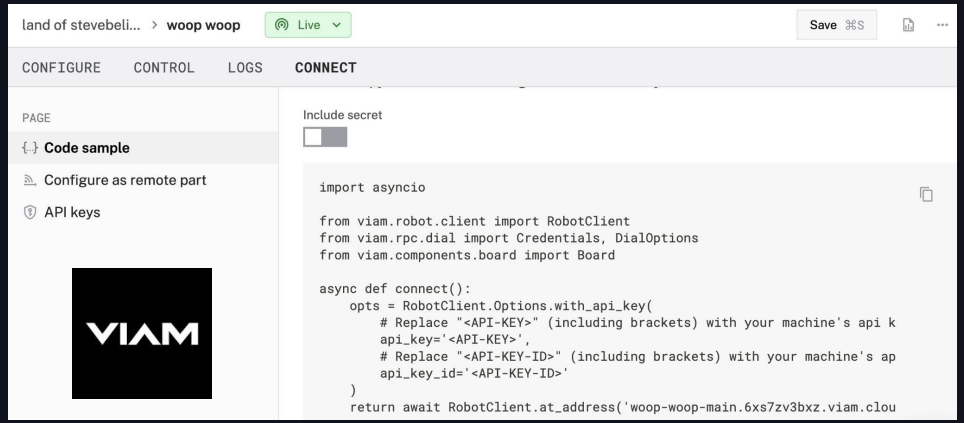
SMART INDUSTRIAL AUTOMATIONS

Code examples and generation



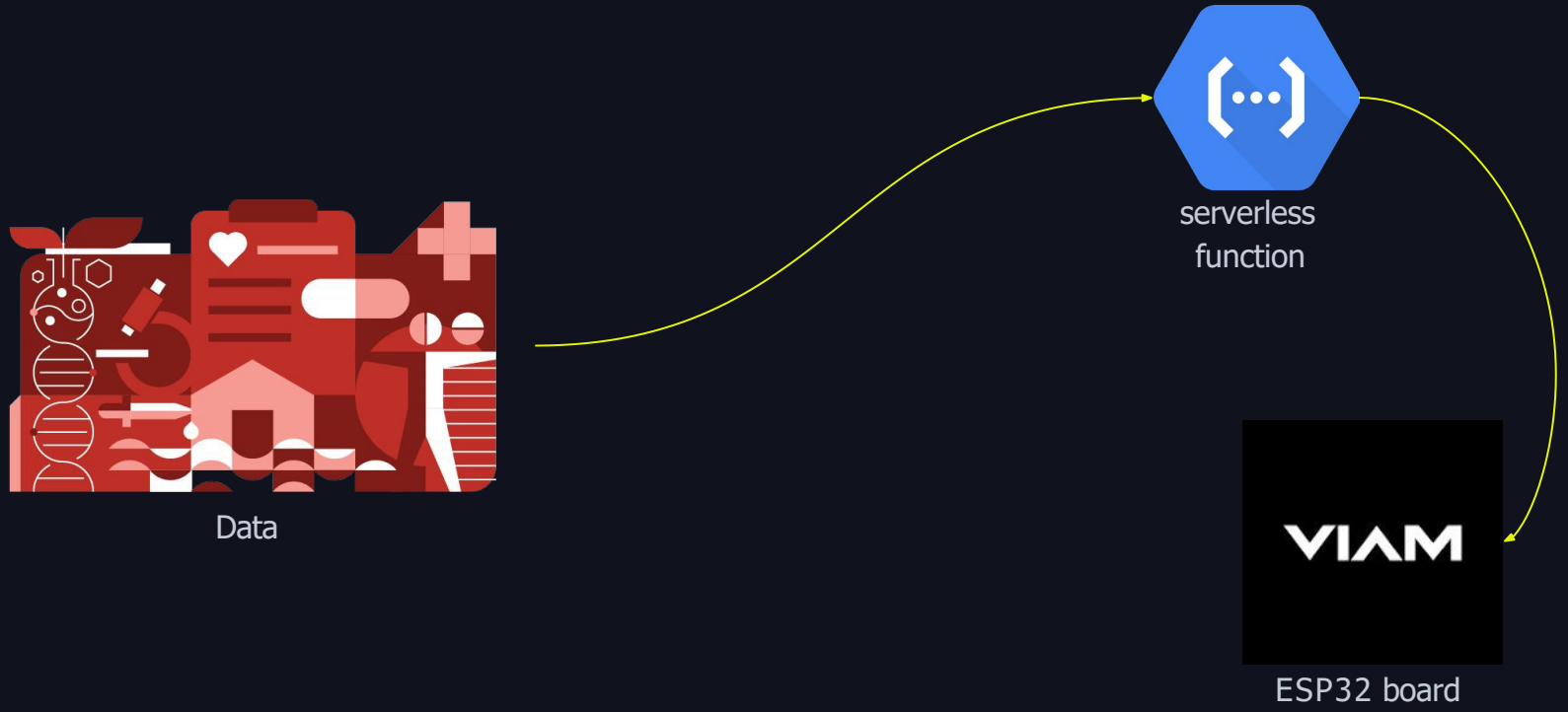






SMART INDUSTRIAL AUTOMATIONS

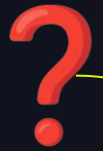
Automation example architecture



SMART INDUSTRIAL AUTOMATIONS

Automation example architecture

Data



serverless function

VIAM

ESP32 board

SMART INDUSTRIAL AUTOMATIONS

Automation example architecture

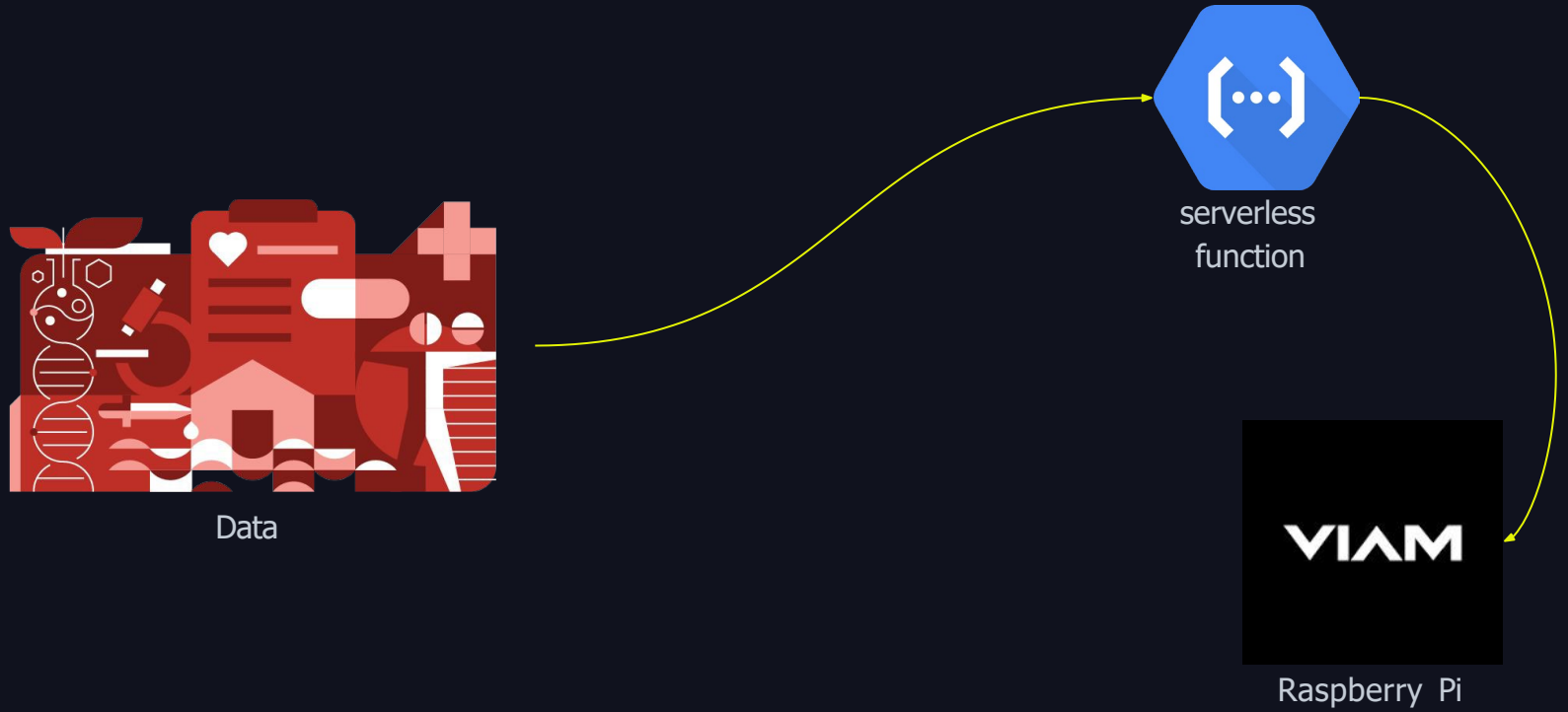
Data

VIAM

ESP32 board

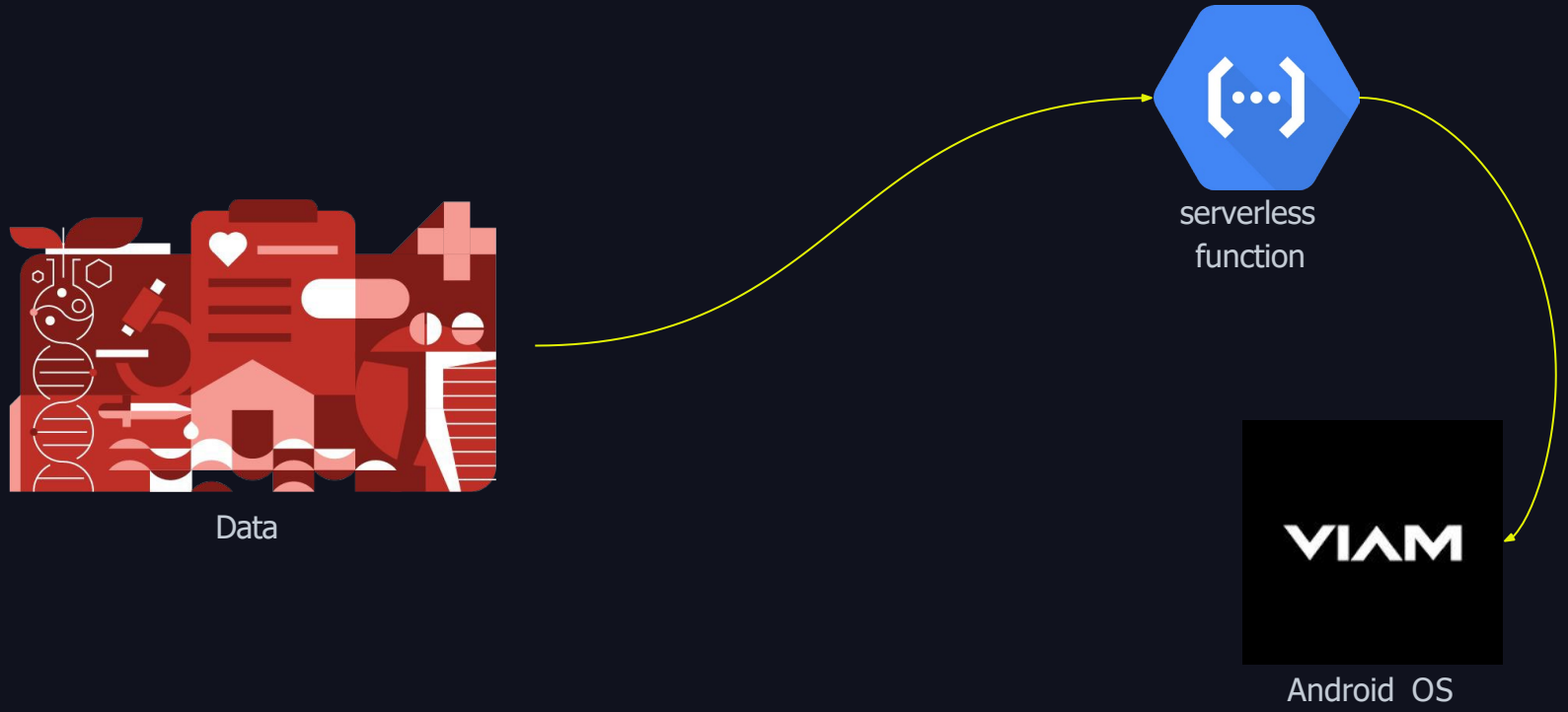
SMART INDUSTRIAL AUTOMATIONS

Automation example architecture



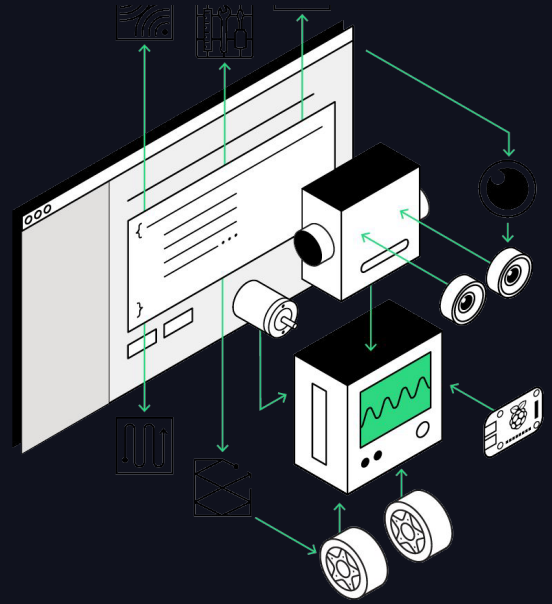
SMART INDUSTRIAL AUTOMATIONS

Automation example architecture



SMART INDUSTRIAL AUTOMATIONS

With the Databricks Statement Execution API



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Statement Execution API: Run SQL on warehouses

Statement Execution Reference (by cloud)

Postman collection

Try Viam