SQL in the Data Intelligence Platform

INTRODUCTION TO DATABRICKS SQL

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datacamp

Instructor Introduction

Kevin Barlow

DATA MANAGER

Who am I?

Professional in the data analytics industry with over a decade of working with different analytical tools.

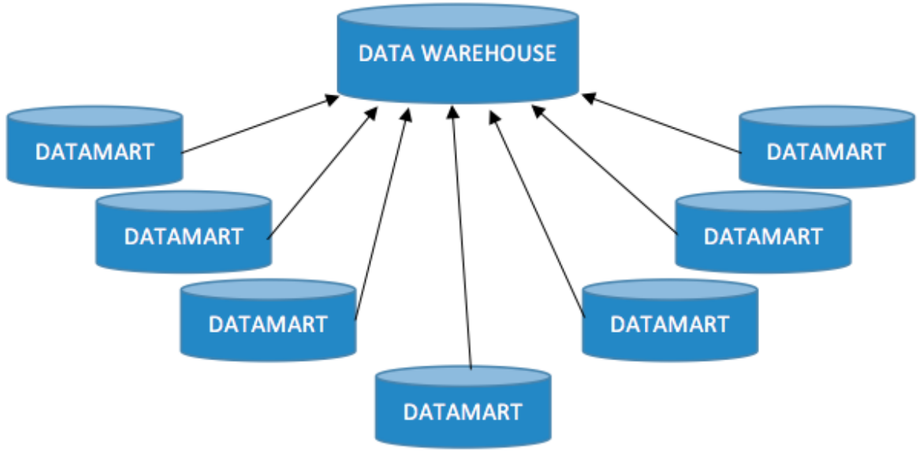
Worked with companies of all sizes to deliver analytics solutions.

Extensive knowledge of the Databricks platform.

Motivation

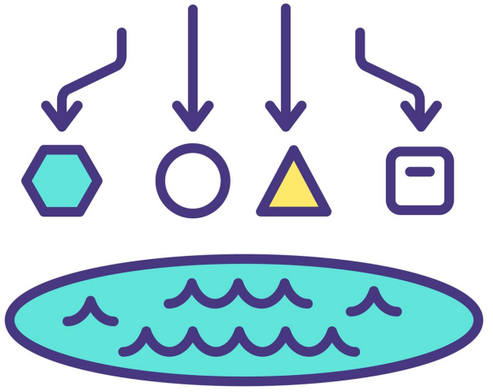
Data Warehouses

- Great for SQL workloads
- Typically expensive
- Proprietary technologies
- Limited capabilities and integrations

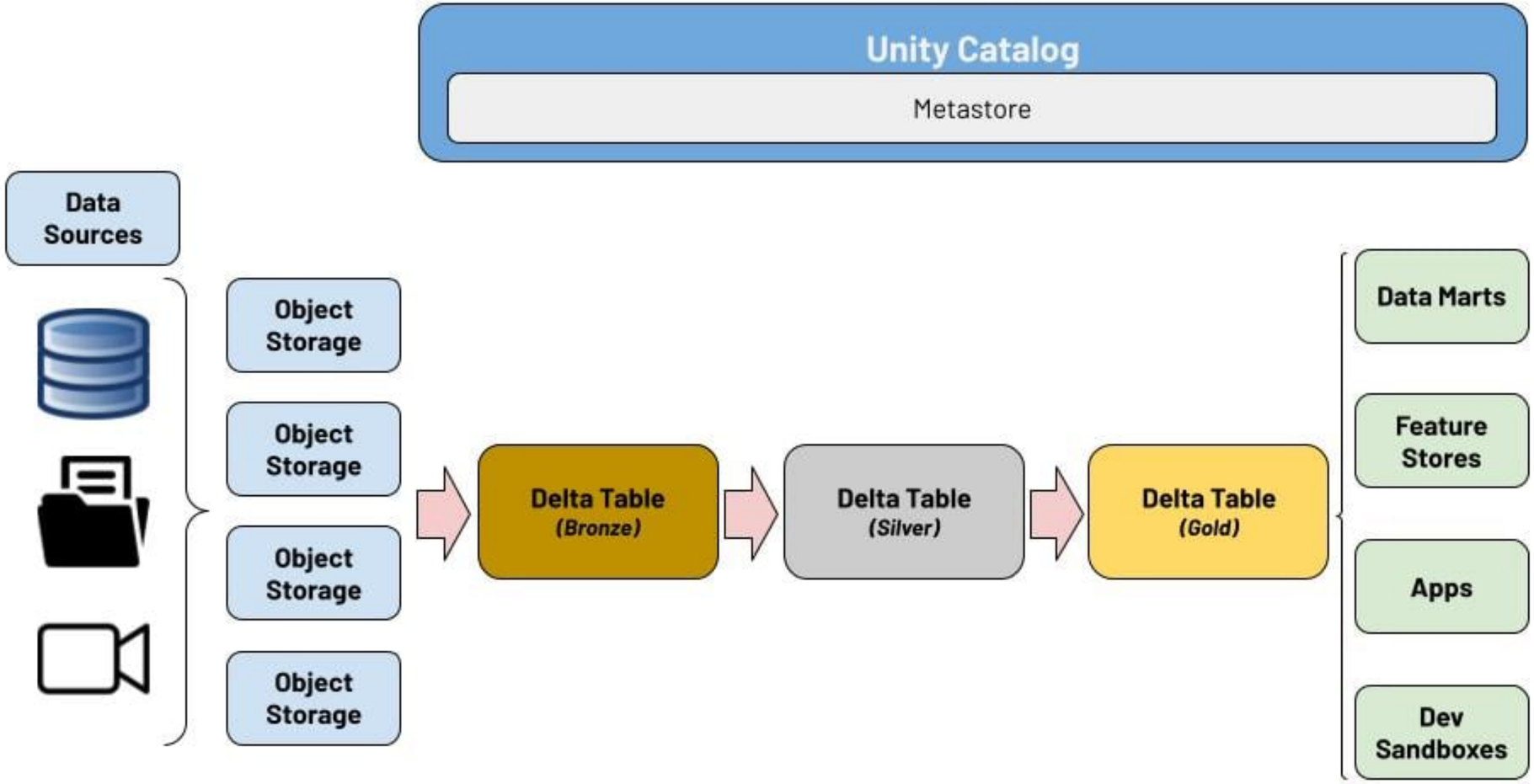


Data Lakes

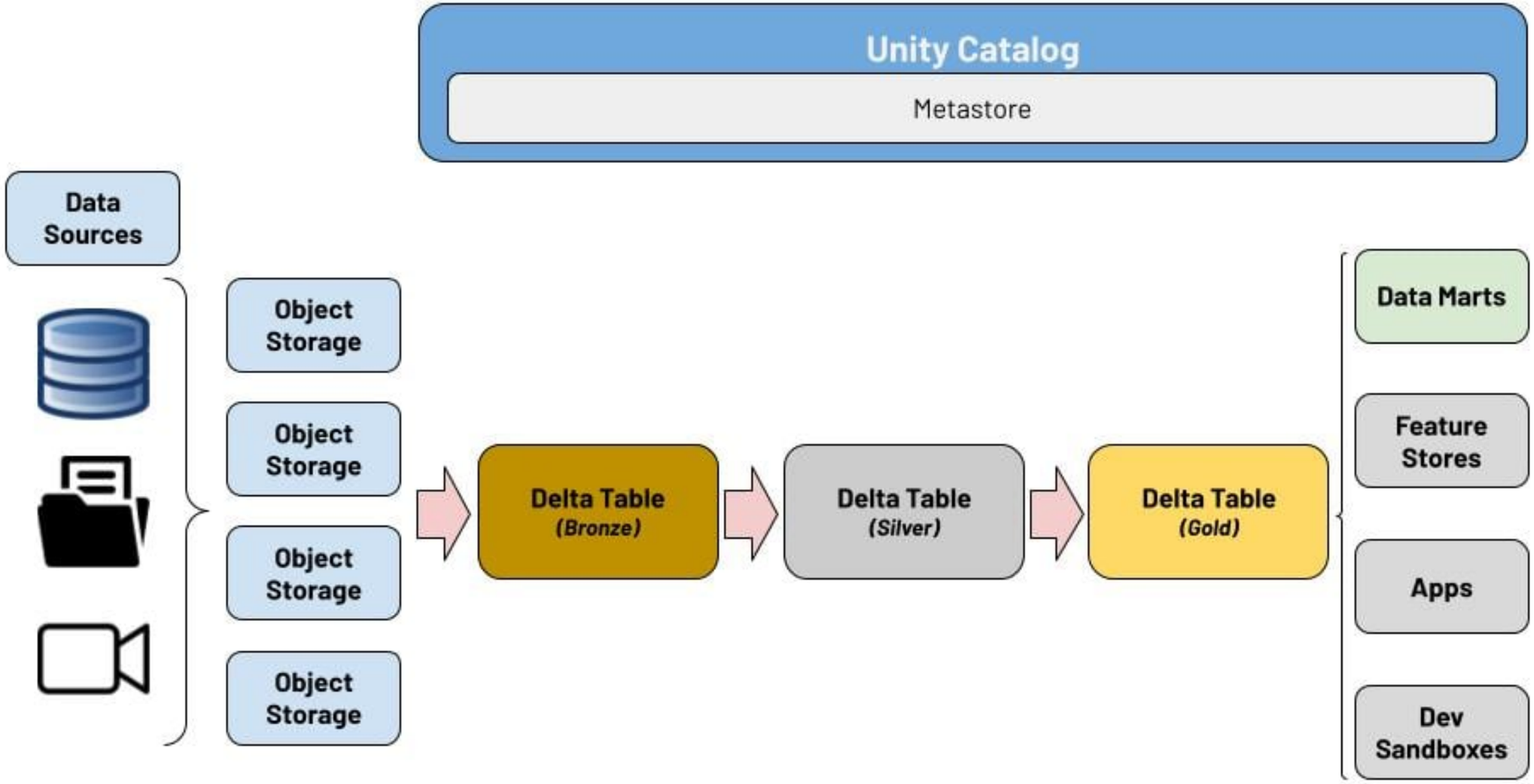
- Great for non-SQL workloads
- Cost effective, lackluster performance
- Open-source technologies
- Unlimited capabilities



Data warehousing in the Lakehouse

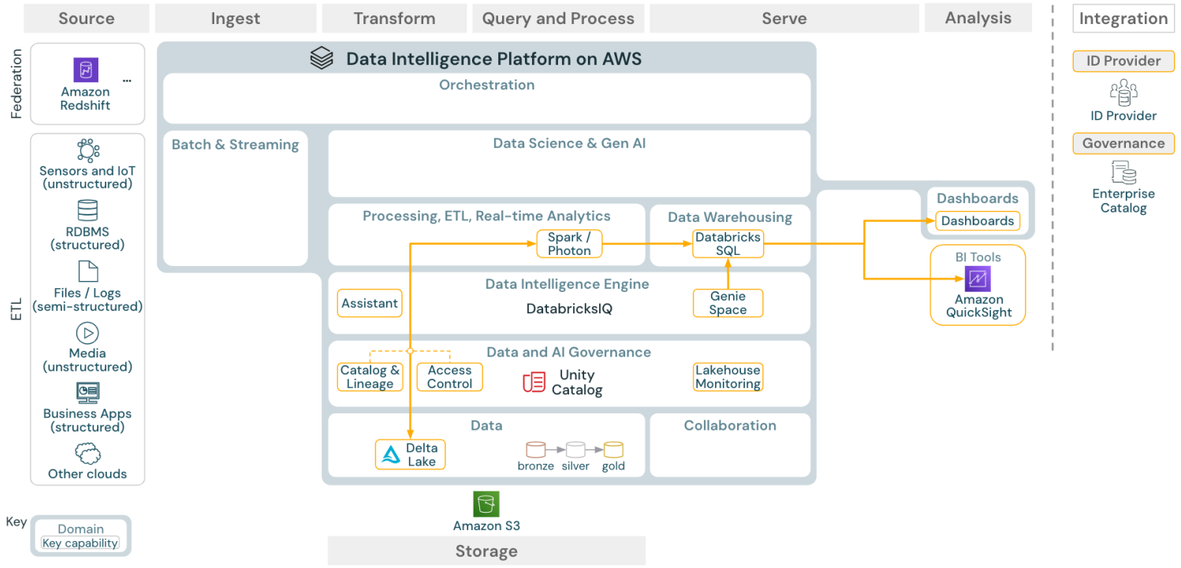


Data warehousing in the Lakehouse



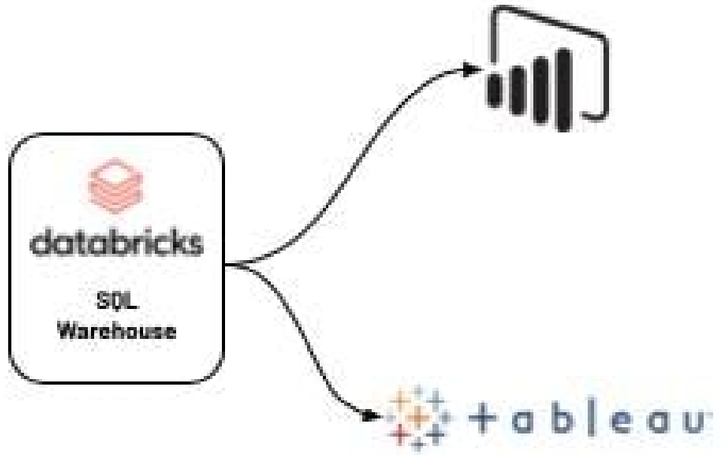
Benefits

- Single architecture for all workloads
- Flexibility and ownership with data
- Open-source technologies
  - Delta
  - ANSI SQL
- Cost effective solution



Business Intelligence ecosystem

- Integrate directly with your BI tool of choice
  - Partner Connect
  - Databricks Connect
  - JDBC / ODBC
- Performance and scalability
- Keep users where they are



Let's practice!

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Exploring Databricks SQL

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Databricks SQL key assets

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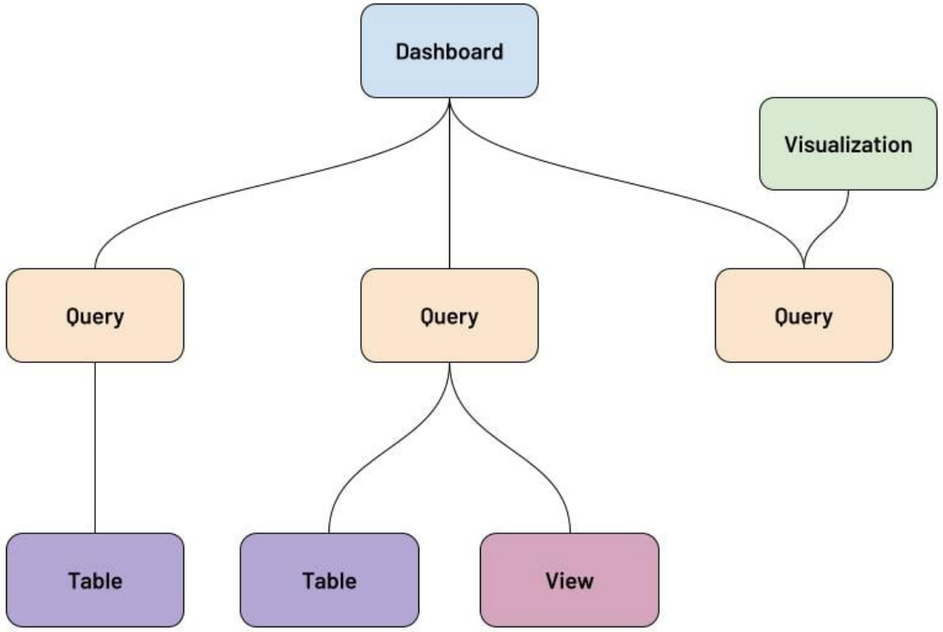
Helpful analogy

A tree consists of many different components, all of which make up the entire entity

In Databricks SQL, different components combine into a data warehouse solution



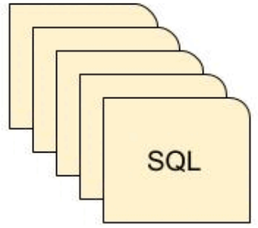
Query

- The base "unit" of analysis in Databricks SQL
- Runs SQL code against compute
- Uses ANSI SQL standard
- Process data from:
  - Unity Catalog
  - Delta tables
  - Data lake files
  - Data streams

```
SELECT
    orderdate AS Date,
    orderpriority AS Priority
    sum(totalprice) AS TotalPrice
FROM sfdc.sales.orders
GROUP BY
    1, 2
ORDER BY
    1, 2
```

SQL Warehouse

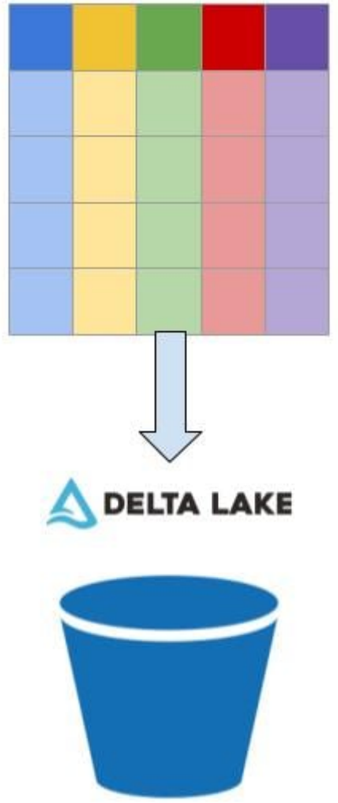
- Compute cluster dedicated for SQL
- Optimizations (e.g. Photon)
- Simpler administration
- Easy scaling
- Queries and BI tools



Tables versus views

Tables

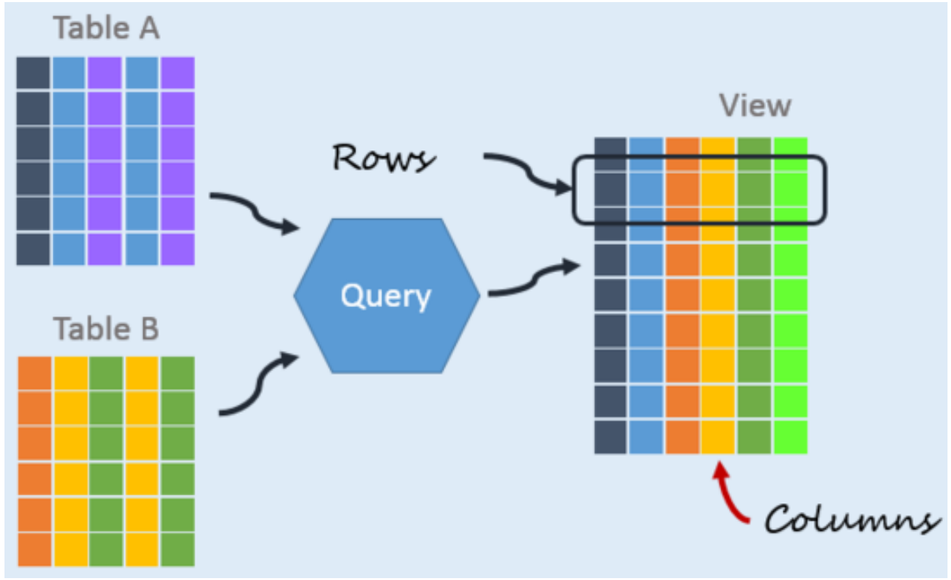
- Physical manifestations of datasets
- Written in Delta format
- Readable and accessible outside of the data pipeline
- Can optimize data layout (partitioning, etc.)



Tables versus views

Views

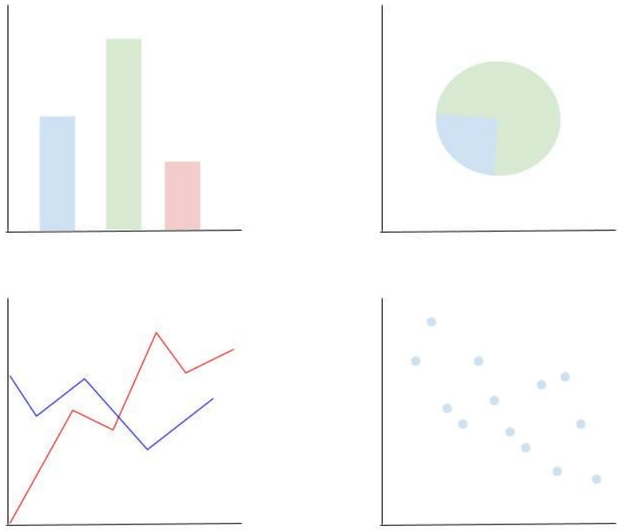
- Virtual representations of query results in Unity Catalog
- Fast performance for reading data
- Great for simplifying downstream queries
  - Source query has many joins, filters, etc.
- Incremental data processing available



Visualizations and dashboards

Visualizations

- Visual representations of a query result
- Created relative to a single query



Dashboards

- Collection of several visualizations
- Across multiple datasets / query results

Let's practice!

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