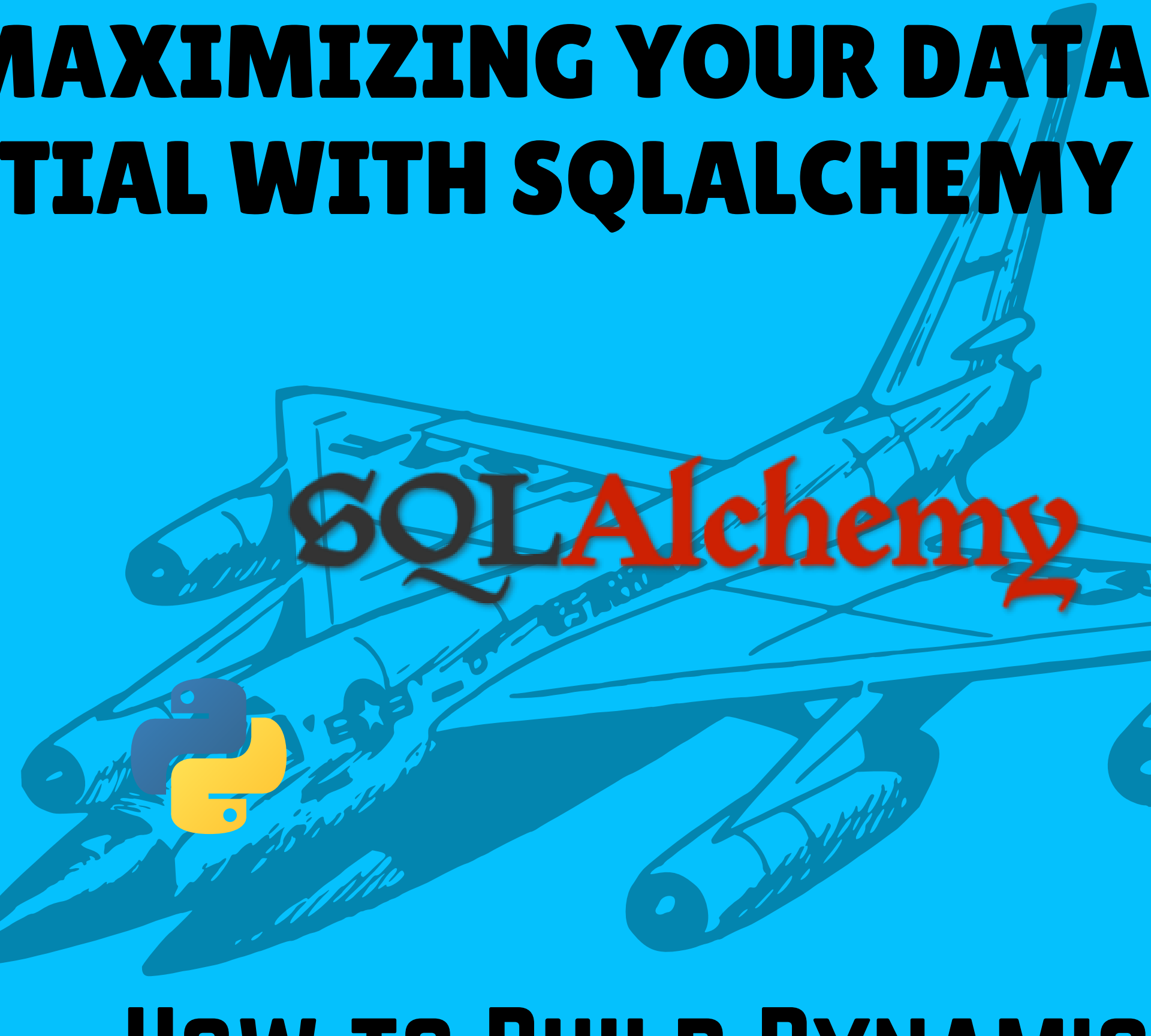
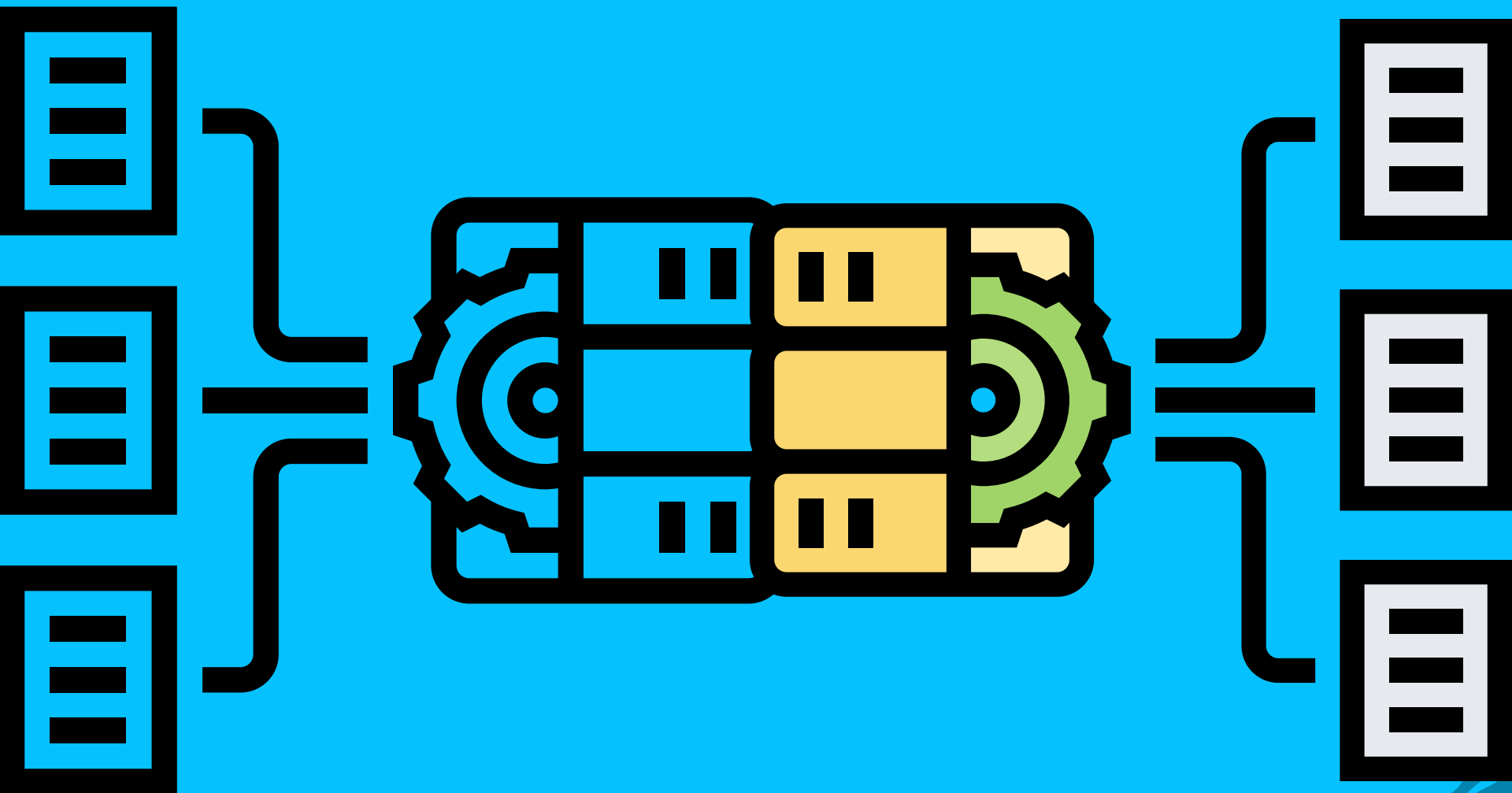
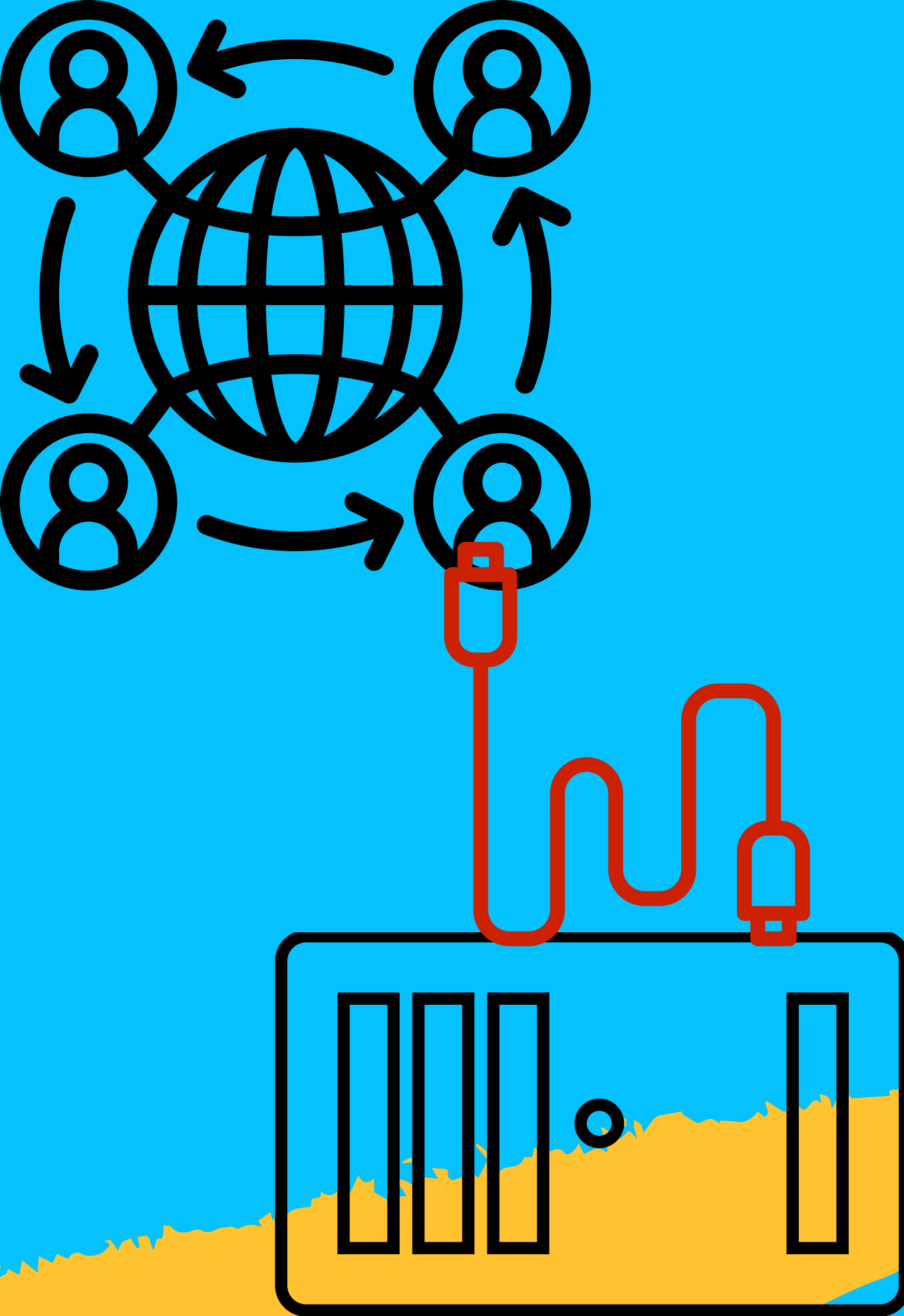


MAXIMIZING YOUR DATA POTENTIAL WITH SQLALCHEMY



HOW TO BUILD DYNAMIC APPLICATIONS WITH ANY DATABASE



WHAT PROBLEM WE'RE FACING

CONNECTING APPS WITH DATABASES

Data needs to be stored somewhere and then it can be used for analysis, insight creation and then making dashboards. Challenge is apps talking with Database

SERIES OF PROBLEM

- **DATABASES REQUIRE SCHEMA**
- **SCHEMA NEEDS TO BE IMPLEMENTED IN CODE**
- **INTERFACE BETWEEN SCHEMA & CODE REQUIRES A GLUE**

PYTHON ECOSYSTEM : SQLALCHEMY + PYDANTIC

HOW TO GET IT INTO MY OS?

- Install Python
- Then do "pip install sqlalchemy"
- Then do "pip install pydantic"

WHERE CAN I LEARN ABOUT STREAMLIT

- SQLAlchemy Site

<https://www.sqlalchemy.org/en/20/>

- Pydantic Reference

<https://docs.pydantic.dev/>

- This Video

BIG DATA ALTERNATIVE : SPARK SQL

ALCHEMY STARTER

01

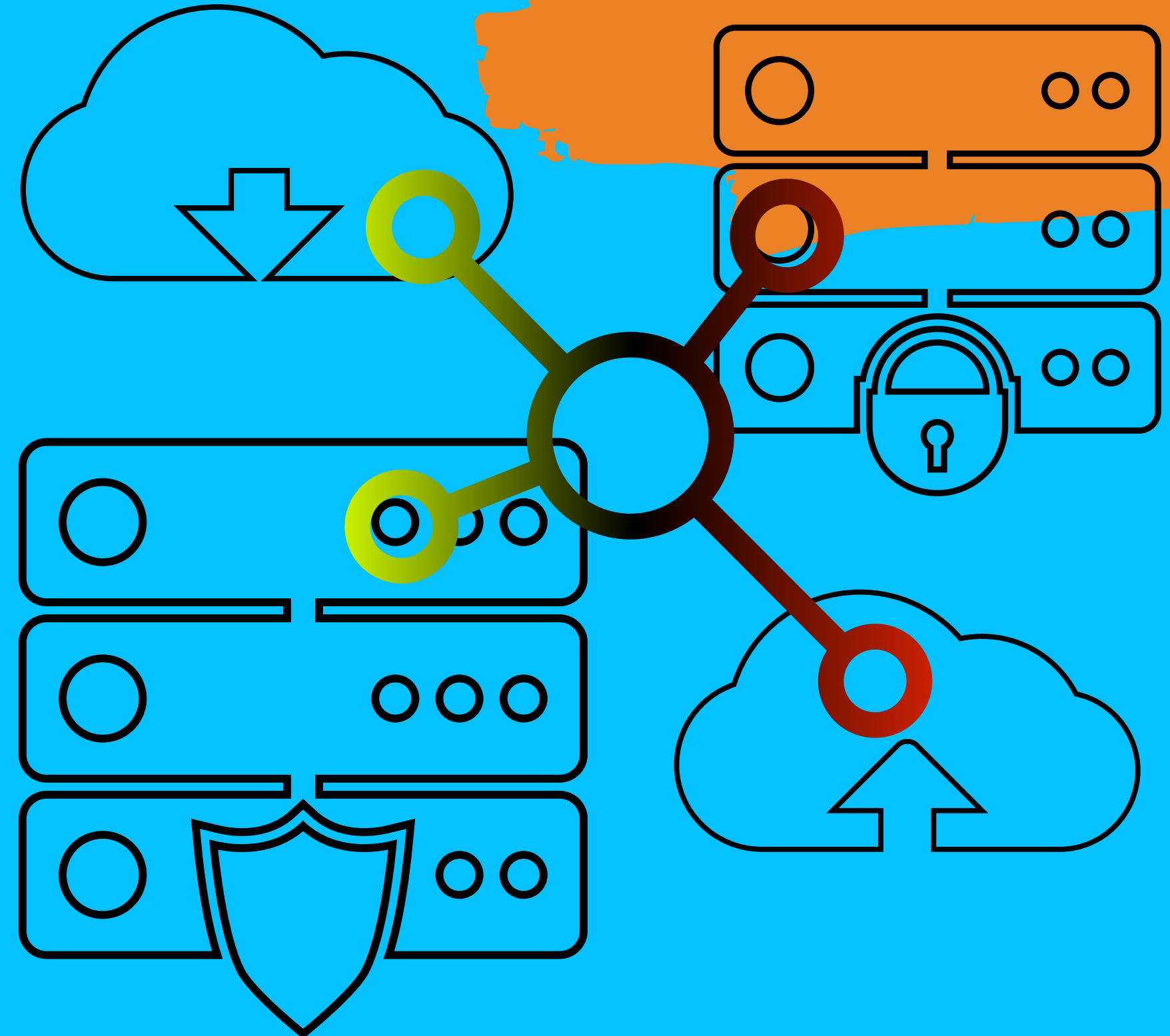
CREATE DATABASE OBJ

- Code DB model as Object
- One model for each table
- Columns as variables
- Can provide constraints

02

CREATE GLUE MODEL

- Data entering database needs to be specific datatype
- Implement Data type check @ write
- Data Type conversion @ read



SQLALCHEMY OBJ : OUR HERO

HOW DOES SQLALCHEMY HELPS

01

TABLE AS OBJECT

- DB table is made into Python object
- Data is written to the object
- Objects writes to Database

02

OBJECT TYPE & SCHEMA

- Data can be of any type. Control by Pydantic
- Matches closely with DB Schema

03

RETRIVAL

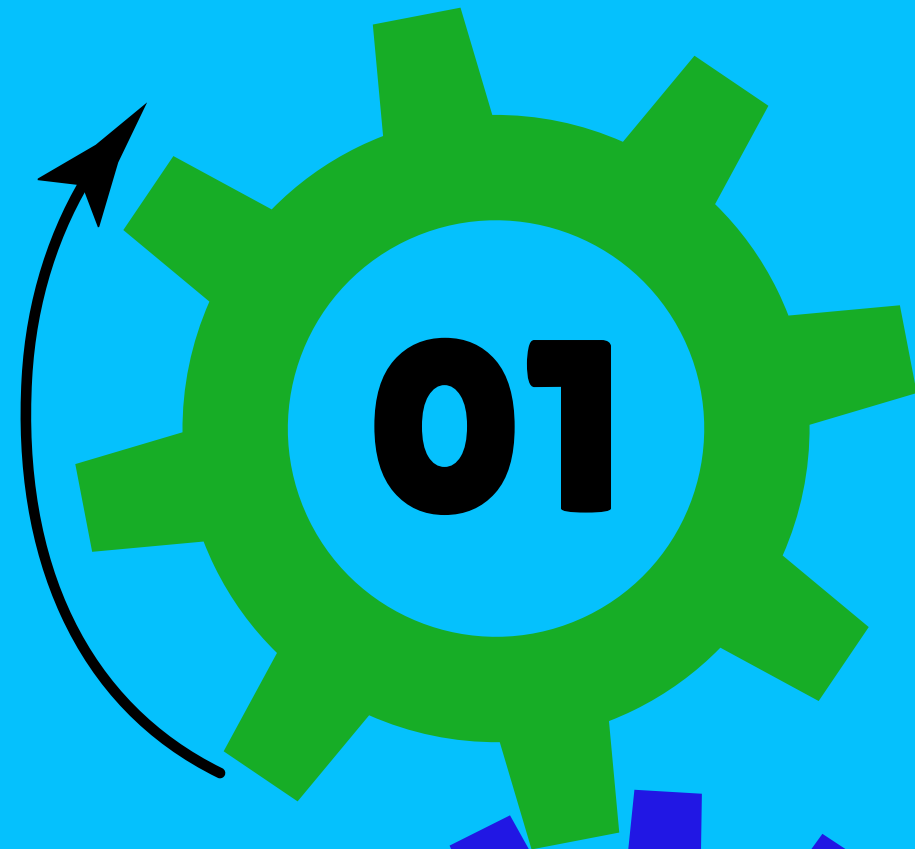
- Connectivity to the Database is offloaded to different library
- DB query done through Objects

04

DEPLOYMENT

- Ensure credentials are safe
- Compatible with Ci/Cd testing

SQLALCHEMY DEPLOY PROCESS

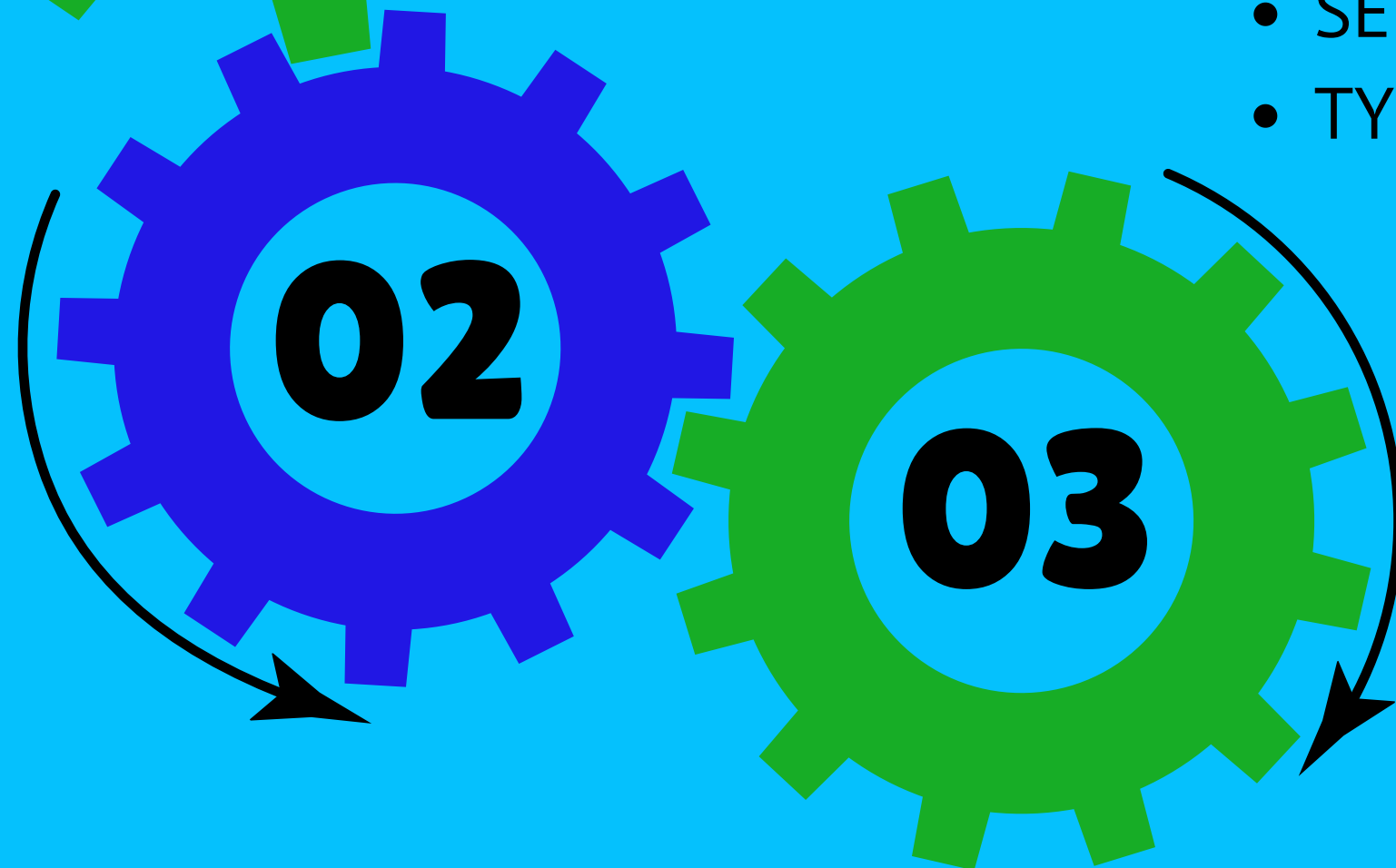


MAKE APP

- REQUEST DATA
- RECIEVE DATA FROM USER

STORE DATA

- SEND DATA TO DATABASE
- TYPE CHECK ON EACH CALL



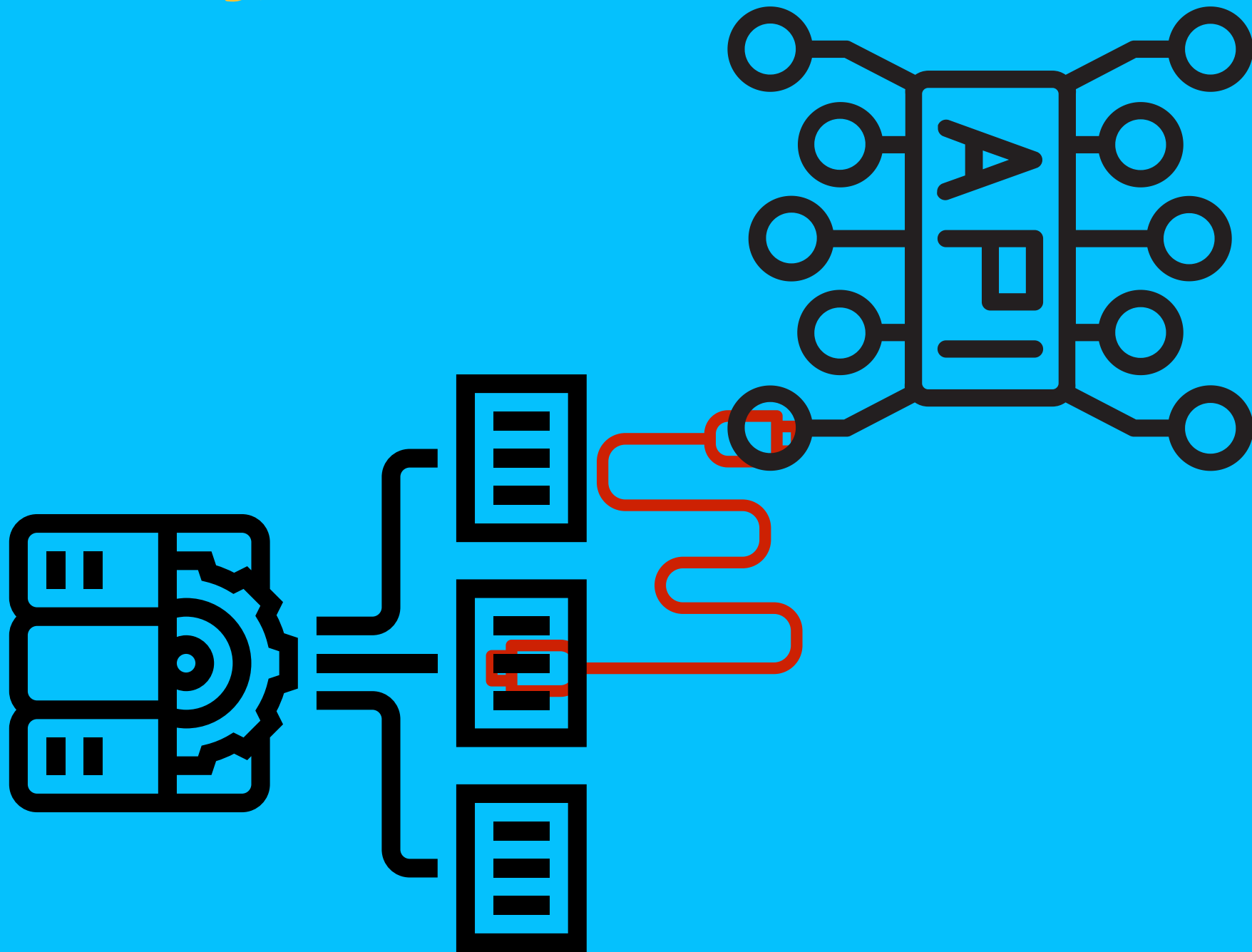
DEPLOY ON SERVER

- Ensure the DB instantiated
- Credentials are secured

HEAD TO JUPYTER

**QUESTIONS AND
COMMENTS**

WHAT NEXT ???



PYTHON FOR RESTAPI

STARRING FASTAPI

<https://pyrite-ethereal-soccer.glitch.me/docs>