# HyperDB Workshop

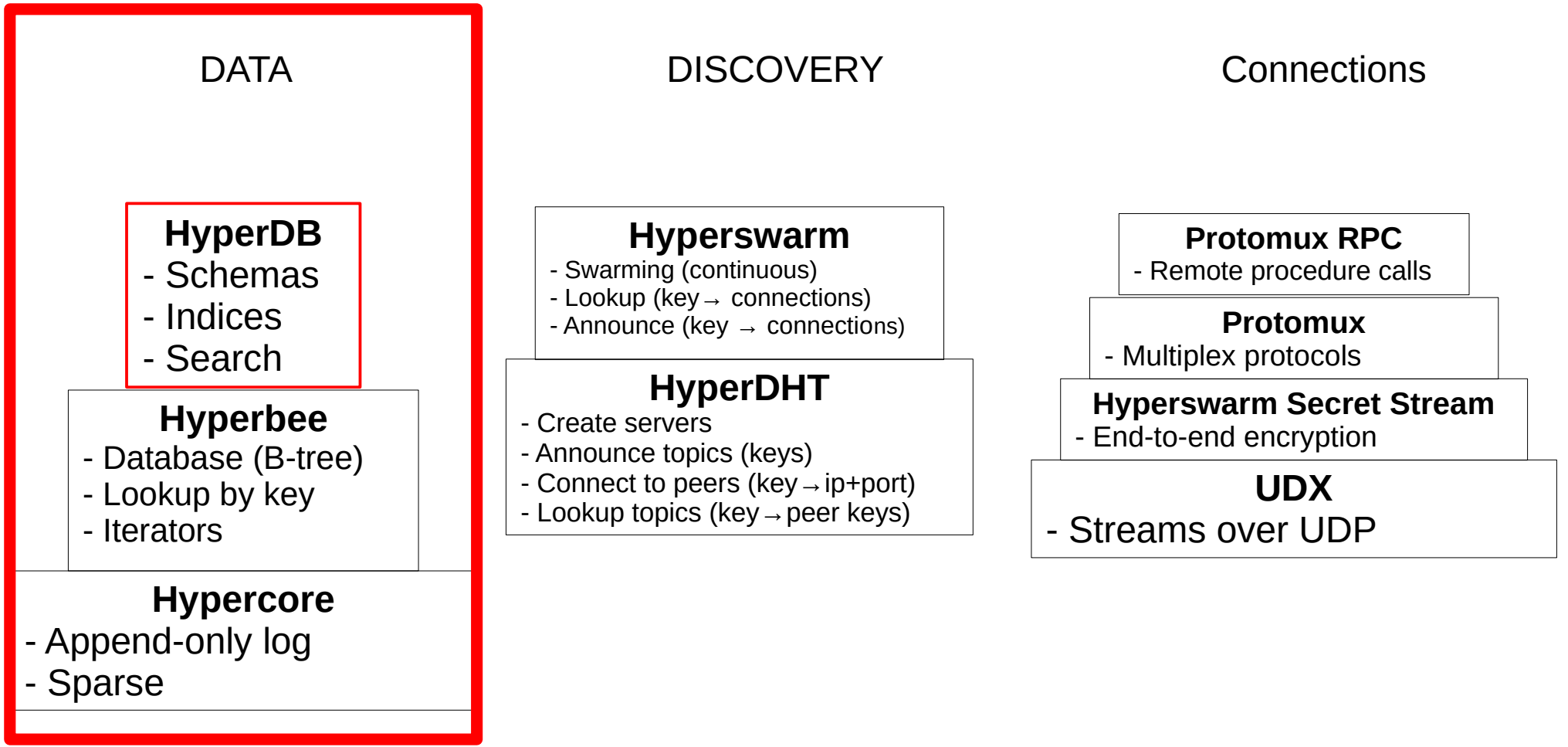
Hans Degroote, for Holepunch
July 15th, 2025

https://github.com/holepunchto
https://github.com/HDegroote
https://gitlab.com/HDegroote

# Overview

- Holepunch stack overview
- Why Hyperdb?
- Building a hyperdb app (demo)
- Extending the app (assignment)

# Holepunch Stack



# Why HyperDB?

- Efficient lookup
  - In Hyperbee:
    - ✓Efficient lookup/search by key
    - ✕Inefficient otherwise

| | | | |
|---|---|---|---|
| En-fr →<br>- driveKey: aaaa<br>- type: ‘translate’ | En-it →<br>- driveKey: bbbb<br>- type: ‘translate’ | En-es →<br>- driveKey: cccc<br>- type: ‘translate’ | En-gen →<br>- driveKey: dddd<br>- type: ‘generation’ |

- ✓Drive key of En-fr?
- ✓All models starting with ‘En’?
- ✕Model name of ‘aaaa’?
- ✕All ‘translate’ models?

# Why HyperDB?

- Schemas + versioning + code generation
  - Hyperbee:
    - ✓Do whatever you want
    - ✕A lot of work
    - ✕Easy to mess up
  - HyperDB (using hyperschema):
    - Define the schema in a build.js file
      - Encodings are automatically created
      - Extendible schema
      - Enforces correct versioning

# Demo + Assignment

https://github.com/holepunchto/hyperdb-workshop

- Define schemas
- Create queries for the API
  - Put
  - Get
  - Get by key
  - List models of type
  - [ASSIGNMENT] delete
- [ASSIGNMENT] Extend DB: add ‘owner’ field
- Add networking
  - [ASSIGNMENT] Remote lookup
  - [OUT OF SCOPE] Remote mutation
- Make resilient
  - [OUT OF SCOPE] Multiple writers with Autobase