Interactively exploring metadata with Beaverdam

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Build, **E**xplore, **A**nd **V**isualize **E**xpe**R**imental **DA**tabases of **M**etadata

Problem

Researchers often collect metadata as key-value pairs, e.g. `"frequency: 5 Hz"`. Collections of such metadata are often **difficult for humans to read** and may be spread over **many files** [1].

It can be time-consuming or impossible to get an **overview** of all experiments [1,2] and identify sets of similar experiments.

Beaverdam's solution

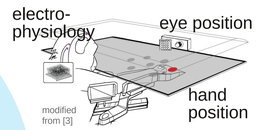
Beaverdam is **Python software** to help researchers:

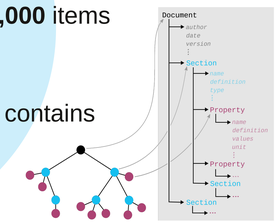
- **combine** metadata files into a single searchable **database**
- explore an **overview** of the database, and selected **details** of individual experiments
- **interactively search** for experiments meeting specific criteria

Use case: electrophysiology

Implanted electrodes record **electrical activity** of neurons in the brain. Other sensors record **behaviour**. Each experiment produces **over 1,000** items of metadata [4].

The **odML metadata model** contains hierarchical sections with associated properties [2,5].

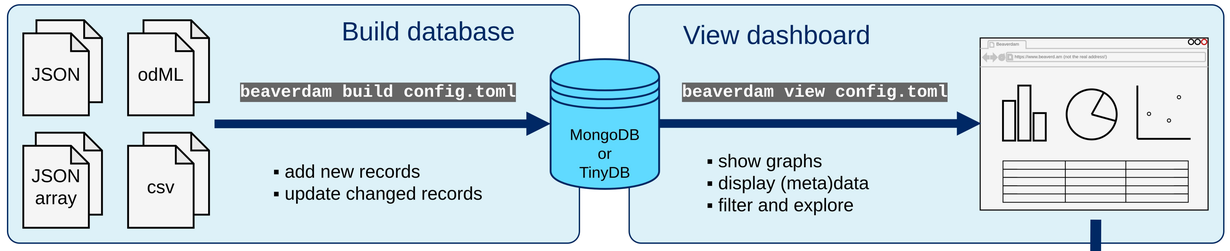




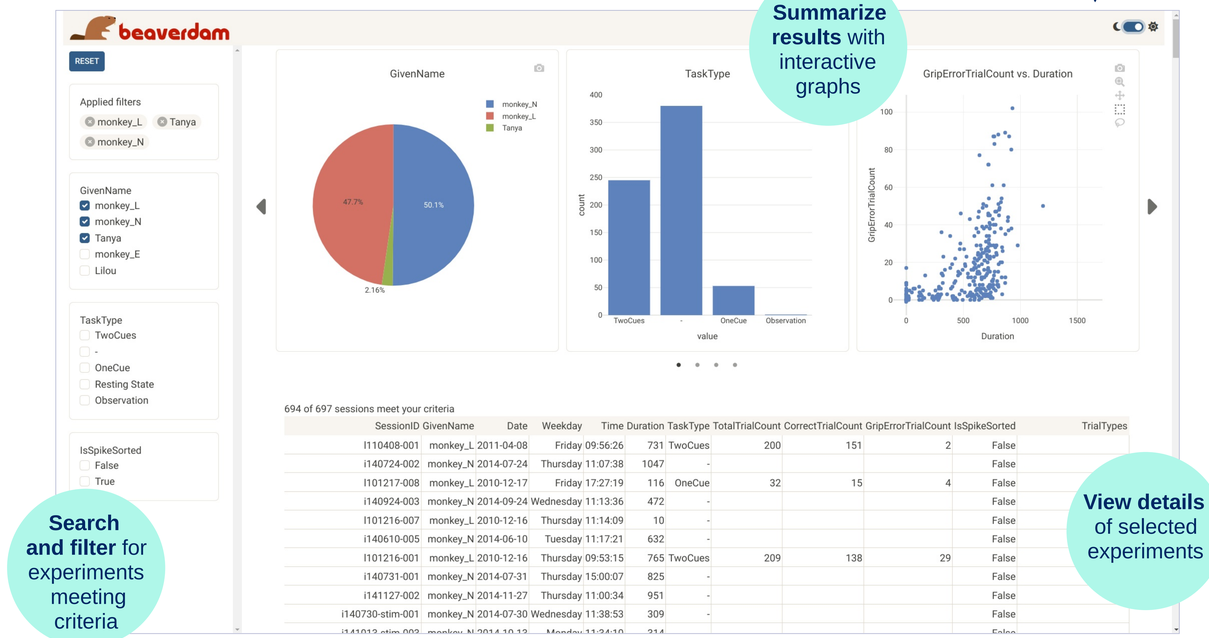
Features

- **Combine** metadata from many files and generate informative **summaries**
- Ingest metadata in **any format** that can be converted to JSON
- Easily **modify** Beaverdam's user interface to show your most useful information
- Run **locally** on one computer, or collaborate by accessing a **central database**

Workflow



Dashboard



https://github.com/INM-6/beaverdam

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