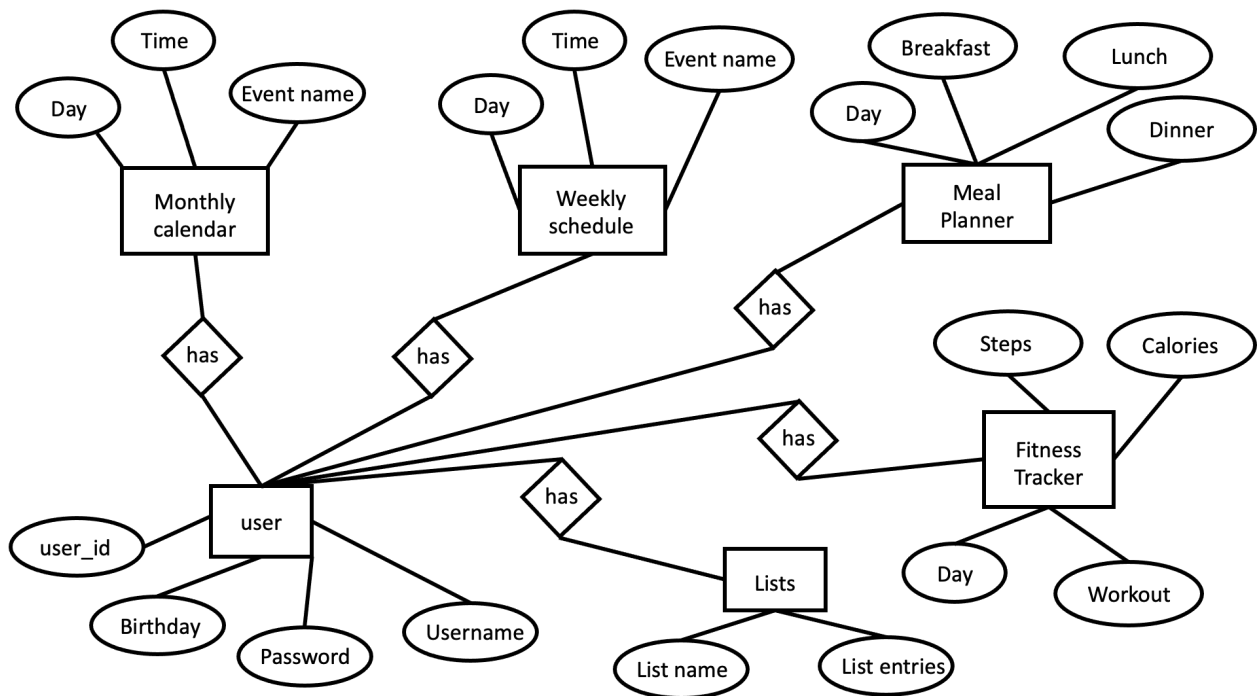# Database Research

Needed databases
- Calendar
    - Entries for each day
- Weekly schedule
    - Entries for each day
- Lists
    - Each user-curated list
- Meal planning
    - Breakfast, lunch, dinner entries for week
- Fitness tracker
    - Workouts completed
    - Fitness goals (water consumed, days eating healthy, etc)
    - Steps completed (and days completed on)
    - Database of possible workouts (with names, durations, calories)
- Security (username and password, name, email, etc.)

Database management software
- MariaDB: https://mariadb.org/
    - Open source
    - Can be used with python
- Amazon DynamoDB: https://aws.amazon.com/dynamodb/?p=ft&c=db&z=3
    - NoSQL
    - Serverless
    - Key-value lookups only pretty much
- MongoDB: https://www.mongodb.com/pricing
    - Open source
    - NoSQL
    - Good for large volumes of data
    - JSON-like Query Language:
    - perform queries, filtering, sorting, and aggregation on our data.
    - Has libraries that work well with React and JavaScript
    - Use with flask or django to mediate (both are python frameworks) interaction between MongoDB and react
- Sqlite: https://www.sqlite.org/index.html
    - Smaller scale
    - Serverless
    - Backend: python with flask/django
    - often used as a local database within web applications to store data on the client-side
- PostgreSQL: https://www.postgresql.org/
    - powerful open-source relational database management system
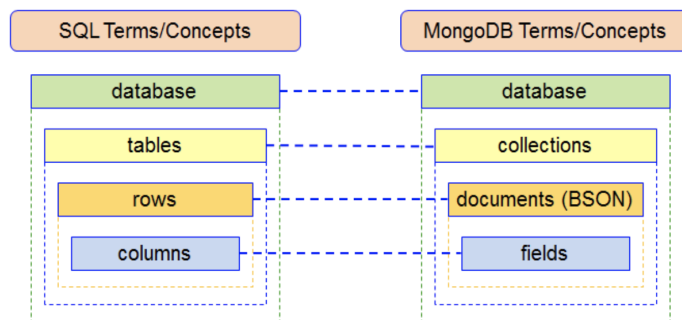   - Uses sQL

- flexibility and support for complex queries
- can model your data using tables for users, calendar entries, schedules, and lists.
- strong support for JSON data types, which can be handy for storing variable data like fitness goals and meal planning.
- Front end works well with react back end might need python with django, or java with springboot
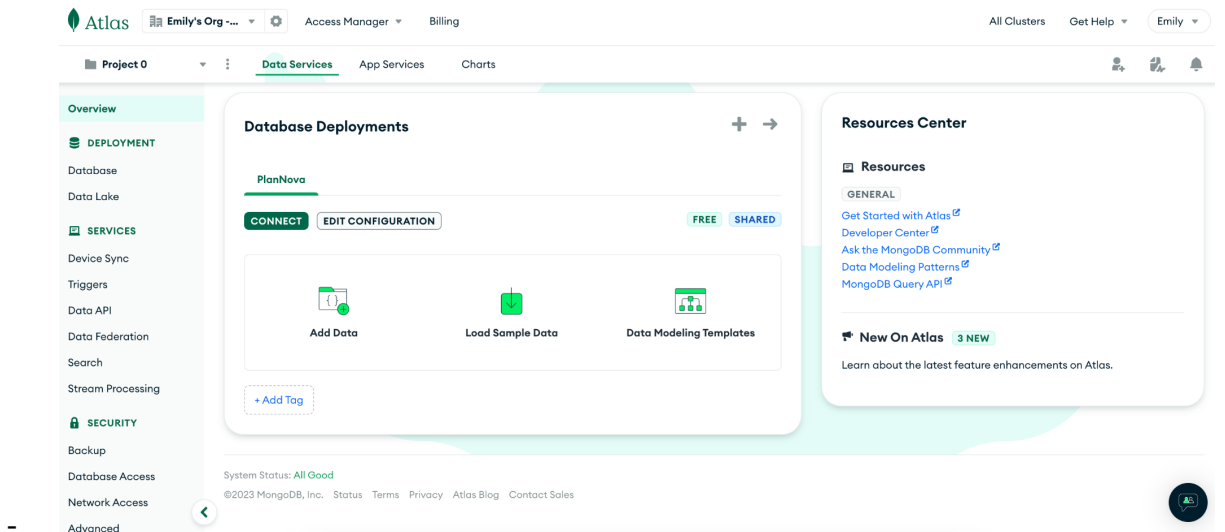
Database diagram

MongoDB research
- Helpful links:
    - Downloading MongoDB: https://www.mongodb.com/try/download/community
    - Python w/ MongoDB: https://www.mongodb.com/languages/python
    - MongoDB basics: https://www.mongodb.com/basics
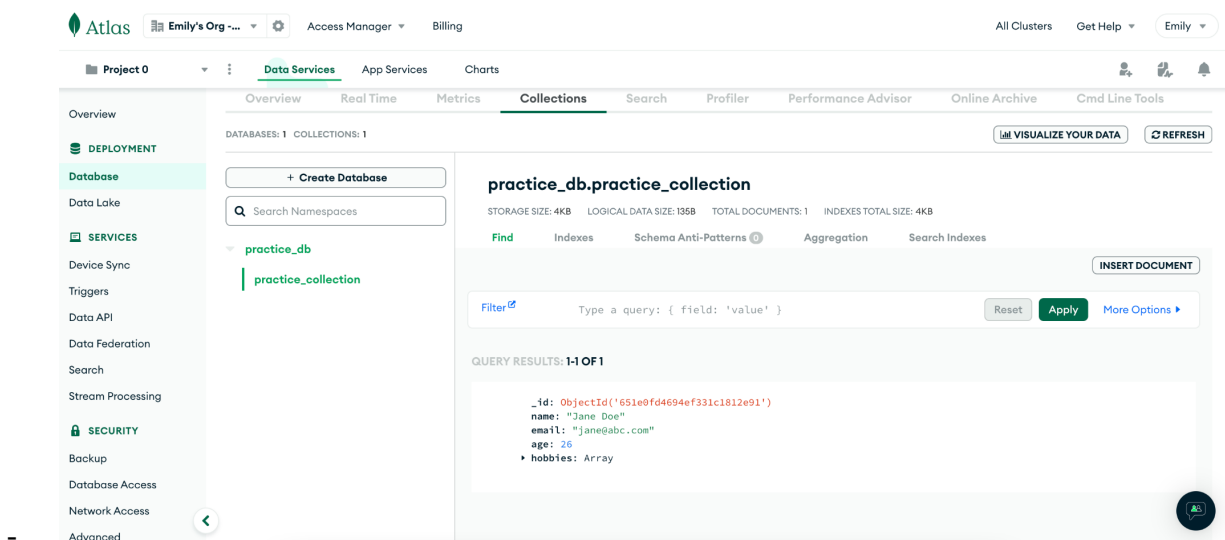- SQL -> MongoDB

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Database Progress

- Set up MongoDB account and created project for application

- Created practice database and collection

- Successfully wrote python script to grab information from this collection