



WELCOME

MongoDB

Atlas Search Workshop



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Repo

github.com/ClusterDB/AtlasSearchWorkshop

or

shorturl.at/fpPT4



Search exercise 0

Create MongoDB cluster
(if not already done)

Add sample data

What is Search?



Search, or “Full-Text Search” is the ability to search across all of your data and efficiently return a list of results, ranked based on how well they matched to the search term

Usually defined as a Search bar



Not an exact match, but a LIST OF RESULTS BASED ON RELEVANCE

Results based on a score

Result 1

Result 2

Result 3

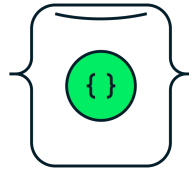
Result 4

How developers build app search today



Stand up a database to provide the application's persistence layer

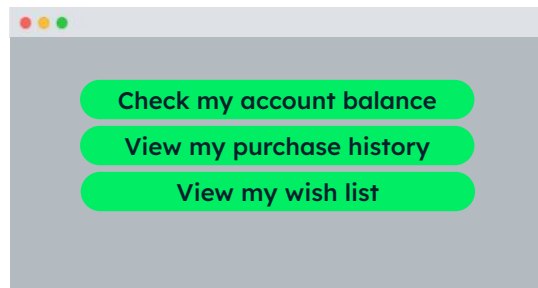
Database



Operational database serving
pre-defined queries



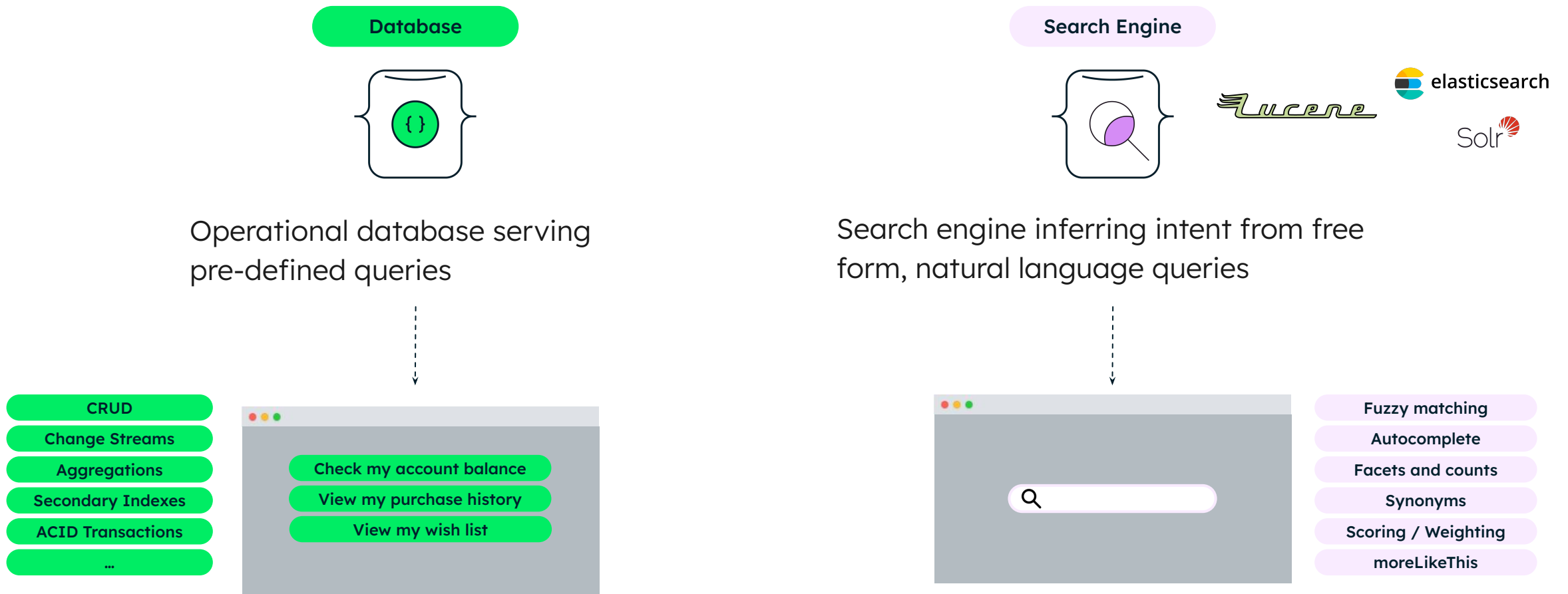
- CRUD
- Change Streams
- Aggregations
- Secondary Indexes
- ACID Transactions
- ...



How developers build app search today



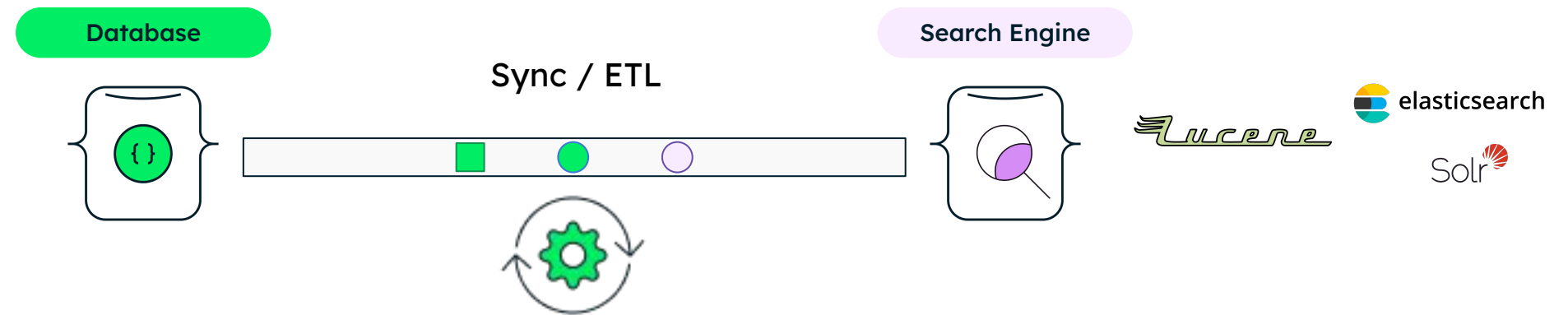
Bolt-on a search engine to power search across application data



How developers build app search today



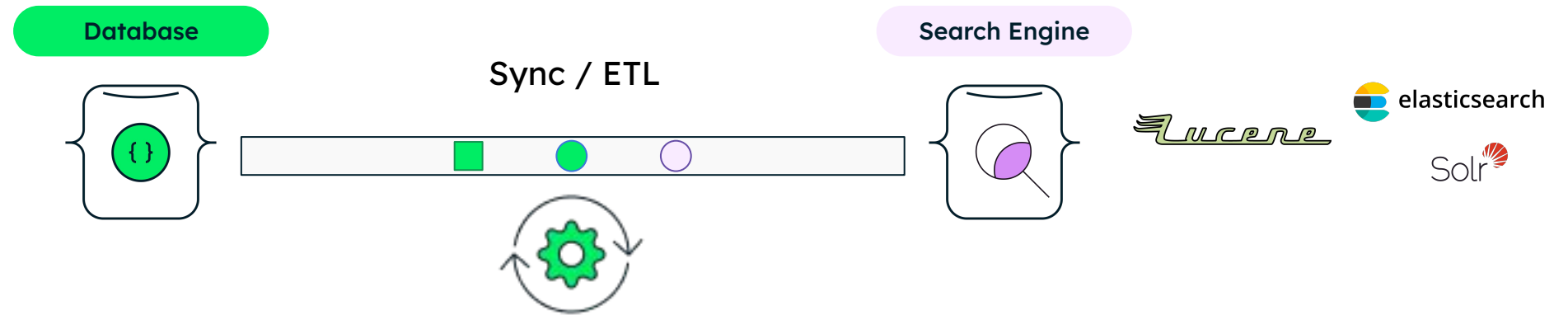
Stand up a replication mechanism to keep the systems in sync



How developers build app search today



Architectural complexity in our application stack



Developer friction

Different query APIs and drivers for database and search, coordinate schema changes



Pay the sync tax

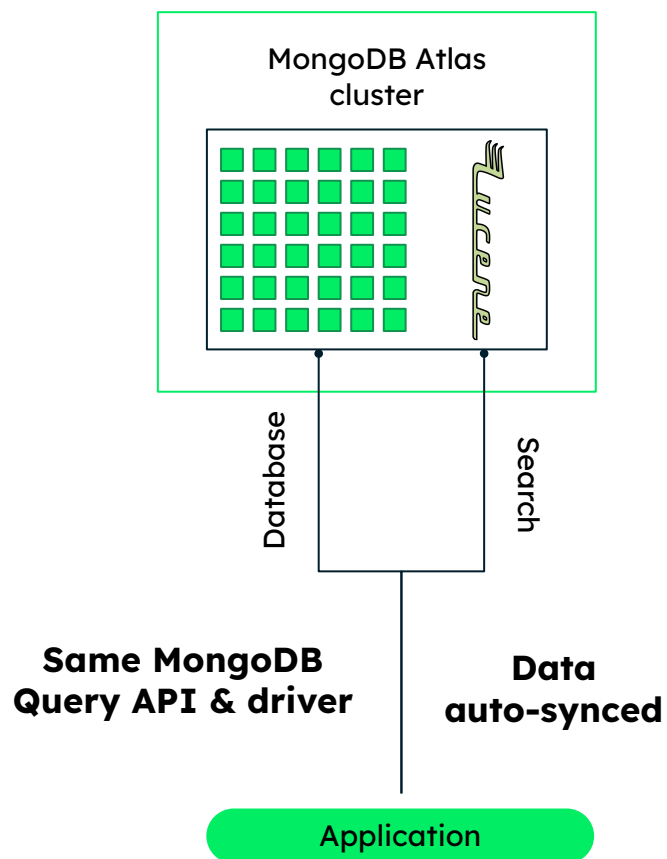
Requires its own systems and skills. Recovering sync errors can consume 10% of a developer's time



Operational overhead

More to provision, secure, upgrade, patch, back up, monitor, scale, etc.

How does Atlas Search address that pain?



Embeds a fully managed Apache Lucene index right alongside the database



Improved developer productivity

Build database and search features using the same query API and driver



Simplified data architecture

Automatic data synchronization, even as your data and schema changes



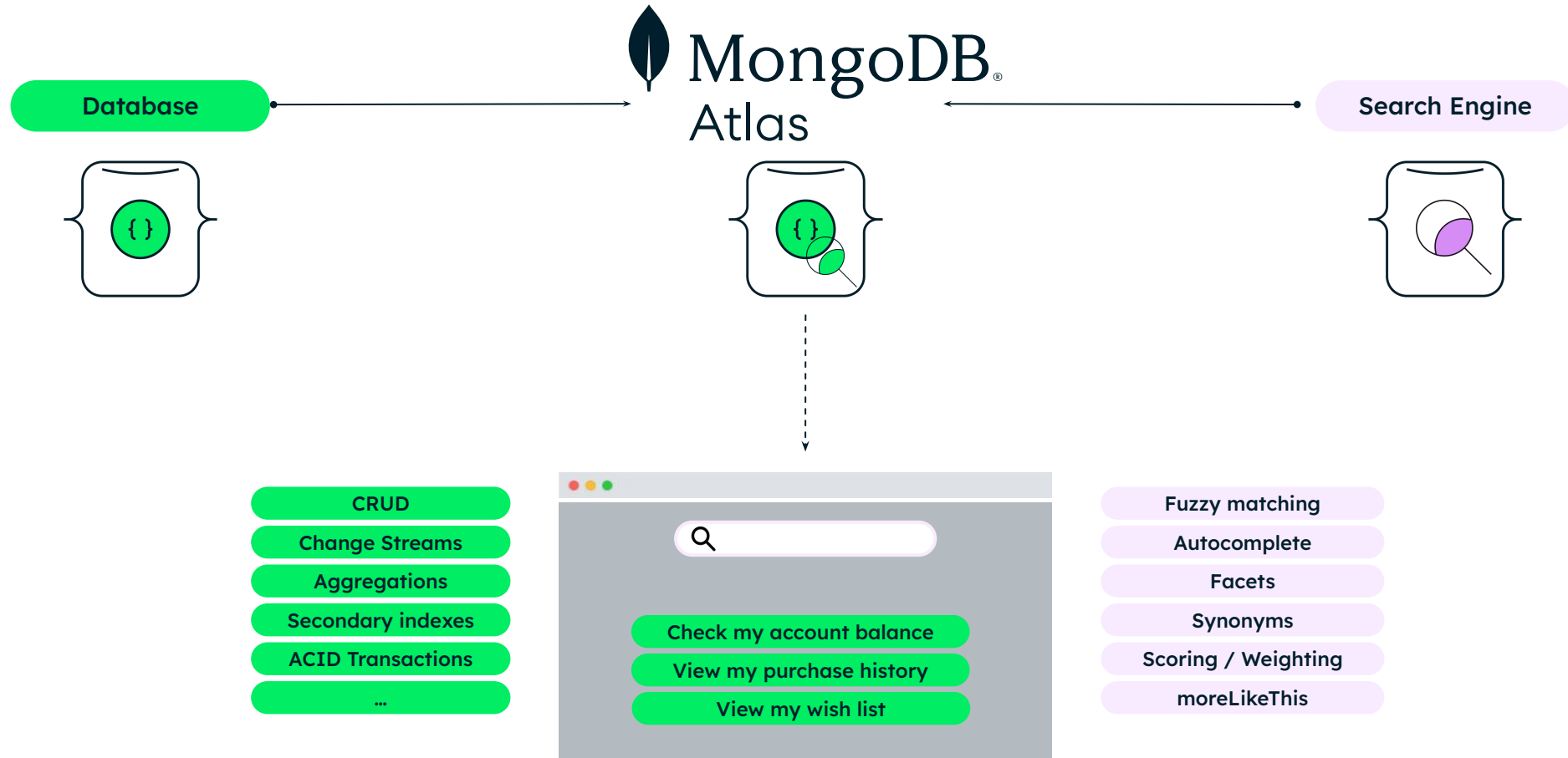
Fully managed platform

Get the security, performance, and reliability of Atlas



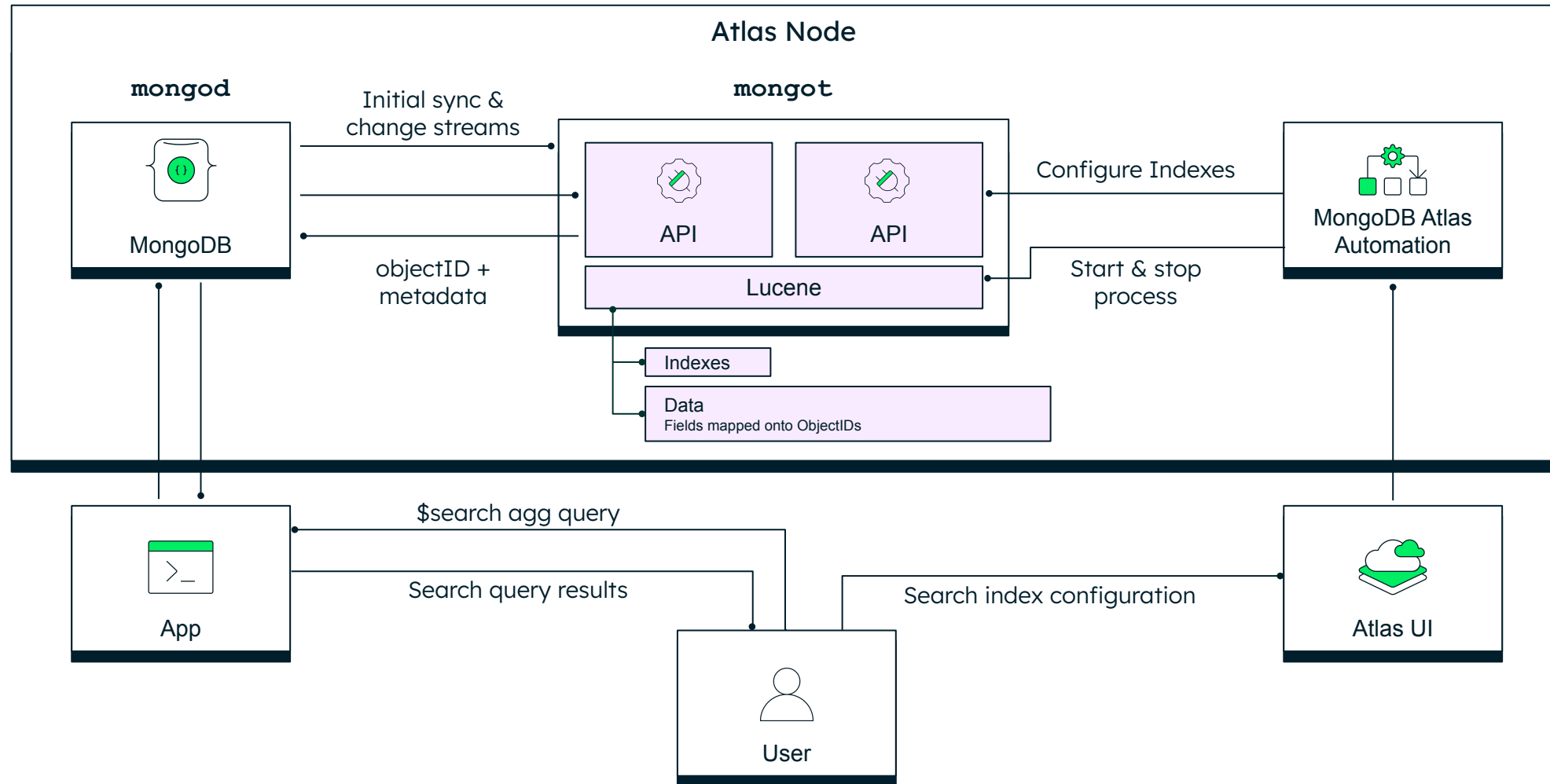
Unifying database and search

Compress 3 systems into 1, ship search features **30%-50% faster**



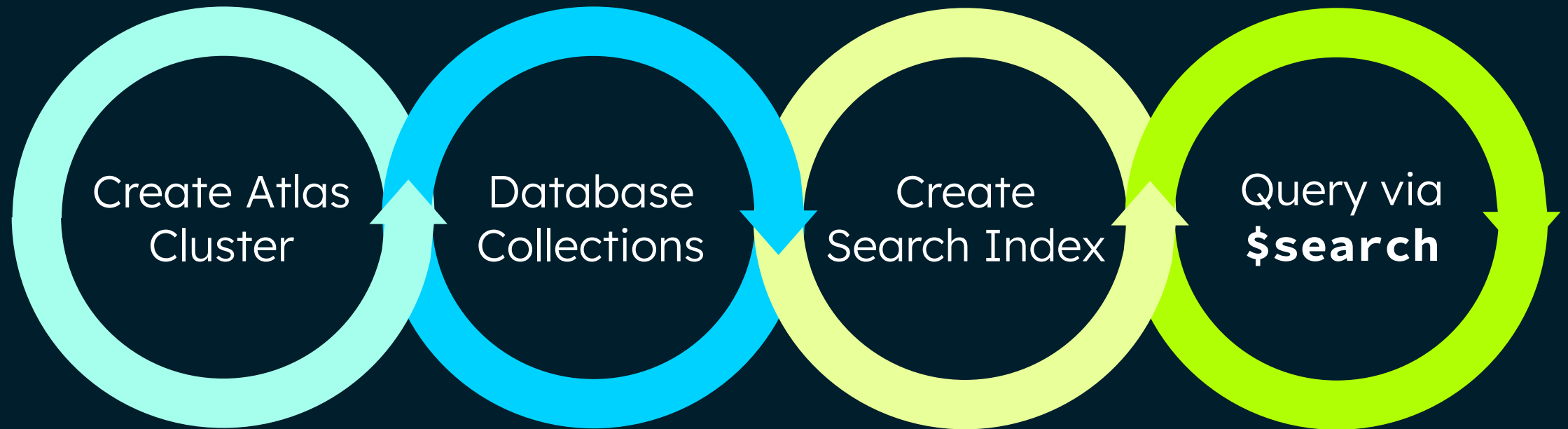


Atlas Search architecture





How do I search data in atlas?



shorturl.at/fpPT4

shorturl.at/fpPT4

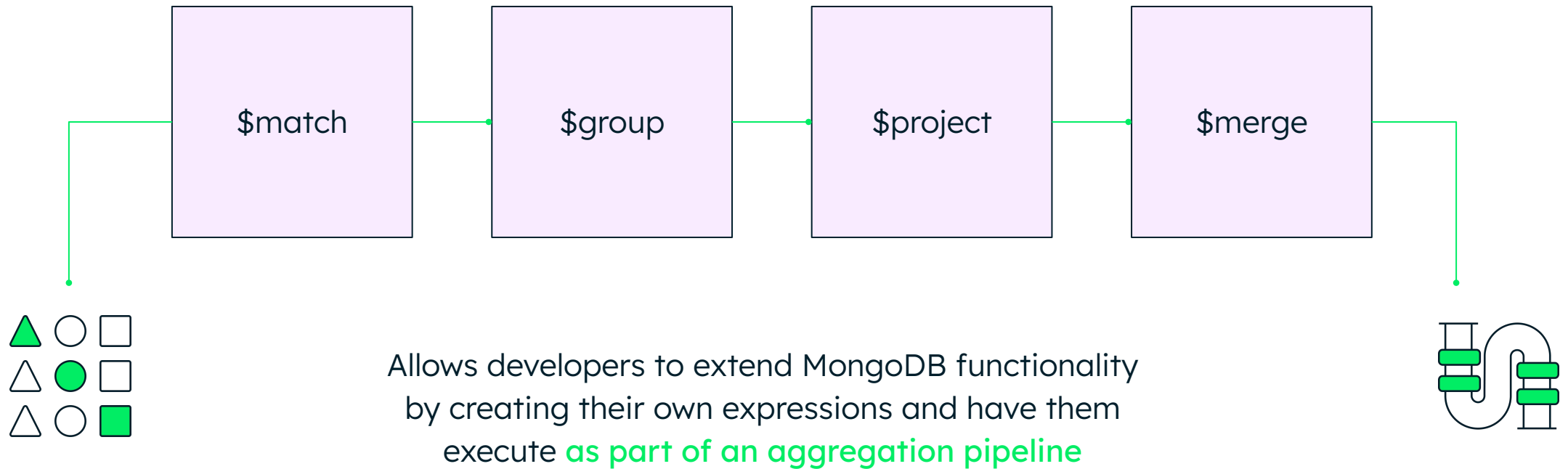


Search exercise 1

Configuring Search

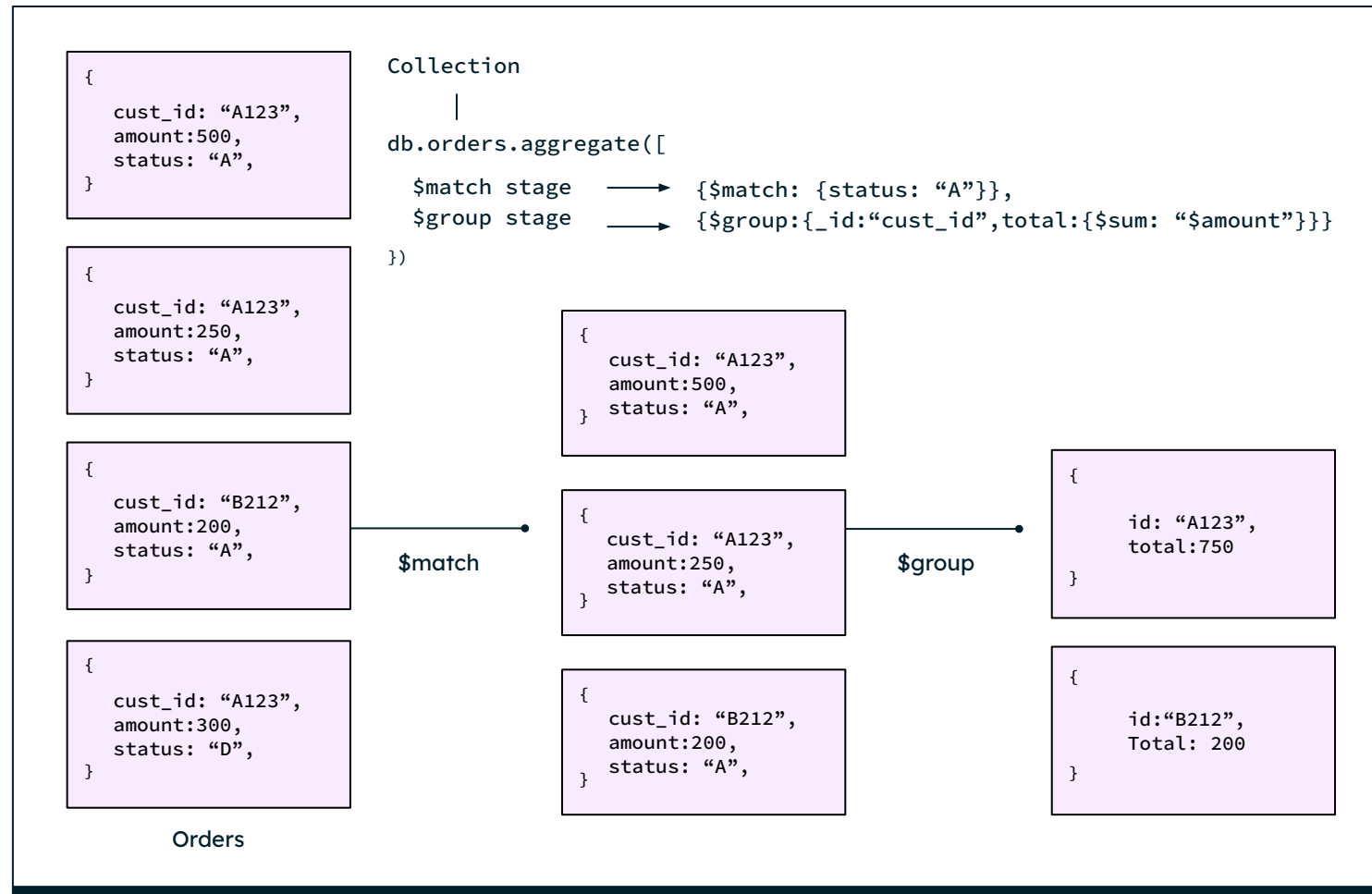


Aggregation pipelines





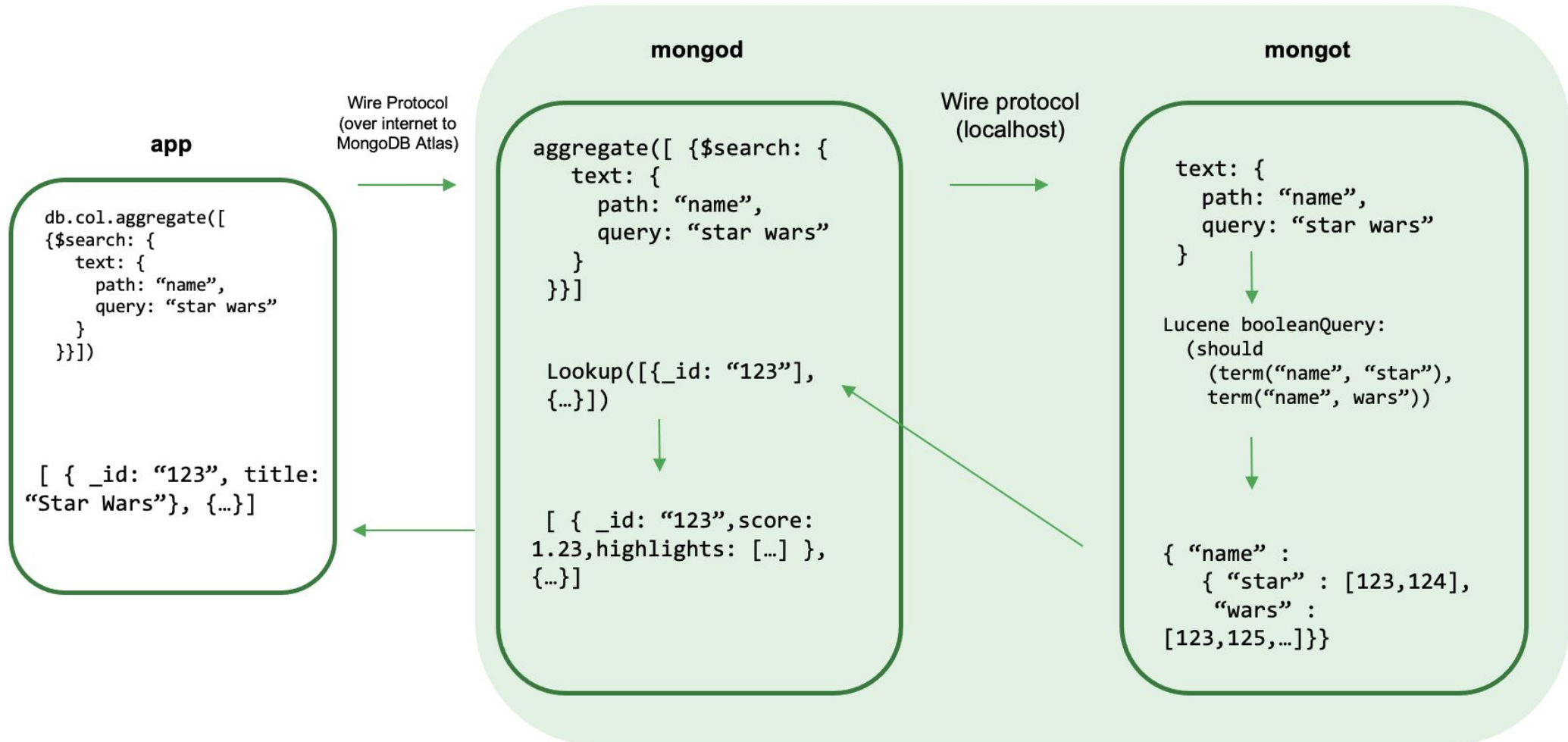
Aggregation pipelines





Query lifecycle

MongoDB Atlas Host



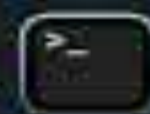
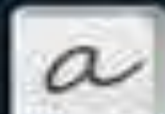


Search exercise 2

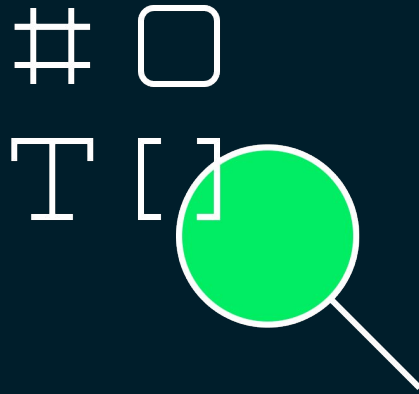
Our first Search aggregations &
searching from our app



Q blues brothers



Rich search features



Atlas Search offers the features needed to fine-tune your search results to help users find what they need, including:

- Fuzzy search
- Autocomplete
- Filters
- Synonyms
- Facets
- Multi-data type support
- Multi-language support
- Highlighting
- Custom scoring
- Rich query language
- More Like This



Search features available with MongoDB Atlas Search

Analizers



We start with an original query

Lions and tigers and bears, oh my!

Analizers apply parsing and language rules to the query

Tokens are the individual terms that are queried; think of these as the words that matter in a search query

Analizers



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Lions and tigers and bears, oh my!

└ lions and tigers and bears, oh my!

lions tigers bears oh my

Analizers



Analizers also support language rules

A search for...

...can return results for related words

"bank"

↓

**["bank", "banks", "banker",
"banking", ...]**

Other supported search features



Search features are all about helping customers make their data more **discoverable** and **relevant** for end users

- **Support for 30+ languages**
- Autocomplete
- Highlighting
- Fuzzy matching (typo tolerance)
- Faceting
- Multiple data types
- Synonyms
- Custom scoring
- Rich query language
- More like this

| | | | | |
|------------------|-------------------|-----------------|-------------------|-------------------|
| lucene.arabic | lucene.armenian | lucene.basque | lucene.bengali | lucene.brazilian |
| lucene.bulgarian | lucene.catalan | lucene.cjk | lucene.czech | lucene.danish |
| lucene.dutch | lucene.english | lucene.finnish | lucene.french | lucene.galician |
| lucene.german | lucene.greek | lucene.hindi | lucene.hungarian | lucene.indonesian |
| lucene.irish | lucene.italian | lucene.latvian | lucene.lithuanian | lucene.norwegian |
| lucene.persian | lucene.portuguese | lucene.romanian | lucene.russian | lucene.sorani |
| lucene.spanish | lucene.swedish | lucene.turkish | lucene.thai | |

Each language analyzer has built-in rules based on the language's usage pattern

Other supported search features



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- Scoring



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- Support for 30+ languages
- Autocomplete
- **Highlighting**
- Fuzzy matching (typo tolerance)
- Faceting
- Multiple data types
- Synonyms
- Scoring

en.wikipedia.org › wiki › Air_Force_One_(film) ▼

Air Force One (film) - Wikipedia

Air Force One **is** a 1997 American political action-thriller **film** directed and co-produced by Wolfgang Petersen and starring **Harrison Ford**, Gary Oldman, ... **Harrison Ford** as **President** James Marshall: Popular **president** and a family man who ... The track was **played** in the background at the New York Hilton Midtown prior to ...

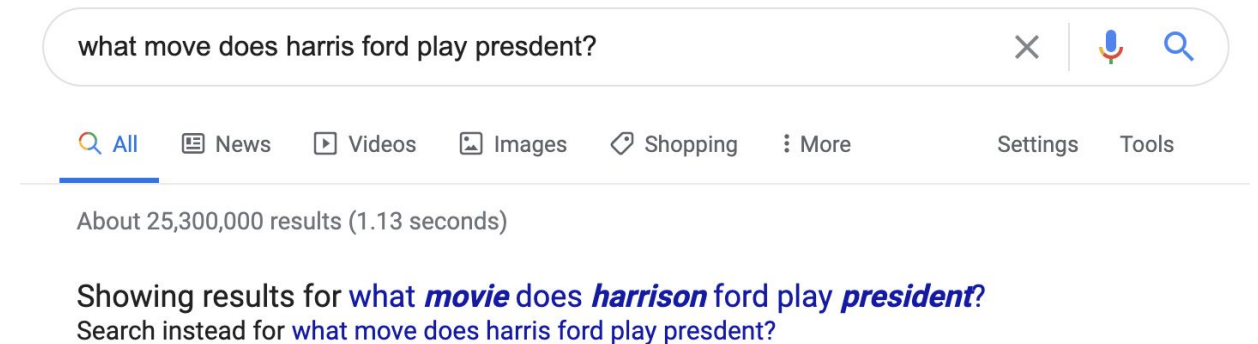
[Liesel Pritzker Simmons](#) · [Elya Baskin](#) · [List of action films of the 1990s](#)

Other supported search features



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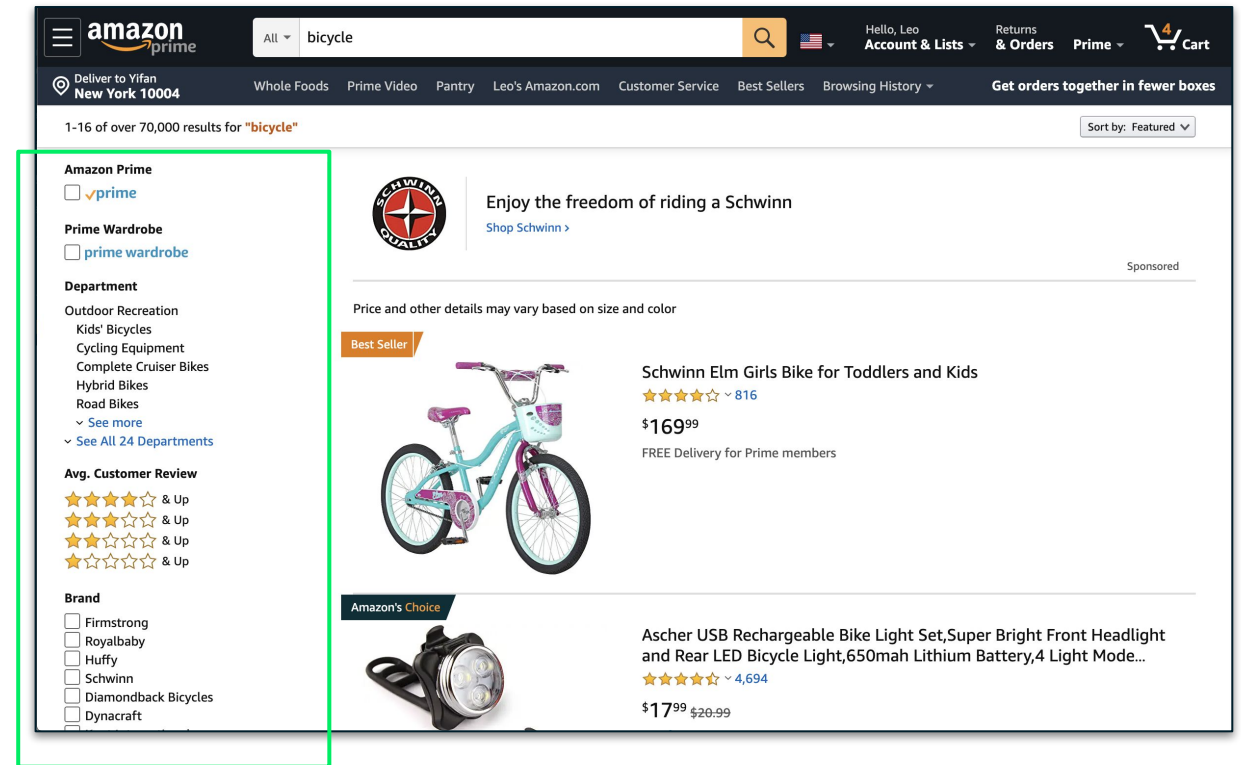


Other supported search features



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- **Multiple data types**
- Synonyms
- Scoring

dates

numbers

geoJSON

boolean

ObjectID

Other supported search features



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- Support for 30+ languages
- Autocomplete
- Highlighting
- Fuzzy matching (typo tolerance)
- Faceting
- Multiple data types
- **Synonyms**
- Scoring

```
{  
  "mappingType": "equivalent",  
  "synonyms": ["car", "vehicle", "automobile"]  
}
```

```
{  
  "mappingType": "explicit",  
  "input": ["beer"],  
  "synonyms": ["beer", "brew", "pint"]  
}
```

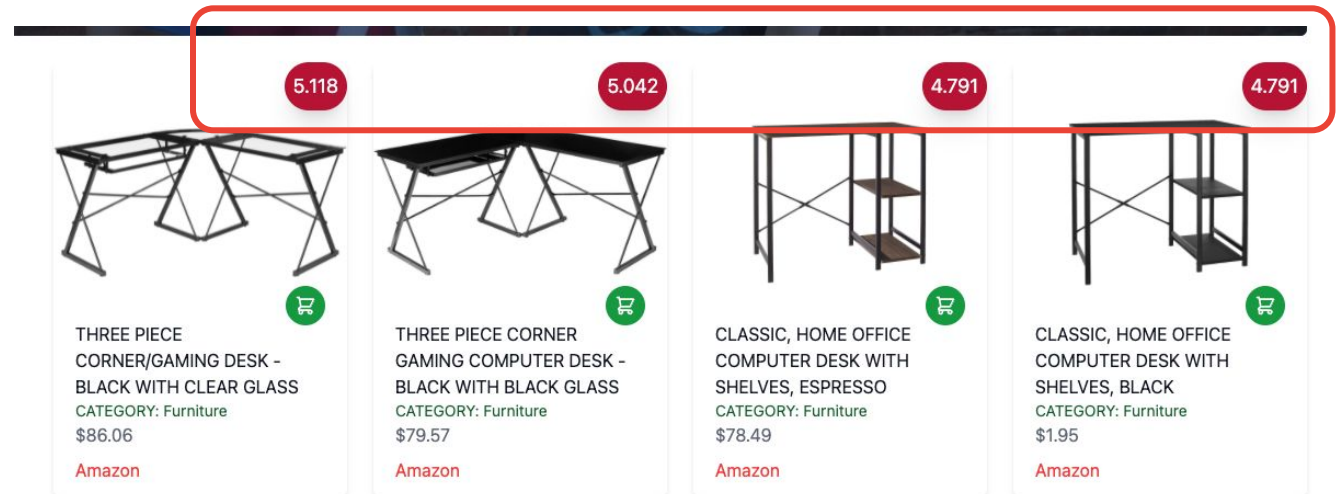
Other supported search features



Search features are all about helping customers make their data more **discoverable** and **relevant** for end users

- Support for 30+ languages
- Autocomplete
- Highlighting
- Fuzzy matching (typo tolerance)
- Faceting
- Multiple data types
- Synonyms
- **Scoring**

Results on a search for **desk**





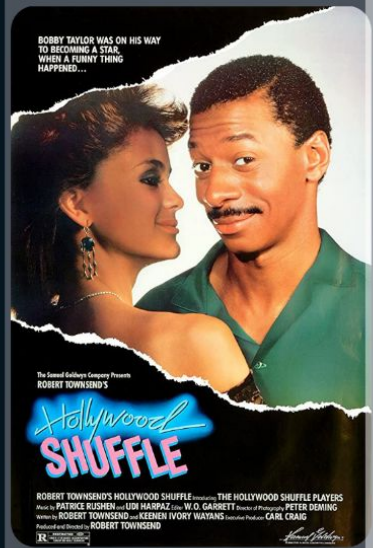
Search exercise 3

Integrate your endpoints into a web
app



🔍 bollywood

Hollywood Shuffle



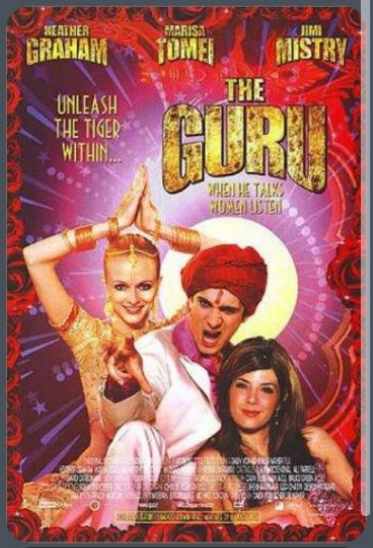
Score: 7.507

Year: 1987

Rating: 7

He just has to convince **Hollywood** that

The Guru



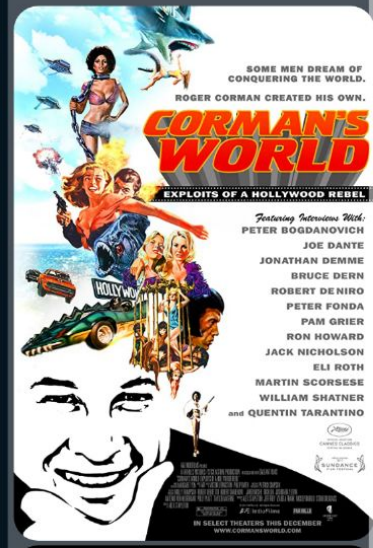
Score: 7.221

Year: 2002

Rating: 5.4

Bored with **Bollywood** movies but

Corman's World: Exploits of a Hollywood Rebel

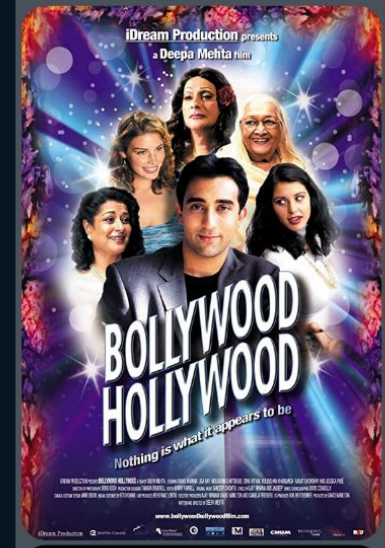


Score: 7.068

Year: 2011

Rating: 7.6

Bollywood/Hollywood



Score: 6.904

Year: 2002

Rating: 6

Demo 4

Search feature tour

atlassearchrestaurants.com

github.com/mongodb-developer/WhatsCooking



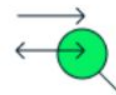
Aggregation



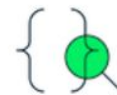
Function Score

100

Synonyms



Data & Indexes



Atlas Search Demo: Restaurant Finder

restaurants...

burger

Find



\$search

Geospatial Search Options

near

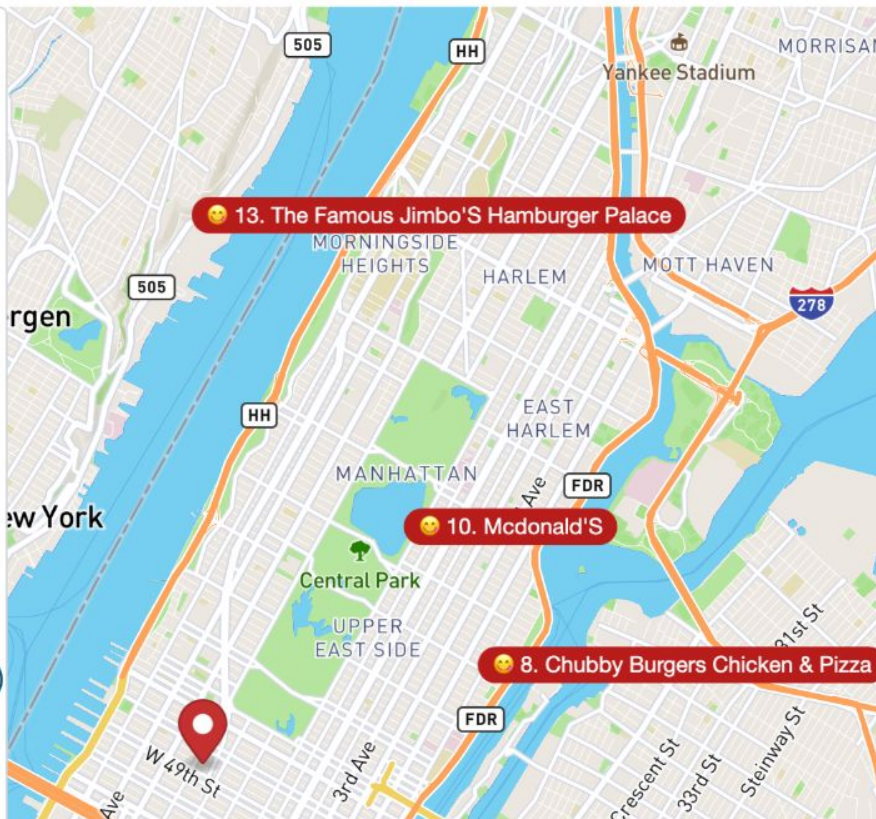
geoWithin

Average Star Rating:



Overall Count: 5813

- ☐ American (5380)
- ☐ Chinese (0)
- ☐ French (0)
- ☐ Hamburgers (433)
- ☐ Italian (0)
- ☐ Japanese (0)



score: 1.8

White Castle

Hamburgers



Myrtle

Avenue

Brooklyn



131

reviews

Show Menu

score: 1.8

Mcdonald'S

Hamburgers



Atlantic

Avenue

Brooklyn

```
{ $search :
```

```
// optional, defaults to "default"
```

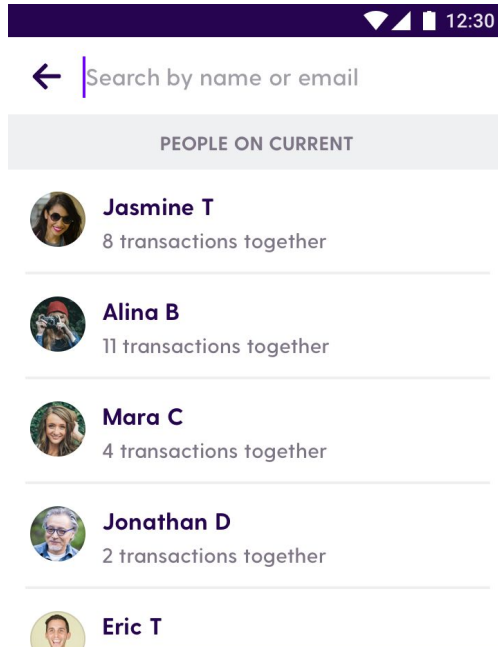
```
index: < indexName >
```

```
{
  "text": {
    "query": "burger",
    "path": "menu",
    "synonyms": "MenuSynonyms"
  }
}
```

highlight :



Who is using Atlas Search today?



Current

[MongoDB.live presentation](#) + [case study](#)

Modern, accessible banking

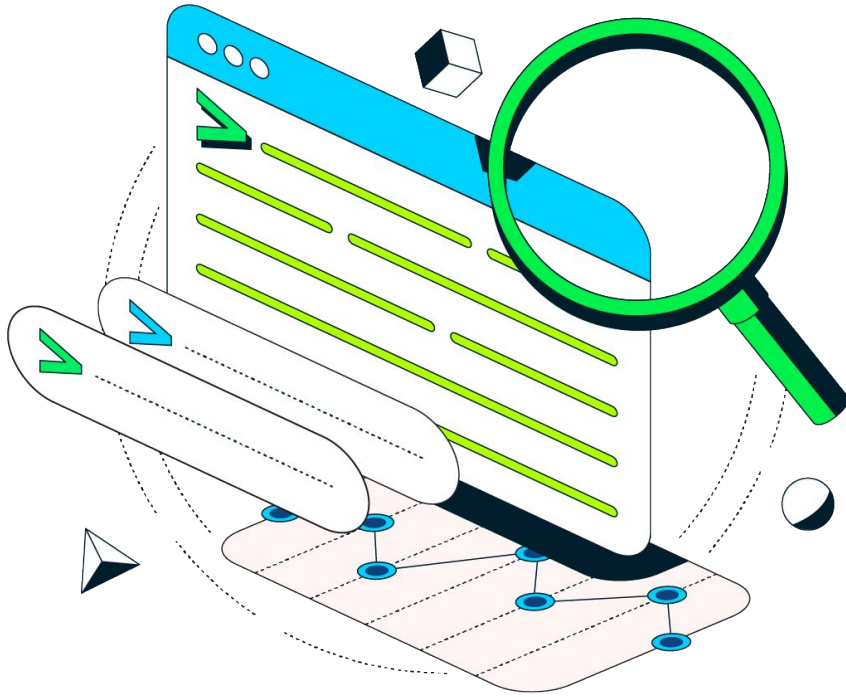
Tripled its valuation to \$2.2 billion just five months after its Series D fundraising round

Peer-to-peer payments made easy

Users can search for friends in the mobile app to send or request money

Chose Atlas Search over Elasticsearch

Benefits of a leaner stack include built-in data consistency and simplified queries



Leading European Insurer

Digital Transformation Initiative

Goal of unlocking multiple data silos constrained within core backend applications.

Single-view search

The customer needs to deliver a single, 360-degree real-time view of customer touch points across all products, including policy details, quotations, account history, and customer service information.

Accelerating Release Cycles

The deep integration between MongoDB Atlas and Atlas search enables the customer to dramatically compress their release cycles.



“Atlas Search has given us a cleaner and simpler architecture. We can create new indexes in a single API call. Data is automatically synced between the database and search index, giving consistent, high quality query results. Developer and operational overhead is reduced, creating cost and time savings which we can reinvest back into building products for our customers.”

**Lead Solution Architect,
Leading European Insurer**





“Coordinating the inter-team dependencies and executing the reindex process meant it would take us 3 to 5 days to roll out new application features with Elasticsearch. Because Atlas Search is embedded right alongside the database, everything is automated for us. Now we’ve got feature releases down to 3 hours, representing a time saving of over 90%.”

Lead Solution Architect,
Leading European Insurer



Welcome to the

MongoDB Developer Community

Community Guides



all categories ▾ all tags ▾ Categories Latest New (59) Unread (3) Top 🔧 + New Topic

Category

Topics

Latest

MongoDB World Hackathon '22

9 / week
6 new



The MongoDB World Hackathon '22 is a six week challenge with amazing prizes and swag up for grabs. Participate in a team of up to 4 hackers, or as an individual.

- Hackers looking for Projects 2 new
- Projects looking for Hackers
- Project Gallery

About the Community

2 / week



Community information and announcements including **Welcome posts** for introductions, a **Getting Started** guide, and **The Treehouse** for casual off-topic discussion.

- Welcome
- Getting Started
- Community Announcements
- MongoDB Events
- \$weeklyUpdate
- The Treehouse
- Forums Site Feedback



🔒 ⚡ Getting Started with the MongoDB Community: README.1ST

10
Oct '20

■ Getting Started



🔒 ⚡ Community Code of Conduct

0
Dec '20

■ Welcome



Issues starting MongoDB on MacOS

4
3m

■ Installation & Upgrades installation server



How to get output of a script or query from MongoDB compass's mongosh to a .txt file on desktop

1
11m

■ Other MongoDB Topics