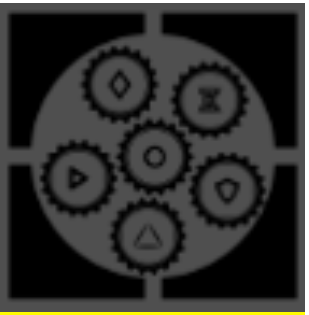
JRedisearch Workshop

By David Parry



Principal Software Engineer at Mutualink Inc.

Worked for a range of companies from startups to big four consulting firms.

Contributes to JRedisearch and Jedis

http://www.davidparry.com <- more here

Redis Overview

- Data Structures Server.
- Commands to access mutable data structures.
- Prefers to store all data in memory faster.
- Data structures stress on memory efficiency, smaller footprint.
- Features typical database; replication, tunable durability, cluster, high availability.
- CRDB – Conflict Free Replicated Database (Paid Version)

RediSearch Module Overview

- Developed and maintained by Redis Labs
- Redis Powered Search Engine
  - Open-Source Full-Text and Secondary Index engine
- Does not use internal data structures like sorted sets
  - Exact phrase matching and numeric filtering for text queries, that are not possible or efficient with traditional Redis search approaches example for a key ‘(hello world)|(hola mundo)’
- Reference Material: https://oss.redislabs.com/redisearch

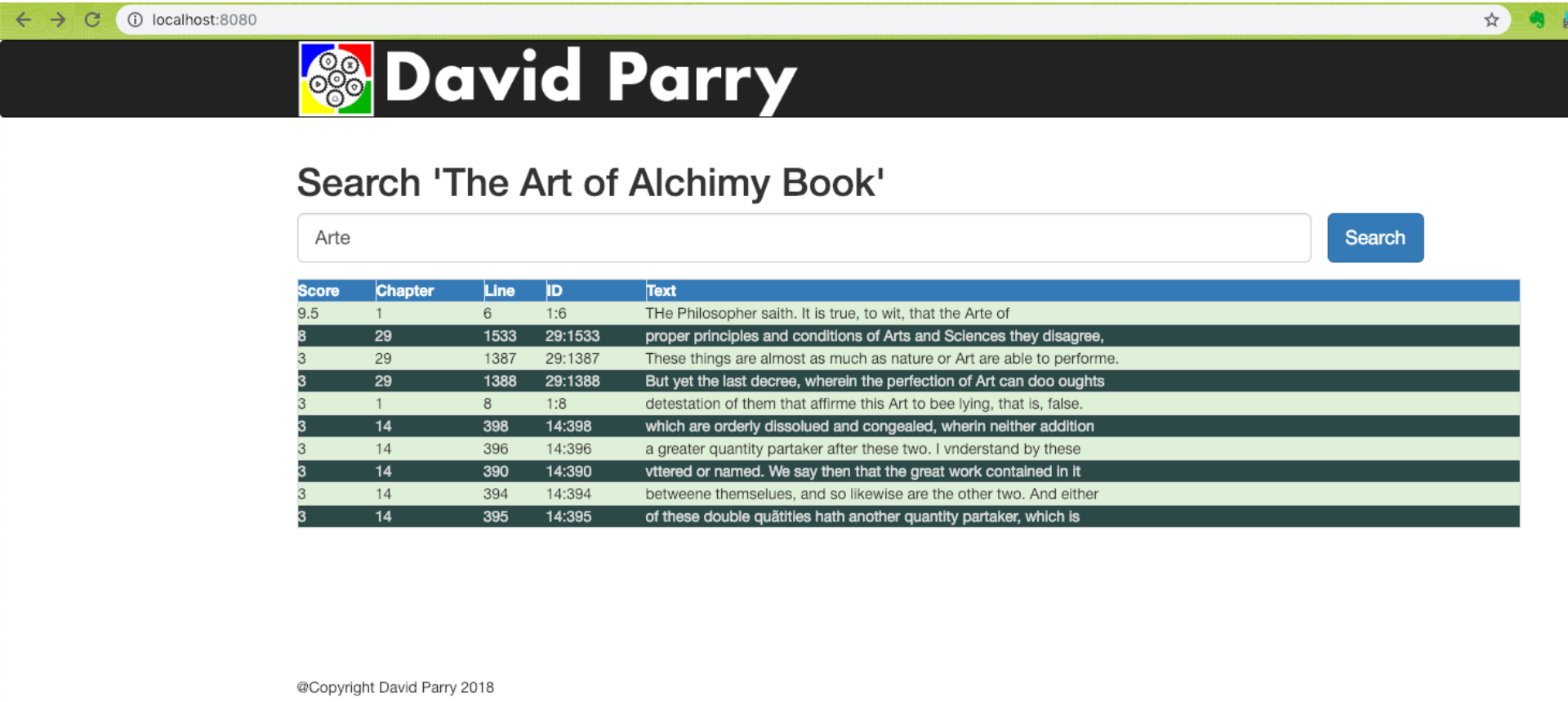
Main Features

Full-Text indexing of multiple fields in documents	Incremental indexing without performance loss
Document ranking (manually at index time).	Optional query clauses
Complex boolean queries with AND, OR, NOT operators between sub-queries	Auto-complete suggestions (with fuzzy prefix suggestions)
Prefix based searches	Field weights
Exact Phrase Search, Slop based search.	Numeric filters and ranges
Support for custom functions for query expansion and scoring (see Extensions)	Stemming based query expansion in many languages (using Snowball)
Geo filtering using Redis' own Geo-commands	Unicode support (UTF-8 input required)
Retrieve full document content or just ids	Partial and conditional document updates
Document deletion and updating with index garbage collection	Optional query clauses

JRedisearch Overview

- Java library abstracting the API of the RediSearch Redis module
- https://github.com/RedisLabs/JRediSearch
- **Topics to Cover**
  - Getting Started
  - Client Usage
  - Schema
  - Index Usage
  - Documents
  - Query Usage
  - Suggestion Usage

Final Result



Getting Started

- Steps to readme:
  - Git install - https://git-scm.com/downloads
  - Verify – `$ git clone git@github.com:davidparry/JRediSearchWorkshop.git`
- Follow the README.md for further instructions

Client Usage

Goal: Connect to Redisearch and verify connectivity

Reference Material:
https://oss.redislabs.com/redisearch/java_client/
http://davidparry.com/storage/jrediseach-javadoc-v0-19-0/docs/io/redisearch/Client.html

Index Usage

Goal: Demonstrate a better approach to check connectivity

See post @ http://davidparry.com/blog/2018/12/2/testing-conductivity-in-jredissearch-to-redis-without-a-prev.html

Schema

Goal: Define and create a Schema in Rediseach

Refe*rence Material:* https://oss.redislabs.com/redisearch/Commands/#ftcreate
https://oss.redislabs.com/redisearch/Commands/#ftinfo
http://davidparry.com/storage/jrediseach-javadoc-v0-19-0/docs/io/redisearch/client/Client.html#createIndex-io.redisearch.Schema-io.redisearch.client.Client.IndexOptions-

Documents

Goal: To add a simple Document to the Index and then a more complex with a Payload

Reference Material:
https://oss.redislabs.com/redisearch/Commands/#ftadd
https://oss.redislabs.com/redisearch/payloads/
http://davidparry.com/storage/jrediseach-javadoc-v0-19-0/docs/io/redisearch/Client.html#addDocument-io.redisearch.Document-io.redisearch.client.AddOptions-
http://davidparry.com/storage/jrediseach-javadoc-v0-19-0/docs/io/redisearch/Document.html#Document-java.lang.String-java.util.Map-double-byte:A-

Query Usage

Goal: retrieve a document using a simple term using a query object

Reference Material:
https://oss.redislabs.com/redisearch/Query_Syntax/
http://davidparry.com/storage/jrediseach-javadoc-v0-19-0/docs/io/redisearch/Client.html#search-io.redisearch.Query-

Suggestion Usage

Goal: add suggestions to the index and retrieve suggested words that are fuzzy

Note: *Adds a suggestion string to an auto-complete suggestion dictionary. This is disconnected from the index definitions, and leaves creating and updating suggestions dictionaries to the user*

Reference Material:
https://oss.redislabs.com/redisearch/Commands/#ftsugadd
http://davidparry.com/storage/jrediseach-javadoc-v0-19-0/docs/io/redisearch/Client.html#addSuggestion-io.redisearch.Suggestion-boolean-
http://davidparry.com/storage/jrediseach-javadoc-v0-19-0/docs/io/redisearch/Client.html#getSuggestion-java.lang.String-io.redisearch.client.SuggestionOptions-

Recap

- Getting Started
- Client Usage
- Schema
- Index Usage
- Documents
- Query Usage
- Suggestion Usage

Q&A