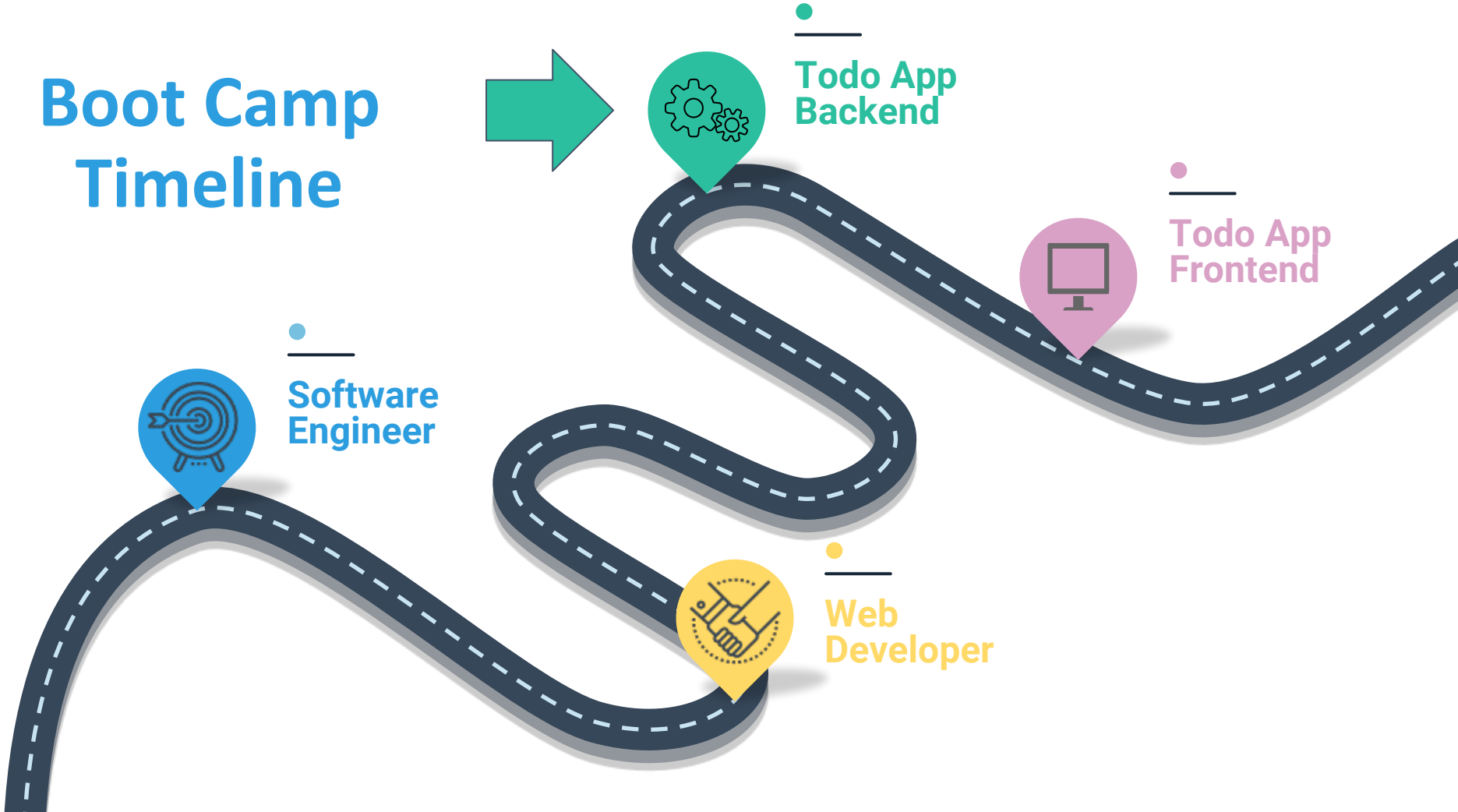
Software Engineering

Mo.Agamia

Boot Camp Timeline



Plan

- Introduction
- Backend
  - Client-Server Architecture
  - RESTful Architecture
  - Node.js & Express
  - Database
  - Authentication
  - Postman

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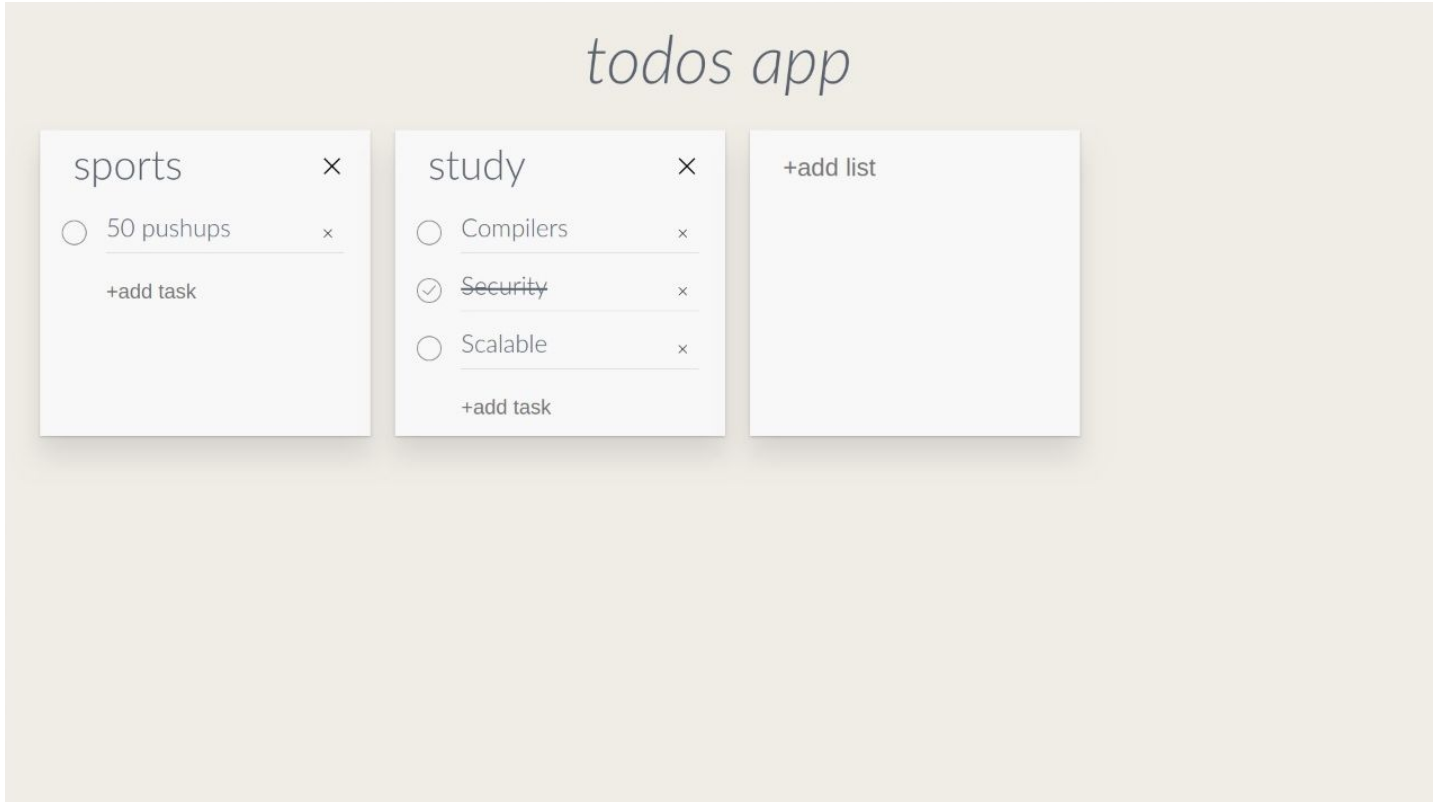
1 Introduction

Todo App



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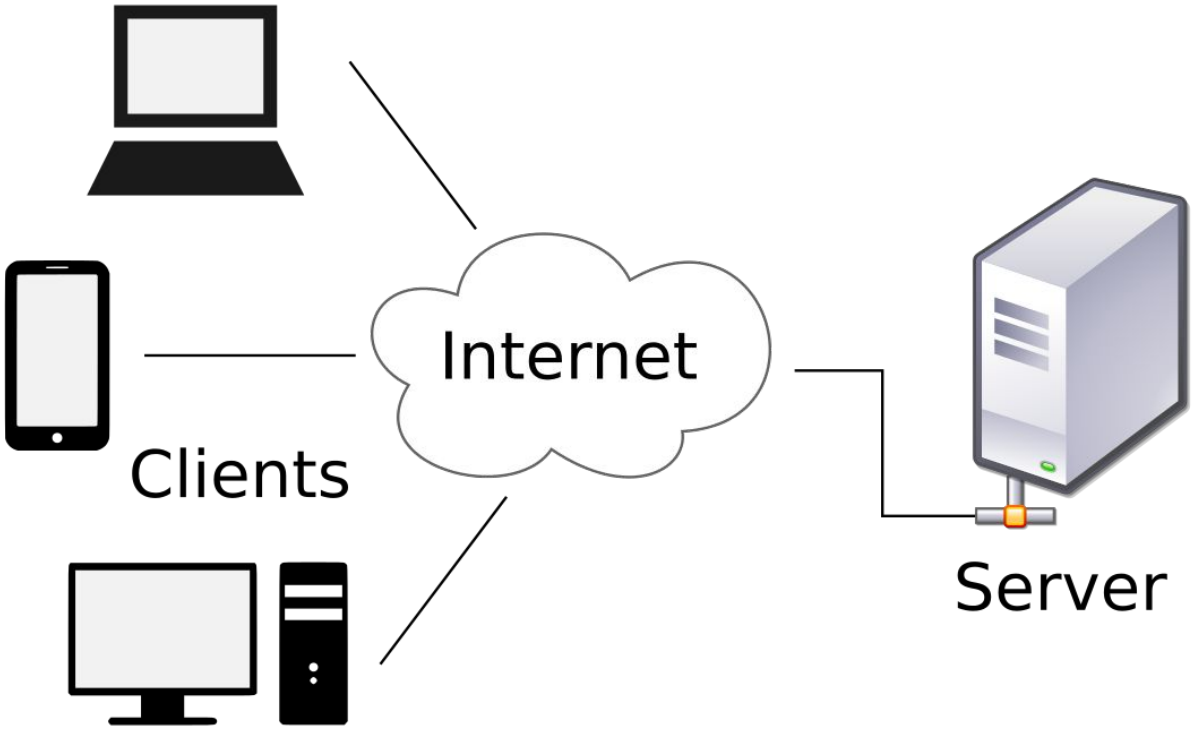
2 Backend

2.1 Client-Server Architecture

Client-Server Architecture



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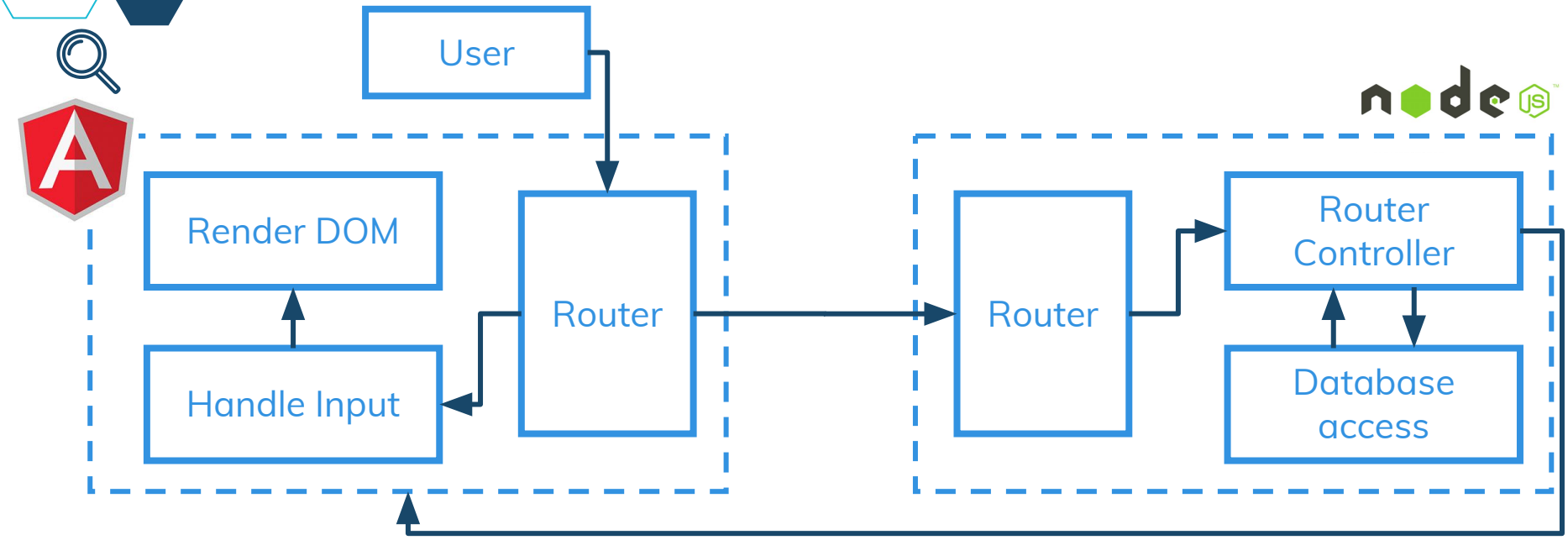
2.2 RESTful Architecture

RESTful Architecture



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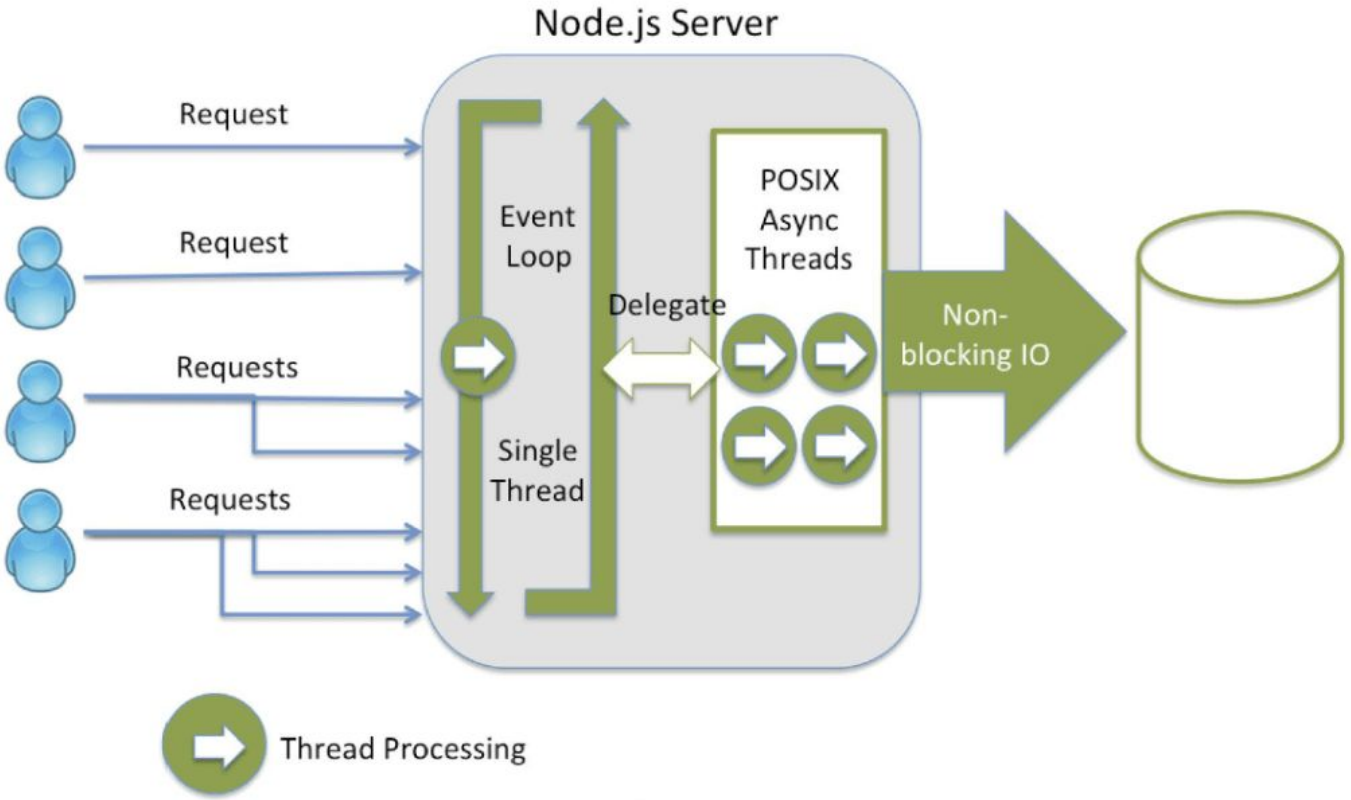
Node.js & Express


Node.js Server
Request
Request
Requests
Requests
Event Loop
Single Thread
Delegate
POSIX Async Threads
Non-blocking IO
Thread Processing

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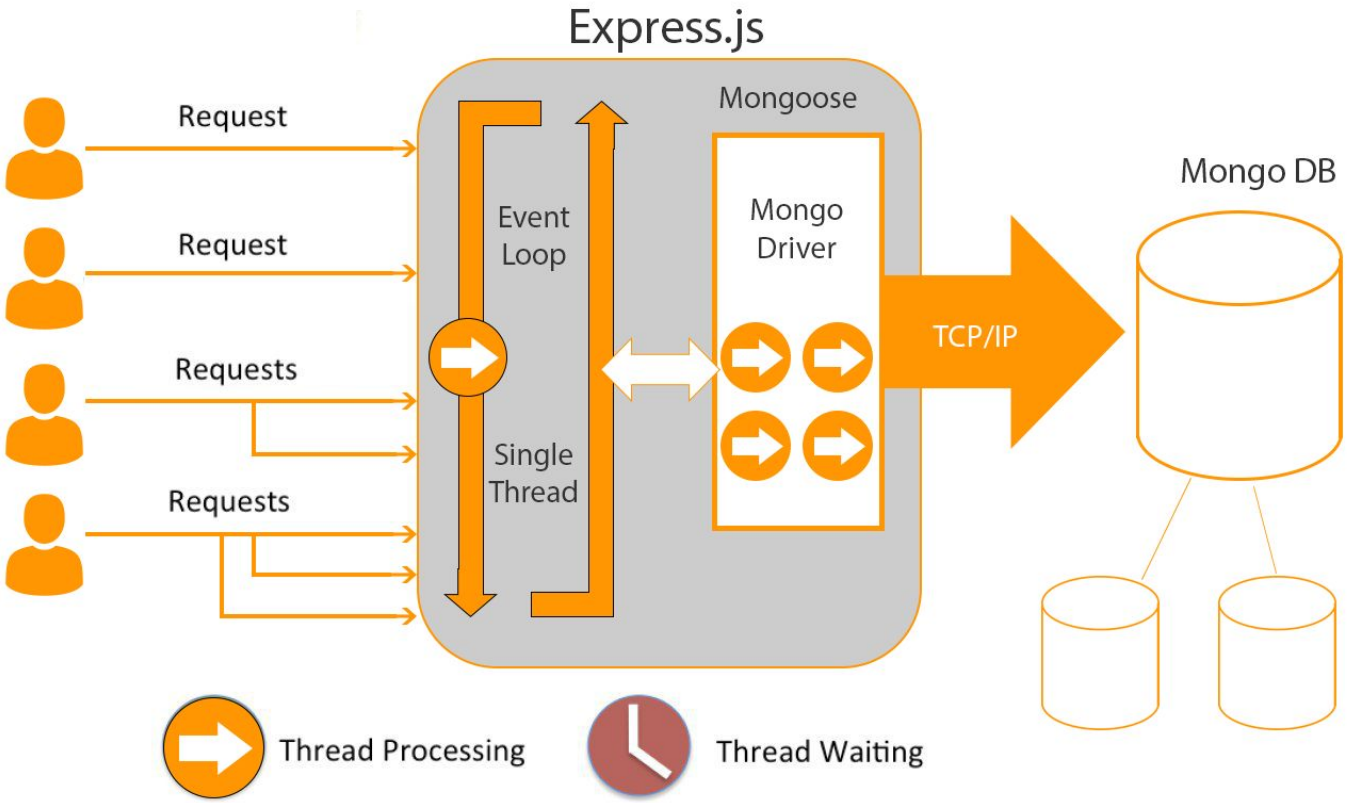
Express.js
Request
Request
Requests
Requests
Event
Loop
Single
Thread
Mongoose
Mongo
Driver
TCP/IP
Mongo DB
Thread Processing
Thread Waiting

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2.4 Database

Types of Databases

- Non-relational/NoSQL
  - MongoDB
  - Redis
  - Couch DB
- Relational Databases
  - MySQL, PostgreSQL
  - Oracle database
  - IBM
  - MariaDB

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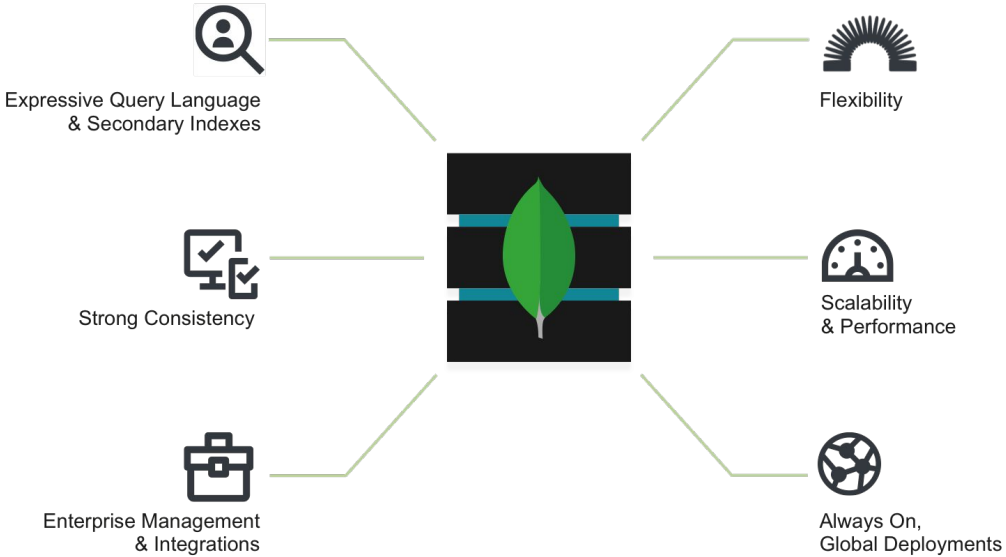
mongoDB®

- Flexible Schema Design.
- JSON Document Model.
- Aggregation Framework & MapReduce.
- Auto-Sharing for Horizontal Scalability.
- Full, Flexible Index Support & Rich Queries.



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2.5 Authentication

Tokenization Authentication

Example:

- Password:

  4111 1111 1111 1111

- Format Preserving Token:

  4111 8765 2345 1111

- Non-format Preserving Token:

  25c92e17-80f6-415f-9d65-7395

  a32u0223

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2.6 Postman

Postman

Postman's Tools Support Every Stage of the API Lifecycle.

Through design, testing and full production, Postman is there for faster, easier API development—without the chaos.

PUBLISH

Onboard developers to your API faster with Postman collections and documentation

DESIGN & MOCK

Design in Postman & use Postman's mock service

MONITOR

Create automated tests to monitor APIs for uptime, responsiveness, and correctness

DEBUG

Test APIs, examine responses, add tests and scripts

DOCUMENT

Create beautiful web-viewable documentation

AUTOMATED TESTING

Run automated tests using the Postman collection runner

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Thanks!

Any questions?

You can find me at:

- Github:
- https://github.com/MoAgamia/SE-Boot-Camp

References

- https://github.com/kamranahmedse/developer-roadmap
- https://www.getpostman.com/
- http://maxprog.net.pl/node-js/node-js-server-architecture
- https://vmokshagroup.com/blog/building-restful-apis-using-node-js-express-js-and-ms-sql-server/