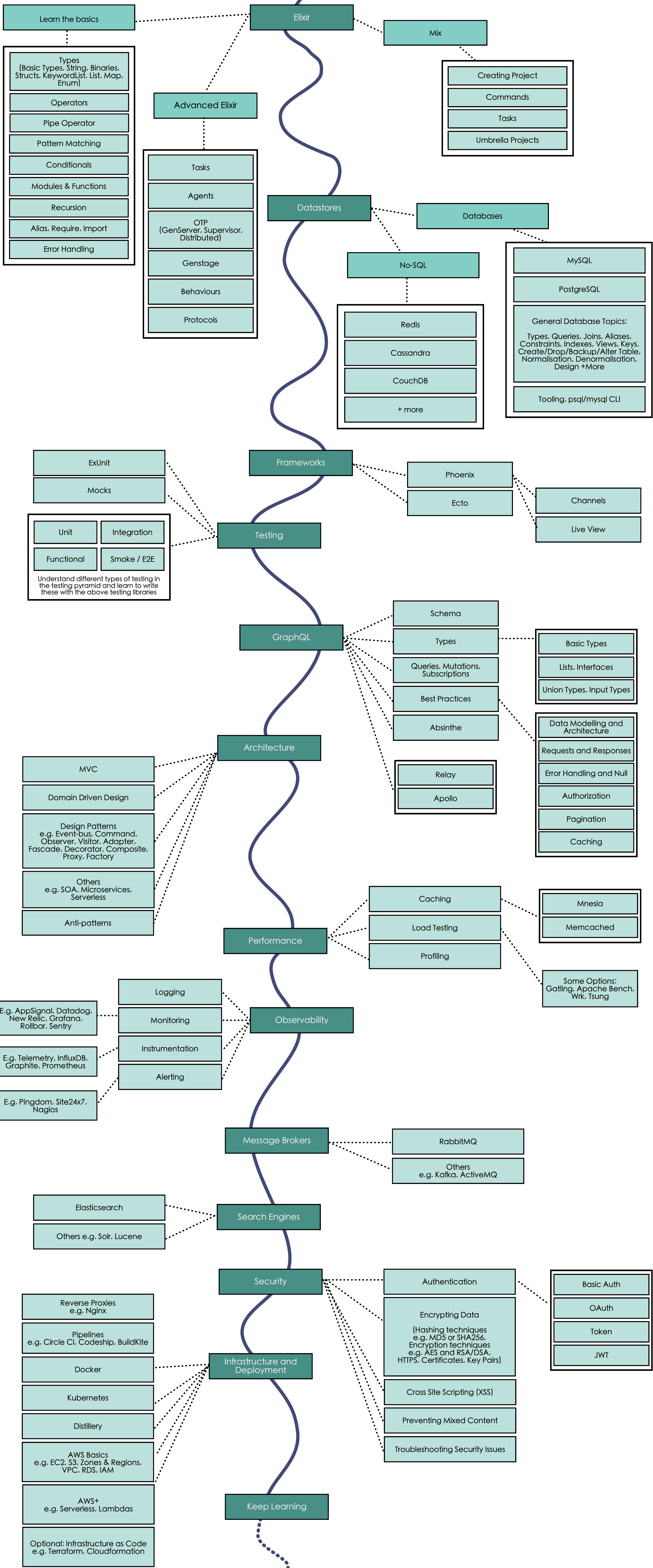


Backend Developer

Learn the Basics



Learn the basics

- Types (Basic Types, String, Binaries, Structs, KeywordList, List, Map, Enum)
- Operators
- Pipe Operator
- Pattern Matching
- Conditionals
- Modules & Functions
- Recursion
- Alias, Require, Import
- Error Handling

Advanced Elixir

- Tasks
- Agents
- OTP (GenServer, Supervisor, Distributed)
- Genstage
- Behaviours
- Protocols

Mix

- Creating Project
- Commands
- Tasks
- Umbrella Projects

Databases

Databases

No-SQL

- Redis
- Cassandra
- CouchDB
- + more

- MySQL
- PostgreSQL
- General Database Topics: Types, Queries, Joins, Aliases, Constraints, Indexes, Views, Keys, Create/Drop/Backup/Alter Table, Normalisation, Denormalisation, Design +More
- Tooling, psql/mysql CLI

Frameworks

Phoenix

Ecto

Channels

Live View

- ExUnit
- Mocks

- Unit
 - Integration
 - Functional
 - Smoke / E2E
- Understand different types of testing in the testing pyramid and learn to write these with the above testing libraries

Testing

GraphQL

Schema

Types

Queries, Mutations, Subscriptions

Best Practices

Absinthe

Relay

Apollo

- Basic Types
- Lists, Interfaces
- Union Types, Input Types

- Data Modelling and Architecture
- Requests and Responses
- Error Handling and Null
- Authorization
- Pagination
- Caching

Architecture

MVC

Domain Driven Design

Design Patterns e.g. Event-bus, Command, Observer, Visitor, Adapter, Facade, Decorator, Composite, Proxy, Factory

Others e.g. SOA, Microservices, Serverless

Anti-patterns

Performance

Caching

Load Testing

Profiling

- Mnesia
- Memcached

Some Options: Gatling, Apache Bench, Wrk, Tsung

Observability

Logging

Monitoring

Instrumentation

Alerting

E.g. AppSignal, Datadog, New Relic, Grafana, Rollbar, Sentry

E.g. Telemetry, InfluxDB, Graphite, Prometheus

E.g. Pingdom, Site24x7, Nagios

Message Brokers

RabbitMQ

Others e.g. Kafka, ActiveMQ

Search Engines

Elasticsearch

Others e.g. Solr, Lucene

Security

Authentication

Encrypting Data (Hashing techniques e.g. MD5 or SHA256, Encryption techniques e.g. AES and RSA/DSA, HTTPS, Certificates, Key Pairs)

Cross Site Scripting (XSS)

Preventing Mixed Content

Troubleshooting Security Issues

- Basic Auth
- OAuth
- Token
- JWT

Reverse Proxies e.g. Nginx

Pipelines e.g. Circle CI, Codeship, BuildKite

Docker

Kubernetes

Distillery

AWS Basics e.g. EC2, S3, Zones & Regions, VPC, RDS, IAM

AWS+ e.g. Serverless, Lambdas

Optional: Infrastructure as Code e.g. Terraform, Cloudformation

Infrastructure and Deployment

Keep Learning