Lesson 13 - APIs

Architecture overview

- API endpoints
- HTTP and HTTPS requests and responses
- Architectures
    - RESTful, SOAP, GraphQL, gRPC, Falcor, Pure JSON and others
    - Webhooks
    - MVC
- Documentation
    - Swagger and Postman
- Programming languages and Frameworks

References

https://tray.io/blog/how-do-apis-work

https://restfulapi.net/

https://leapgraph.com/rest-api-alternatives/

https://futurice.com/blog/api-services-mvc

https://merehead.com/blog/development-trends-best-backend-frameworks-in-2022/

Architecture design

- Information and data
- Object Modeling and resources
- Model URIs
- Controllers
- Services
- Database

References

https://restfulapi.net/rest-api-design-tutorial-with-example/

https://www.coreycleary.me/what-is-the-difference-between-controllers-and-services-in-node-rest-apis/

NestJS Framework

- Running services with node
- Web server with node
- Using Express to run a node web server
- About using frameworks
- Using NestJS framework
- Overview of a NestJS project

- Using the CLI
- Initializing a project with NestJS
- Swagger plugin

References

https://nodejs.org/en/docs/guides/getting-started-guide/

https://devdocs.io/express-getting-started/

https://docs.nestjs.com/

https://github.com/brocoders/nestjs-boilerplate

https://docs.nestjs.com/openapi/introduction

Implementing the API

- The NestJS CLI
- Creating Resources
- Controllers, Services and Routes in NestJS
- Modules and injections (overview)
- Server configuration
- Serving scripts as services
- Params, DTOs and Payloads
- HTTP errors and messages
- (Review) Environment
- Implementing the features

References

https://docs.nestjs.com/cli/overview

https://docs.nestjs.com/recipes/crud-generator

Homework

- Read the references
- Implement GET methods to query total supply, allowance from a given address to another address, transaction status by transaction hash and transaction receipt of a transaction by transaction hash
- (Optional) Remove the wallet from the environment, and implement a method to setup a wallet passing the private key as parameter
  - Methods that require a wallet should give an error message explaining that a wallet must be set before using that method