Go project structure (best practices)

WASA: Web and Software Architecture

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Fantastic Coffee (decaffeinated)

“Best practice”

a working method, or set of working methods, that is officially accepted as being the best to use in a particular business or industry […]

Definition of best practice from the *Cambridge Business English Dictionary* © Cambridge University Press

What?

“Fantastic Coffee (decaffeinated)” is an opinionated template we made.

It combines some best practices about Go.

- https://gitlab.com/sapienzaapps/fantastic-coffee-decaffeinated
- https://github.com/sapienzaapps/fantastic-coffee-decaffeinated

Fantastic Coffee (decaf) structure

```
cmd/
demo/
doc/
go.mod
go.sum
LICENSE
open-npm.sh
README.md
service/
vendor/
webui/
```

cmd/

cmd/ contains executables.

Go code here should only present packages in a usable manner.

E.g.:

1. Read CLI options
2. Import packages and use functions to register API handlers
3. Start web server
4. Wait for termination signal

service/

All packages should be here, as sub-directories. Nesting is possible.

E.g., *`services/globaltime/`* is the *`globaltime`* package.

vendor/

It contains the source for all external packages (“dependencies”).

You should update it when you add/update/remove dependencies: *`go mod vendor`*

See https://go.dev/ref/mod#vendoring.

webui/

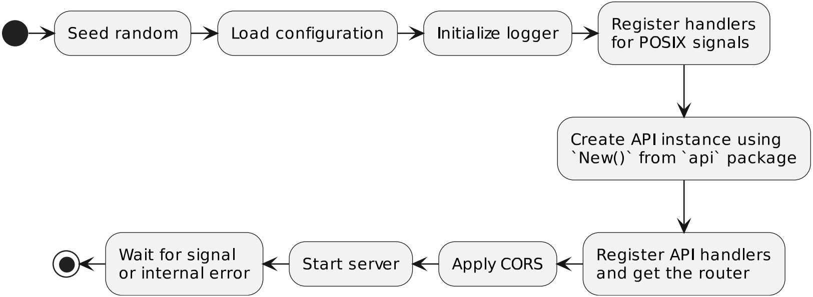
Contains a Vue.js project. We'll see the content in few weeks.

Let’s dive into the *source*.

cmd/webapi/

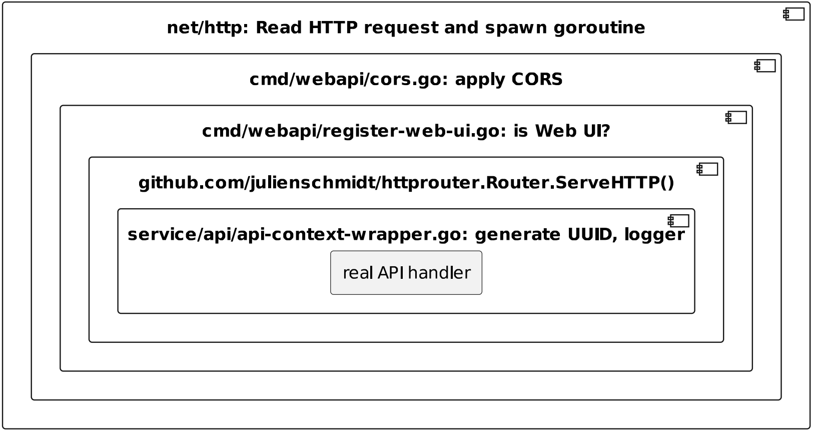
```
cmd/webapi/cors.go
cmd/webapi/load-configuration.go
cmd/webapi/main.go
cmd/webapi/register-web-ui.go
cmd/webapi/register-web-ui-stub.go
```

cmd/webapi/main.go



Seed random
Load configuration
Initialize logger
Register handlers for POSIX signals
Create API instance using `New()` from `api` package
Register API handlers and get the router
Apply CORS
Start server
Wait for signal or internal error

HTTP request wrappers



net/http: Read HTTP request and spawn goroutine
cmd/webapi/cors.go: apply CORS
cmd/webapi/register-web-ui.go: is Web UI?
github.com/julienschmidt/httprouter.Router.ServeHTTP()
service/api/api-context-wrapper.go: generate UUID, logger
real API handler