php sw

HOW DO YOU STRUCTURE YOUR APPS?

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image: https://www.flickr.com/photos/hisgett/24764746083

QUESTIONS, DECISIONS 🤔

- Should I put everything in one namespace?
- Should I start with one and extract other namespaces over time?
- How do I decide if something should be in its own namespace?
- Should I just use a framework?
- Microservices or monolith?
- How much should be shared?
- What's the “best way”?

Image: https://www.flickr.com/photos/photommo/4082927817 2

GOOD STRUCTURE GOALS

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- Consistent.
- Easy to understand, navigate and reason about ("makes sense”).
- Easy to change, loosely-coupled.
- Easy to test.
- Little to no technical debt.
- "As simple as possible, but no simpler.”
- Design reflects exactly how the software works.
- Structure reflects the design exactly.

image: https://www.flickr.com/photos/sergejf/15849692023

How the software works

☝🏽

Design

☝🏾

Structure

ARCHITECTURE

- Maintainability
- Understandability
- Testability
- Little technical debt

A (SIMPLE) BEER REVIEWING SERVICE

- Users can add a review for a beer.
- Users can list all beer reviews.
- Option to store data either in memory or in a JSON file.

FLAT STRUCTURE

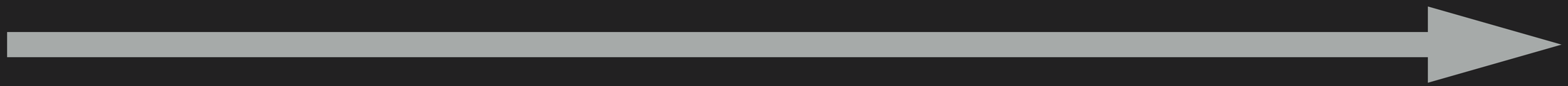
FLAT STRUCTURE

```
/
├── handlers.php
├── models.php
├── storage.php
├── storage_mem.php
├── storage_json.php
└── index.php
```

GROUP BY FUNCTION

GROUP BY FUNCTION (“LAYERED ARCHITECTURE”)

- presentation / user interface
- business logic
- storage / external dependencies



GROUP BY FUNCTION

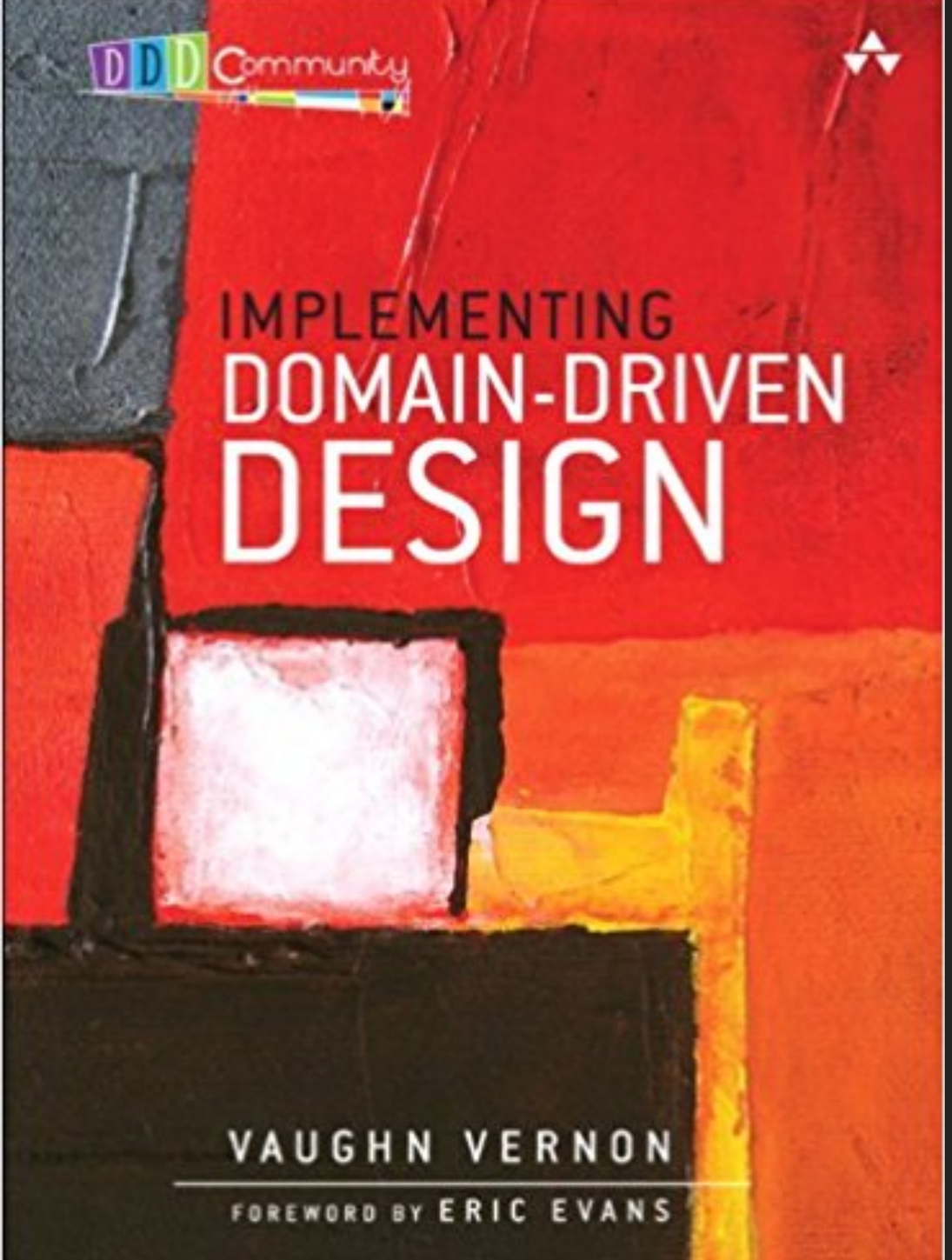
```
.
├── handlers
│   ├── list_reviews.php
│   └── add_review.php
├── index.php
├── models
│   ├── beer.php
│   ├── review.php
│   └── storage.php
└── storage
    ├── json.php
    └── memory.php
```

GROUP BY MODULE

GROUP BY MODULE

```
.
├── beers
│   ├── beer.php
│   └── handler.php
├── index.php
├── reviews
│   ├── handler.php
│   └── beer_review.php
└── storage
    ├── json.php
    ├── memory.php
    └── storage.php
```

GROUP BY CONTEXT



DOMAIN DRIVEN DESIGN! (DDD)

DOMAIN DRIVEN DESIGN (DDD)

- Establish your domain and business logic.
- Define your bounded context(s), the models within each context and the ubiquitous language.
- Categorising the building blocks of your system:

  Entity
  Value Object
  Domain Event
  Aggregate
  Service
  Repository
  Factory

DEMO PROJECT

Context: beer tasting

Language: beer, review, storage, ...

Entities: Beer, Review, ...

Value Objects: Brewery, Author, ...

Aggregates: BeerReview

Service: Beer Review adder, Beer Review lister

Events: Beer added, Review added, Duplicate review, ...

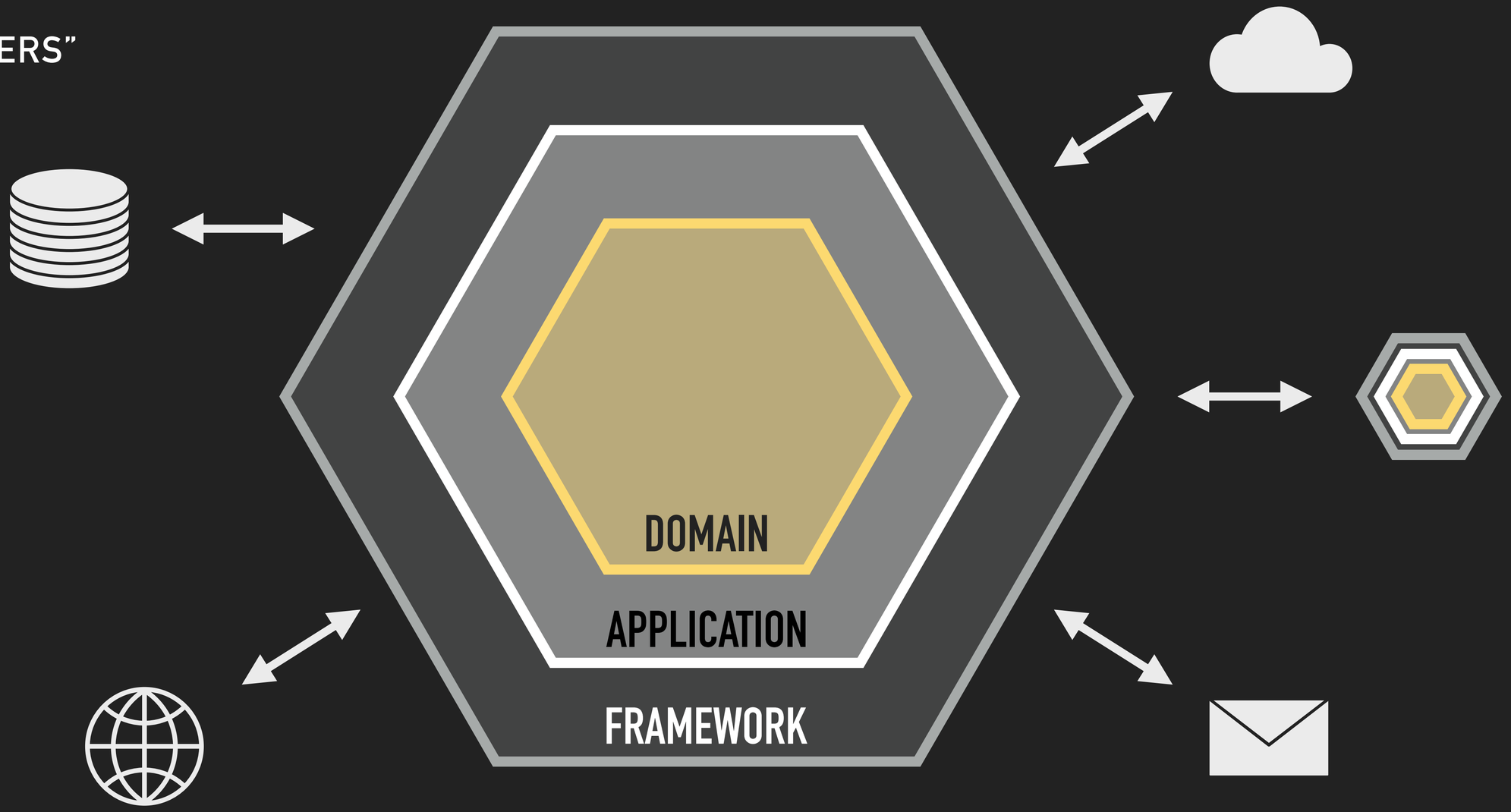
Repository: Beer repository, Review repository

GROUP BY CONTEXT

```
.
├── reviewing
│   ├── handler.php
│   └── beer_review.php
├── listing
│   ├── handler.php
│   └── reviews.php
├── index.php
└── storage
    ├── json.php
    ├── memory.php
    └── storage.php
```

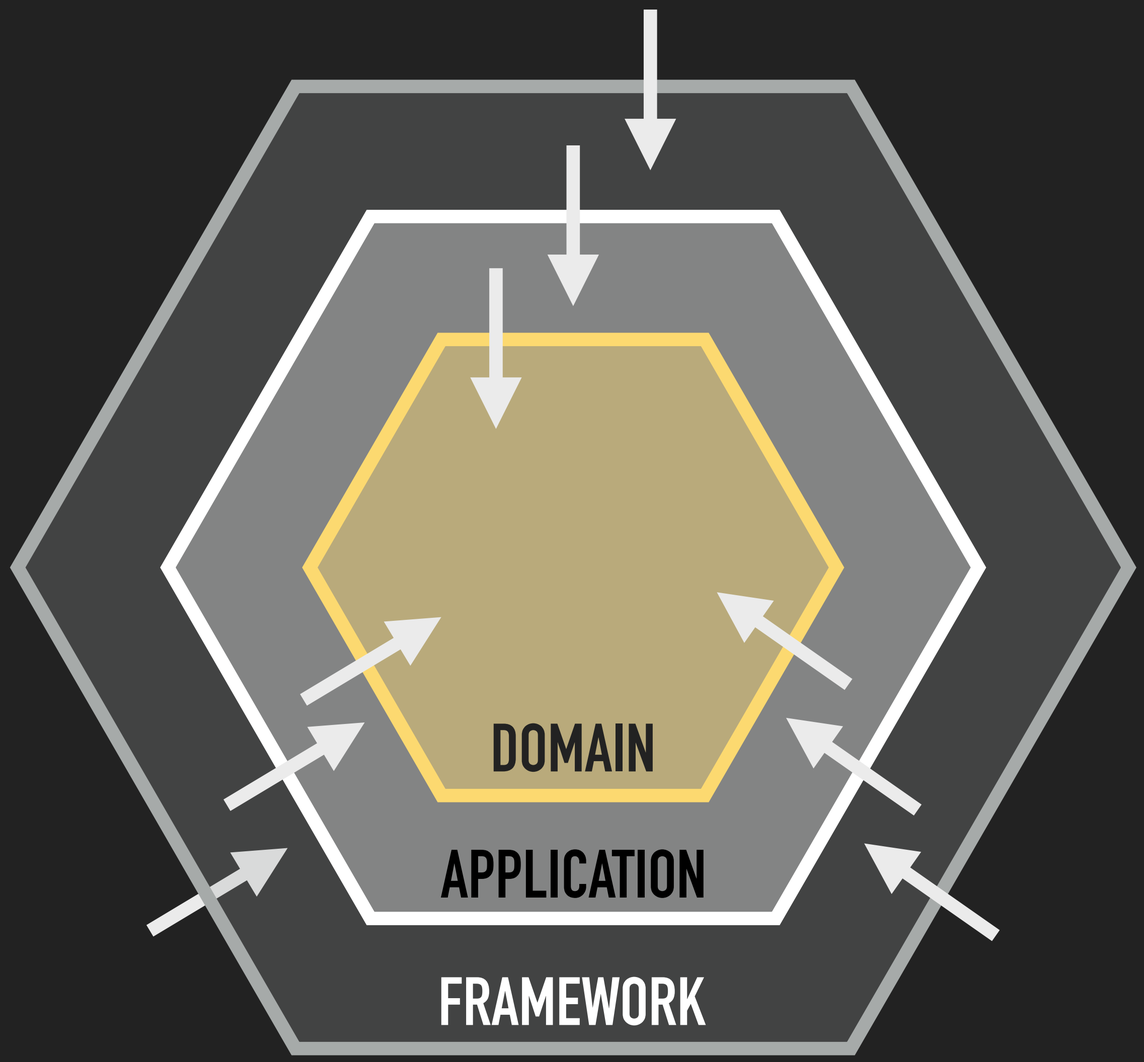
HEXAGONAL ARCHITECTURE

"PORTS AND ADAPTERS"



HEXAGONAL ARCHITECTURE

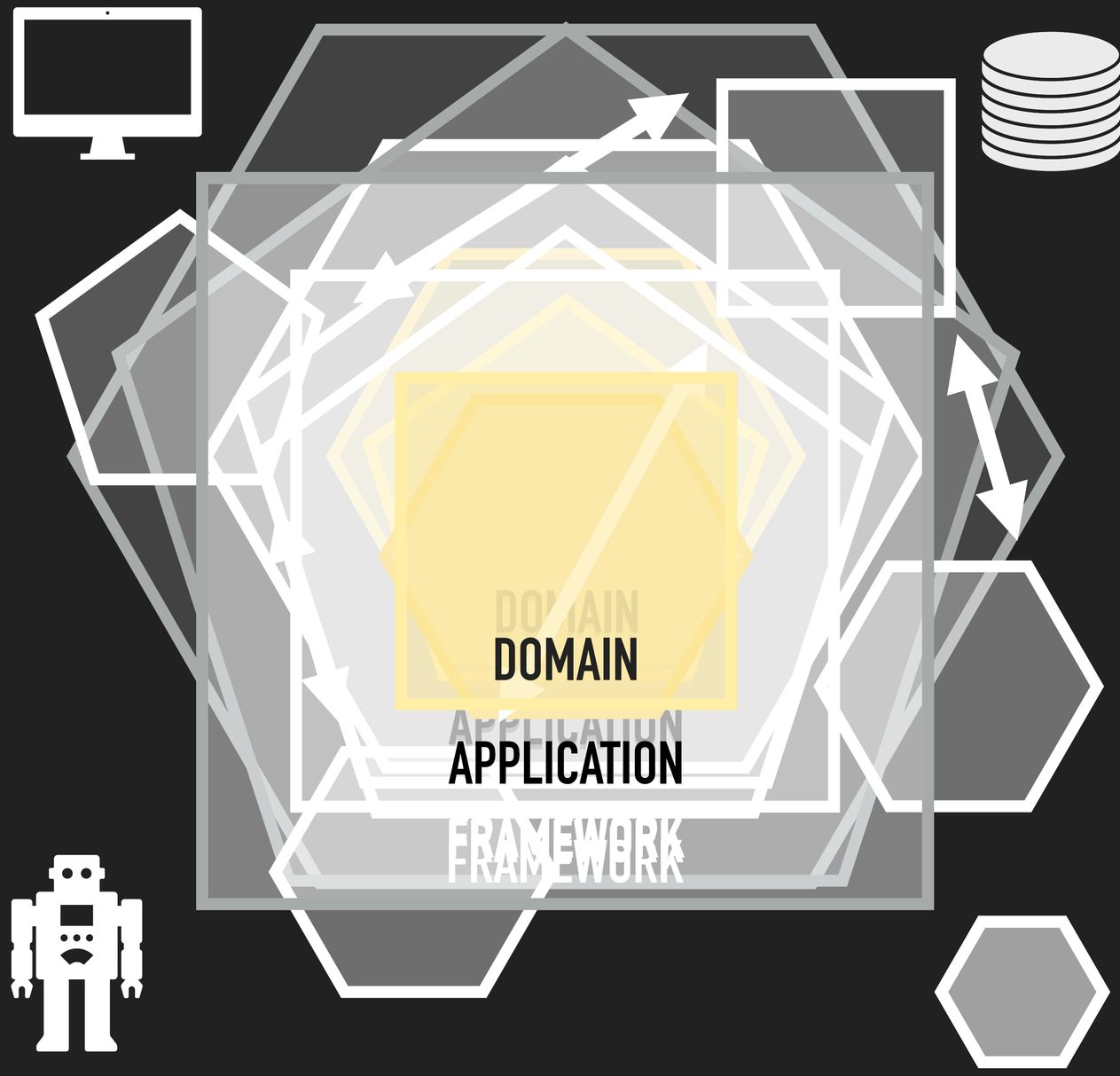
"PORTS AND ADAPTERS"



Dependencies
only point inwards.

HEXAGONAL ARCHITECTURE

"PORTS AND ADAPTERS"



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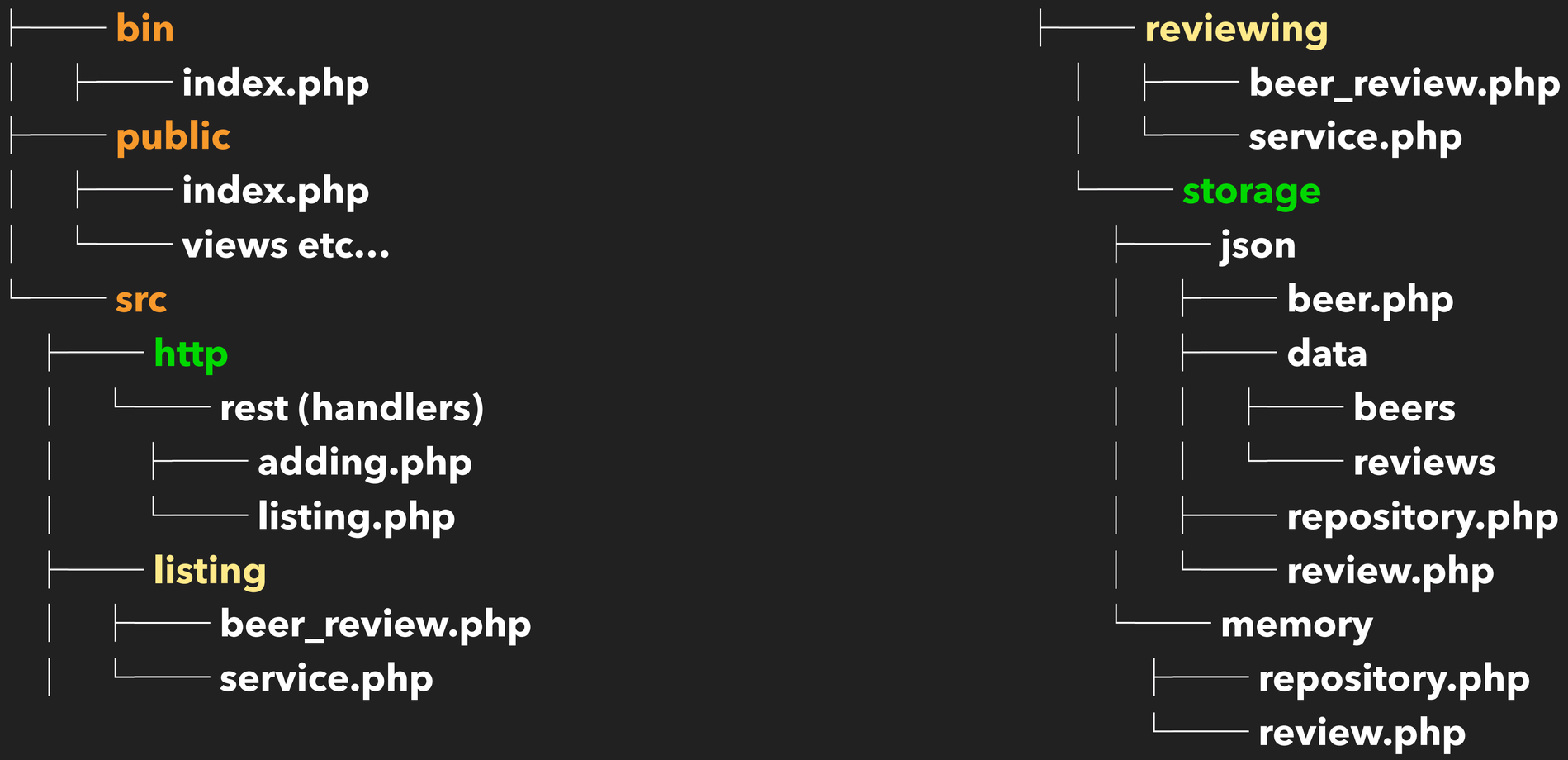

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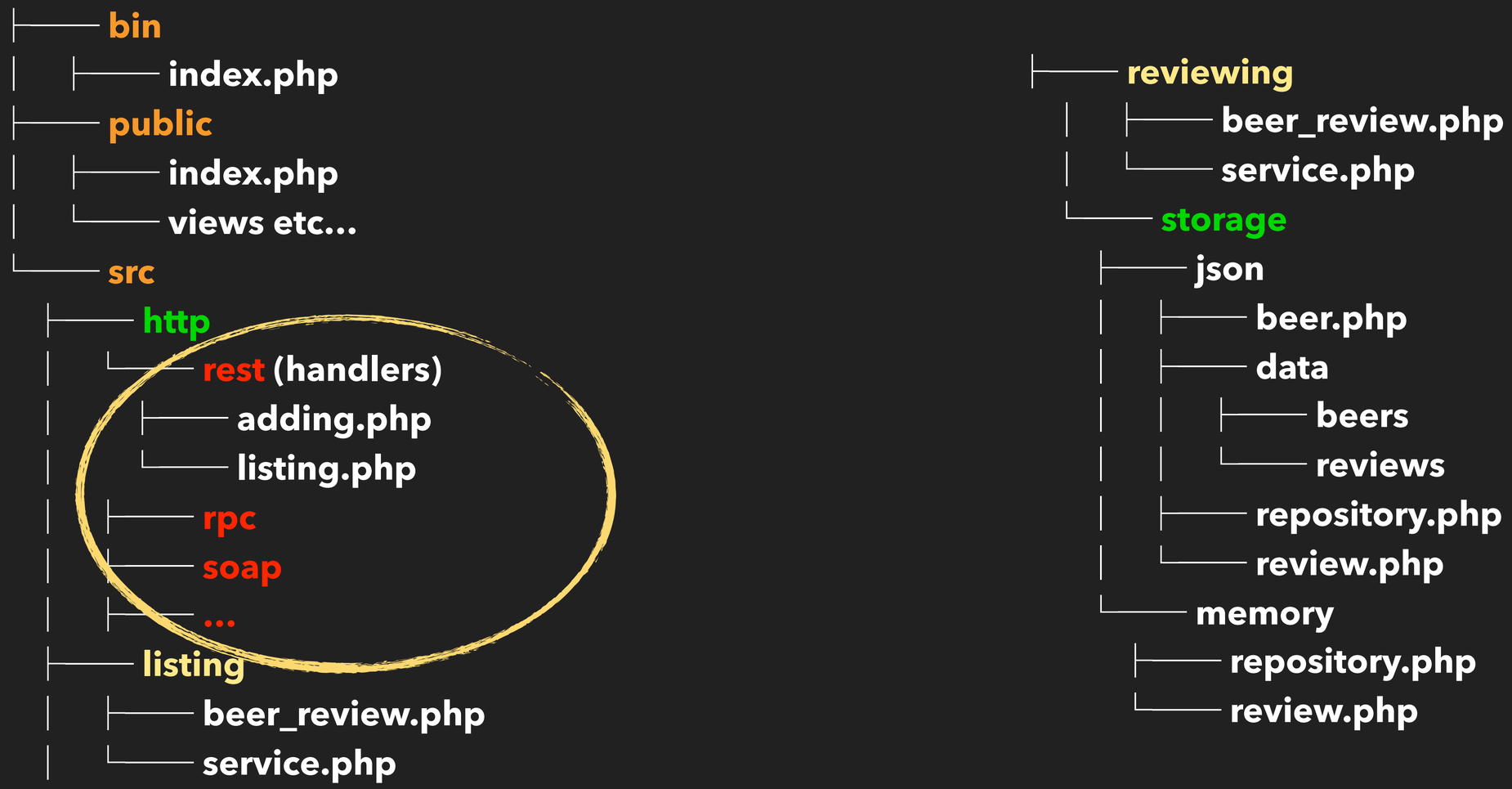


FRAMEWORKS?

TESTING

- Unit test #allthedomain!
- Easy mocking of external dependencies

NAMING

- Choose names that suggest well what can be expected inside.
  - communicate what they provide, as opposed to what they contain
- Avoid generic names like util, common etc.
- Avoid stutter (e.g. Controllers/FooBarController -> Controllers/FooBar).
- Accessibility - choose screenreader-friendly names! (see Julia's talk)

PUTTING IT ALL TOGETHER

👌 Flat and simple is ok.

☝🏽 Two top-level directories:
bin|public (for your binaries/doc root) and src (for all teh codez)

✌🏾 Group by context, not generic functionality. Try DDD + hex.

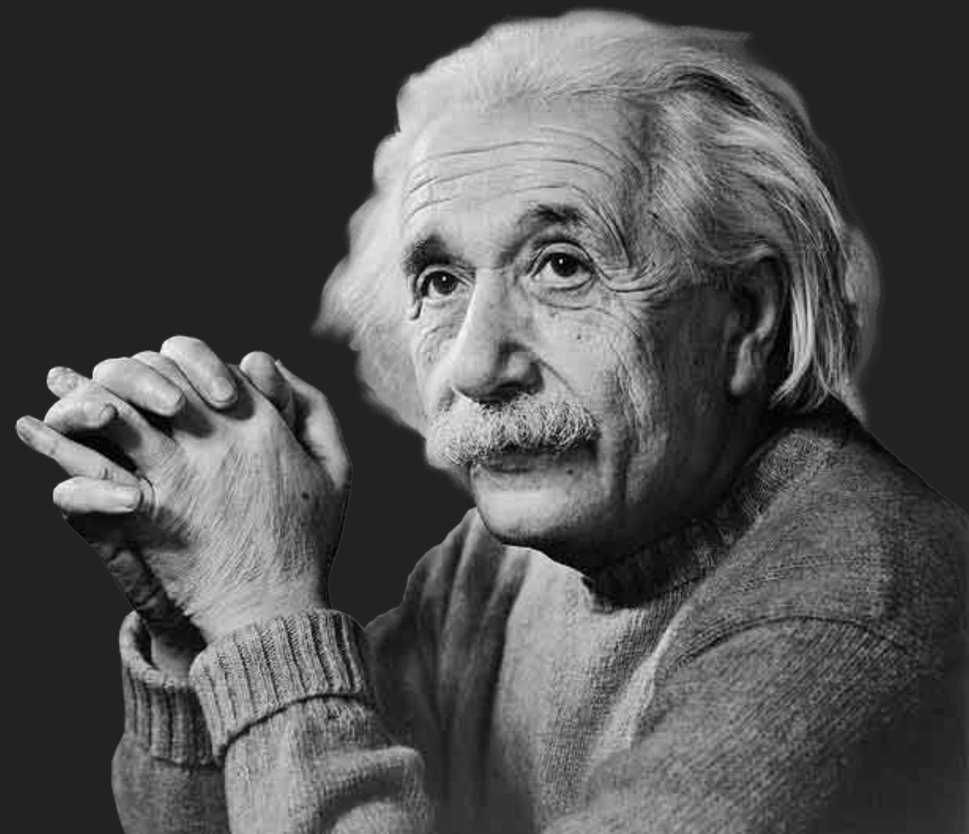
🤟All other project files (composer, phpunit, docker): root dir of your project.

🙌🏿 index.php initialises and ties everything together.

👍🏻 Keep the business logic centralised.

CONCLUSION

- No single right answer (sorry...) 🙃
- "Be like water"
- "As simple as possible, but no simpler"
- Maintain consistency
- Experiment!
- Share your ideas 🙌🏽



QUESTIONS? LINKS!

- @kasiazien
- demo code: coming soon to a GitHub near you!
- references:

  The Hexagonal (Ports & Adapters) Architetcure by Alistair Cockburn

  Hexagonal architecture by Chris Fidao

THANK YOU! 💜 🐘

HTTPS://JOIND.IN/TALK/761AF

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