

Disclaimer

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This talk is not
about the front end

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This talk is about
software architecture

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(Yes, at 18:00 on a Saturday. Sorry not sorry)



BACK
FEST

We asked for
responsibilities



The Art(?) of
Front-end Architecture

👋 Hi! I'm Adrià Fontcuberta



Senior(?) Software Engineer @ **Holaluz**

Member of the official **Vue Test Utils**

Member of **Testing Library**

Co-organizer of **VueJS Barcelona**

@afontq

afontcu.dev

HLFF20

What are* we aiming for?

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Write maintainable,
scalable apps

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Stay away from the
framework

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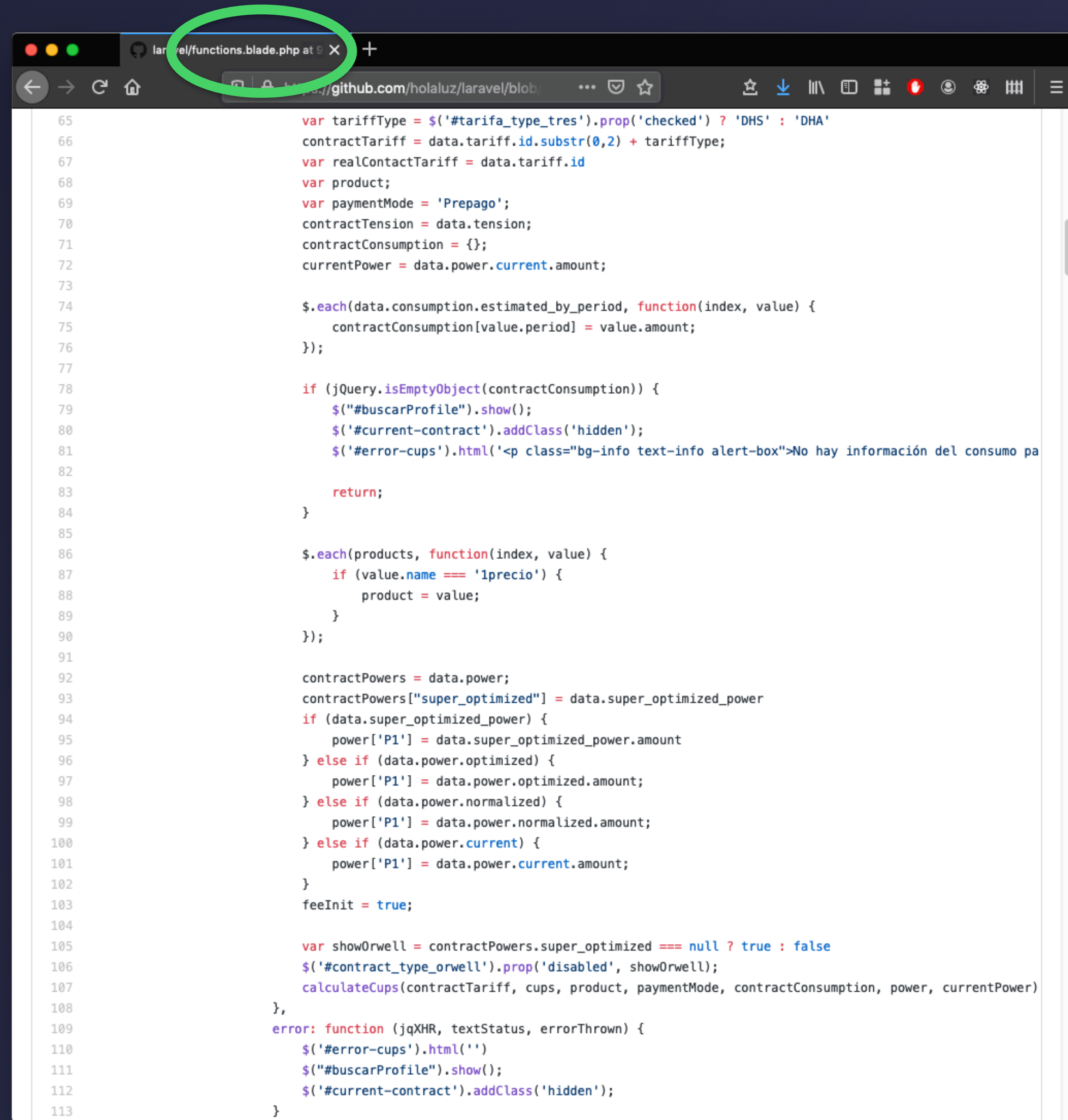
Share knowledge
between teams and areas

Reduce the gap between
Front and Back

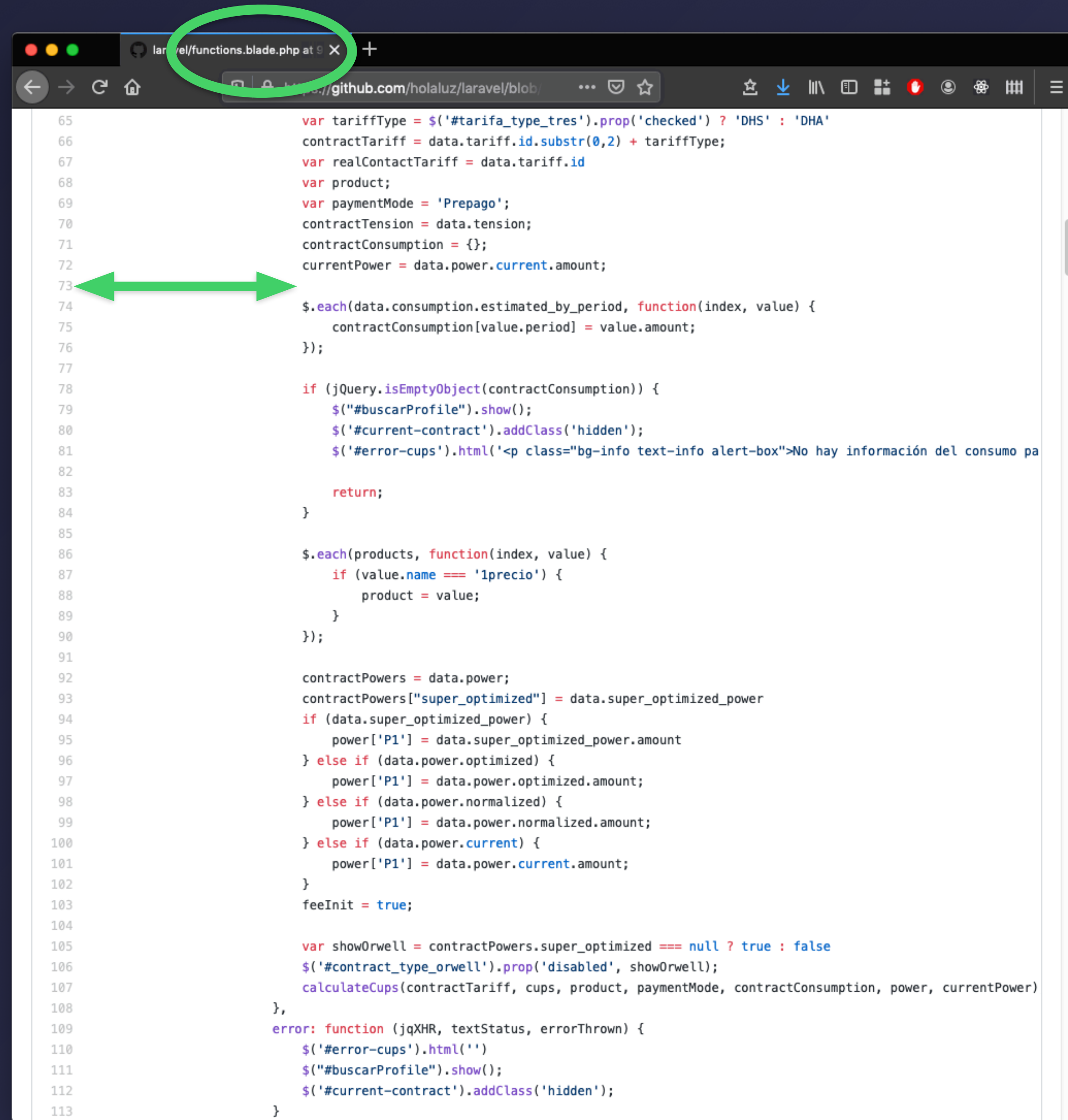
This is not about writing good
software, but how to build software
that can **change over time**

P A R E N T A L
ADVISORY
EXPLICIT CONTENT

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https://github.com/holaluz/laravel/blob/
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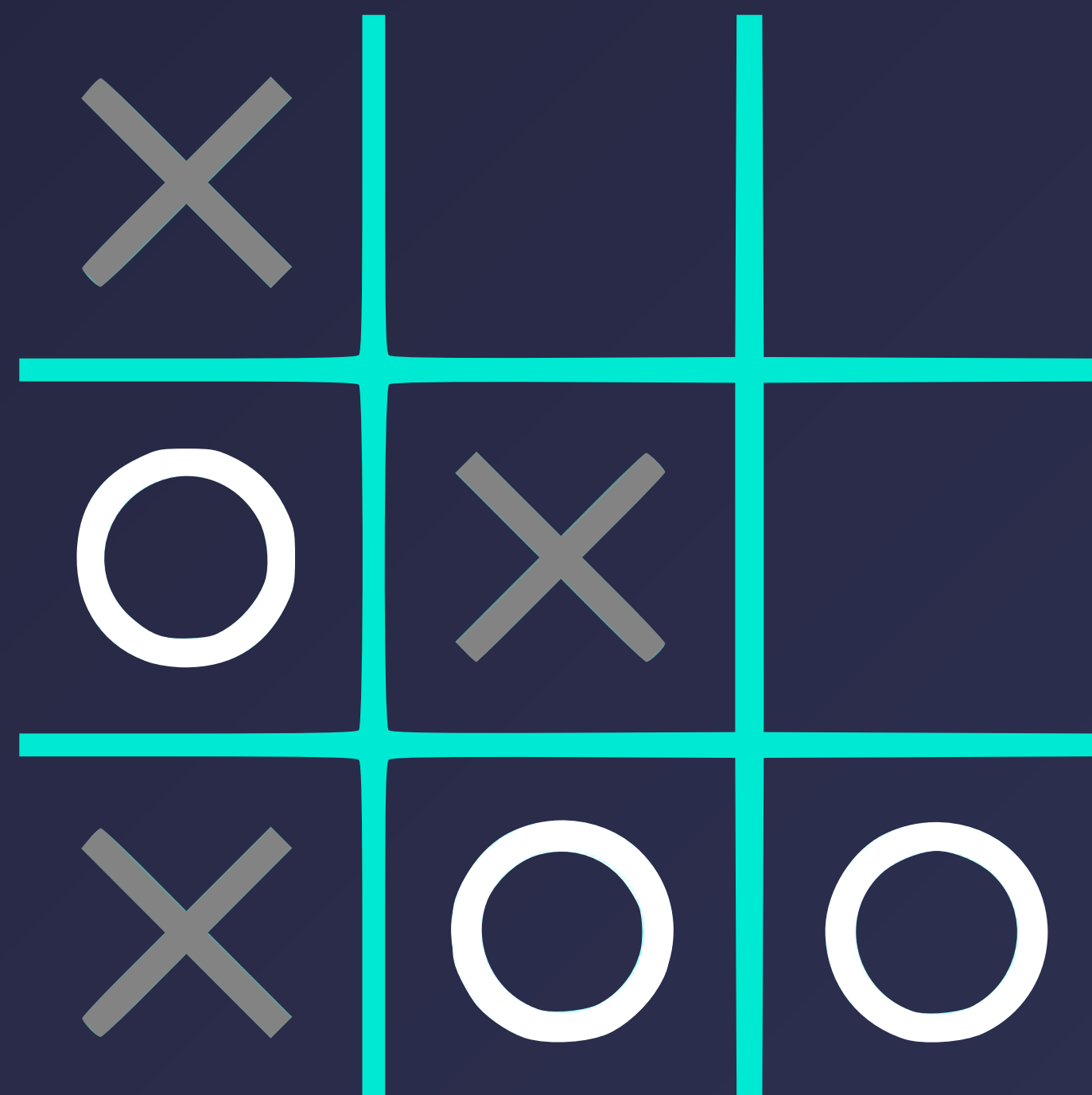




Business stuff

Delivery stuff







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Delivery stuff

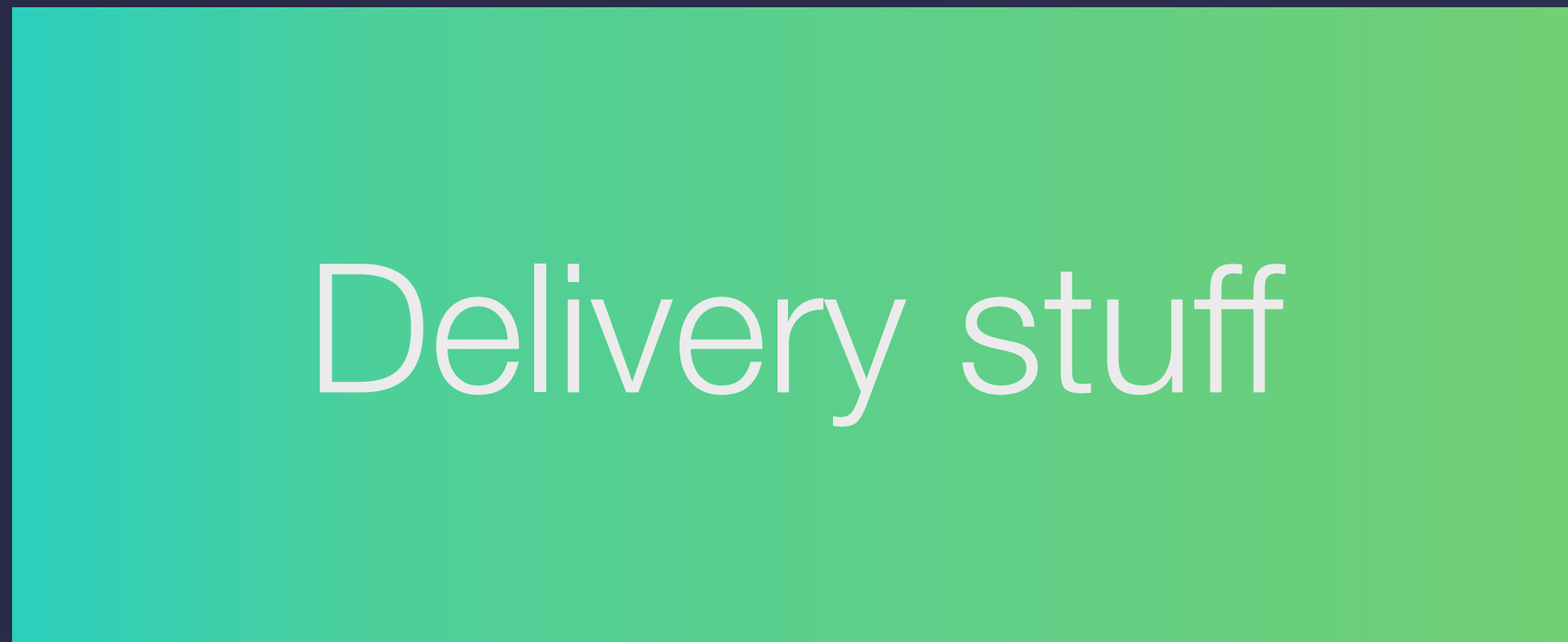
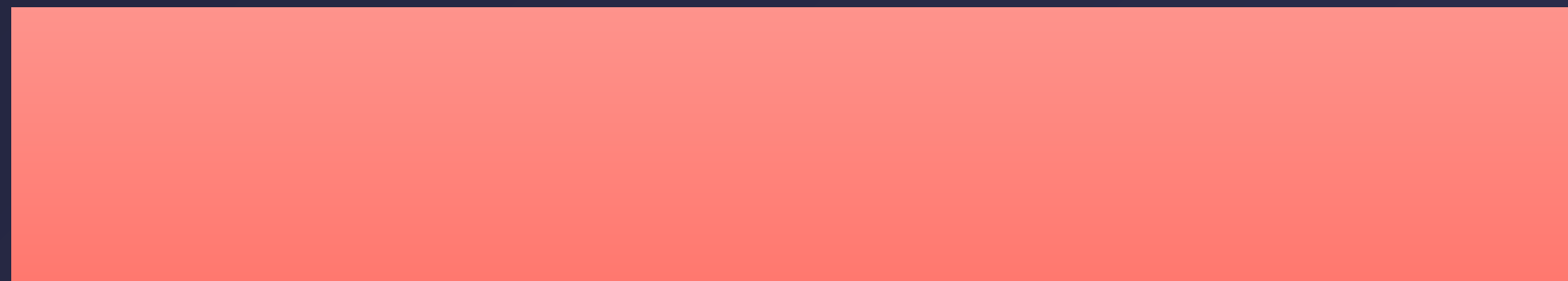




Business stuff

Delivery stuff





Domain

Use cases

Delivery stuff

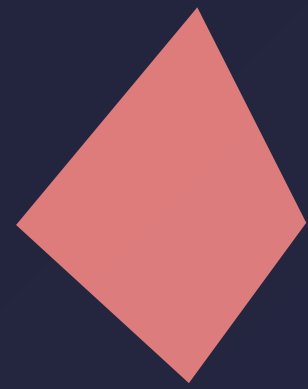


Domain

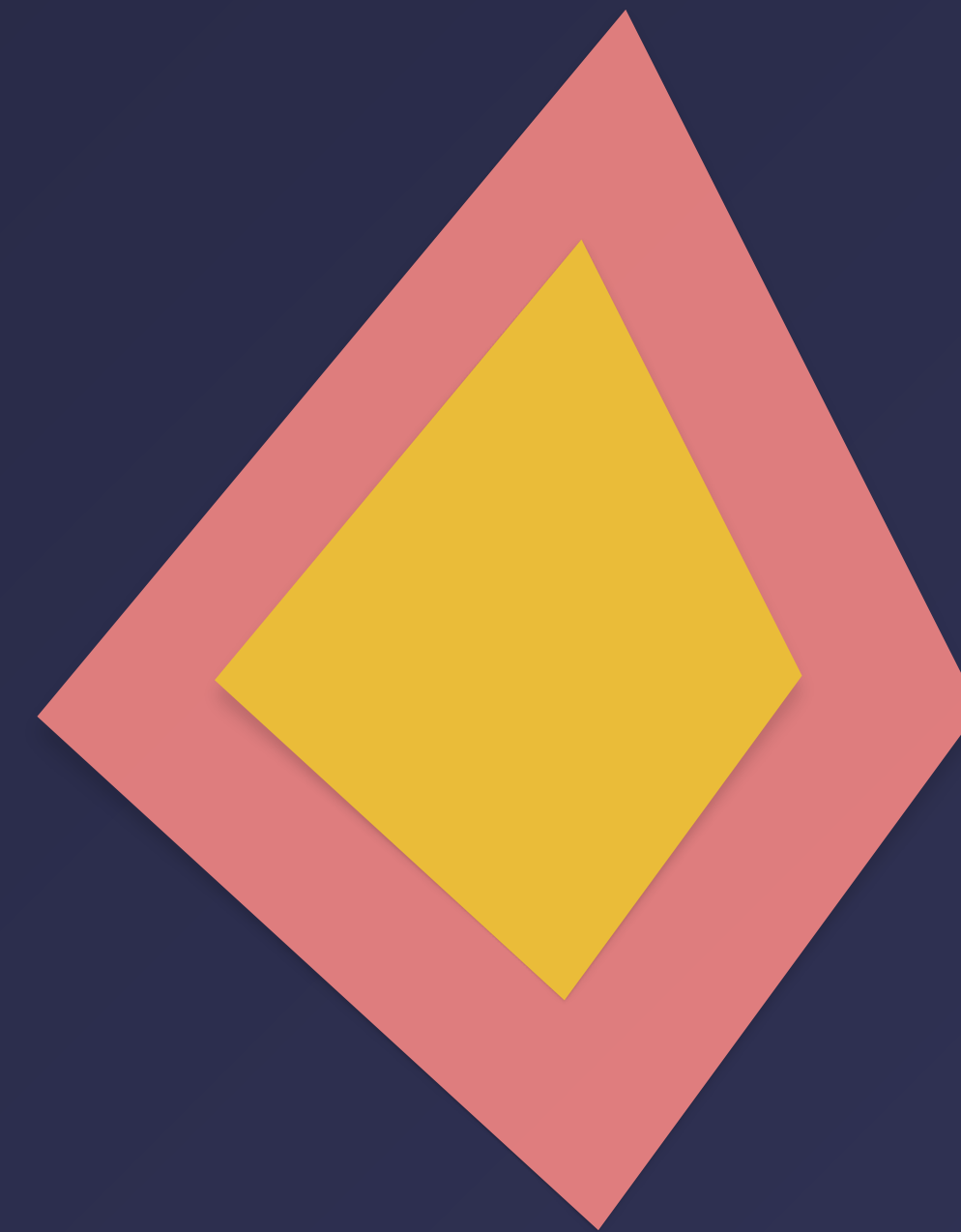




Domain

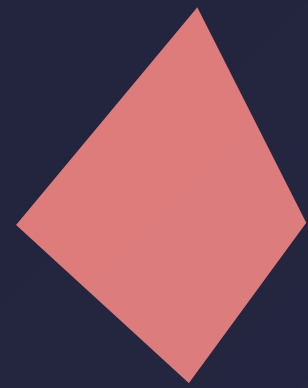


Use cases





Domain



Use cases

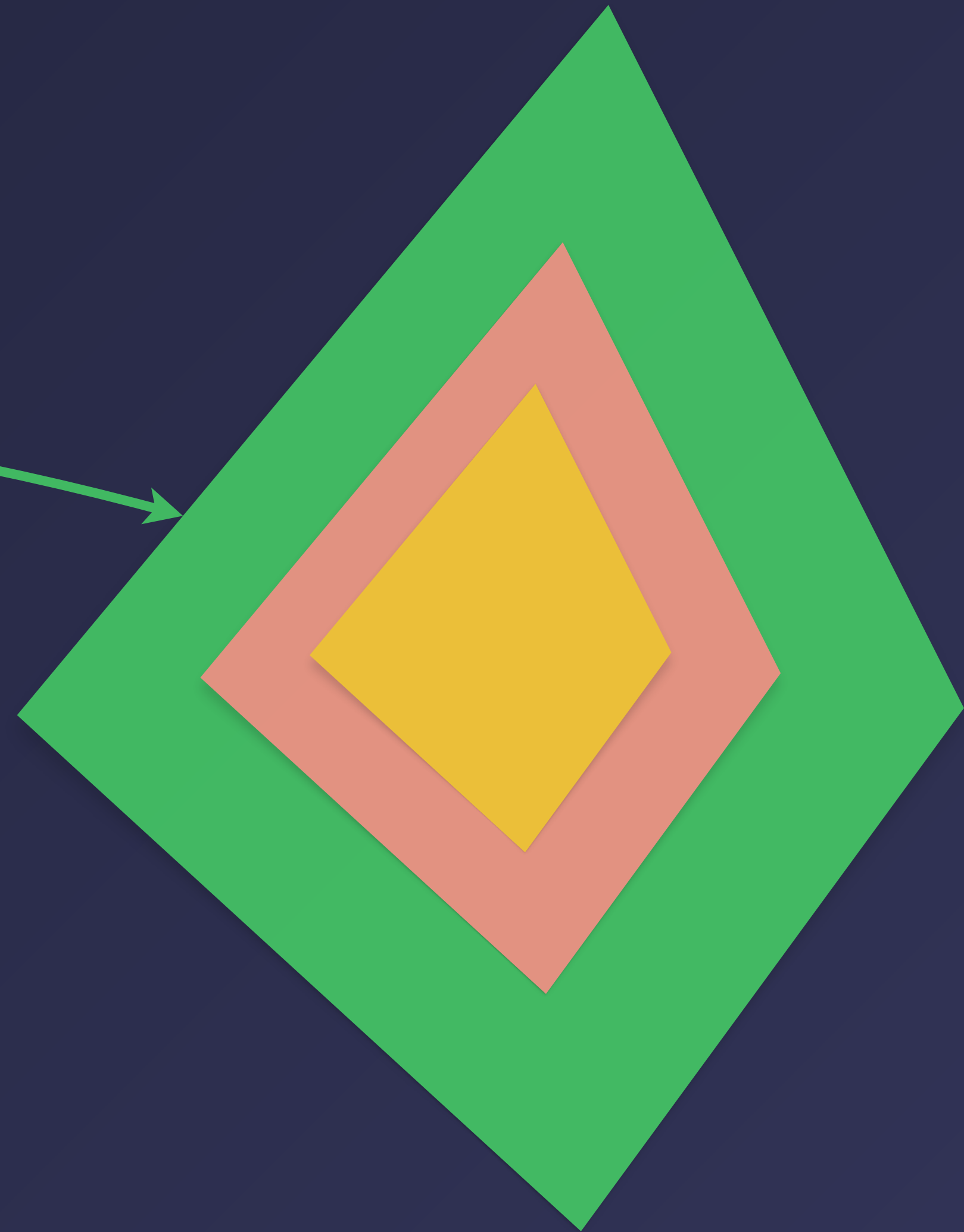


Delivery

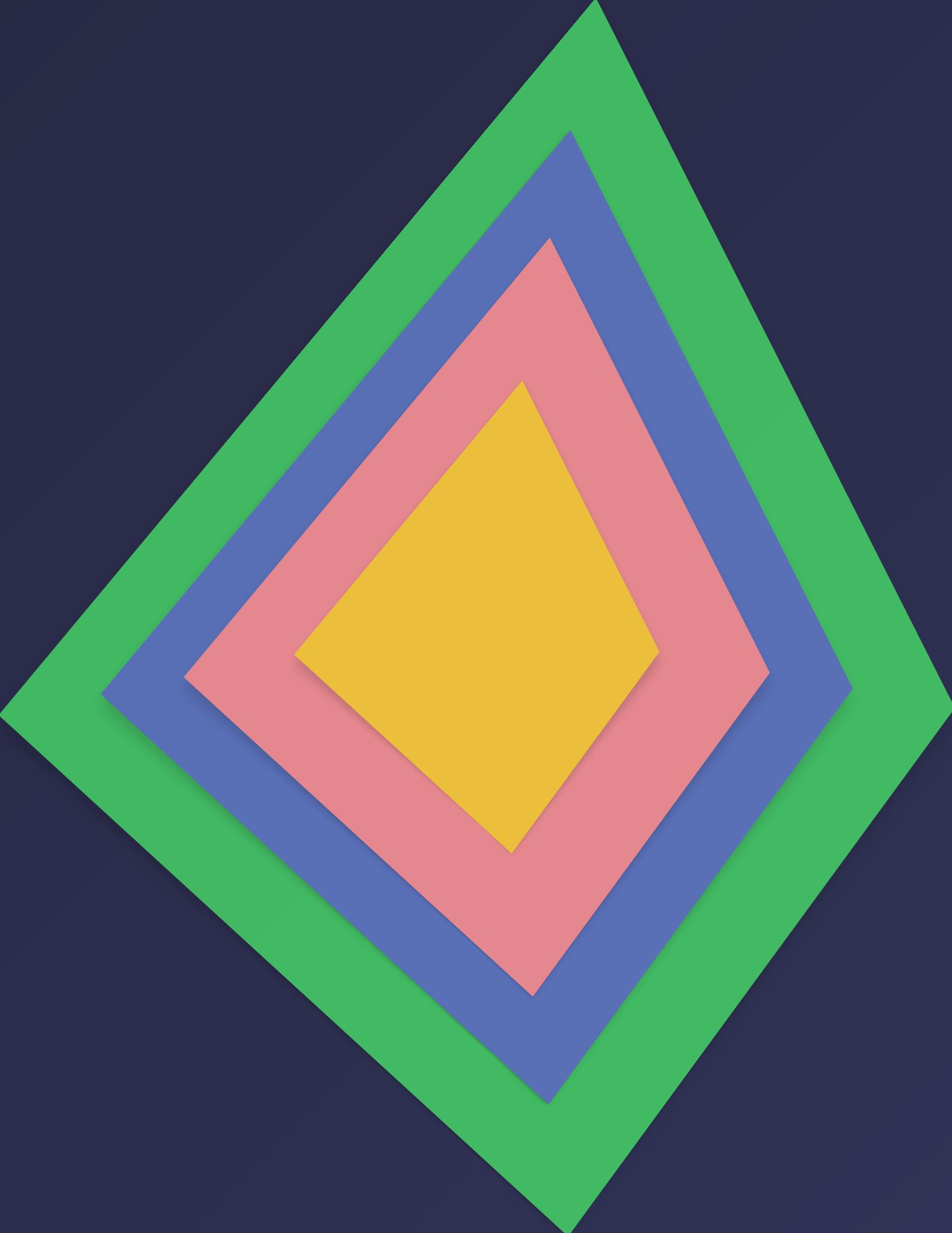




This layer has
two streams
of data

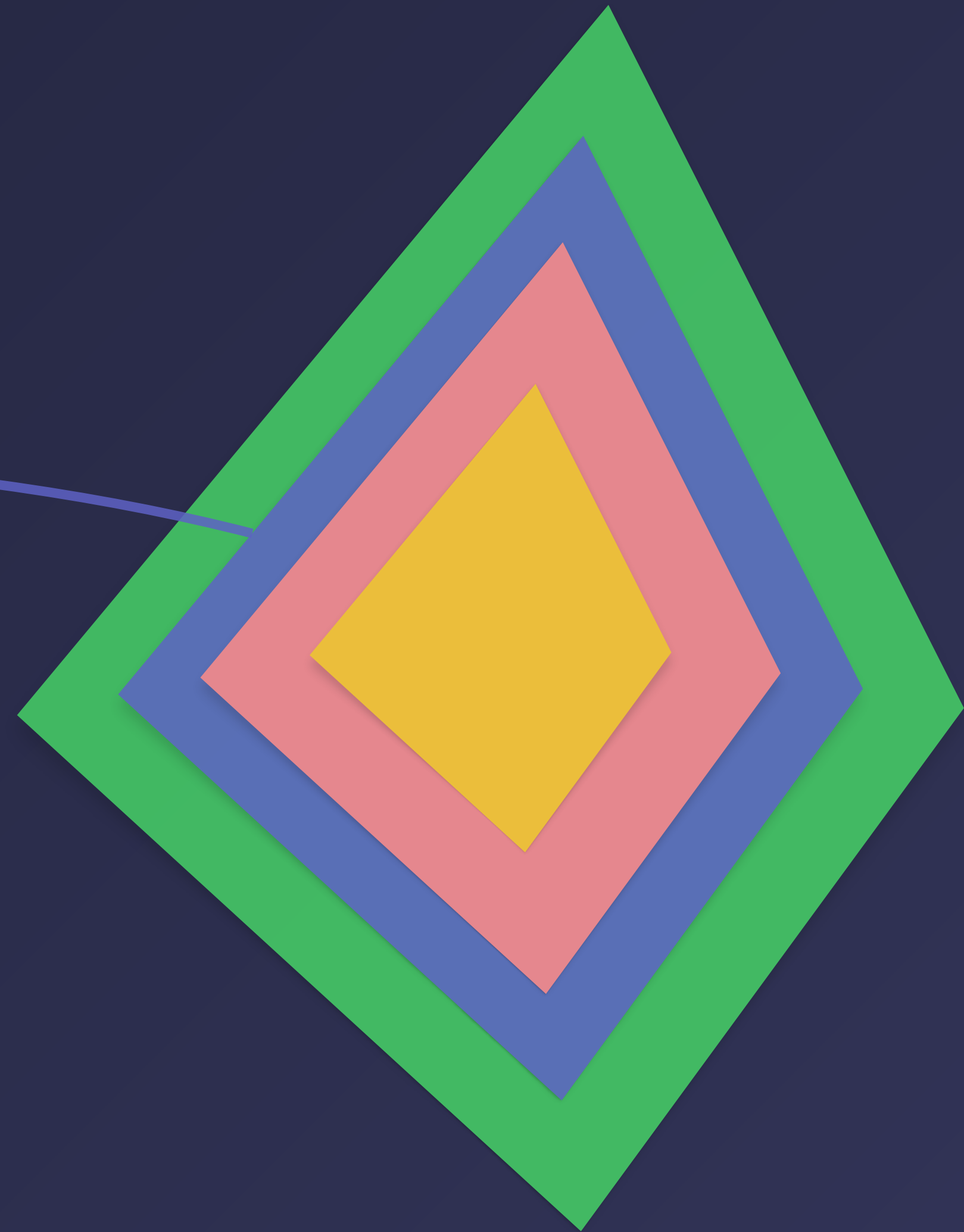
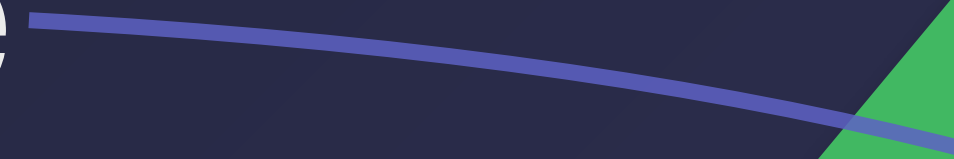








Infrastructure

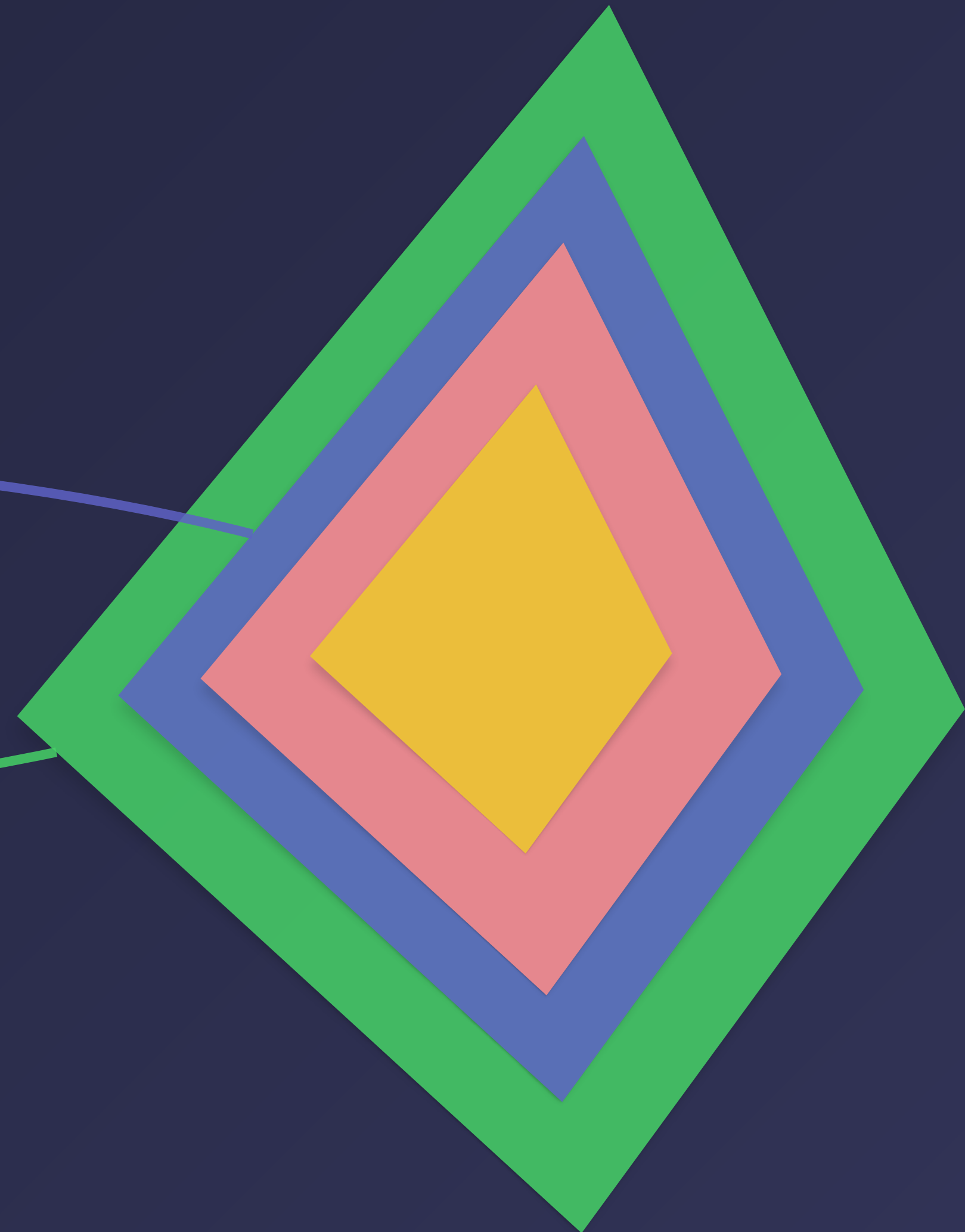




Infrastructure



UI / Input





Infrastructure

API repositories

Cookies

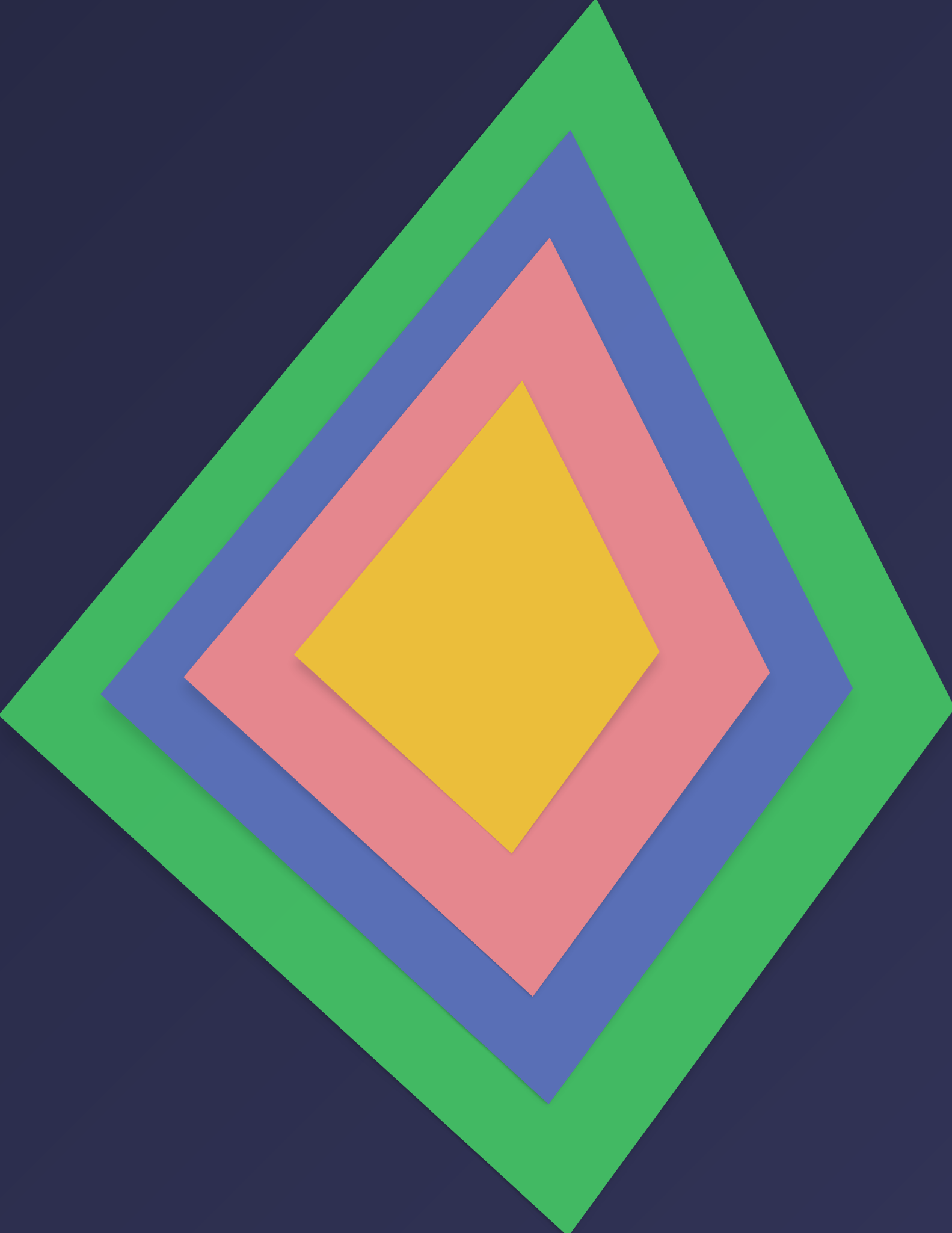
Web Storage



UI

ツ(ツ)

What does **layer**
really mean?



Dependencies only
point **inwards**



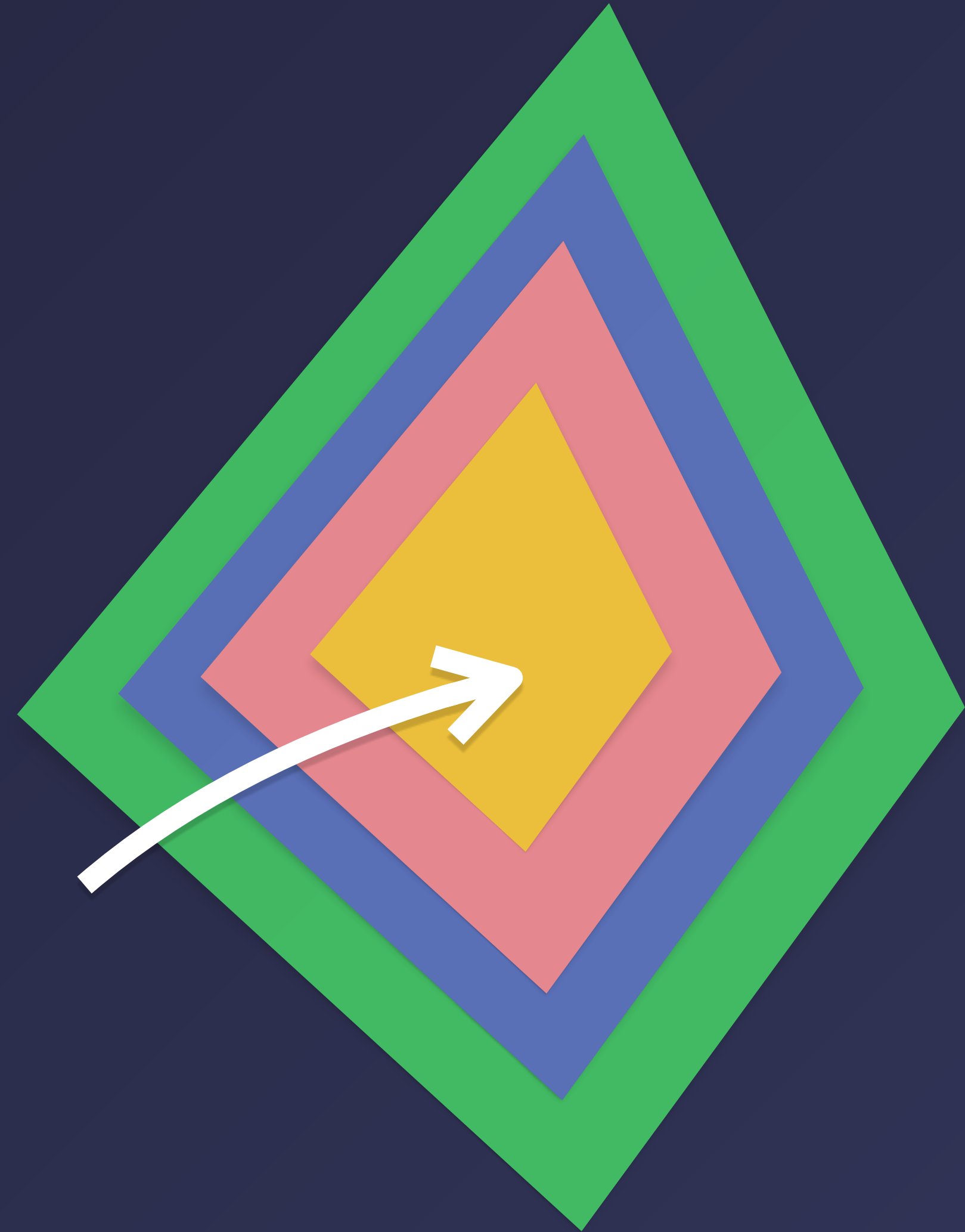
Dependencies only
point **inwards**

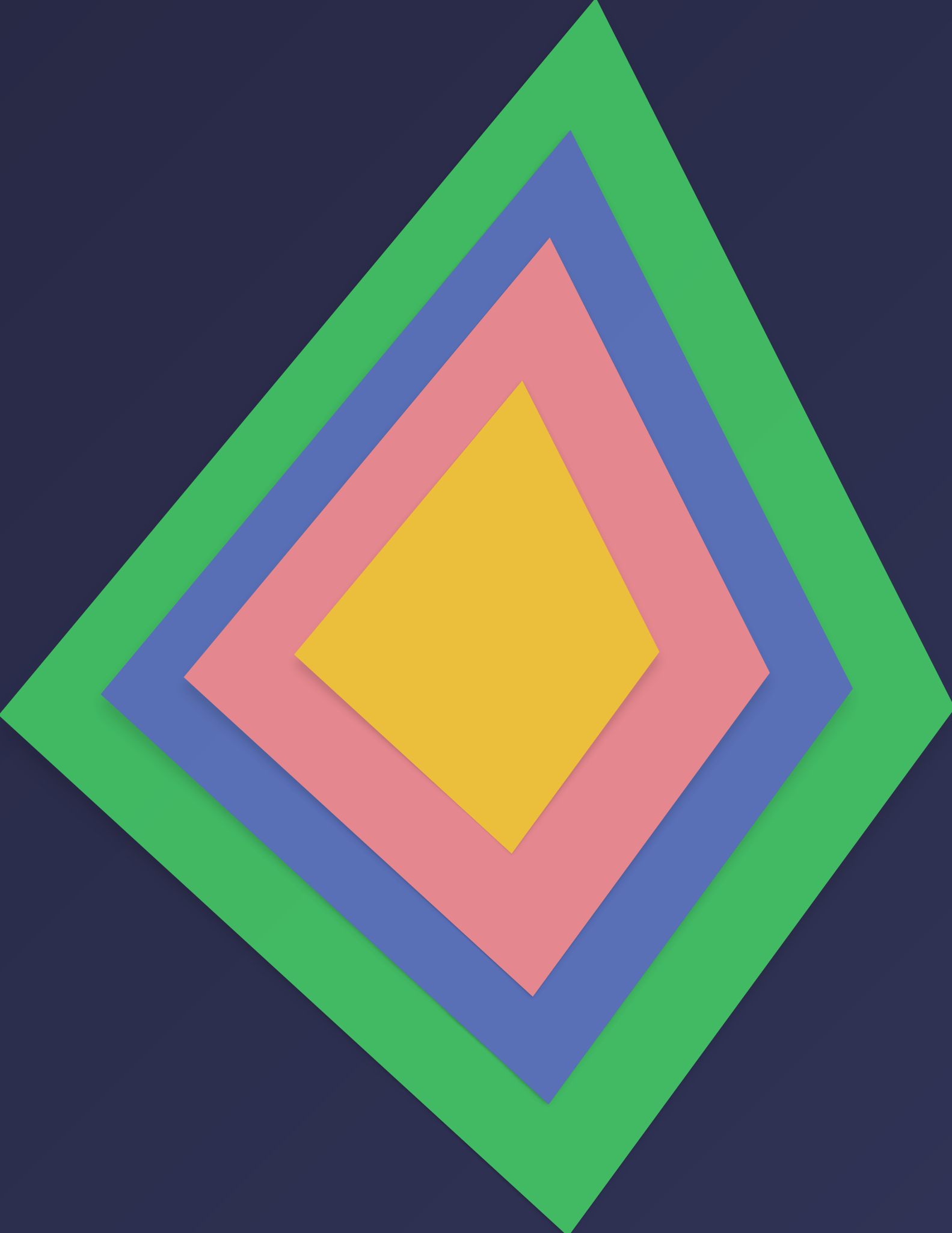
An inner layer **should
never rely** on anything
from an outer layer.

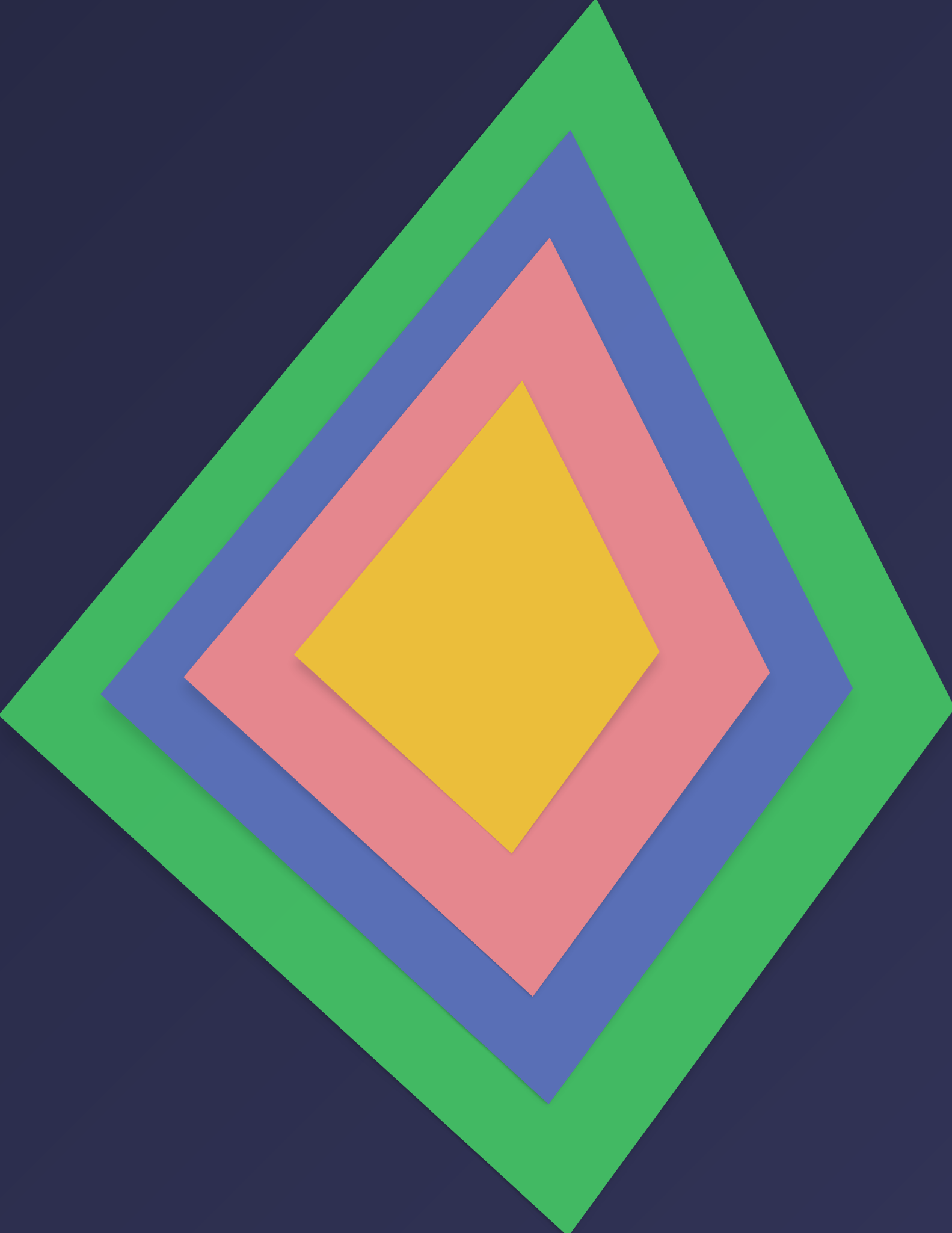


Dependencies only
point **inwards**

An inner layer **should
never rely** on anything
from an outer layer.



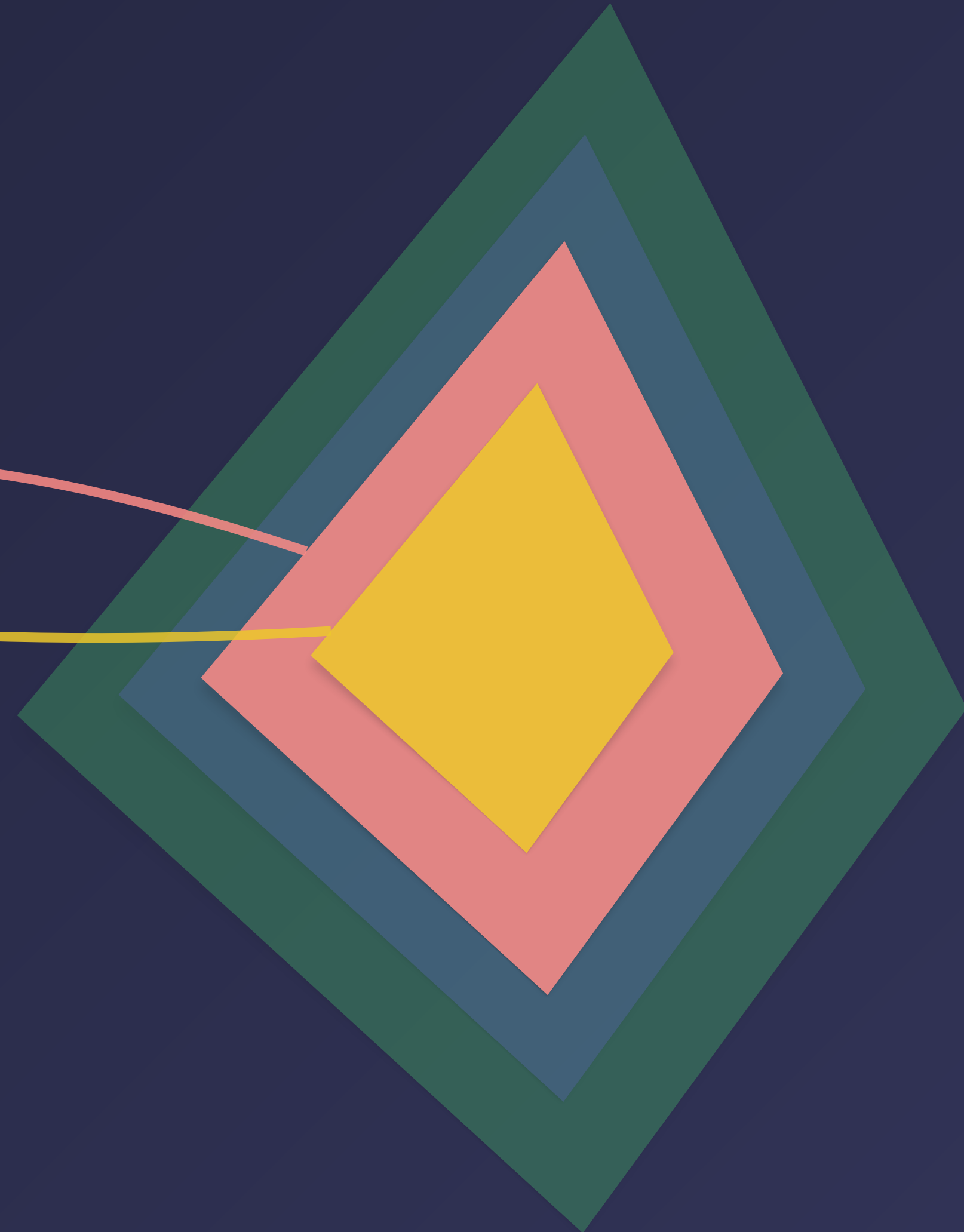




Use case “**Get user information**”
depends on “**User**”



Use case “**Get user information**”
depends on “**User**”



Use case “**Get user information**”
depends on “**User**”



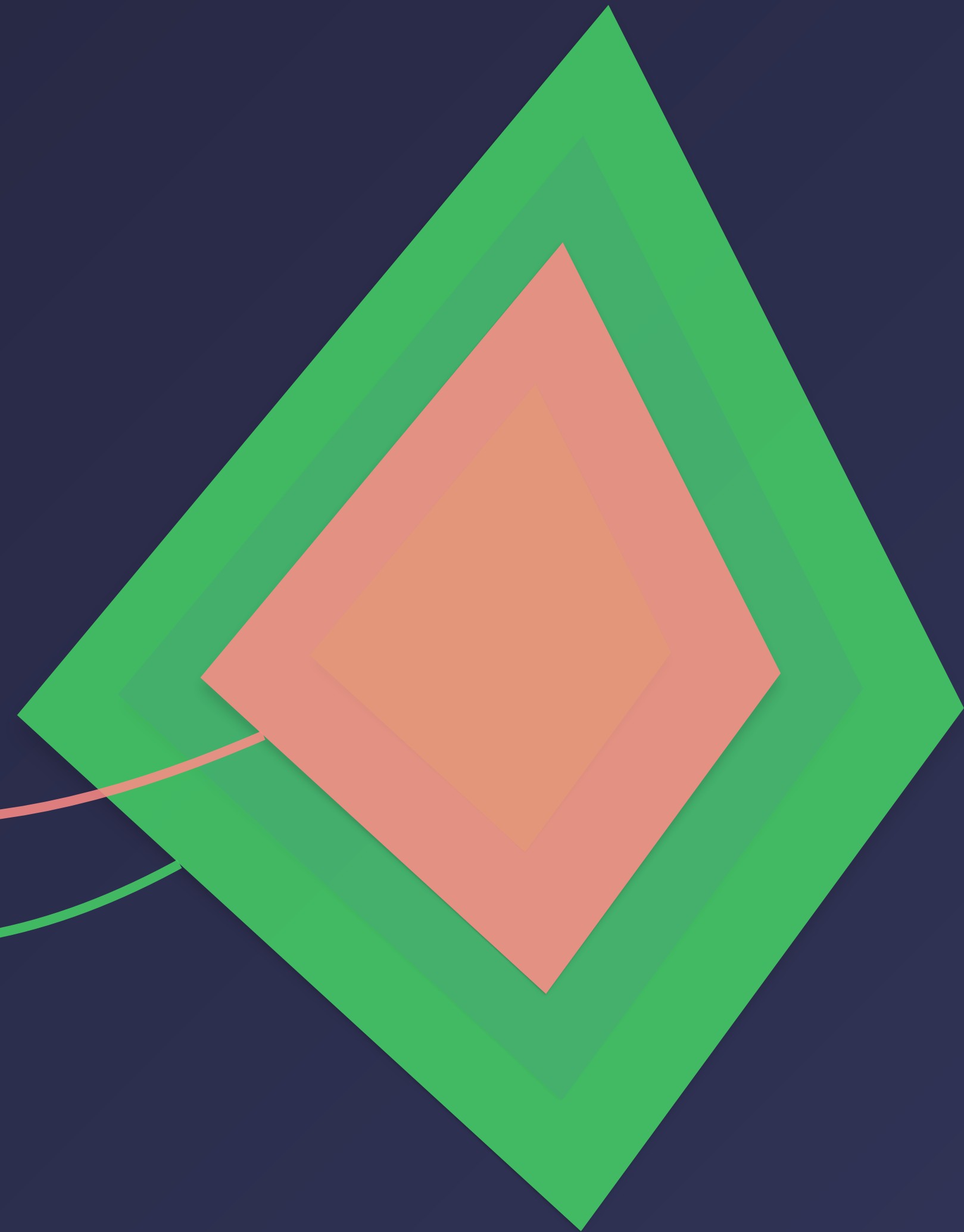
Use case “**Get user information**”
depends on “**User**”

Use case “**Get user information**”
depends on the **UI framework**



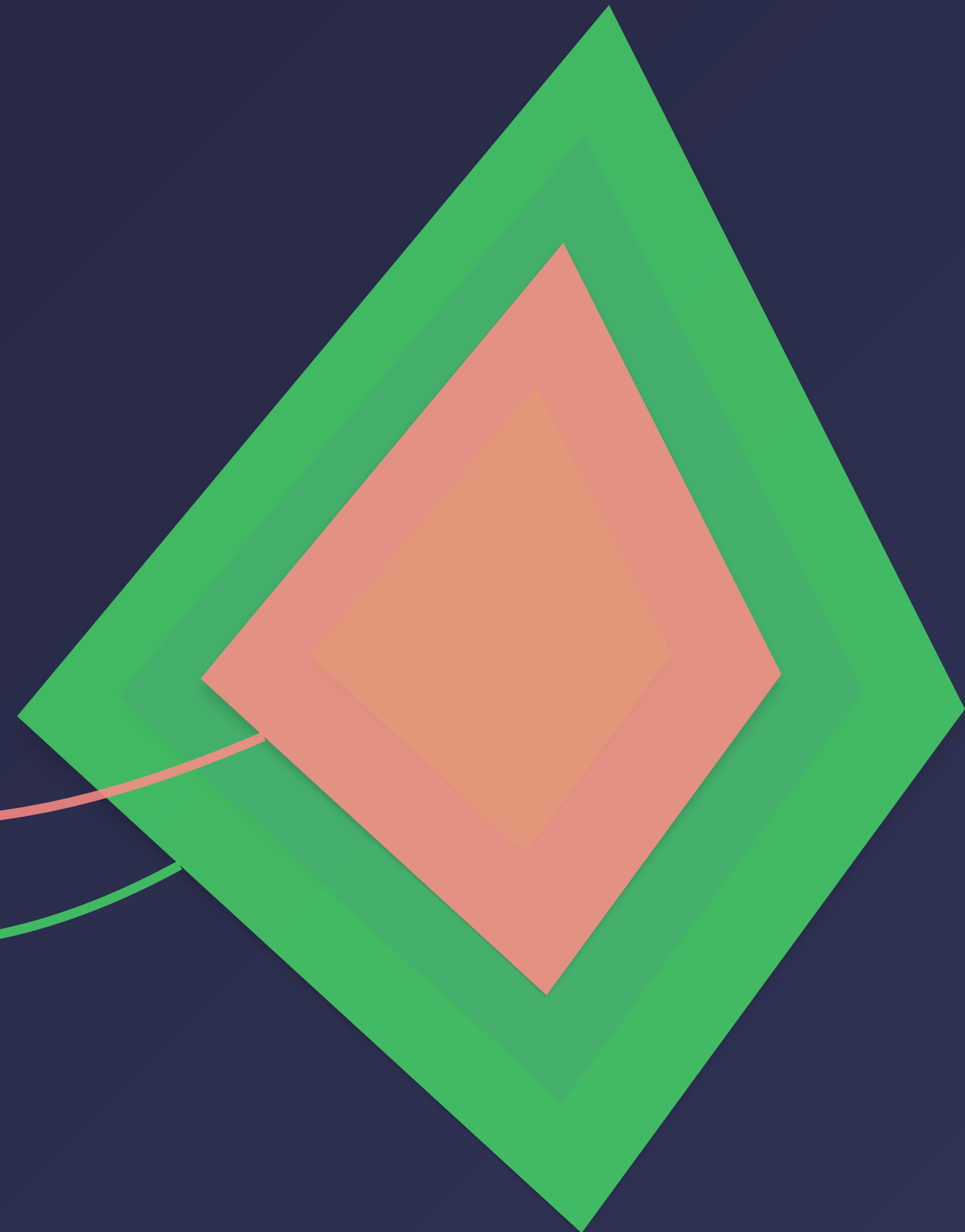
Use case “**Get user information**”
depends on “**User**”

Use case “**Get user information**”
depends on the **UI framework**



Use case “**Get user information**”
depends on “**User**”

Use case “**Get user information**”
depends on the **full framework**





WOW

*much palabro
en inglés*

amaze diapositivas

100%

very wow



BACK
FEST

The Web is a
delivery
mechanism



It is not
the center.
It is external.



It is really,
really hard to
get it right



We need to
adapt its
content for our
inner layers



We need to
adapt its
content for our
inner layers

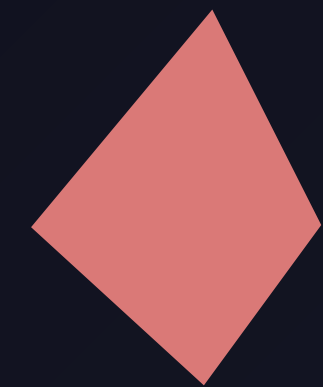


- Domain
- Use cases
- Infrastructure
- Adapter
- UI

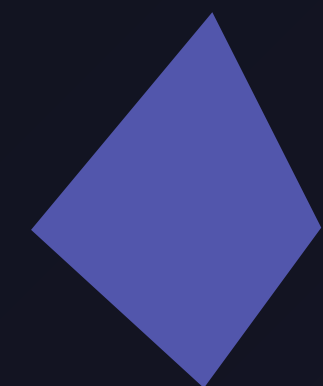




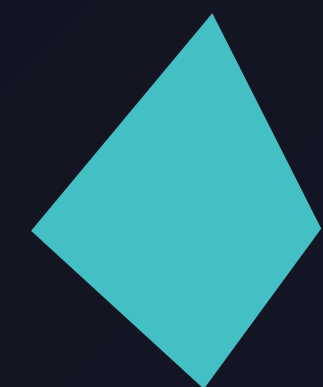
Domain



Use cases



Infrastructure



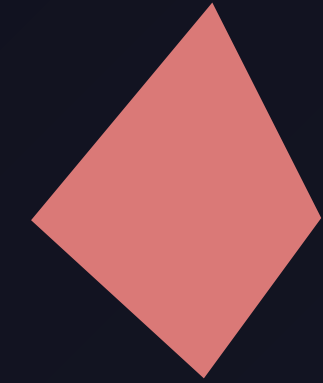
Adapter



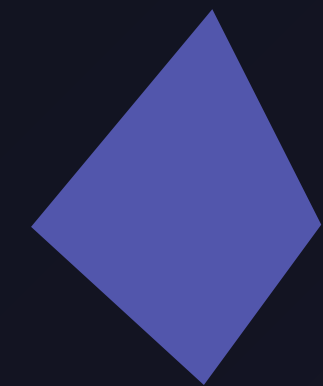
UI



Domain



Use cases



Infrastructure

Independent of
the framework



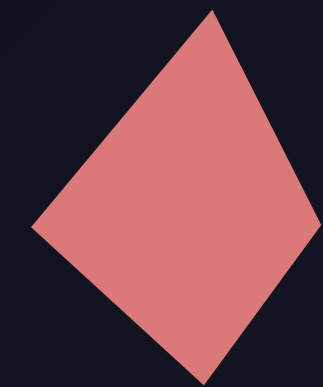
Adapter



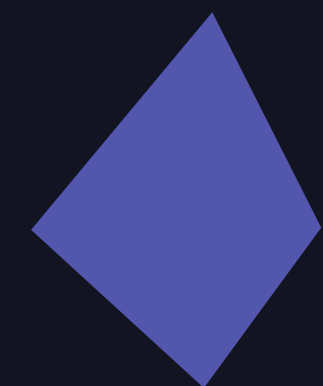
UI



Domain

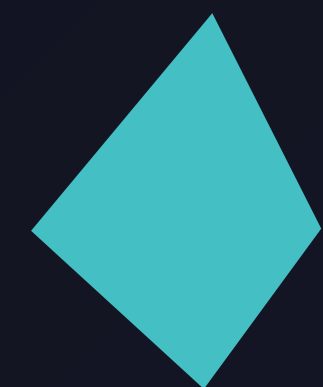


Use cases



Infrastructure

Independent of
the framework



Adapter

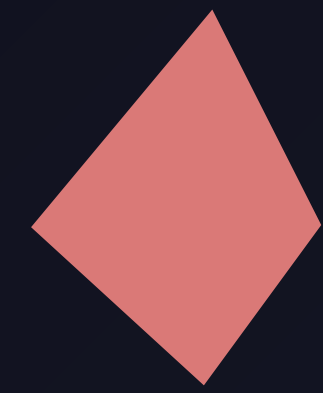


UI

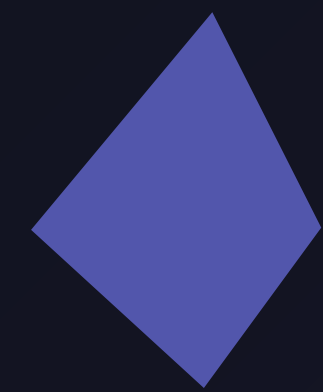
The frameworkTM



Domain



Use cases

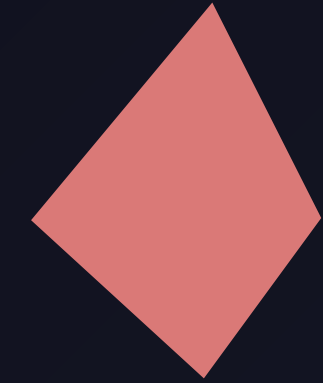


Infrastructure

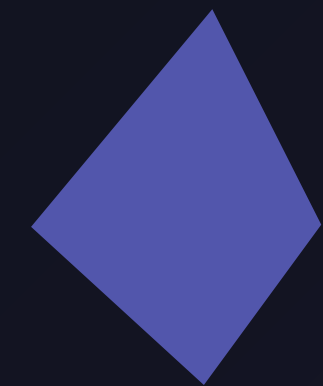
Independent of
the framework



Domain

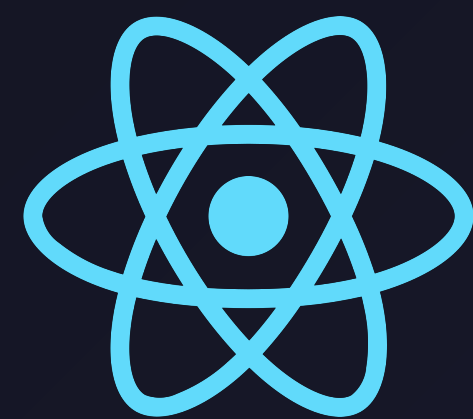


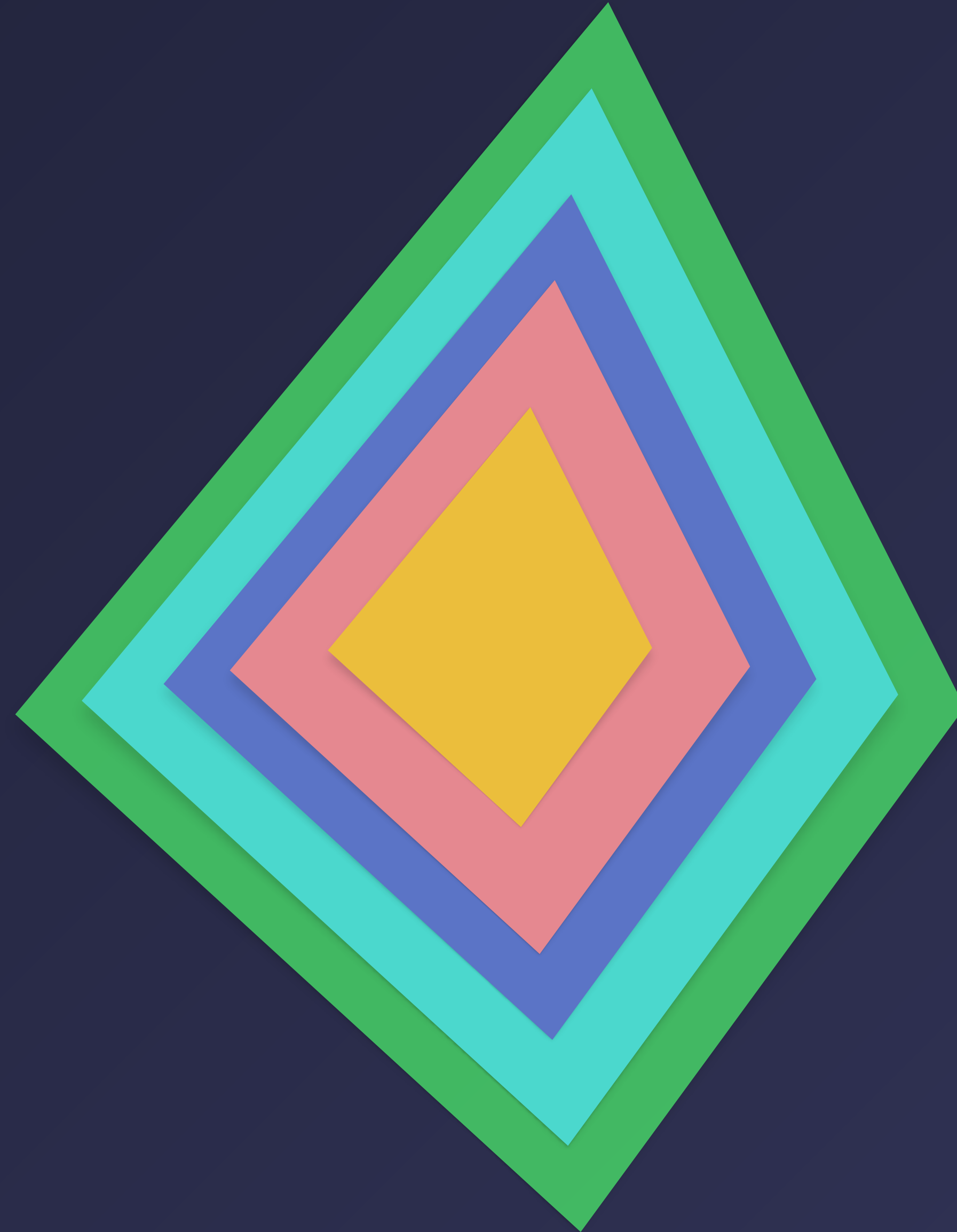
Use cases

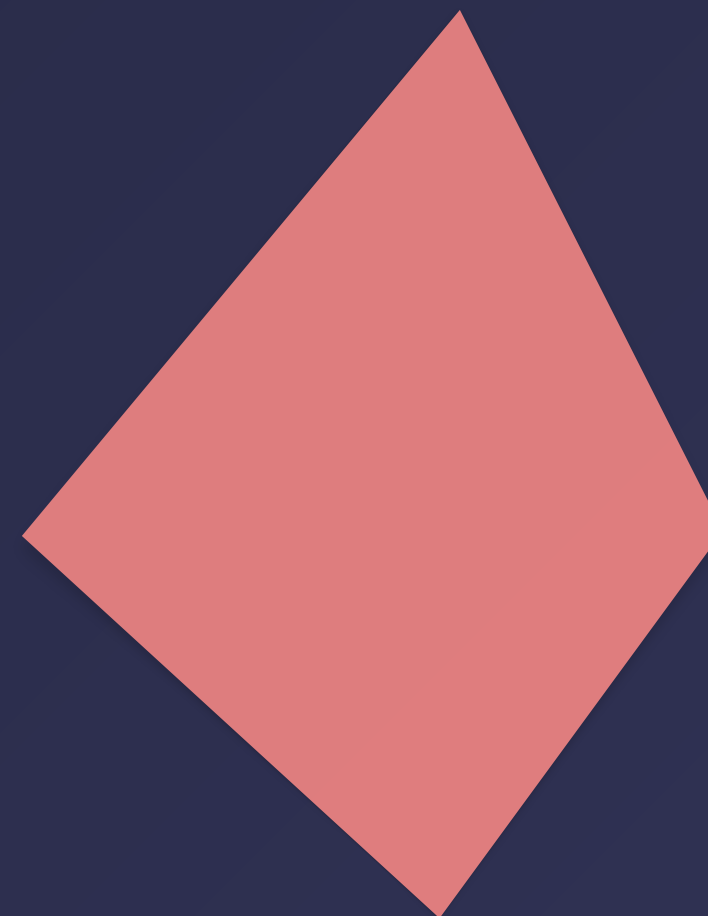
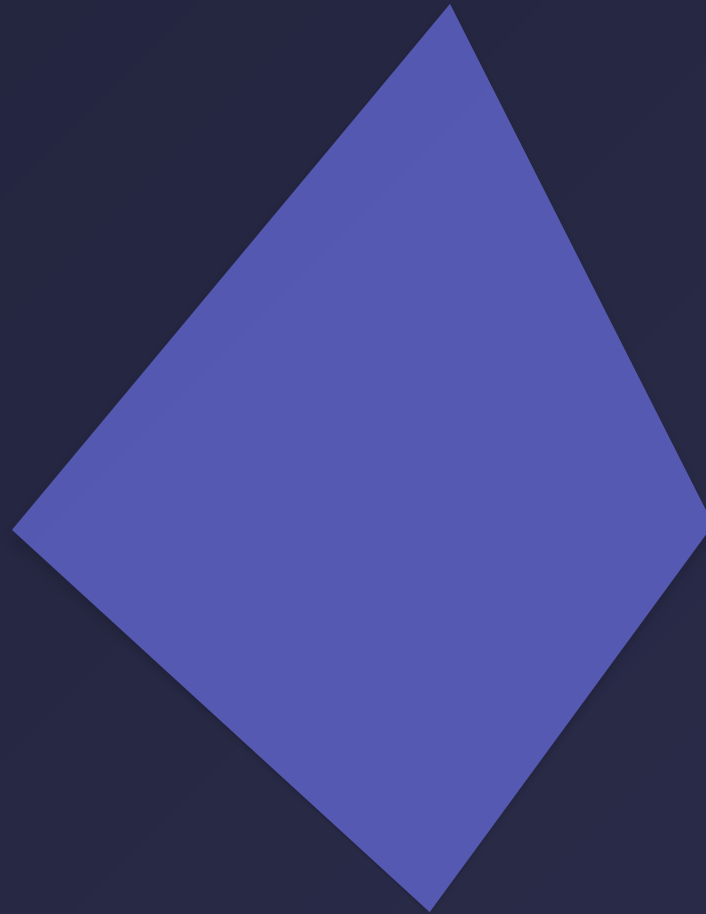


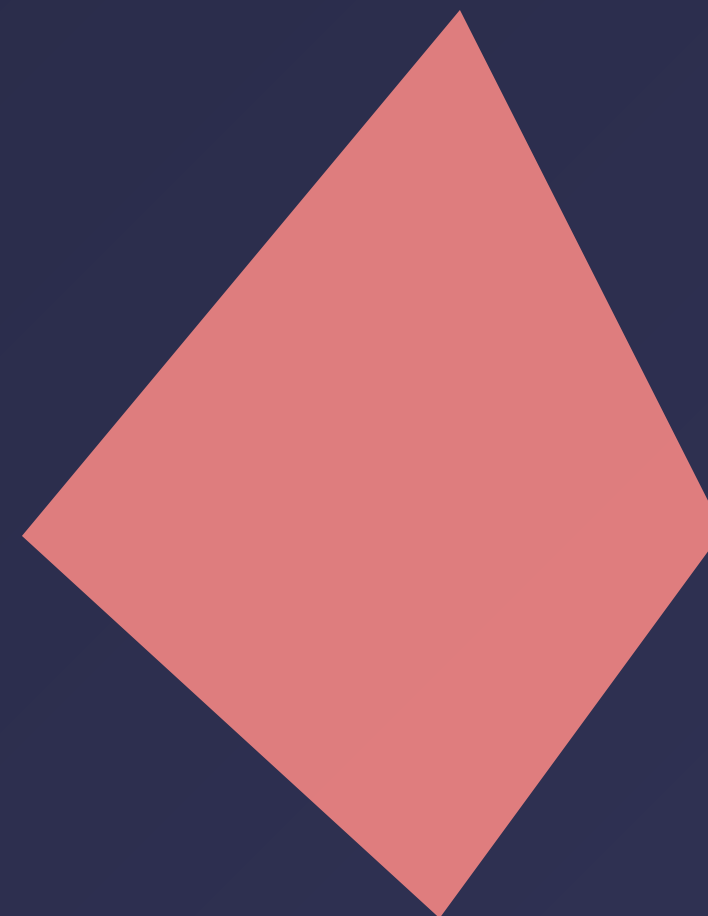
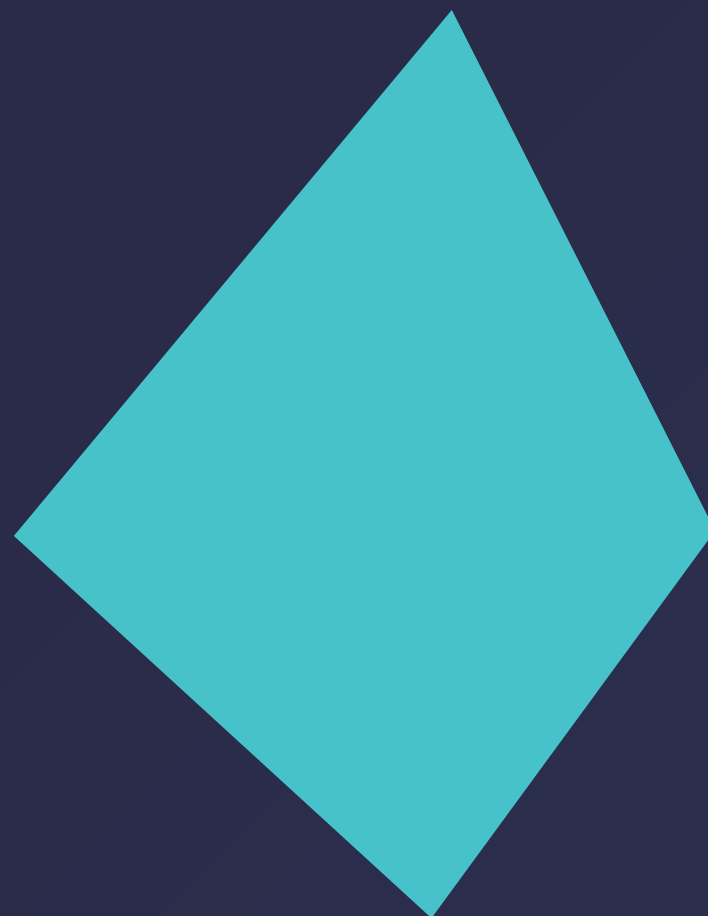
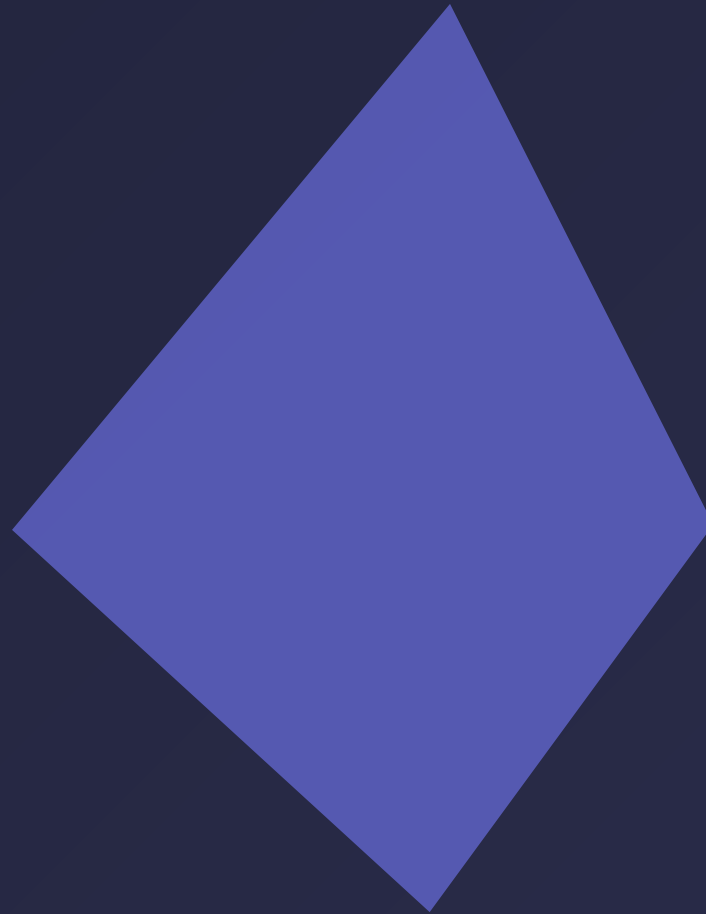
Infrastructure

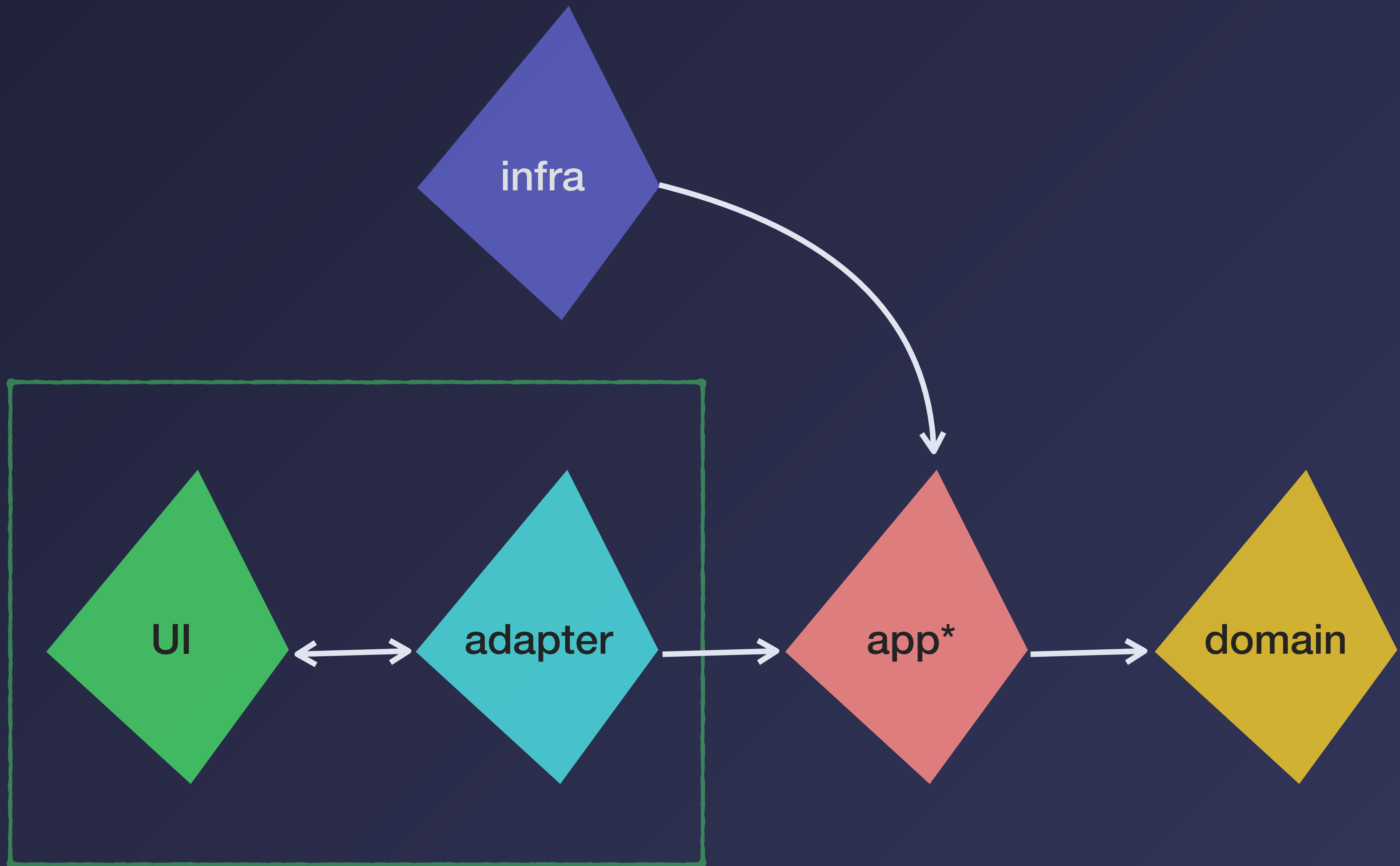
Independent of
the framework

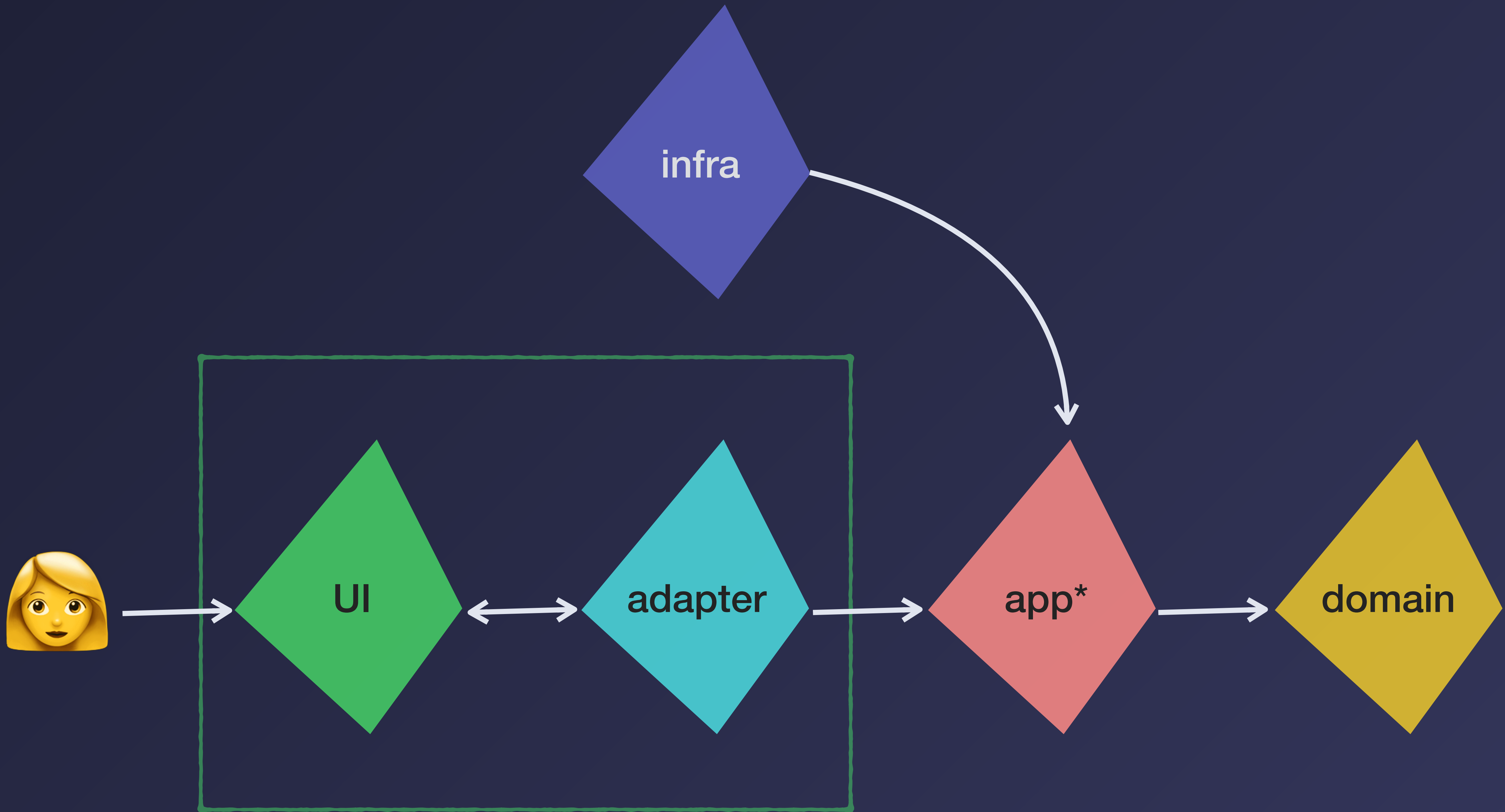


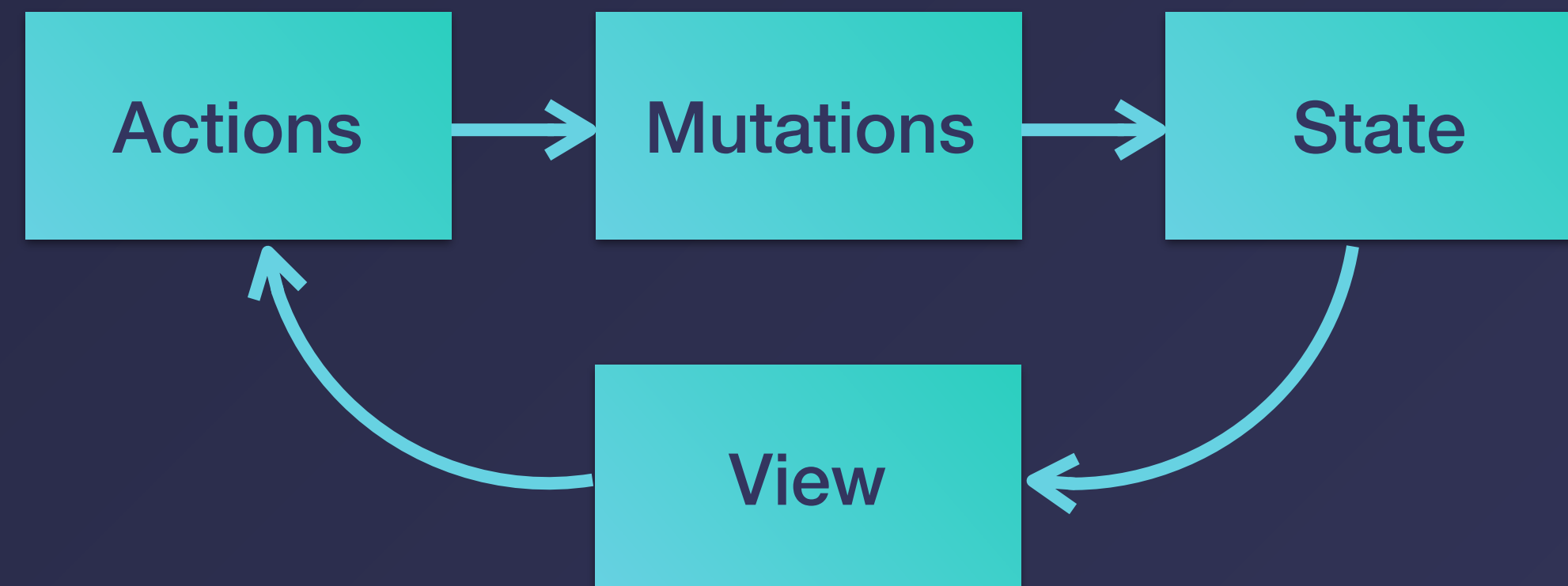
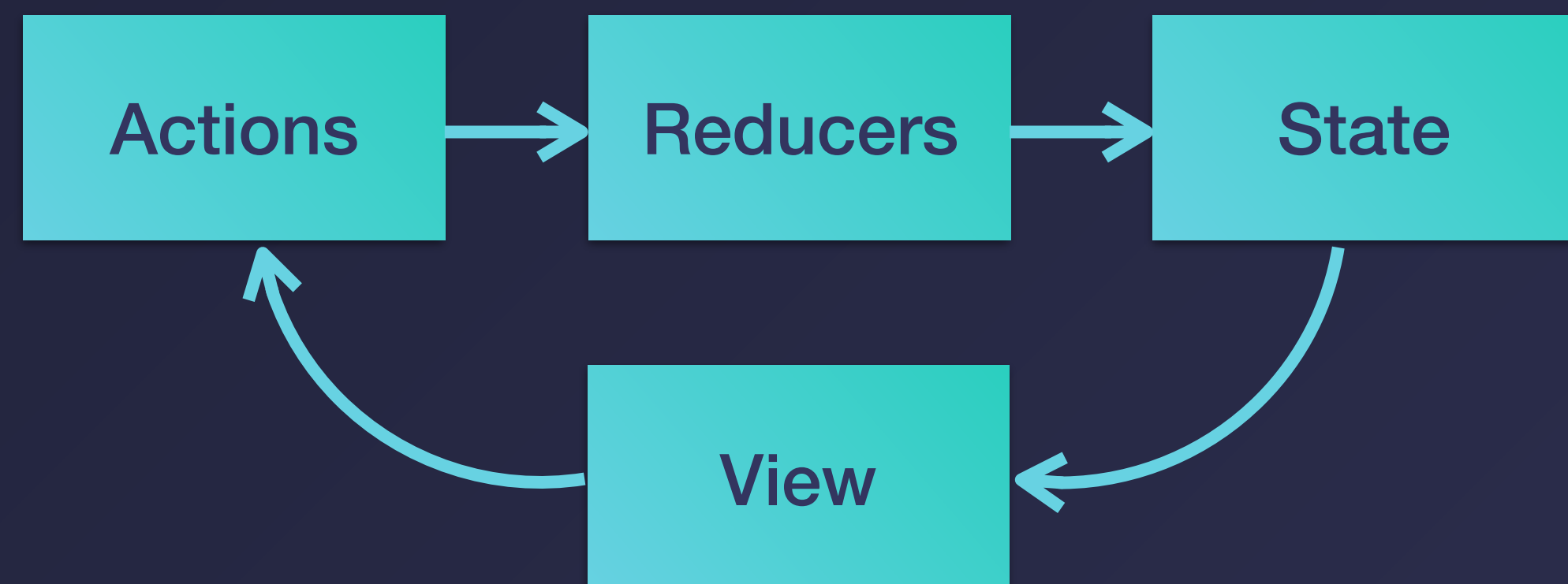


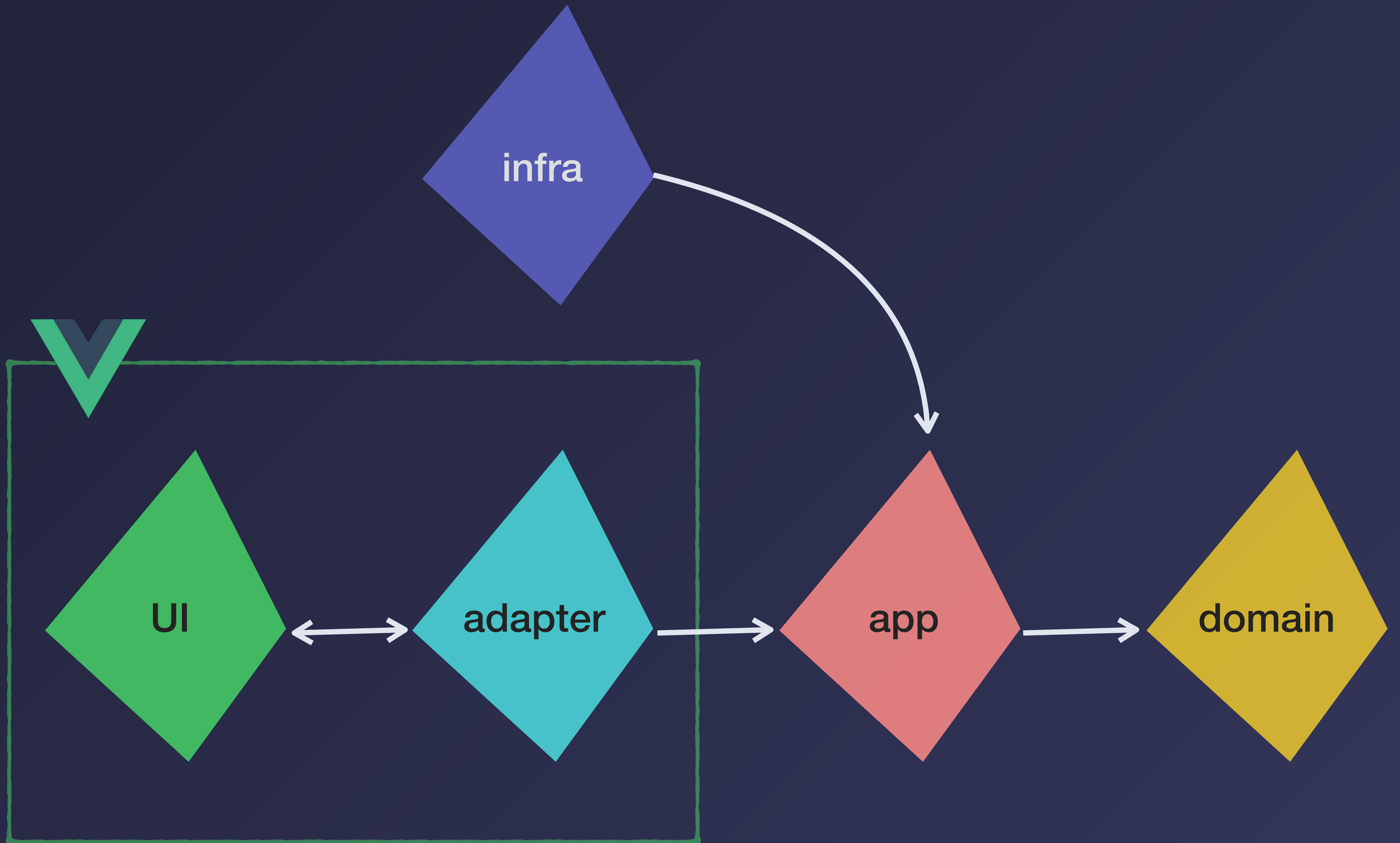


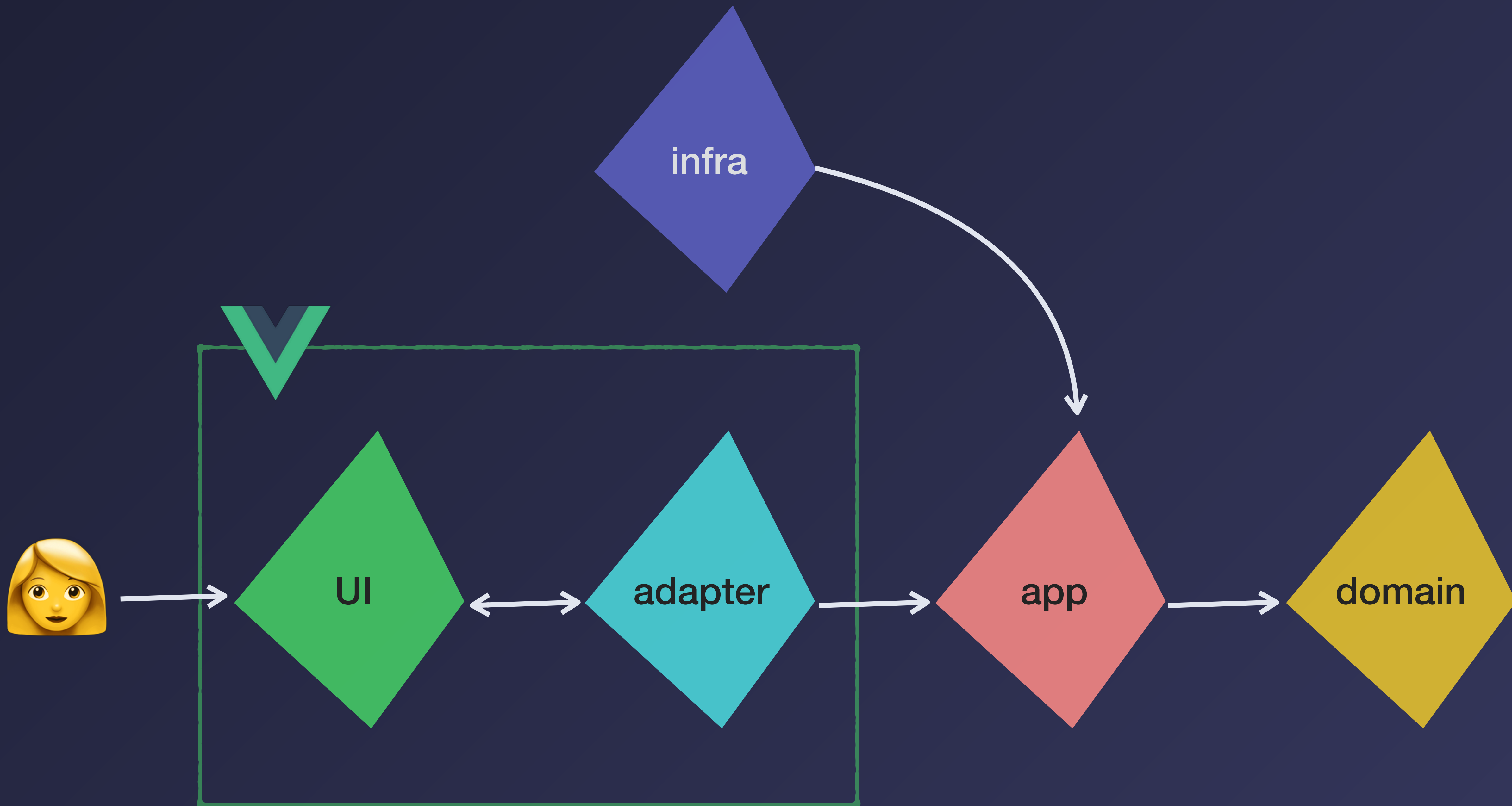


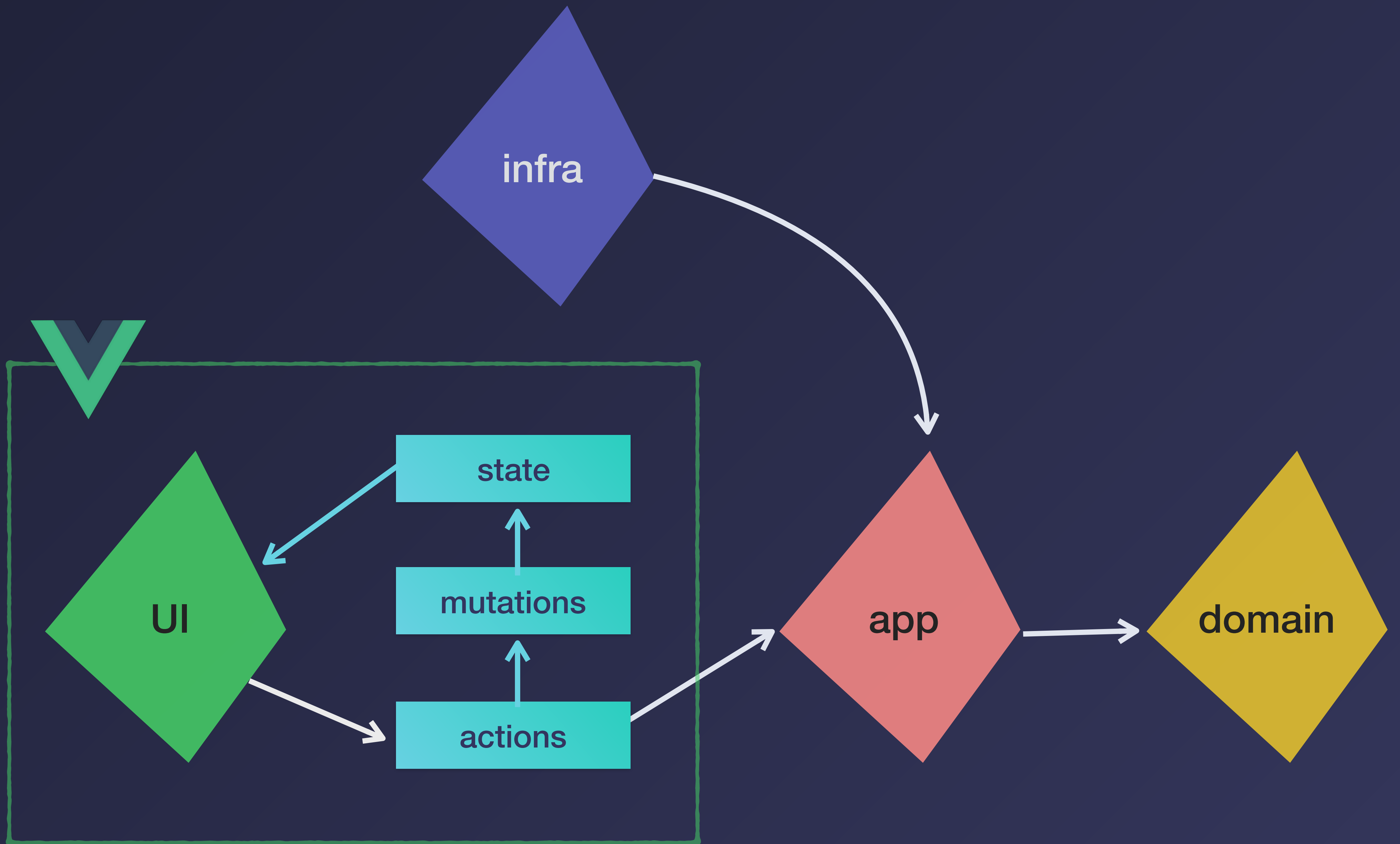


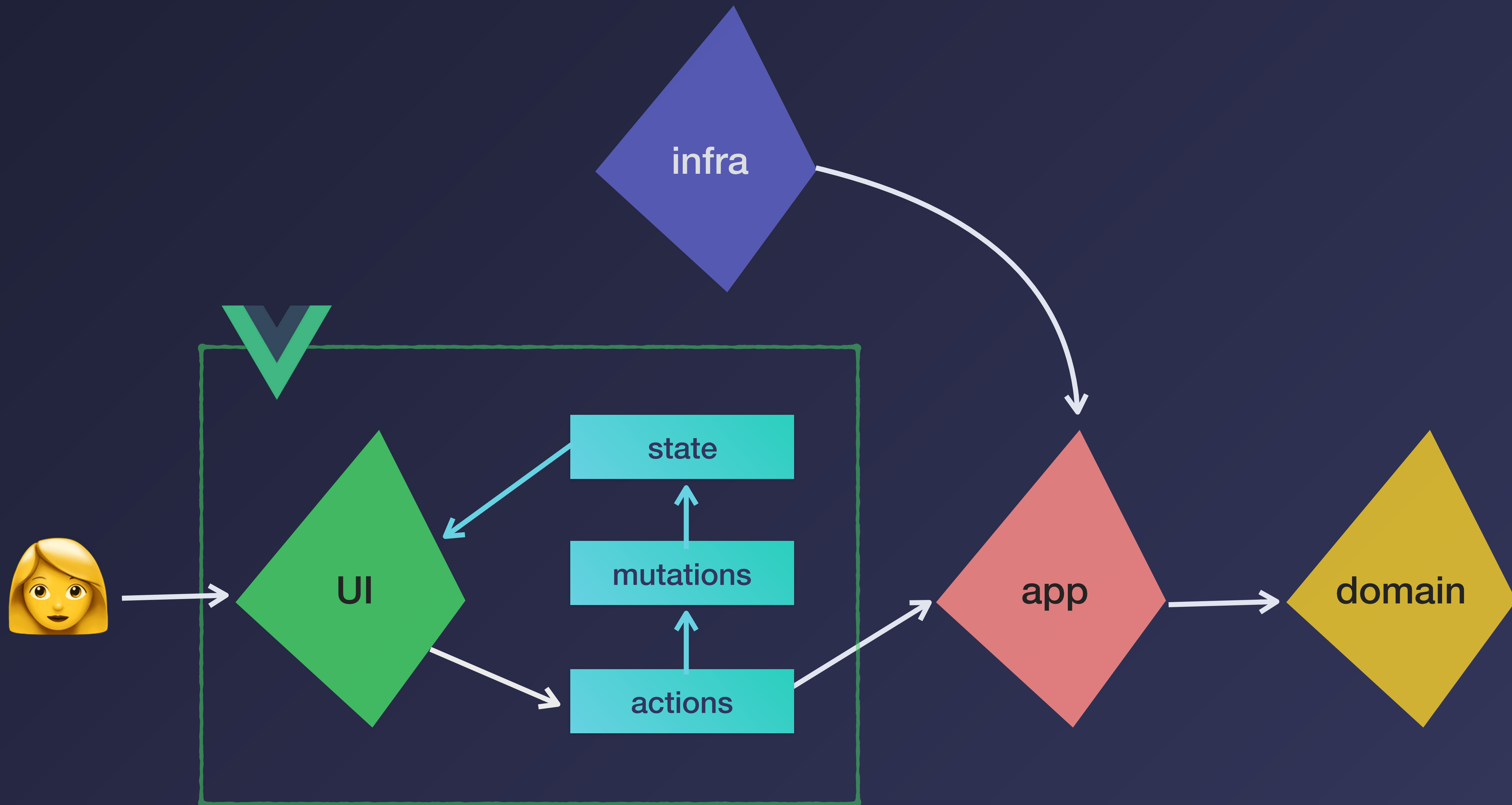












```
type Coordinate = 0 | 1 | 2
type Sign = "X" | "O" | ""

class Board {
  public isFull(): boolean {}
  public isPositionTaken(cell: Cell): boolean {}
  public fillPosition(cell: Cell, player: Player): void {}
}

class Cell {
  private row: Coordinate
  private col: Coordinate
}

class Player {
  public sign: Sign
  public equals(player: Player): boolean {}
}
```

```
type Coordinate = 0 | 1 | 2  
type Sign = "X" | "O" | ""
```

```
class Board {
```

THIS IS NOT
"THE RITE WAY"

```
    equals(player: Player): boolean {}  
}
```

```
type Coordinate = 0 | 1 | 2
type Sign = "X" | "O" | ""

class Board {
  public isFull(): boolean {}
  public isPositionTaken(cell: Cell): boolean {}
  public fillPosition(cell: Cell, player: Player): void {}
}

class Cell {
  private row: Coordinate
  private col: Coordinate
}

class Player {
  public sign: Sign
  public equals(player: Player): boolean {}
}
```



```
class Game {  
    private board: Board  
    private isEnded: (): boolean  
    private getLastPlayer(): Player  
  
    public makeMove(player: Player, cell: Cell): void {  
        if (this.isEnded())  
            throw new FinishedGameException()  
  
        if (player.equals(this.getLastPlayer()))  
            throw new AlreadyPlayedException()  
  
        if (this.board.isPositionTaken(cell))  
            throw new AlreadyTakenException()  
  
        this.board.fillPosition(cell, player)  
    }  
}
```

```
function makeMoveUseCase({ game, player, cell }, { onSuccess, onError }) {  
  try {  
    game.makeMove(player, cell)  
  } catch (error) {  
    onError(error)  
    return  
  }  
  
  onSuccess(player, cell)  
}
```

```
function makeMoveUseCase({ game, player, cell } { onSuccess, onError }) {  
  try {  
    game.makeMove(player, cell)  
  } catch (error) {  
    onError(error)  
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    game.makeMove(player, cell)  
  } catch (error) {  
    onError(error)  
    return  
  }  
  
  onSuccess(player, cell)  
}
```

```
import { makeMoveUseCase } from 'application/ ... '

const actions = {
  makeMove({ state, commit }, cell) {
    commit('MAKE_MOVE_REQUEST')

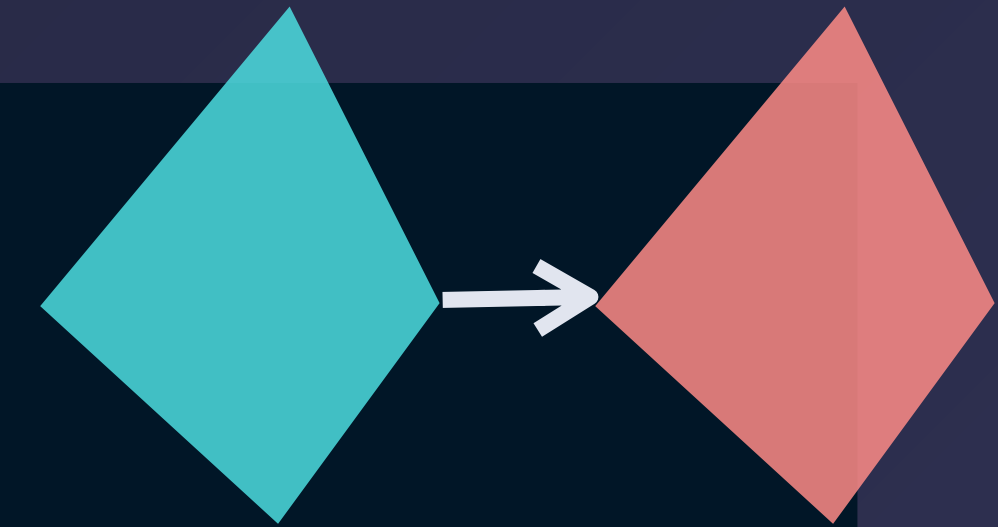
    makeMoveUseCase({
      player: state.currentPlayer,
      game: state.game,
      cell
    }, {
      onSuccess: (player) => commit('MAKE_MOVE_SUCCESS', player),
      onError: (error) => commit('MAKE_MOVE_ERROR', error.message)
    })
  }
}
```



```
import { makeMoveUseCase } from 'application/ ... '
```

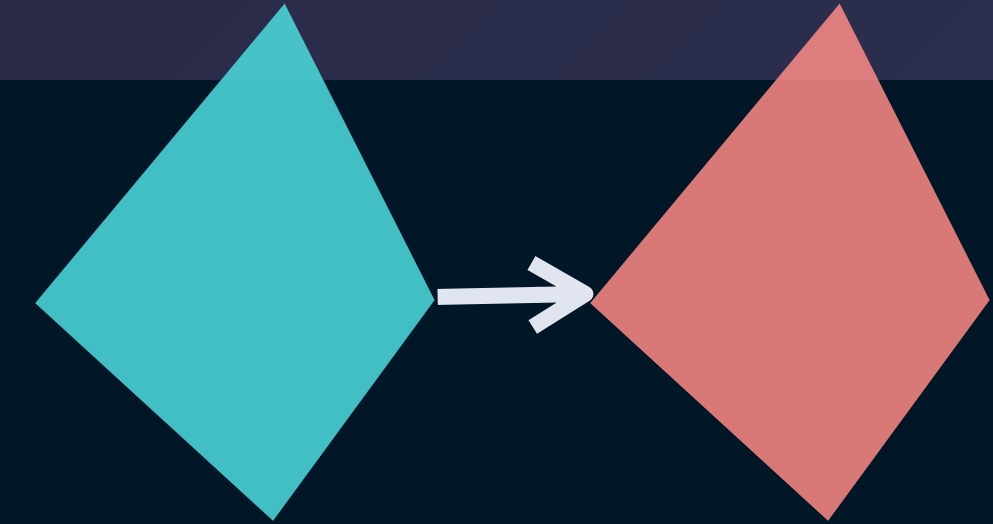
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    commit('MAKE_MOVE_REQUEST')
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    makeMoveUseCase({  
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      game: state.game,  
      cell  
    }, {  
      onSuccess: (player) ⇒ commit('MAKE_MOVE_SUCCESS', player),  
      onError: (error) ⇒ commit('MAKE_MOVE_ERROR', error.message)  
    })  
  }  
}
```



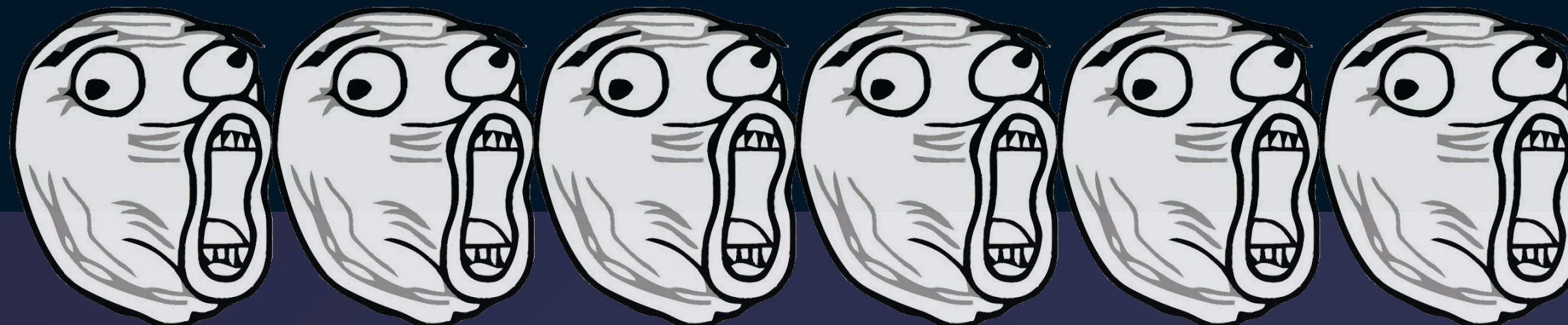
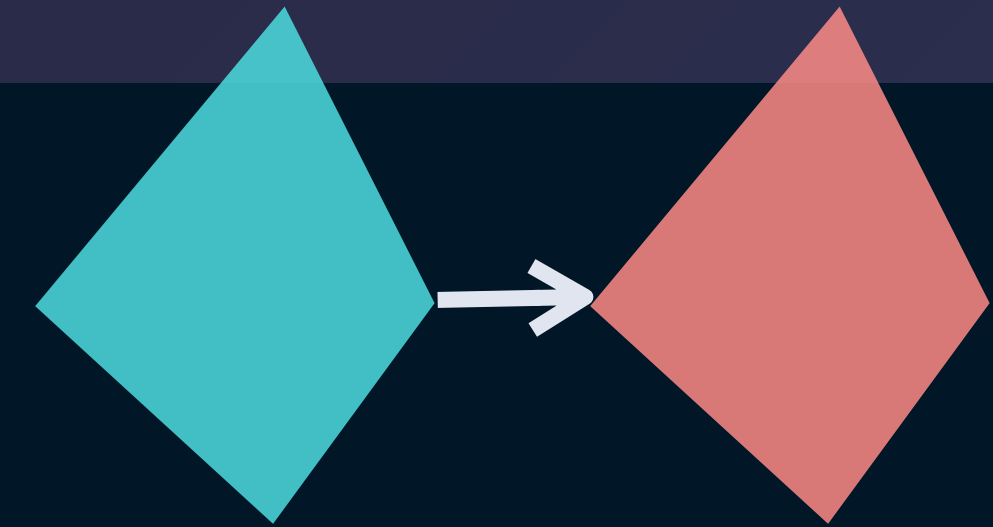
```
import { makeMoveUseCase } from 'application/ ... '
```

```
$( '#submit_move' ).click(function() {  
  makeMoveUseCase(  
    {  
      player: $( '#current_player' ).val(),  
      game: window.game,  
      cell: [ $( 'input[name="row"]' ).val(), $( 'input[name="col"]' ).val() ]  
    },  
    {  
      onSuccess: () => $( '#success_message' ).fadeIn('slow'),  
      onError: () => window.alert('oops something went wrong')  
    }  
  )  
})
```

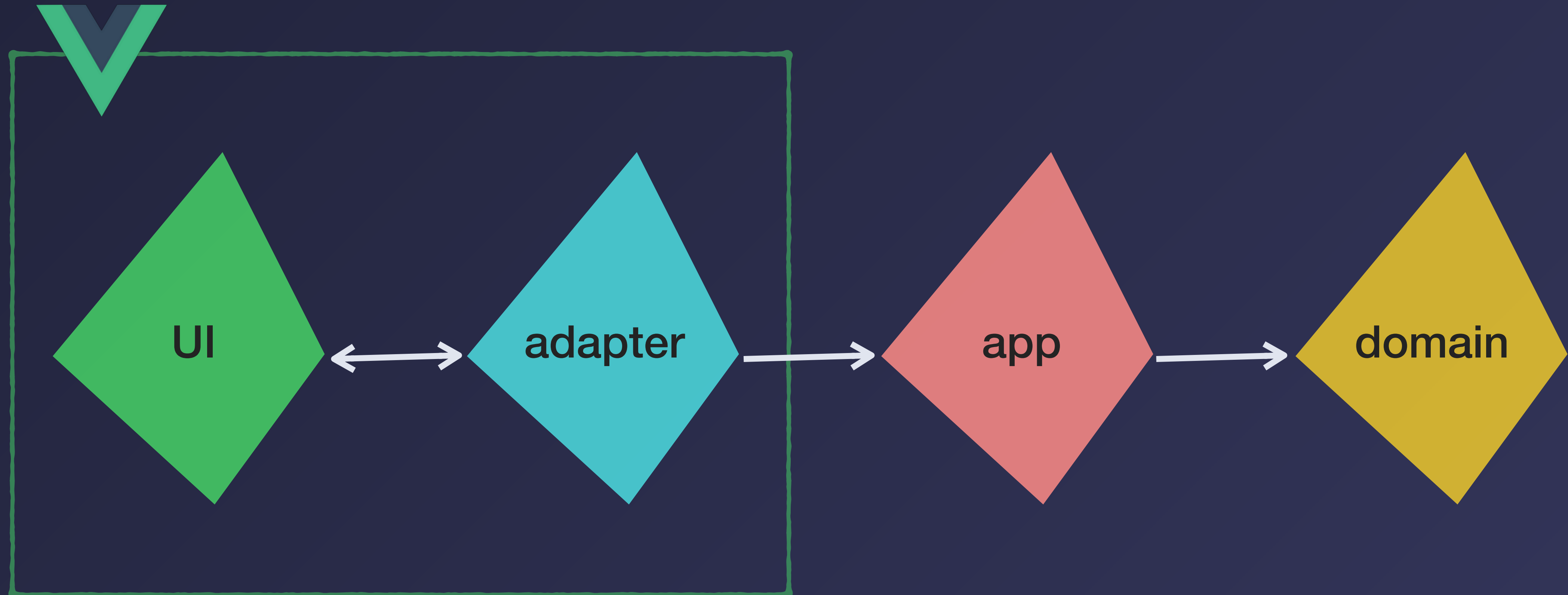


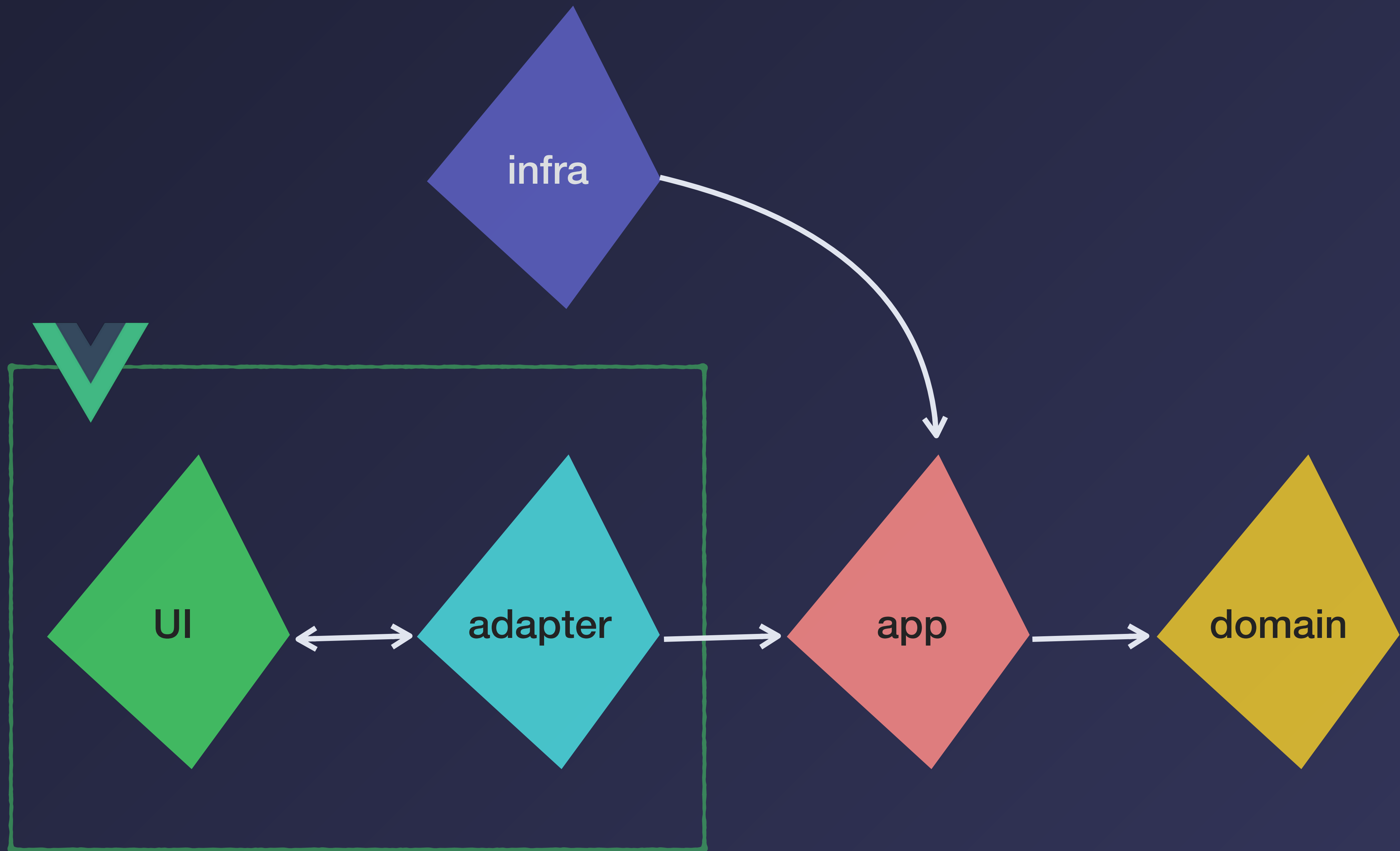
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    },  
    {  
      onSuccess: () => $( '#success_message' ).fadeIn('slow'),  
      onError: () => window.alert('oops something went wrong')  
    }  
  )  
})
```



```
src/  
  domain/  
  application/  
  infrastructure/  
  ui/
```





Disclaimer #1

You **might not need**
any of this

Disclaimer #1

You **might want**
some parts of it

Disclaimer #2

This talk was **actually**
about the front end

**Front-end development is
software development**

Disclaimer #3

Nothing explained
here today is **new**



I Am Developer

@iamdeveloper

hi, I'm a javascript developer, I like to take software design patterns from the 70s and present them as new ideas to front-end developers

5:53 PM · Jan 19, 2020



I Am
@iam

hi, I'm a java
patterns from
front-end o

5:53 PM · Jan 19



RIGHT IN THE FEELS

are design
ideas to

Wrapping up

Wrapping up

Organize code **around**
business rules, not
frameworks

Wrapping up

Organize code **around**
business rules, not
frameworks

Dependency Rule
Keep details away from
the core

Wrapping up

Organize code **around business rules**, not frameworks

Dependency Rule
Keep details away from the core

Make everything easy to **test**

Wrapping up

Organize code **around business rules**, not frameworks

Dependency Rule
Keep details away from the core

Make everything easy to **test**

Front-end development is software development

This is not about writing good software, but how to build software that can **change over time**

Ok Adri this is cool

Where should I start?

Ok Adri this is cool

Where should I start?

`noti.st/afontcu`

👋 That's all!

@afontq

afontcu.dev

noti.st/afontcu