



Maintaining your elasticsearch indexes

Jetro Coenradie

Create your index


```
curl -XPUT http://localhost:9200/conferences
```

Update your index

Backing up your index

Other tools

```
elasticdump \  
  --input=http://localhost:9200/conferences \  
  --output=/data/conferences.json \  
  --type=data
```



Marvel /Sense

Kibana

Logstash

<https://www.elastic.co>



Maintain elastic

Elastic gui

Geo elastic

<https://github.com/jettro>

<https://www.npmjs.com/package/elasticdump>

<https://github.com/jprante/elasticsearch-jdbc>

<https://github.com/spring-projects/spring-data-elasticsearch>

WORKING
WITH WHAT
YOU GOT

Making the Best of Legacy Code & Design

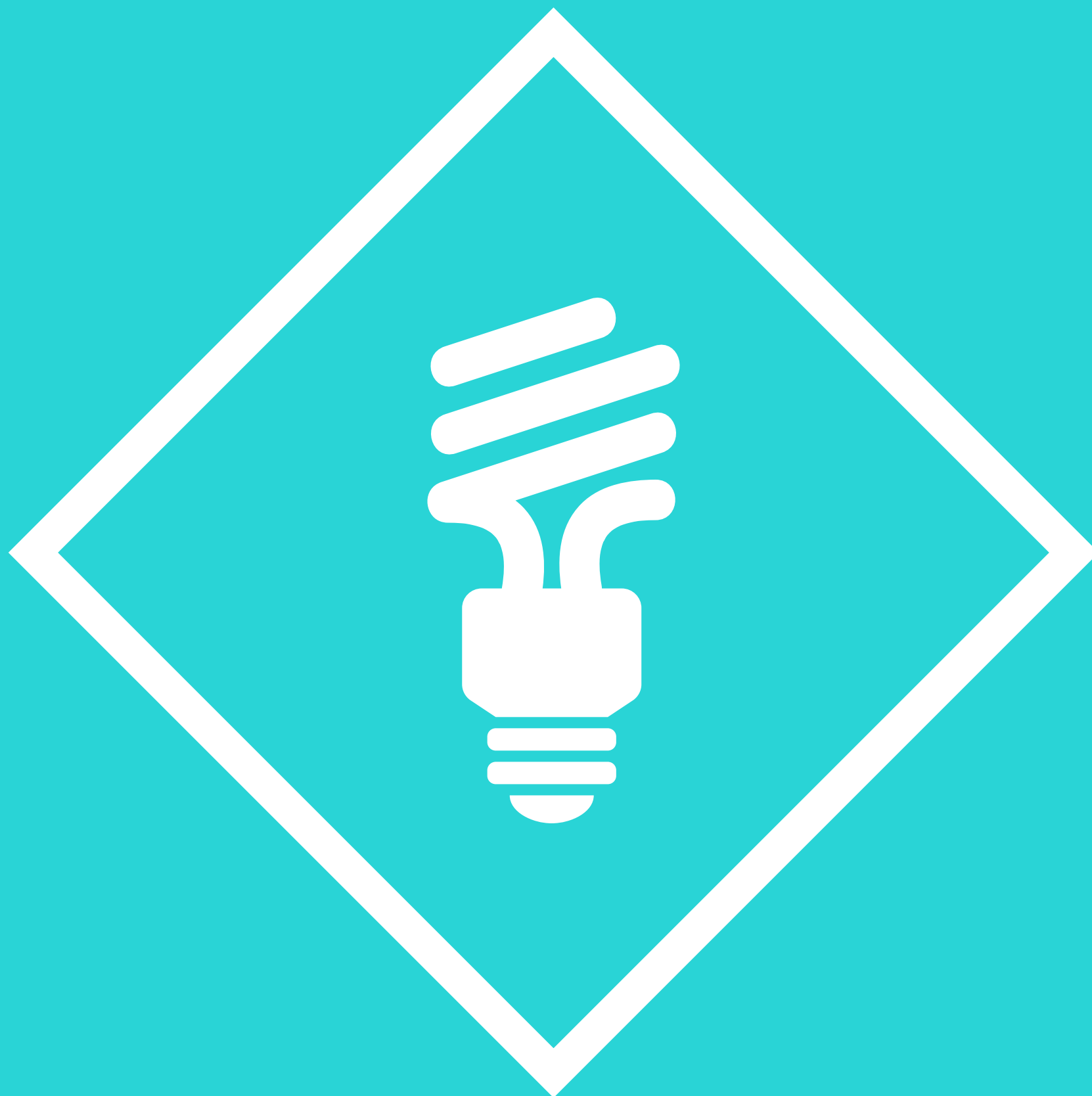


**Working with legacy code
will make you a
better coder.**

**Working with legacy code
will make you a
better human.**



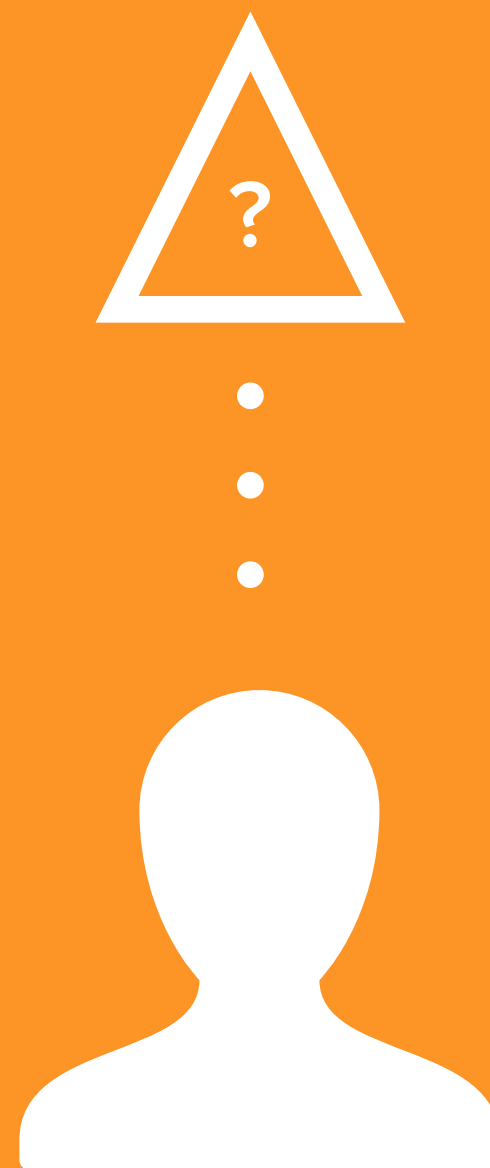
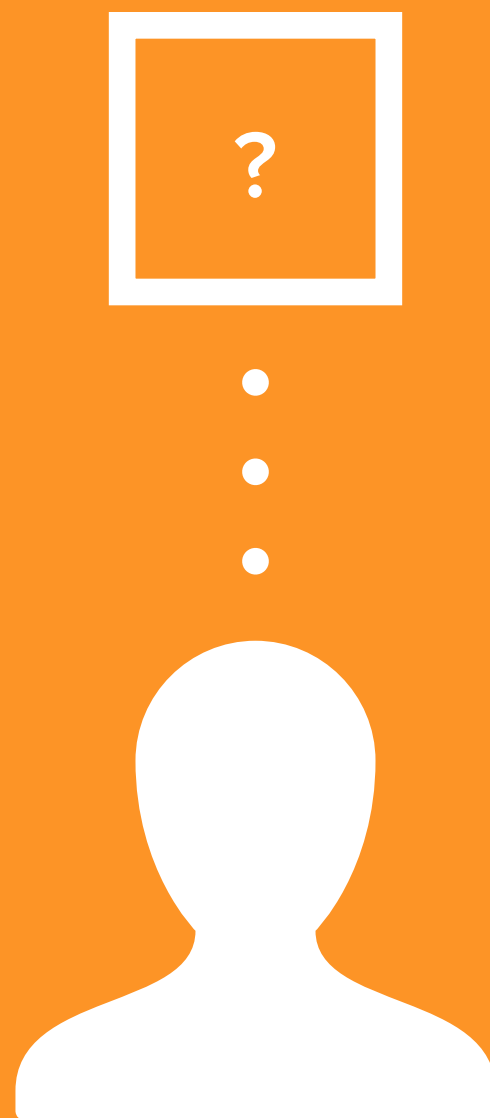
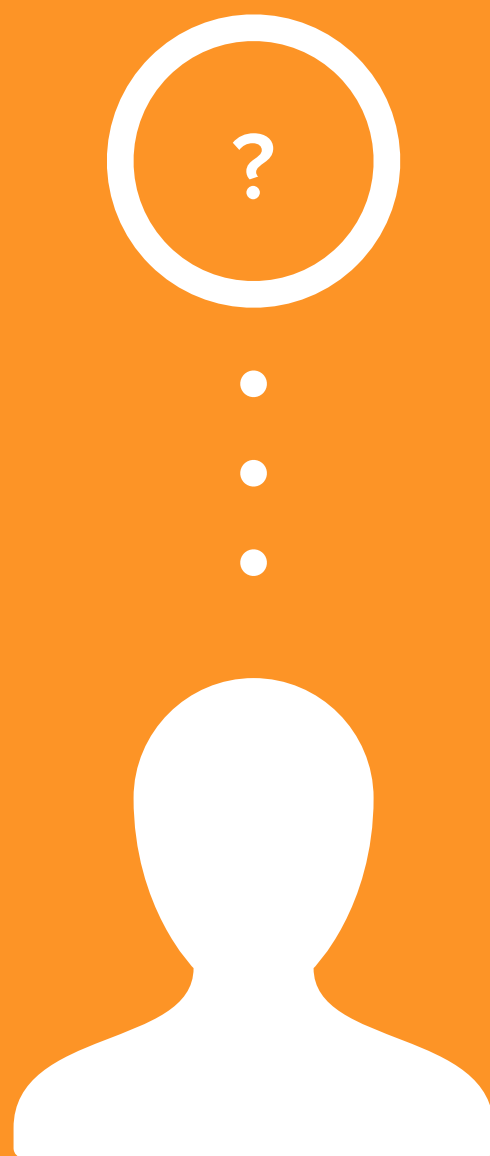


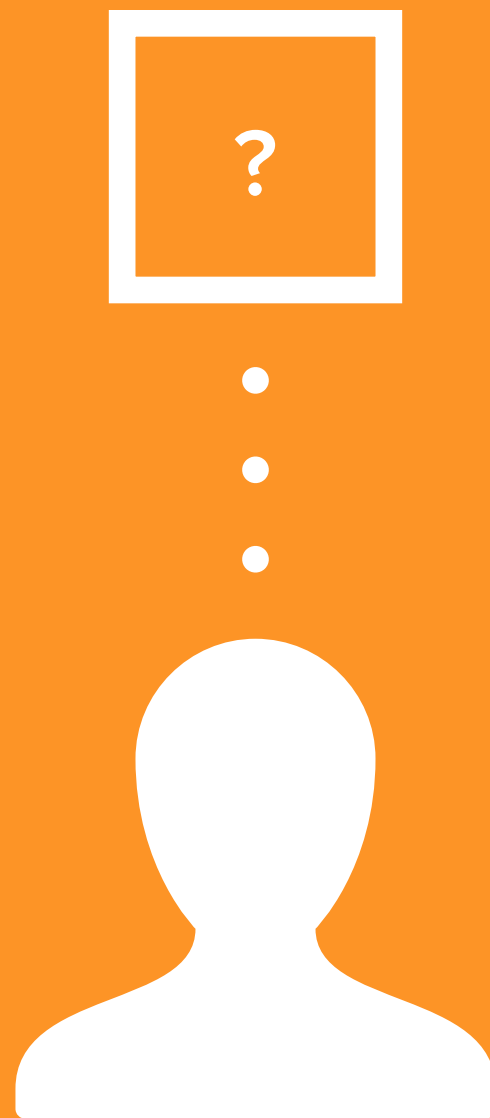


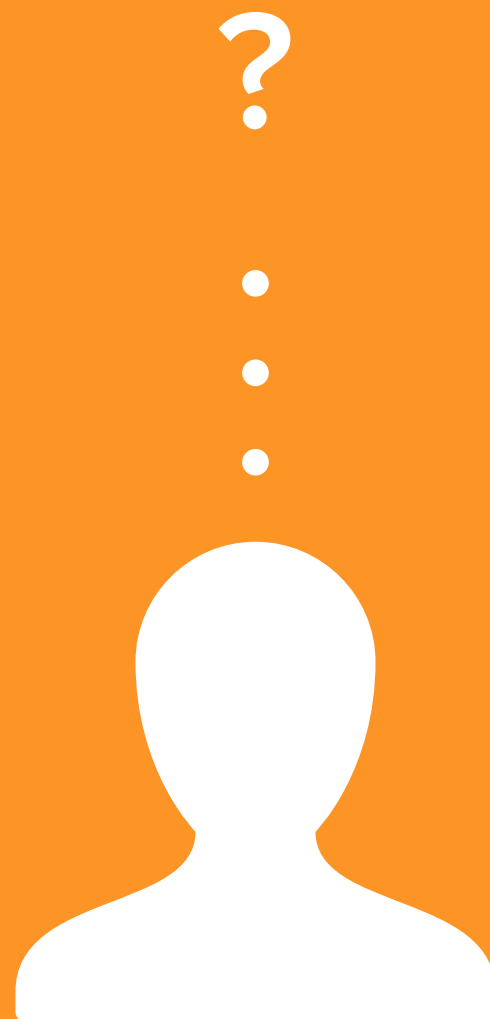


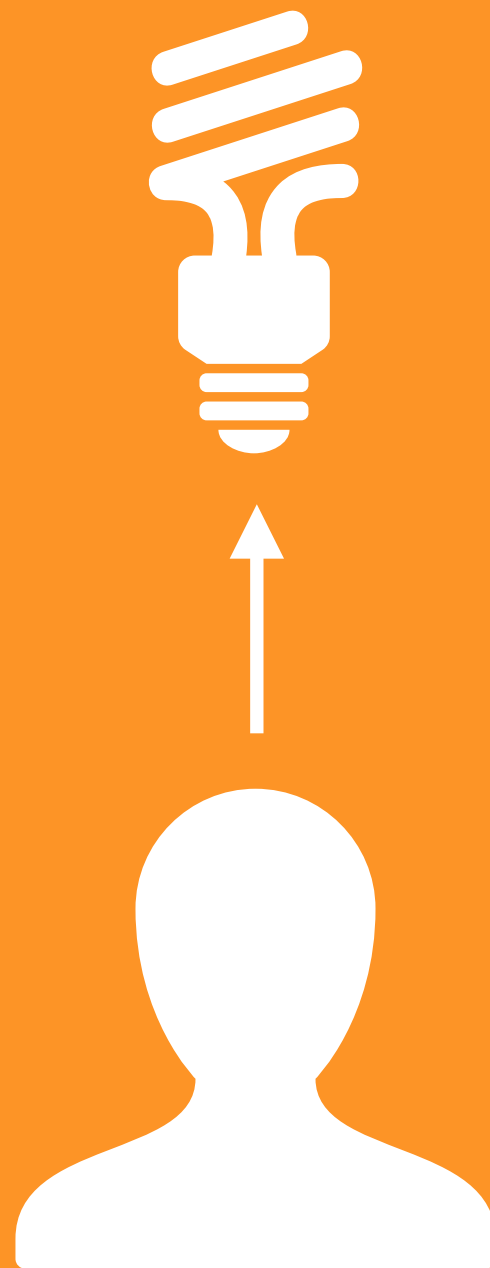






















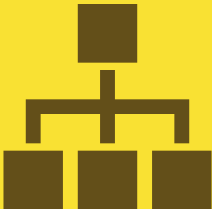


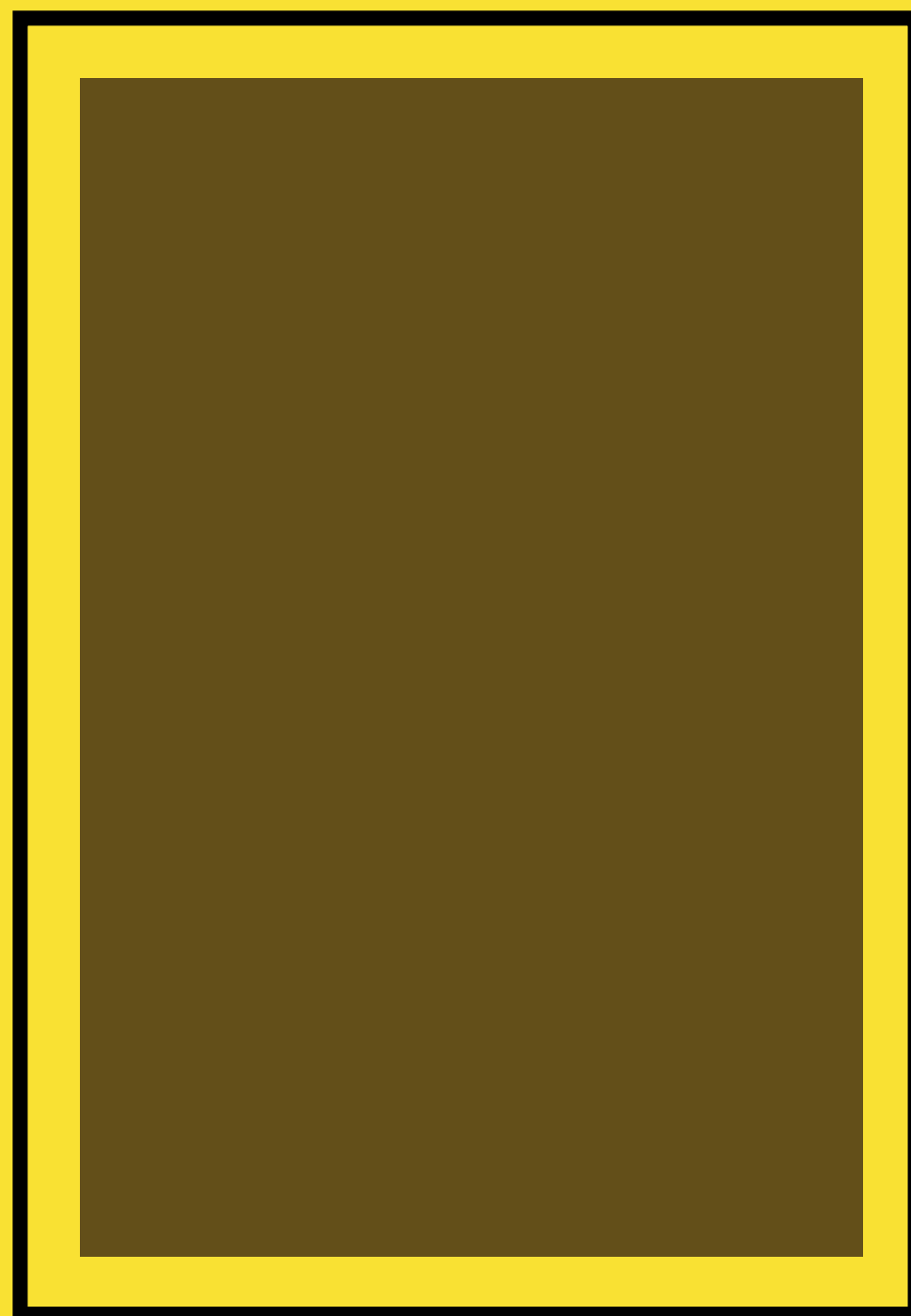
1

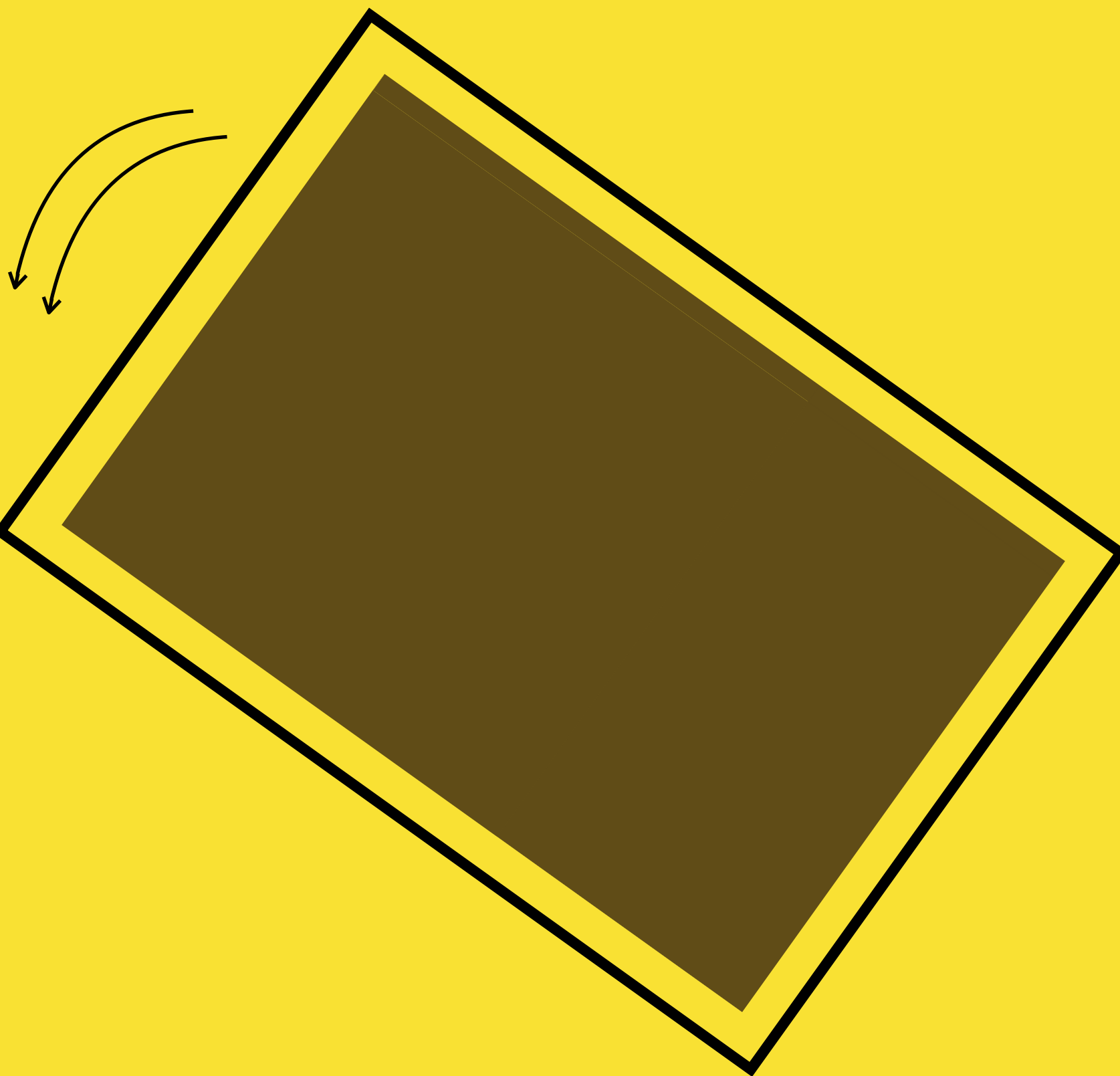
2

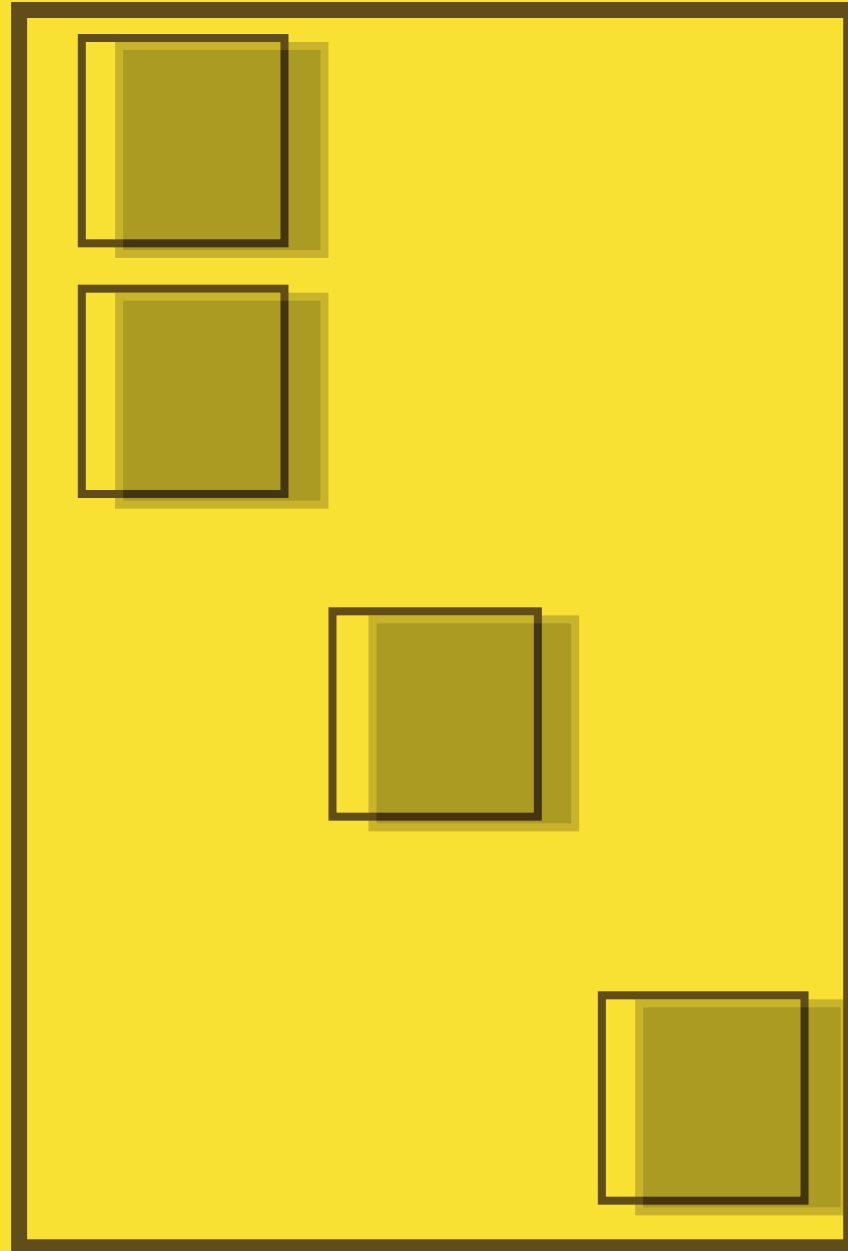
3

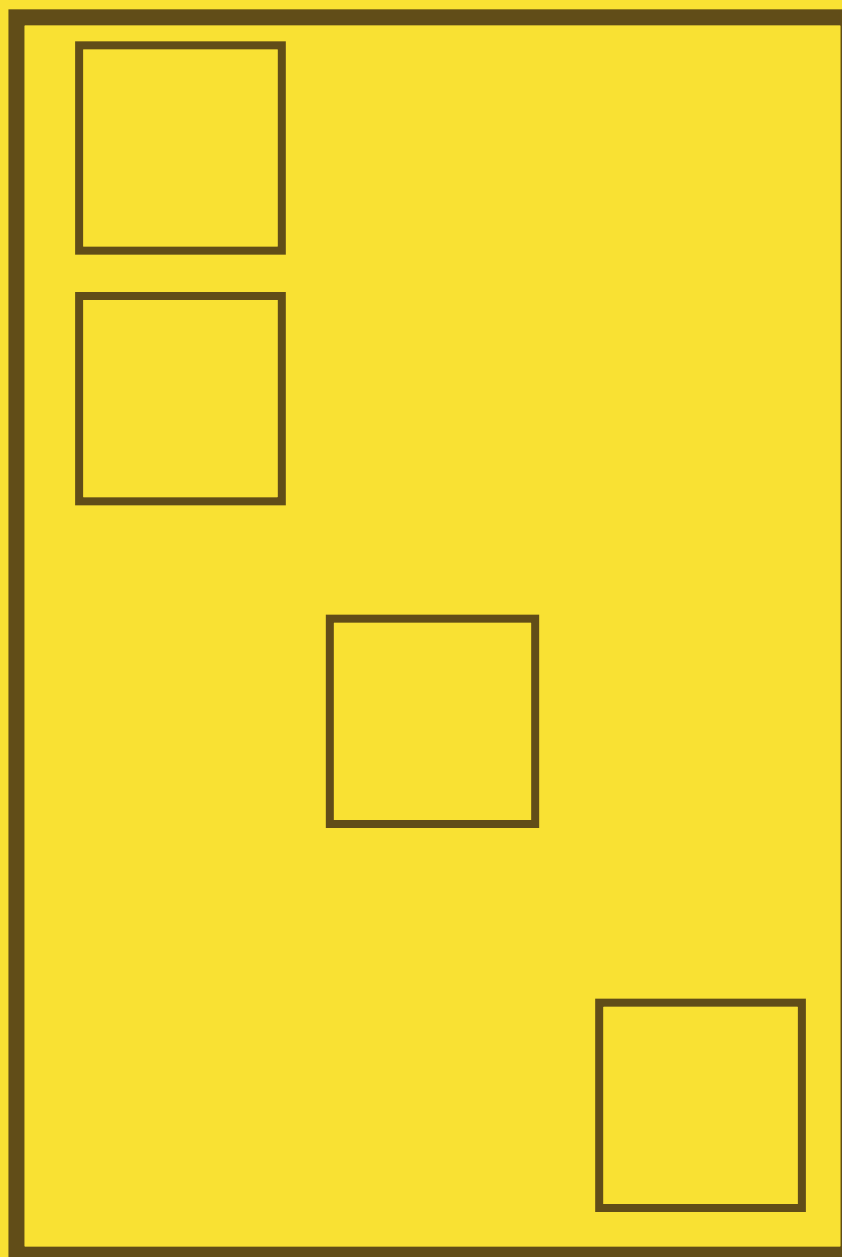








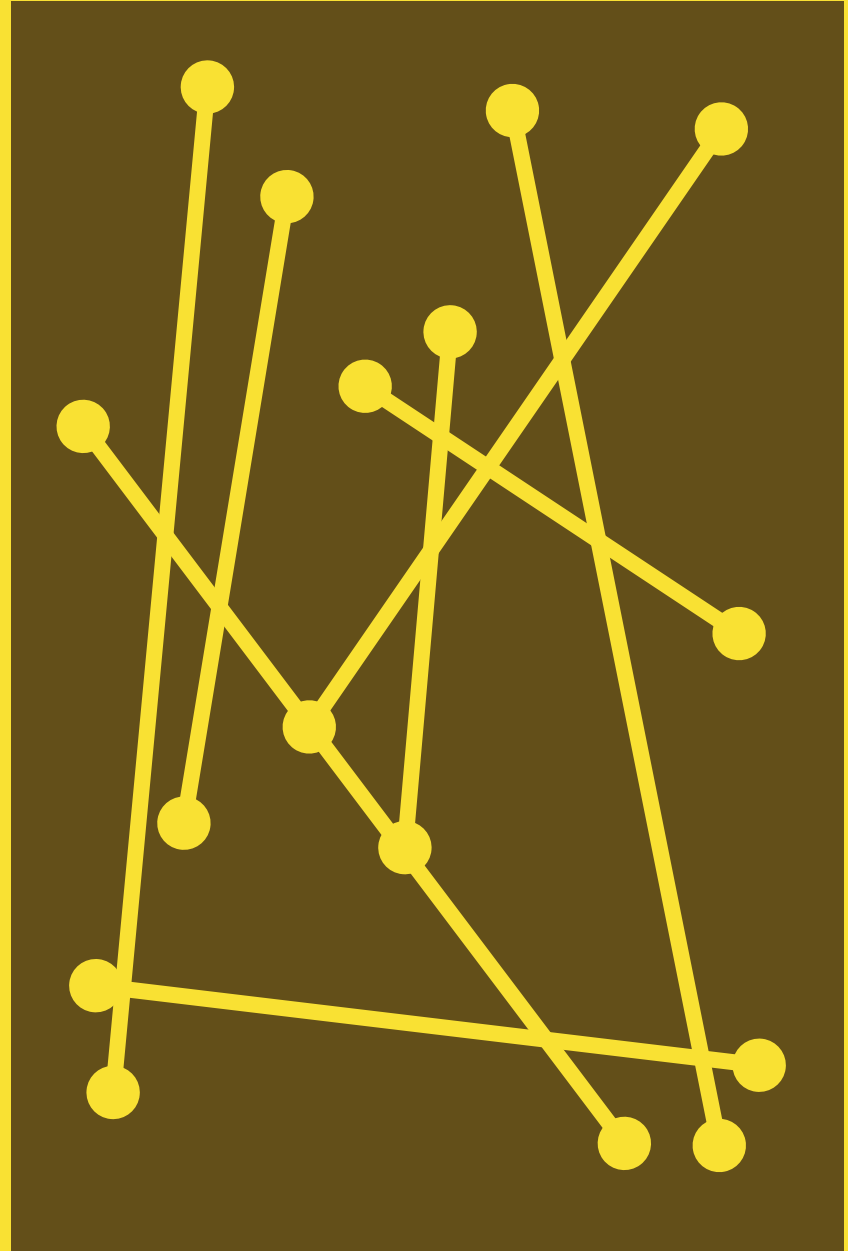




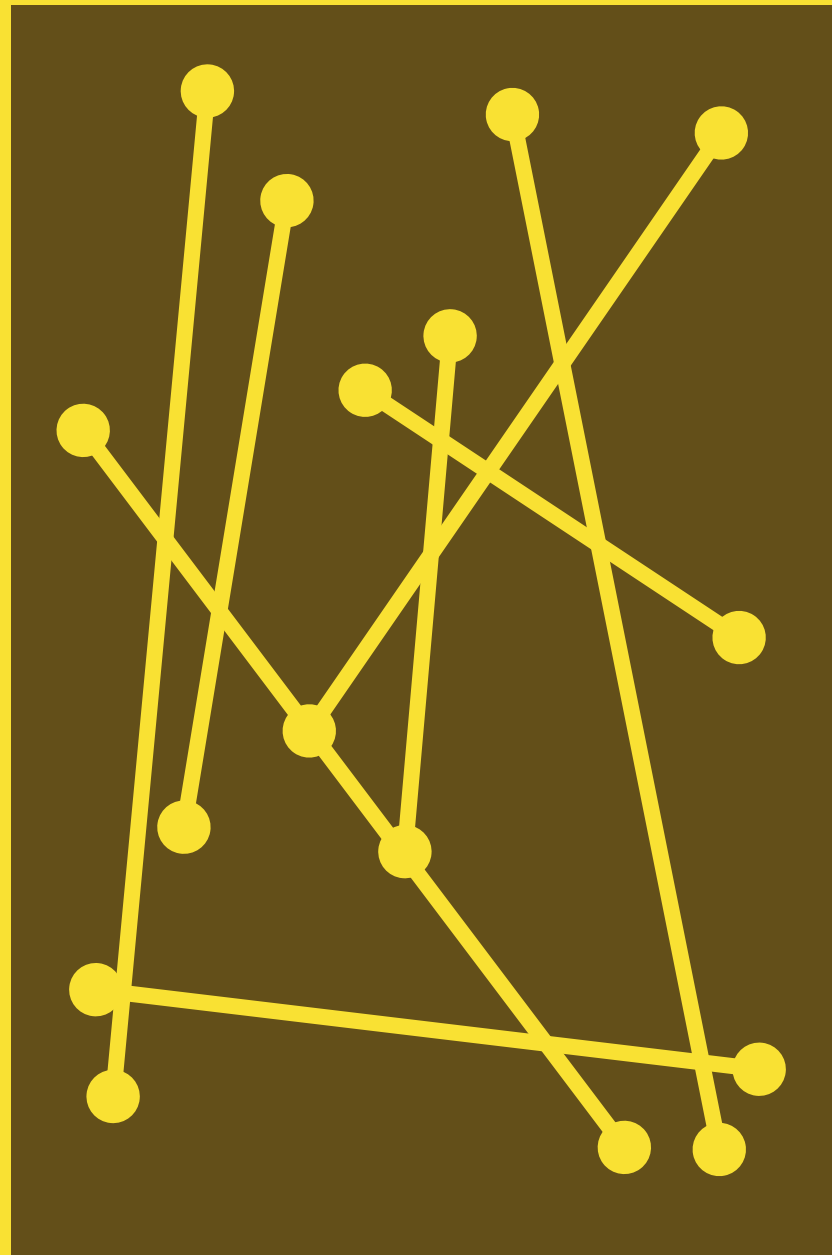
?!



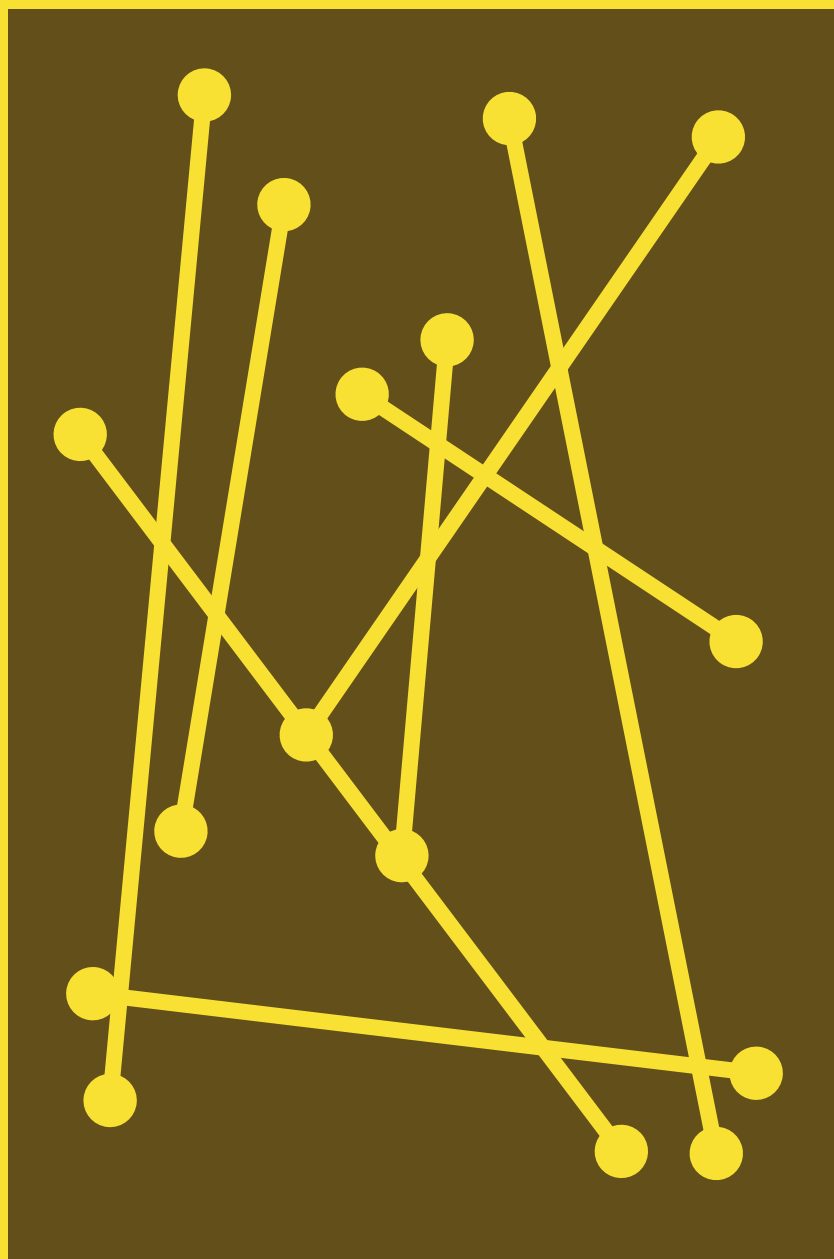
?!



?!



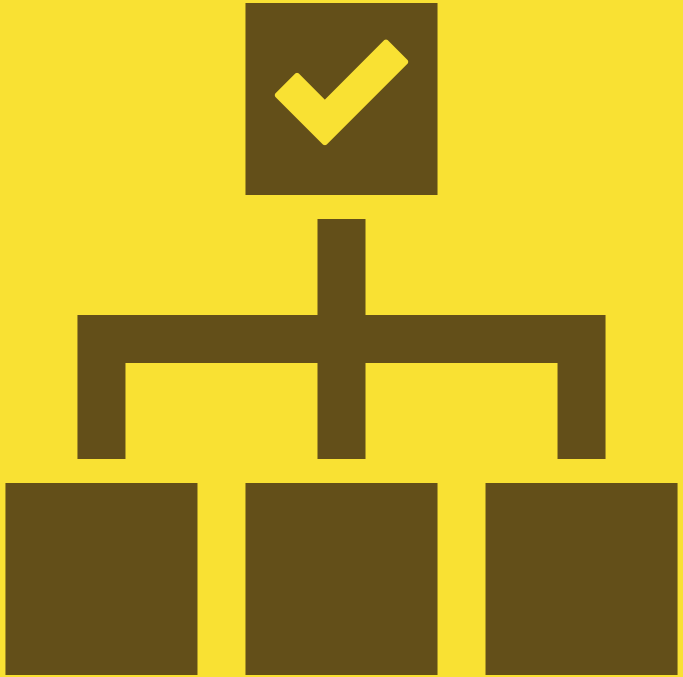
?!
●●



?!
●●



?!
●●







Primary

Secondary

Primary

Secondary

Primary

Secondary

Primary

Secondary

Drop down

Home Background

HSB: 60 ° 1% 93%

RGB: 237 237 235

Hex#: EDEDEB

Template Background

HSB: 72 ° 2% 96%

RGB: 244 245 240

Hex#: F4F5F0

Dark Background

HSB: 90 ° 3% 30%

RGB: 76 77 75

Hex#: 4C4D4B

Typography

HSB: 60 ° 1% 20%

RGB: 51 51 50

Hex#: 333332

Text Link

HSB: 132° 50% 72%

RGB: 92 184 110

Hex#: 5CB86E

Over

Drop down

Drop down

Drop down

Over

Drop down

110 / 120

CLICK OR DRAG & DROP IMAGE

B


i


H1


H2


“


🔗






Drag 'n drop or  [click to add image](#)











M M

Medium
Medium

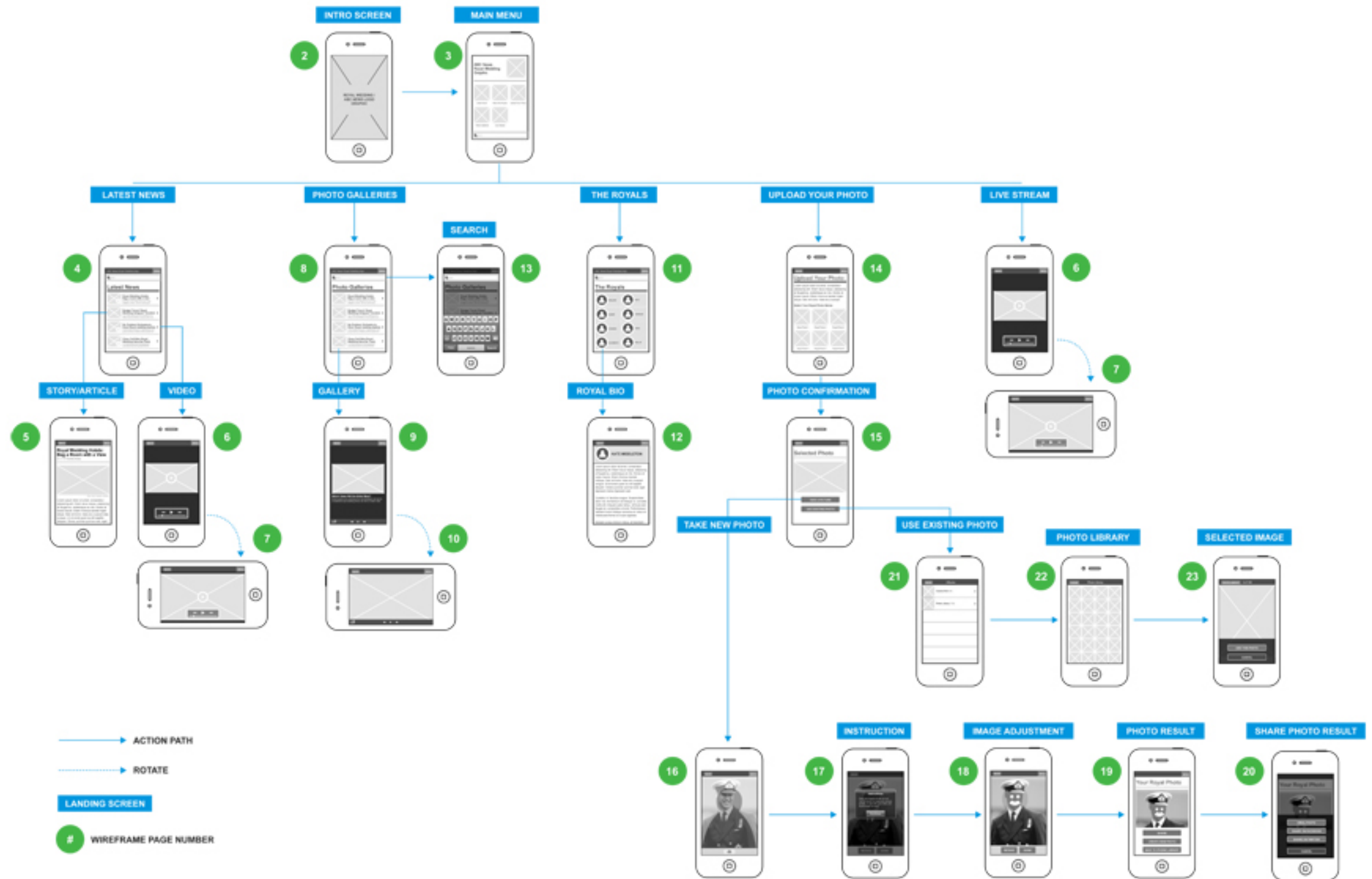
Medium

Medium

Lorem ipsum dolor sit amet, consectetur adipiscing elit. In egestas posuere faucibus. Nulla vitae elit libero,

Lorem ipsum dolor sit amet, consectetur adipiscing elit. In egestas posuere faucibus. Cras diam. Nulla vitae elit libero,

Lorem ipsum dolor sit amet, consectetur adipiscing elit. In egestas posuere faucibus. Cras diam. Nulla vitae elit libero, a pharetra augue.





**“Those who cannot
remember the past
are condemned to
repeat it.”**

George Santayana

**Those who cannot
remember past UX errors
are condemned to
repeat them.**

(Not George Santayana)

**Figure out what
you've got**

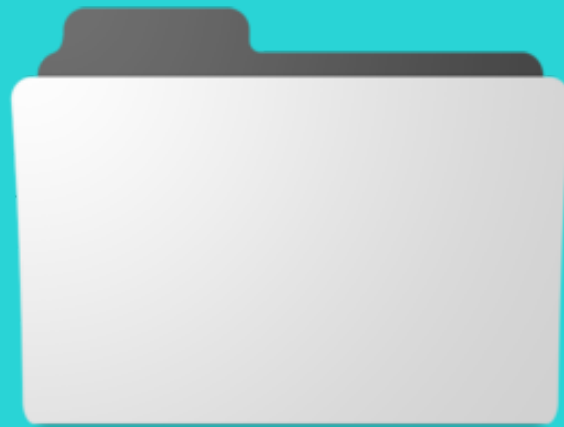
**Understand the
codebase**

Maintain order



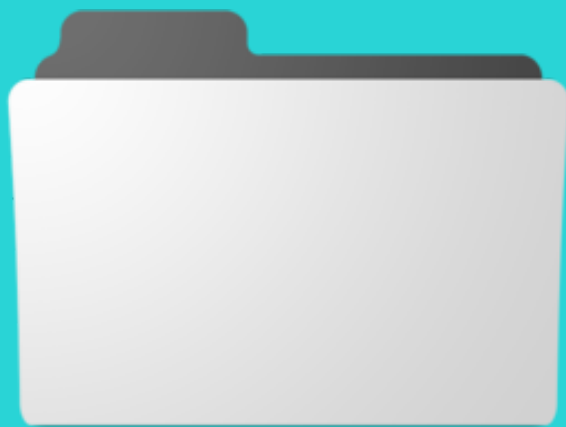
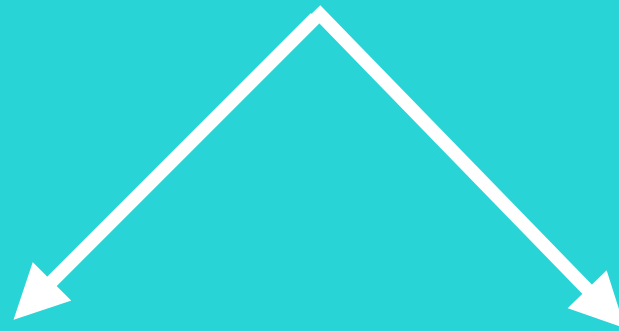






Project Stuff 2003 - 2015

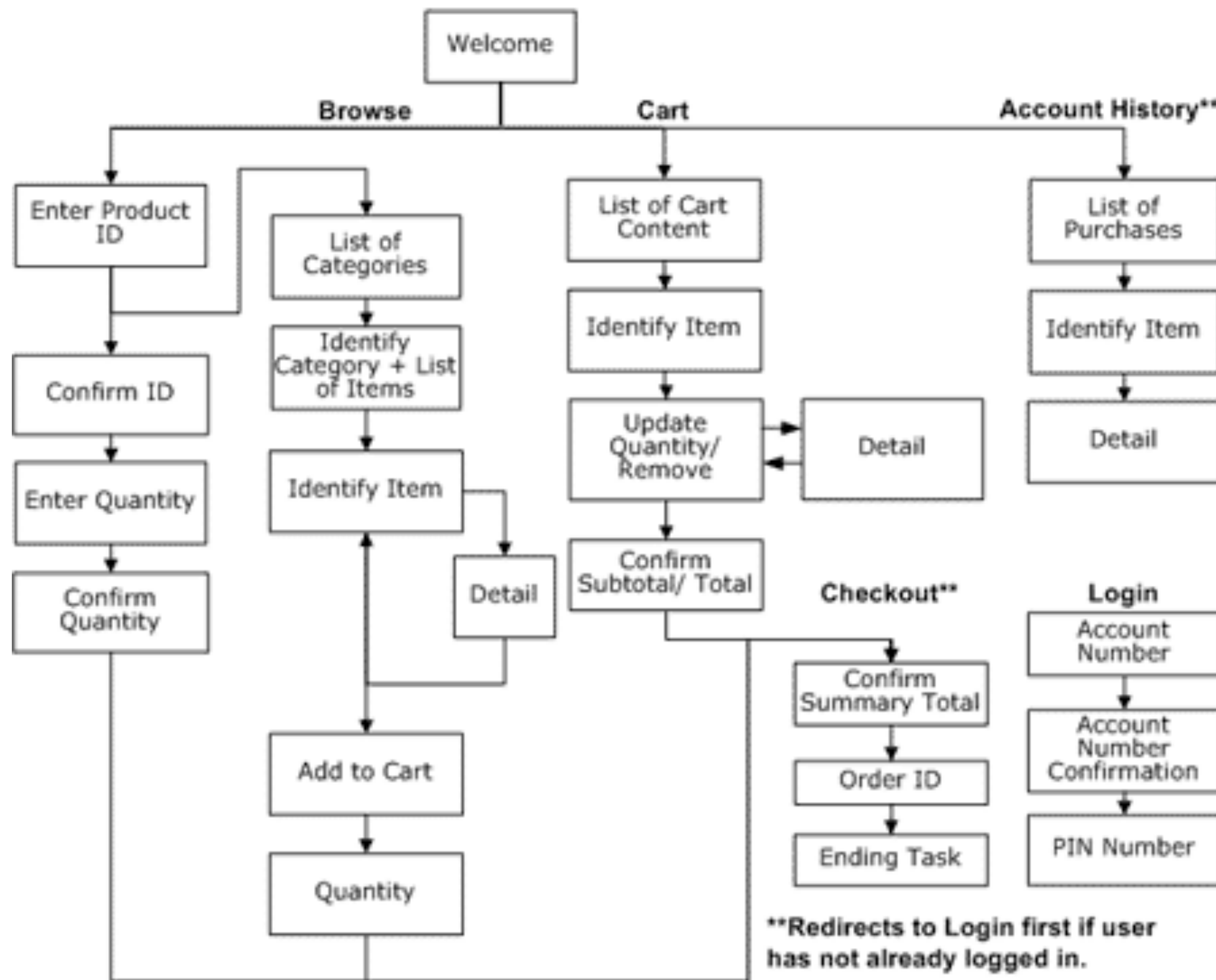
tiny_logo_2004.jpg



_Archive



Trash



LOGO

SEARCH

Page 1

Page 2

Page 3

Page 4

Page 5

IMAGE

BANNER 1

BANNER 2

BANNER 3

BANNER 4

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean fermentum, consectetur aliquam. Nulla id tortor ipsum. Cras ut massa eu lorem adipiscing placerat et in elit. Quisque pretium sagittis turpis ut vulputate. Phasellus vitae enim ipsum. Nulla cursus interdum augue, blandit gravida lorem aliquam tempus. Vivamus nec urna a purus dictum molestie eu et urna. Duis iaculis mauris eu nulla volutpat lobortis. Vestibulum posuere malesuada eleifend.

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

IMAGE

IMAGE

IMAGE

IMAGE

Lorem ipsum dolor sit amet.

IMAGE

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean fermentum, consectetur aliquam. Nulla id tortor ipsum. Cras ut massa eu lorem adipiscing placerat.

IMAGE

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean fermentum, consectetur aliquam. Nulla id tortor ipsum. Cras ut massa eu lorem adipiscing placerat.

IMAGE

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean fermentum, consectetur aliquam. Nulla id tortor ipsum. Cras ut massa eu lorem adipiscing placerat.

Read More

NEWSLETTER [NAME]

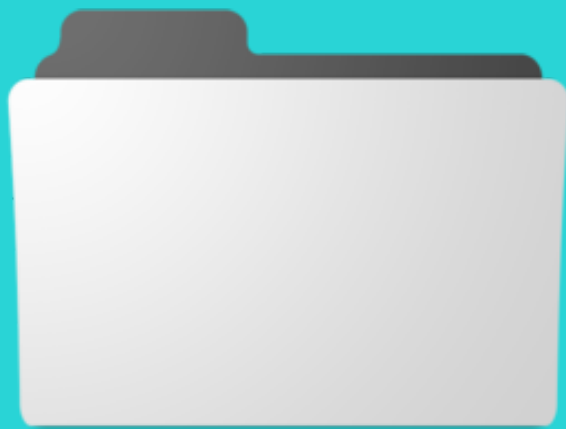
NEWSLETTER [EMAIL]

SM

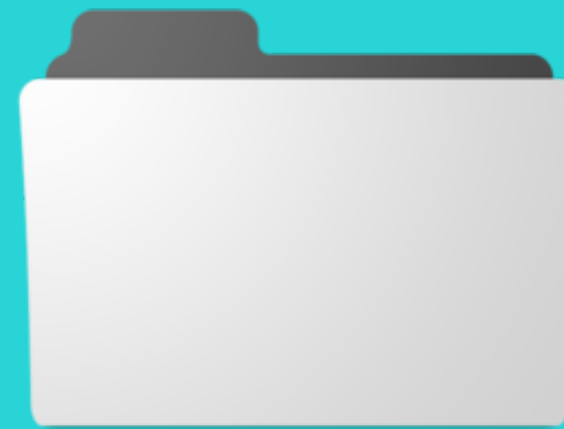
SM

SM

SM



Illustrations



Photography

Define a

GOAL

Define a

GOAL





Outline a

4



























**Create goals
together**

Define the problem

**Share and discuss
legacy issues**

**Write those
goals down**

**Write those
goals down!**



Profile app

Profile

check in

EDIT

upcoming

My first

Stats

Edit

Personal.

version 1.0

Gym member tool

Photo

prime

phone

**Make all of your
major decisions at the
whiteboard level**



Profile app

Profile

check in

EDIT

Notes

Edit

Recorded

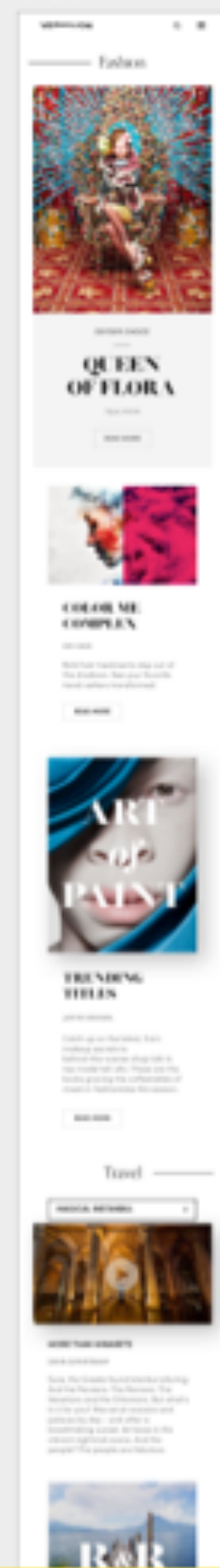
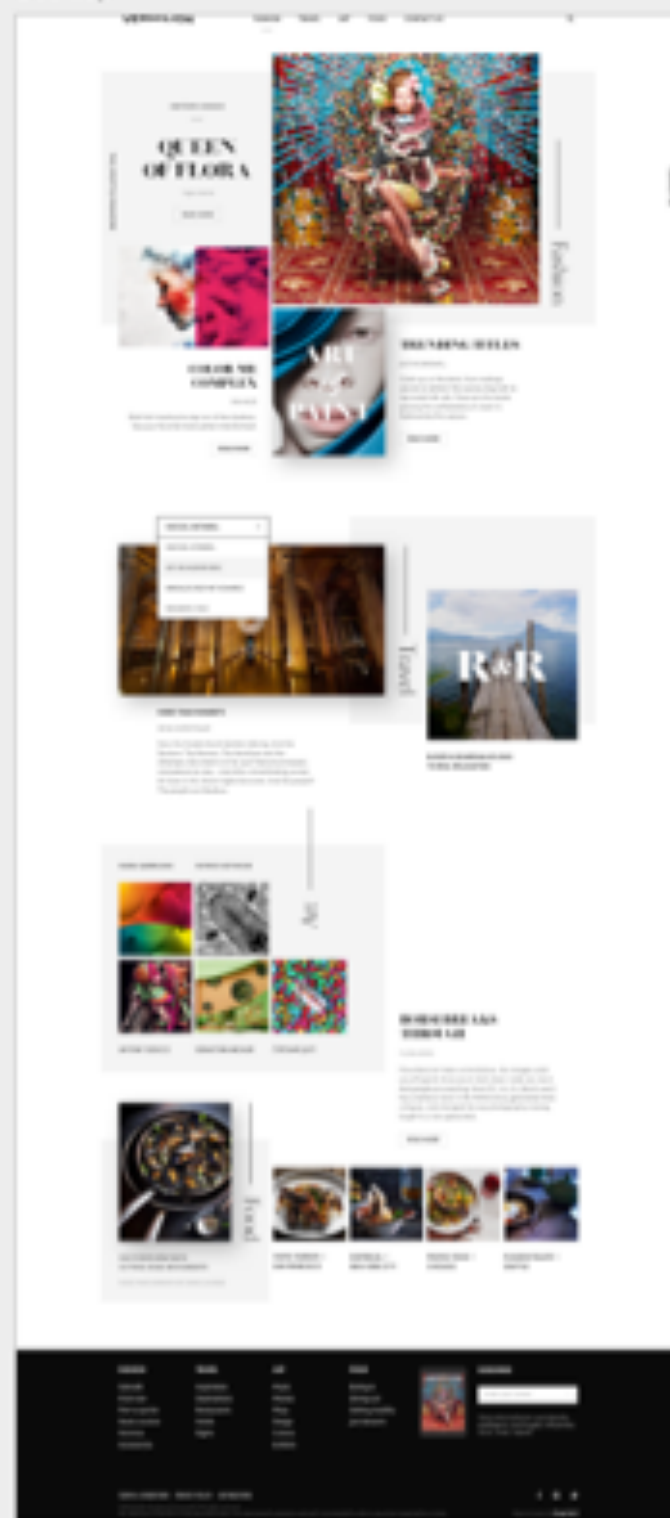
phone

version stuff

Gym membership tool

Photo

prime







TA4TV

☒ SHOP NAME

PHONE
 EMAIL

☒ EVENT NAME
DATE
LOCATION

☒ EVENT NAME
DATE
LOCATION

Hourly
Location

Phone, TA4TV

SHOP PROFILE

PAYPAL
DIVER

TA4TV

☒ ALL EVENTS

☒ EVENT NAME
DATE
LOCATION

CAPACITY
LOCATION

#

\$ price

PARTICIPATING

RENTALS

BUY

Having a goal...

Having a goal...

1. Informs team

Having a goal...

1. Informs team

2. Lays groundwork

Having a goal...

- 1. Informs team**

- 2. Lays groundwork**

- 3. Sets expectations**

Going Forward

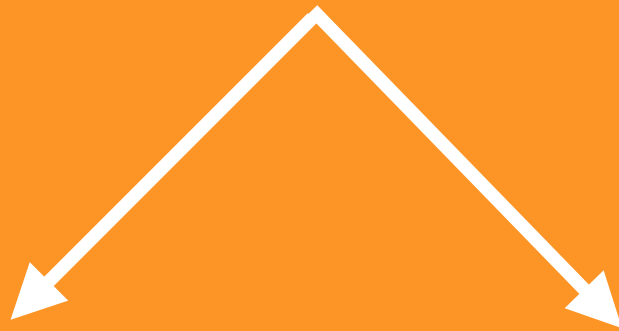
**Keep track of the
mess**







tiny_logo_2004.jpg



_Archive



Trash







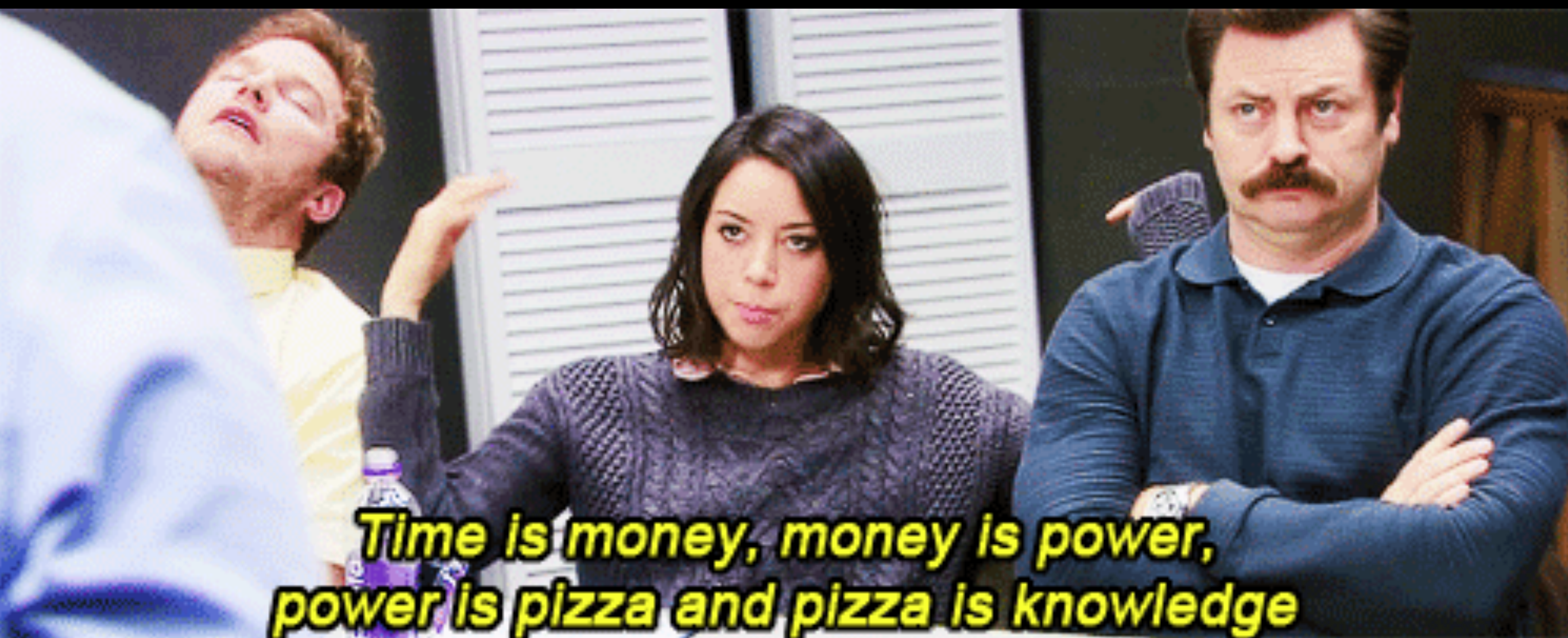


**How do we end up
with bad legacy?**

**“We need it
yesterday.”**

We do our best!

What can we do?



Improve existing code

+

Minimize new cruft

**Prioritize
maintenance**

“Always code as if the person who ends up maintaining your code is a violent psychopath who knows where you live.”

John F. Woods



**Write code
for me!**



**Your work is part of
a foundation.**



Assess



Assess



Define your goal

- 1 Assess**
- 2 Define your goal**
- 3 Prioritize maintenance**





Thanks!



Document Database Schema Design

Agenda

Schema

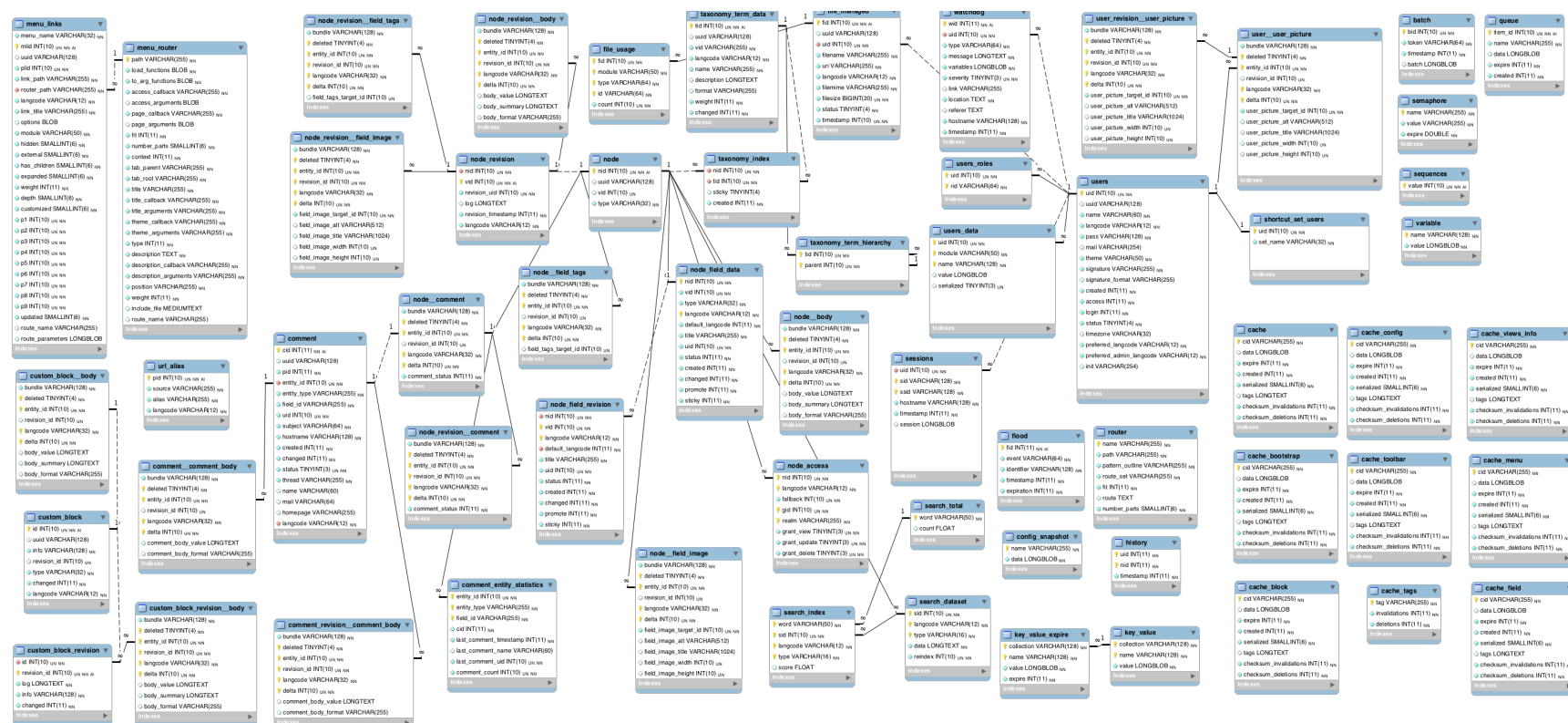
Documents

Document Schema Design

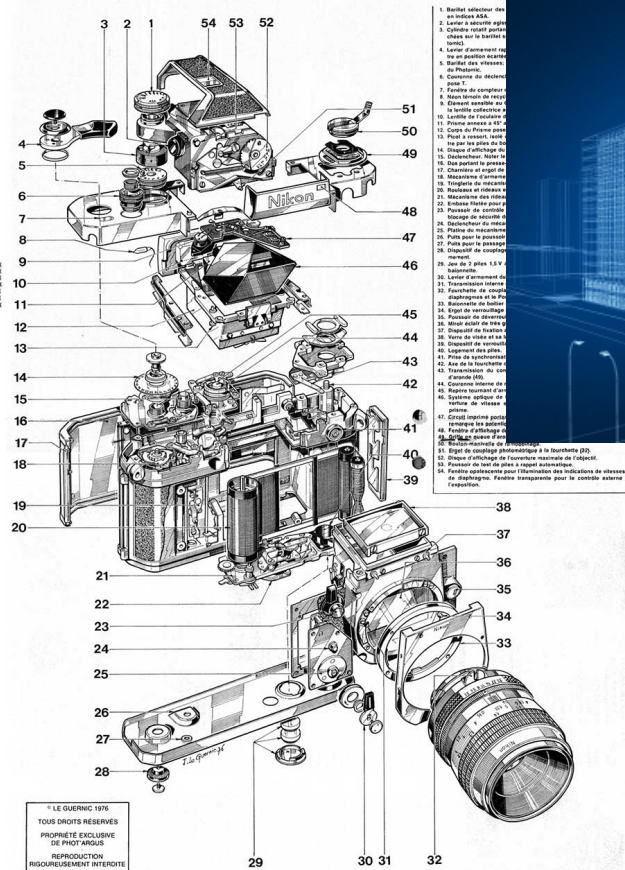
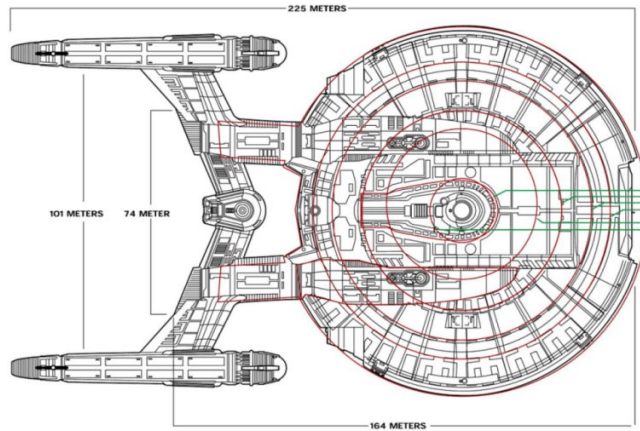
Patterns

Schema

First thing that comes to mind...



But there are other types of schema

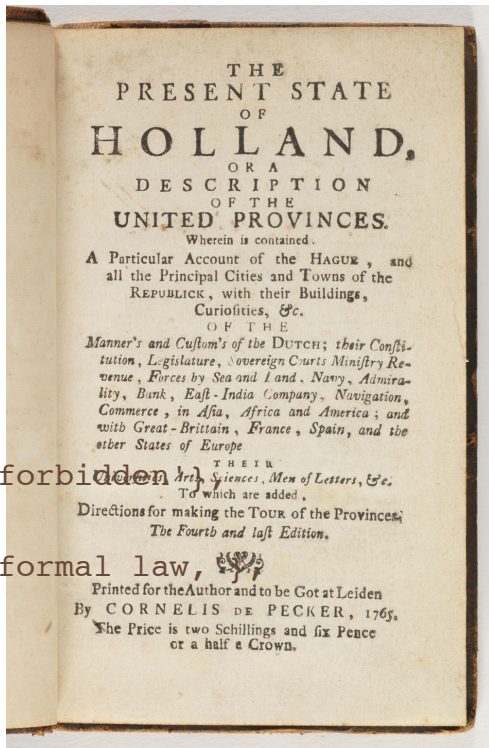


Documents



What is a Document?

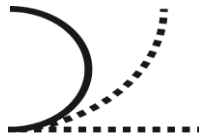
```
{  
  name: 'Dutch Constitution',  
  headline: 'The Present State of Holand',  
  efforced_by: 'King and Parliament'  
  date: '11 October 1848',  
  labels: [legal, society, rules],  
  freedoms: [  
    { name: 'Speech',  
      text: 'Any censorship is absolutely forbidden',  
    },  
    { name: 'Association',  
      text: 'This right can be limited by formal law',  
    }  
  ]  
}
```



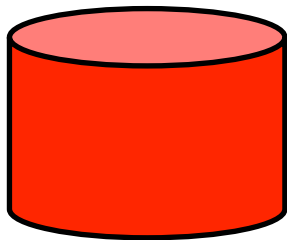
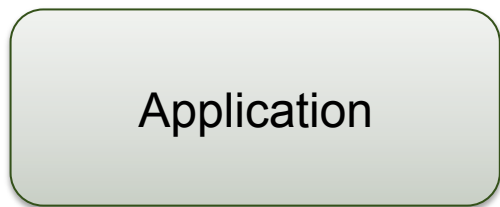
Document Schema Design

The focus is "What I want to Build"

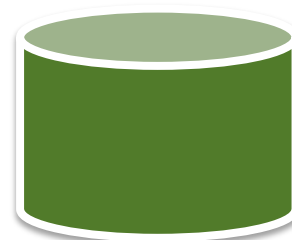
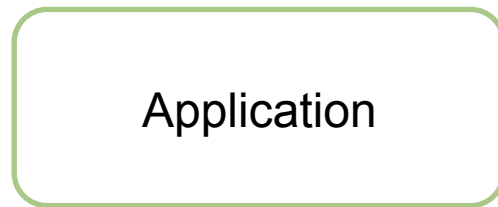
- We focus on how to use Data
 - Not on how to store it
- Use flexibility of schema to adjust to new features and iterations deliver more features
 - Do not be restricted by the need to add functionality
- Scale to accommodate your application data needs
 - Don't be afraid of being successful
- Out of the Box Full features
 - Text Search
 - Geospatial, Rich queries
 - Map Reduce and Aggregation Framework



Mind Set



RELATIONAL WAY



MONGODB WAY

It is so good it can take check-in's from Mars!



Patterns

Discrete Documents

```
{  
  policyNum: 123,  
  type: auto,  
  customerId: abc,  
  payment: 899,  
  
  deductible: 500,  
  make: Taurus,  
  model: Ford,  
  VIN: 123ABC456,  
}
```

```
{  
  policyNum: 456,  
  type: life,  
  customerId: efg,  
  payment: 240,  
  
  policyValue: 125000,  
  start: jan, 1995  
  end: jan, 2015  
}
```

```
{  
  policyNum: 789,  
  type: home,  
  customerId: hij,  
  payment: 650,  
  
  deductible: 1000,  
  floodCoverage: No,  
  street: "10 Maple Lane",  
  city: "Springfield",  
  state: "Maryland"  
}
```

Time Series

```
{
  _id: "20130310/resource/home.htm",
  metadata: {
    date:
ISODate("2013-03-10T00:00:00Z"),
    site: "main-site",
    page: "home.htm",
    ...
  },
  month : 3,
  total : 9120637,
  hourly: {
    0 : 361012,
    1 : 399034,
    ...,
    23 : 387010 },
    hour-minute: {
      0 : { 0 : 5678,
          1 : 6745,
          2 : 9212,
          ...
          59 : 6823
        },
      1 : { 0 : 8765,
          1 : 8976,
          2 : 8345,
          ...
          59 : 9812
        },
      ...,
      23 : { 0 : 7453,
          1 : 7432,
          2 : 7901,
          ...
          59 : 8764
        }
    }
}
```


Referencing vs Embedding

Embedding

```
{
  _id: 111,
  name: "Friso",
  beers: [
    { name: "SuperBock", comment: "AWESOME" },
    { name: "Bavaria", comment: "Boooohhhohohoh" }
  ]
}
```

Referencing

```
{
  _id: 111,
  name: "Friso"
}
```

```
{
  _id: 21,
  user_id: 111,
  name: "SuperBock",
  comment: "AWESOME"
}
{
  _id: 22,
  user_id: 111,
  name: "Bavaria",
  comment: "Boooohhhohohoh"
}
```

Referencing vs Embedding

Referencing	Embedding
Data grows in different ways	Want to retrieve all info in one go (avoid round trips to database)
Is access by different access patterns and workflows	Assure atomic operations
Have a different lifecycle	When data changes in the same rate and in the same pace

Anti-Patterns

Unbounded Arrays/Documents

```
{_id: 1, selfies: [x0001]}
```

```
{_id: 2, selfies: [x0101]}
```

```
db.profile.insert( doc0 );
```

```
db.profile.insert( doc2 );
```

```
db.profile.update( {_id:1},  
{$push:{selfies: x0202}});
```


Unbounded Arrays/Documents

```
{_id: 2, selfies: [x0101]}
```

```
{_id: 1, selfies: [x0001,  
x0202]}
```

```
db.profile.insert( doc0 );
```

```
db.profile.insert( doc2 );
```

```
db.profile.update({_id:1},  
{ $push:{selfies: x0202}});
```

Unbounded Arrays/Documents

```
{_id: 3, selfies: [x0103...]}
```

```
{_id: 4, selfies: [x0104...]}
```

```
{_id: 1, selfies: [x0001,  
x0202]}
```

```
db.profile.insert( doc0 );
```

```
db.profile.insert( doc2 );
```

```
for i in all_profiles:
```

```
db.profile.update({_id: i},  
{$push:{selfies: xXXX});
```

Overloaded Documents

AMSTERDAM

INTERNATIONAL
SOFTWARE DEVELOPMENT
CONFERENCE 2015

goto;
conference

follow us @gotoamst

Workshops: June 17 / Conference: June 18-19

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NORBERTO LEITE,

DEVELOPER ADVOCATE AT MONGODB

[Tweet](#)



Biography: [Norberto Leite](#)

Norberto Leite is Technical Evangelist and Developer Advocate at MongoDB. Norberto has been working for the last 5 years on large scalable and distributable application environments, both as advisor and engineer. Prior to MongoDB Norberto served as BigData Engineer at Telefonica.

Twitter: [@nleite](#)

Presentation: [Organizing Work](#)

Track: Lightning Talks / Time: Friday 11:30 - 12:20 / Location: Beursfoyer

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Overloaded Documents

```
{
  name: 'Norberto',
  role: 'Technical Evangelist',
  talks: [
    {
      title: 'Document Database Schema Design',
      description: 'This talk is a short introduction...',
      schedule: '12:10 - 12:25'
    },
    {
      title: 'Scalable Cluster in 15 minutes!',
      description: 'This talk is a quick introduction...',
      schedule: '14:50 - 15:05'
    }
  ],
  twitter: 'nleite',
  email: 'norberto@mongodb.com',
  bio: 'Norberto Leite is Technical Evangelist...'

  address: 'Calle Artistas, Madrid',
  supporter: { clube: 'FC Porto', description: 'Best Club in the WORLD' },
  conferences: ['GOTO', 'MongoDB World' ...],
  git_activity: [{type: 'pr', hook: '3142ji3423j342'}],

  selfies: [0x13423423423423, 0x13423434324234]
}
```


Overloaded Documents

```
{
  name: 'Norberto',
  role: 'Technical Evangelist',
  talks: [
    {
      title: 'Document Database Schema Design',
      description: 'This talk is a short introduction...',
      schedule: '12:10 - 12:25'
    },
    {
      title: 'Scalable Cluster in 15 minutes!',
      description: 'This talk is a quick introduction...',
      schedule: '14:50 - 15:05'
    }
  ],
  twitter: 'nleite',
  email: 'norberto@mongodb.com',
  bio: 'Norberto Leite is Technical Evangelist...'
},
...
}
```

100% data usage

Overloaded Documents

**0.1% data
usage ?**

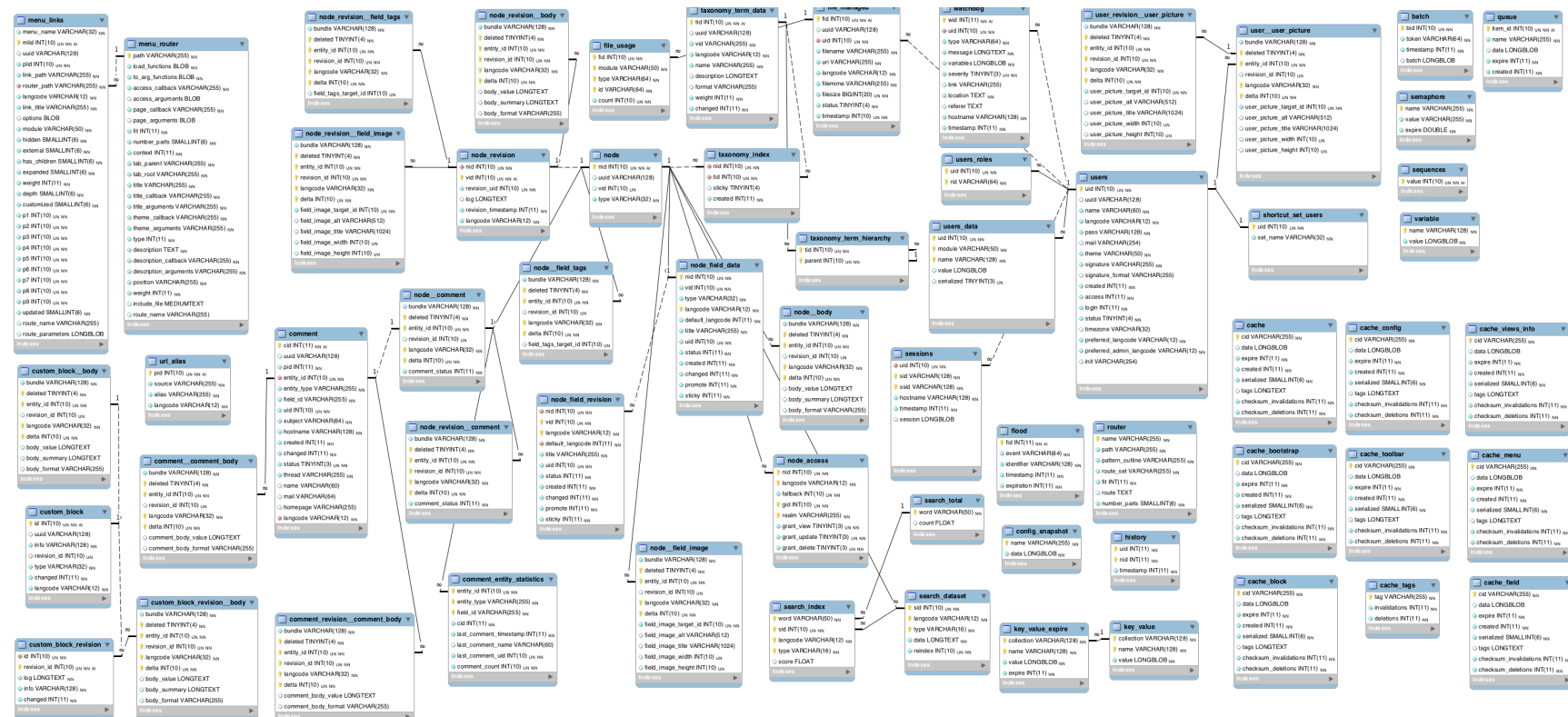
```
...  
address: 'Calle Artistas, Madrid',  
supporter: { clube: 'FC Porto',  
             description: 'Best Club in the WORLD' }  
conferences: ['GOTO', 'MongoDB World' ...],  
git_activity: [{type: 'pr', hook: '3142ji3423j342'}]  
selfies: [0x13423423423423, 0x13423434324234]  
...  
}
```

Highly Nested Documents

```
{
  name: 'Some Dude',
  arguments: [
    {
      properties: [
        {
          fields: [
            topics: {
              a:1,
              ...
            }
          ]
        }
      ]
    }
  ]
}
```

**Please, don't go
further than 5
levels!**

Collection over-Normalization



Is it Easy?

Final Notes

- Think on how you want your data to be used
- Don't be afraid of making mistakes
 - It's normal (to normalize) and to make the first attempts with a relational mindset in place
- Make use of the flexibility of schema do adjust or schema design
- Talk to us if you need help!

