

Marius Wilms & Christoph Labacher

# Discovering Principles for Design System Tools

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Atelier Disko

We are ...

Marius Wilms

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Interaction Designer at Atelier Disko

- What are Design Systems?
- What is DSK?
- Lessons Learned: Principles

What are Design Systems?

Design Systems are  
repositories of organizational  
knowledge on design.

What are Design Systems?

# Styleguide

What are Design Systems?

Styleguide

Component  
Library

What are Design Systems?

Documentation  
of Principles

Culture

~~Styleguide~~  
Tokens

Case Studies

Component  
Library

What is DSK?

DSK is a workbench for  
collaboratively creating and  
documenting Design Systems.

What is DSK?

# Live Demo of DSK

# Lessons Learned: Principles

Principle I

Designed for Process

Many tools help you with  
the outcome, and little  
with the process.

**Outcome**

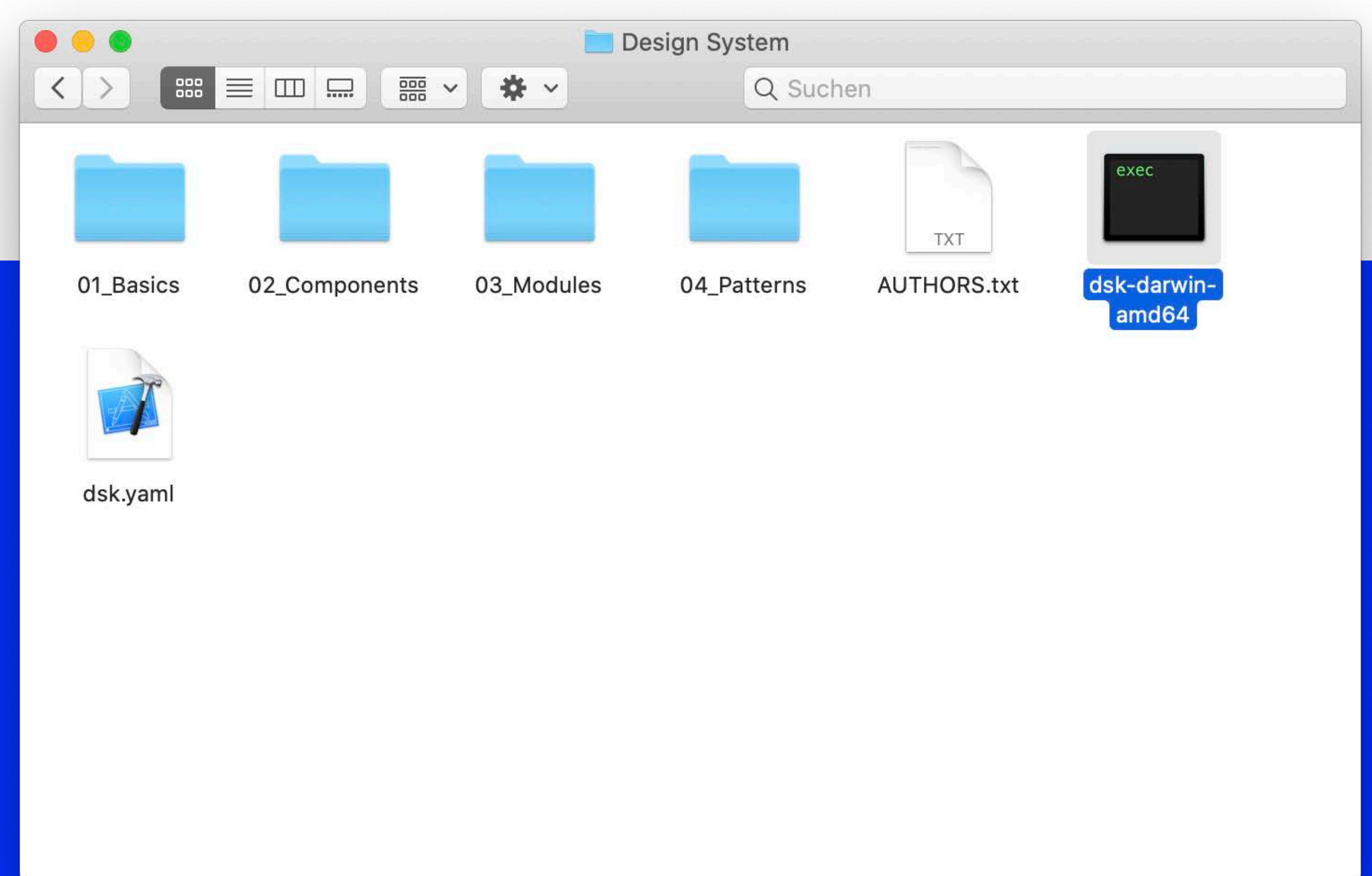
»We want a documentation website for our Design System.«

Process

»We need to build a design system, and we're creating it from scratch!«

Many tools help you with  
the outcome, and little  
with the process.

## Process in DSK

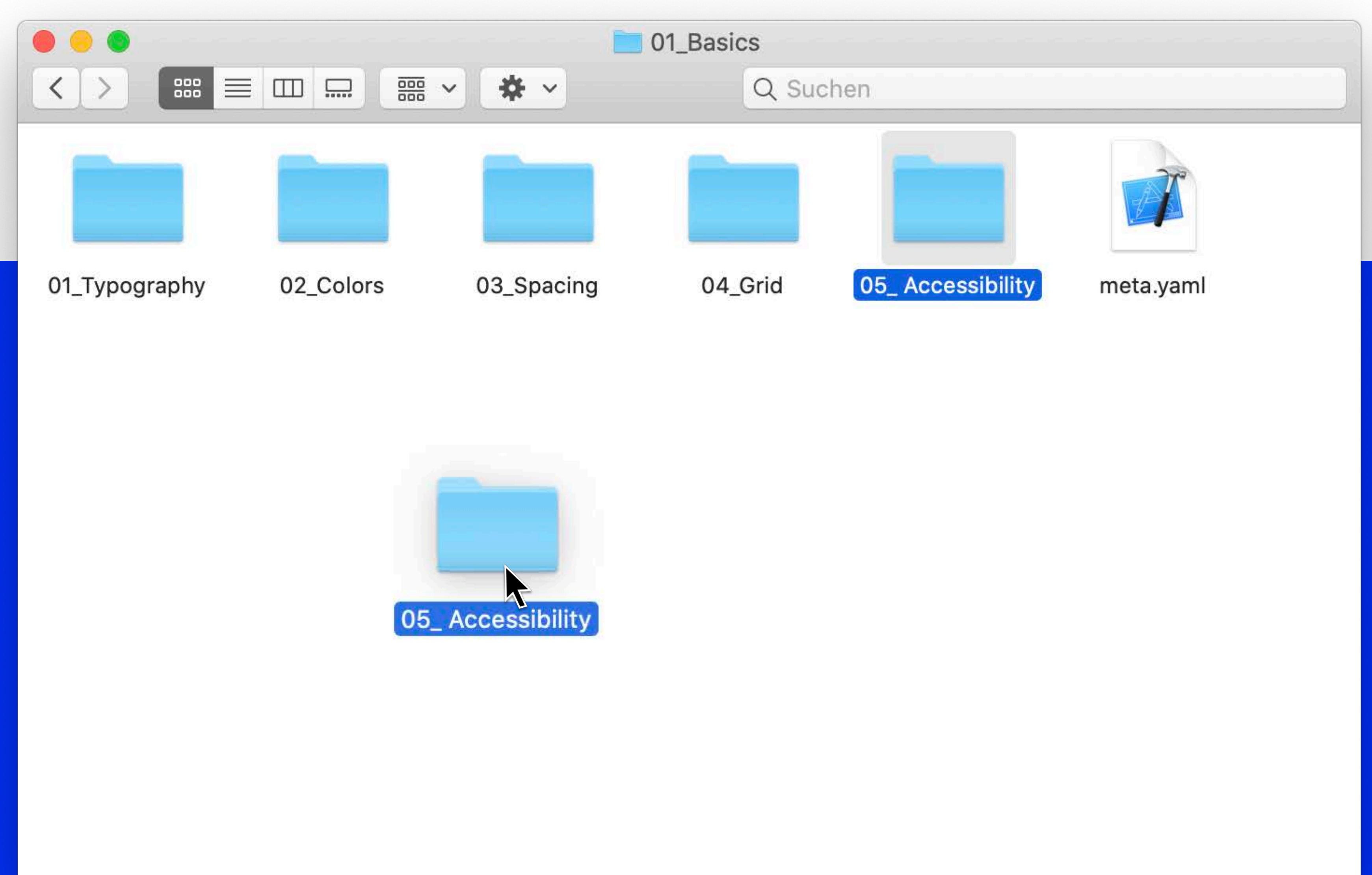


Start Locally

Direct Manipulation

Vanilla Markdown

## Process in DSK



Start Locally

Direct Manipulation

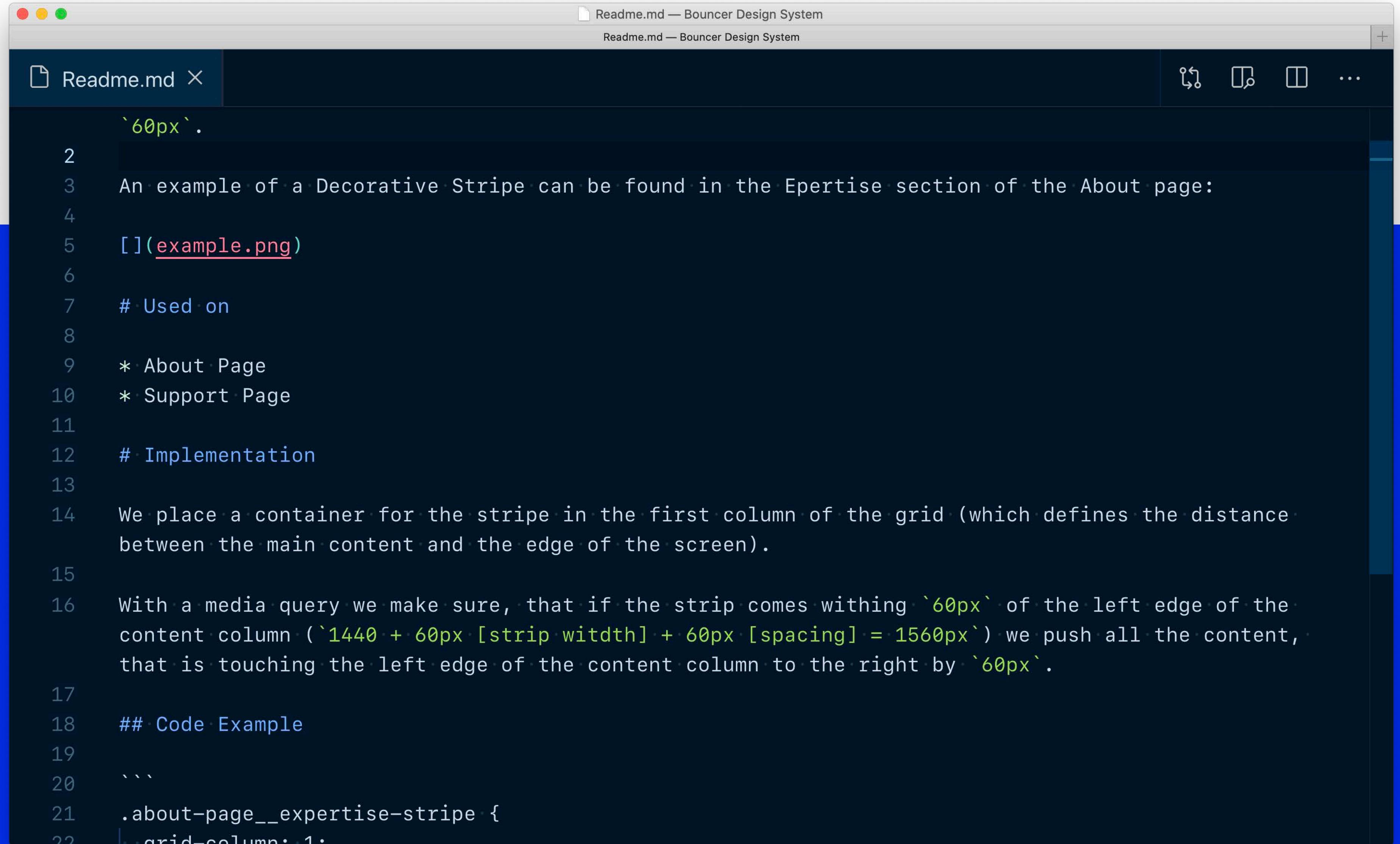
Vanilla Markdown

## Process in DSK

Start Locally

Direct Manipulation

Vanilla Markdown



```
Readme.md — Bouncer Design System
Readme.md — Bouncer Design System

Readme.md ×

`60px`.

2
3 An example of a Decorative Stripe can be found in the Expertise section of the About page:
4
5 [](example.png)
6
7 # Used on
8
9 * About Page
10 * Support Page
11
12 # Implementation
13
14 We place a container for the stripe in the first column of the grid (which defines the distance
between the main content and the edge of the screen).
15
16 With a media query we make sure, that if the strip comes withing `60px` of the left edge of the
content column (`1440 + 60px [strip width] + 60px [spacing] = 1560px`) we push all the content,
that is touching the left edge of the content column to the right by `60px`.
17
18 ## Code Example
19
20 ```
21 .about-page__expertise-stripe {
22   grid-column: 1;
```

DSK is a tool for supporting  
creativity, not a website  
generator.



»For a technology to be effective, [Seymour Papert] said, it should provide easy ways for novices to get started (**low floor**) but also ways for them to work on increasingly sophisticated projects over time (**high ceiling**).«

[Resnick 2016]



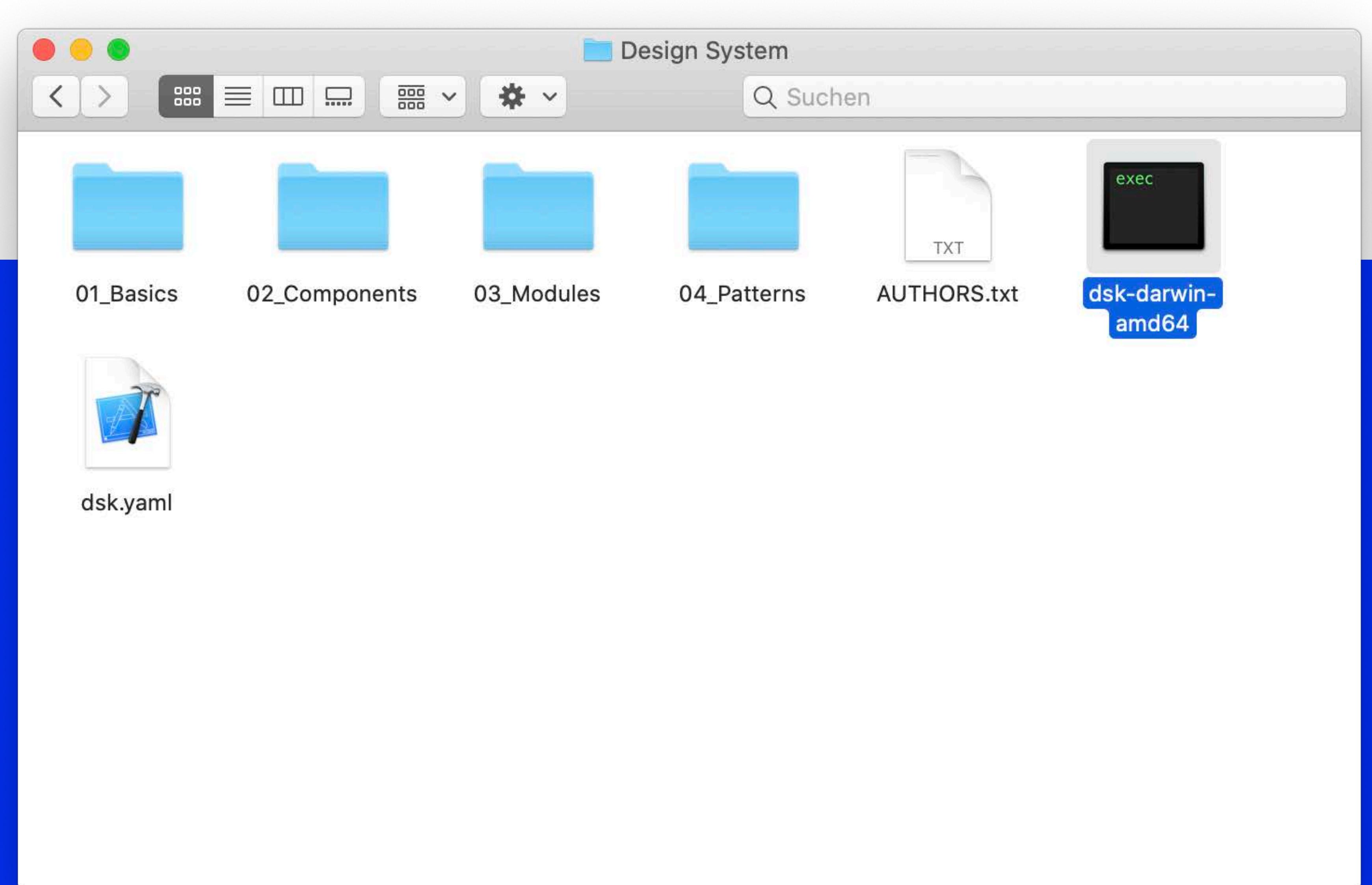
»For a more complete picture, we need to add an extra dimension: **wide walls**. It's not enough to provide a single path from low floor to high ceiling; we need to provide wide walls so that kids can explore multiple pathways from floor to ceiling.«

[Resnick 2016]

## Principle II

low floor — easy to start  
high ceilings — scalable  
wide walls — many ways

**Low Floor**  
in DSK



Start Locally

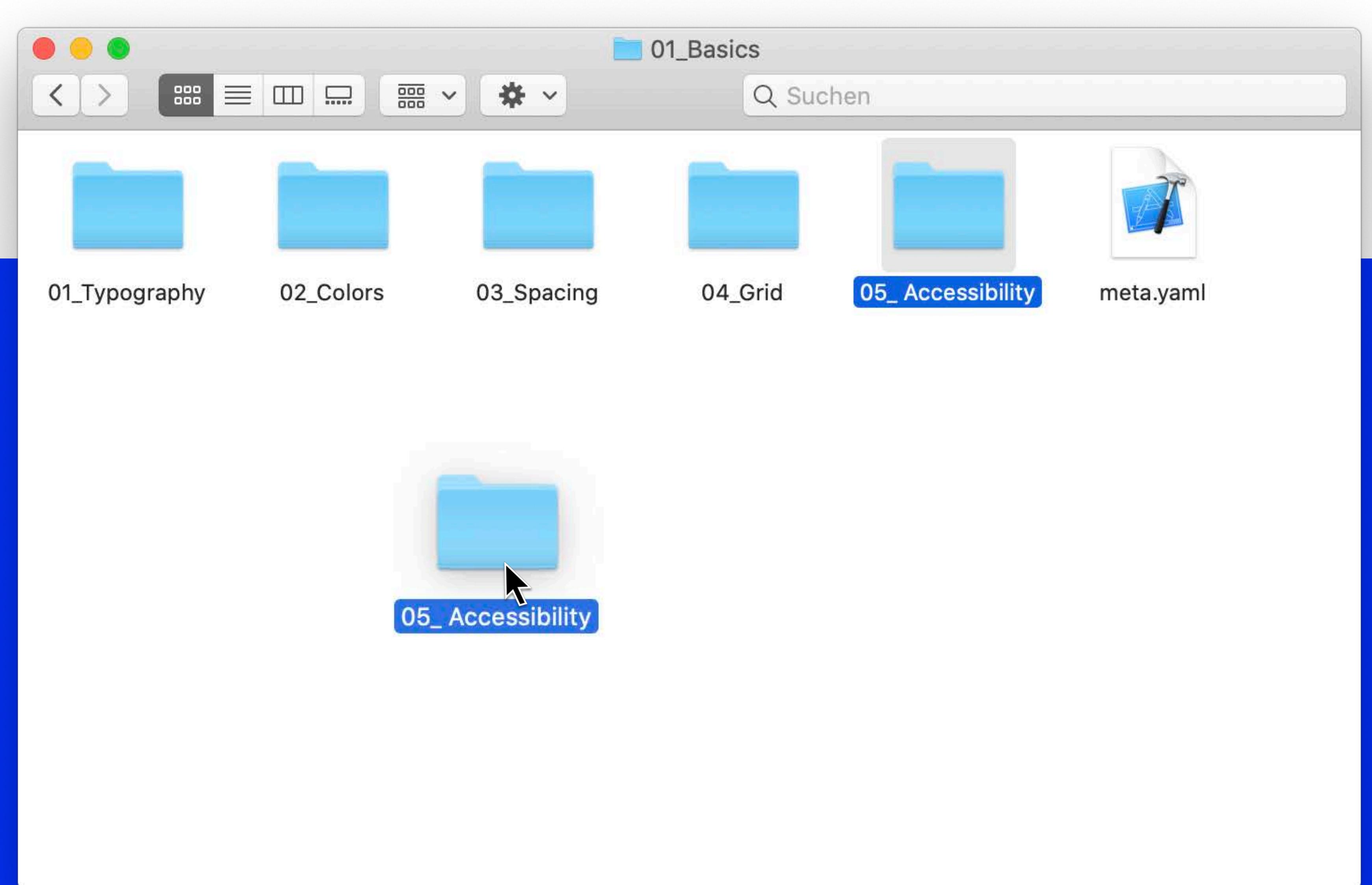
---

Direct Manipulation

---

Vanilla Markdown

**Low Floor**  
in DSK



Start Locally

---

Direct Manipulation

---

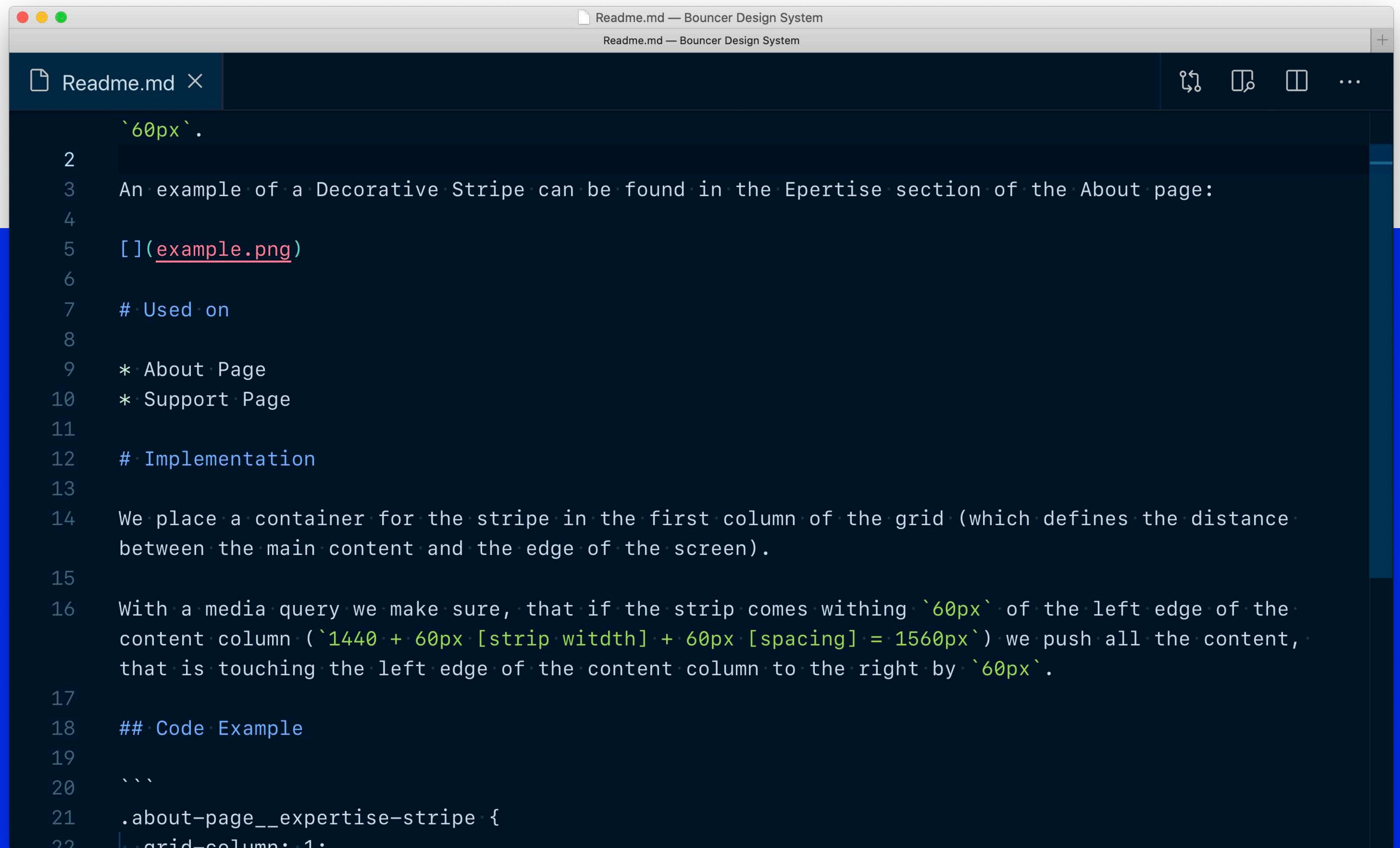
Vanilla Markdown

# Low Floor in DSK

Start Locally

Direct Manipulation

Vanilla Markdown



```
1 `60px`.  
2  
3 An example of a Decorative Stripe can be found in the Expertise section of the About page:  
4  
5 [](example.png)  
6  
7 # Used on  
8  
9 * About Page  
10 * Support Page  
11  
12 # Implementation  
13  
14 We place a container for the stripe in the first column of the grid (which defines the distance  
between the main content and the edge of the screen).  
15  
16 With a media query we make sure, that if the strip comes withing `60px` of the left edge of the  
content column (`1440 + 60px [strip width] + 60px [spacing] = 1560px`) we push all the content,  
that is touching the left edge of the content column to the right by `60px`.  
17  
18 ## Code Example  
19  
20 ``  
21 .about-page__expertise-stripe {  
22   grid-column: 1;
```

## High Ceiling in DSK

```
$ rsync -vru ./my-design-system \  
disko@web0.disko.io:/var/www/dsk
```

Hosted

---

Documentation

Components

---

Search

---

Versions

# High Ceiling in DSK

Hosted

Documentation  
Components

Search

Versions

The screenshot shows a web-based design system interface. On the left, a sidebar menu includes sections for Basics (Typography, Colors, Spacing, Grid, Accessibility), Components (Form Elements, Layouts, Client Backend Components), and a Filter Aspects dropdown. The main content area displays typography examples with names like Alpha, Beta, Gamma, Delta, and Epsilon, each with its font, size, and line height details. Large text samples are shown for each typeface, such as "While Suez sailors wax parquet decks, Afghan..." for Alpha and "Quick zephyrs blow, vexing daft Jim." for Gamma. A search bar at the top right allows users to search the design system.

Atelier Disko / Bouncer Design System

localhost:3000/tree/Basics/Typography

Search Bouncer Design System...

**Basics**

- Typography
- Colors
- Spacing
- Grid
- Accessibility

**Components**

- Form Elements
  - Button
  - Dropdown
  - Fileupload
  - Input
  - Textarea
- Layouts
  - Article
  - Chaos Grid
  - Longread
- Client Backend Components
  - Document
  - Tag
  - Ticket
  - Ticket Stack
- Address

Filter Aspects

Feature Carousel

Version: live

Powered by DSK · Get in Touch

**Alpha**  
'NeuzeitS'  
60px / 85px / 0.37px

**Beta**  
'NeuzeitS'  
34px / 45px / 0.19px

**Gamma**  
'NeuzeitS'  
24px / 38px / 0.19px

**Delta**  
'NeuzeitS'  
16px / 28px / 0.25px

**Epsilon**  
'NeuzeitS' (Bold)  
12px / 24px / 0.69px

THE JOB REQUIRES EXTRA PLUCK AND ZEAL FROM EVERY YOUNG WAGE EARNER.

Readme Tokens

Assets Source

While Suez sailors wax parquet decks, Afghan...

While Suez sailors wax parquet decks, Afghan...

Quick zephyrs blow, vexing daft Jim.

Quick wafting zephyrs vex bold Jim.

# High Ceiling in DSK

Hosted

Documentation  
Components

Search

Versions

localhost:3000/tree/Components/Form-Elements/Button

Atelier Disko / Bouncer Design System

Search Bouncer Design System...

Basics

- Typography
- Colors
- Spacing
- Grid
- Accessibility

Components

- Form Elements
  - Button
  - Dropdown
  - Fileupload
  - Input
  - Textarea
- Layouts
  - Article
  - Chaos Grid
  - Longread
- Client Backend Components
  - Document
  - Tag
  - Ticket
  - Ticket Stack
- Address

Filter Aspects

Feature Carousel

Version: live

Powered by DSK · Get in Touch

Readme

Assets Source

## Guidelines

**DO** Use an active verb as a label

**DON'T** Use a non-descript label

**DON'T** Use any color other than our signature color

← PREVIOUS Form Elements

NEXT → Dropdown

# High Ceiling in DSK

Hosted

Documentation  
Components

Search

Versions

The screenshot shows a web application interface for the Atelier Disko Bouncer Design System. On the left, a dark sidebar contains a navigation menu with sections like Basics, Components, and Patterns, each with sub-options. A modal window is open in the center, displaying a detailed page about typography components. The page includes sections for Hero, Headings, Header, and Content underneath Header, with definitions and URLs for each. The overall design is clean and modern, using a blue and white color scheme.

Atelier Disko / Bouncer Design System

Basics

- Typography
- Colors
- Spacing
- Grid
- Accessibility

Components

- Form Elements
  - Button
  - Dropdown
  - Fileupload
  - Input
  - Textarea
- Layouts
  - Article
  - Chaos Grid
  - Longread
- Client Backend Components
  - Document
  - Tag
  - Ticket
  - Ticket Stack
- Address

Basics /

He

**Hero**

A **Hero** is an image that at the top of a page, below the **Header** and title of the page.  
[/Components/Hero](#)

**Headings**

**Headings** structure pages in a semantic or visual way.  
[/Components/Headings](#)

**Header**

A **Header** displays the global navigation of the site.  
[/Components/Header](#)

**Content underneath Header**

[/Patterns/Content-underneath-Header](#)

'NeuzeitS'  
34px / 45px / 0.19px

While Suez sailors wax parquet decks, Afghani...

Filter Aspects

Feature Carousel

Version: live

Powered by DSK · Get in Touch

# High Ceiling in DSK

Hosted

Documentation  
Components

Search

Versions

- Input
- Textarea
- Layouts
- Article
- Chaos Grid
- Longread
- Client Backend Components
- Document
- Tag
- Ticket
- Ticket Stack
- Address

Banner

Filter Aspects

Feature Carousel

Version: live

Powered by [DSK](#) · [Get in Touch](#)

Readme Tokens

## Desktop

The grid for Desktop is based around 10 columns  
60px . It is centered with a total max-width of 1000px.



# High Ceiling in DSK

Hosted  
Documentation  
Components

Search

Versions

- Input
- Textarea
- Layouts
- Article
- Chaos Grid
- Longread
- Client Backend Components
- Document
- Tag
- Ticket
- Ticket Stack
- Address

Banner

Filter Aspects

Version: version-1

Version: version-2

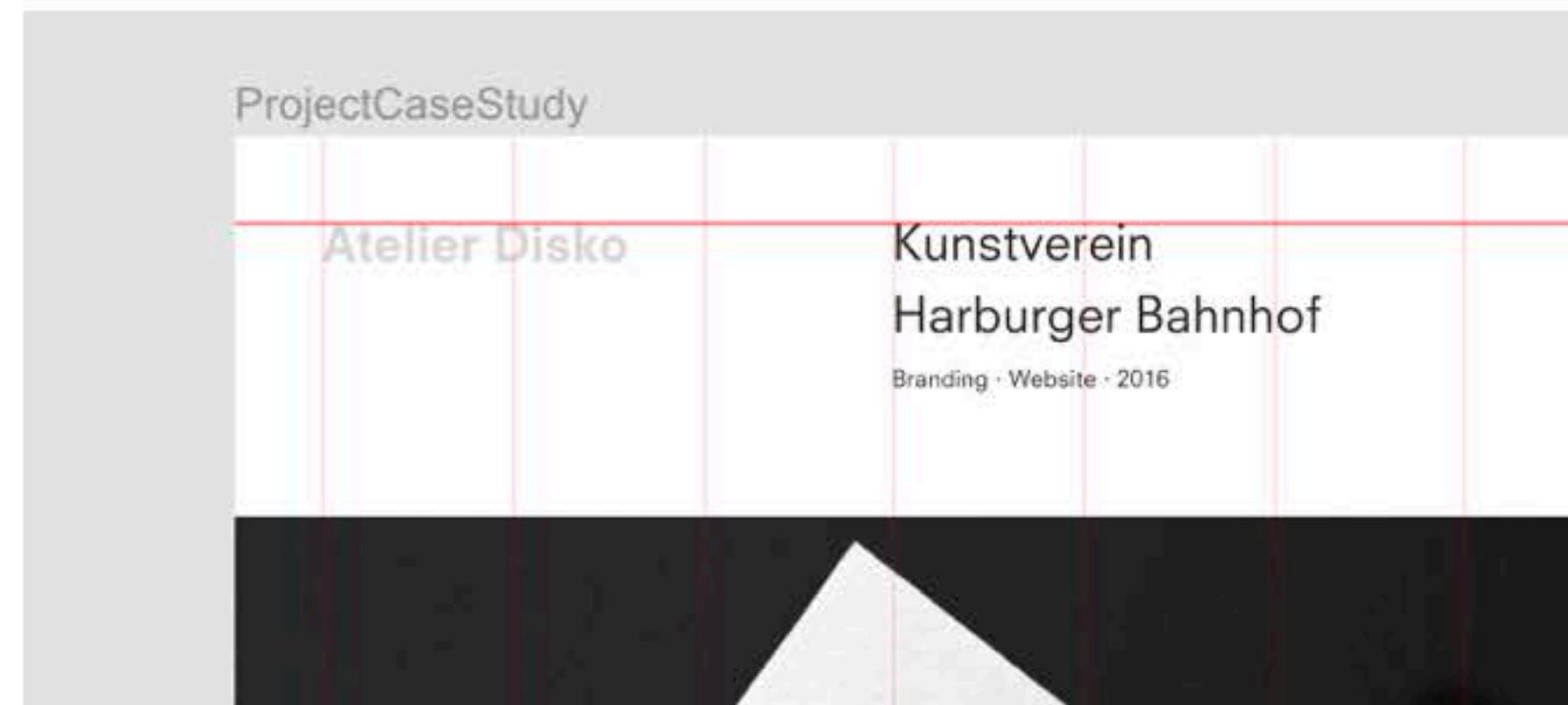
✓ Version: live

Powered by [DSK](#) · [Get in Touch](#)

[Readme](#) [Tokens](#)

## Desktop

The grid for Desktop is based around 10 columns 60px . It is centered with a total max-width of 1000px.





»When evaluating the use of creativity support tools, we consider diversity of outcomes as an indicator of success.«

[Resnick et al. 2005]

# Wide Walls in DSK

API

Custom Frontends

Custom  
Documentation  
Components

Atelier Disko / Bouncer Design System

Search Bouncer Design System...

Basics

- Typography
- Colors
- Spacing
- Grid
- Accessibility

Components

- Form Elements
  - Button
  - Dropdown
  - Fileupload
  - Input
  - Textarea
- Layouts
  - Article
  - Chaos Grid
  - Longread
- Client Backend Components
  - Document
  - Tag
  - Ticket
  - Ticket Stack
- Address

Filter Aspects

Feature Carousel

Version: live

Powered by DSK · Get in Touch

localhost:3000/tree/Basics/Grid?t=source

API Response for /api/v2/tree/Basics/Grid

```
{
  "hash": "38353330616433343336303337643764393338626635626661383030363237373536383337666132",
  "url": "Basics/Grid",
  "parent": {
    "url": "Basics",
    "title": "Basics"
  },
  "children": [],
  "title": "Grid",
  "description": "The Grid organizes the horizontal space of every page.",
  "authors": [],
  "modified": 1571734208,
  "version": "",
  "tags": [],
  "custom": null,
  "docs": [
    {
      "title": "Readme",
      "html": "<h2>Desktop</h2>\n\n

The grid for Desktop is based around 10 columns with no gutter



## Desktop\n\nThe grid for Desktop is based around `10` columns with no gutter and a side-margin of



“components”: []


    },
    {
      "title": "Tokens",
      "html": "<p><Banner title=\"Usage\" type=\"important\">Use these tokens to quickly access the defined style


“raw”: <Banner title=\"Usage\" type=\"important\">Use these tokens to quickly access the defined style in



“components”: [

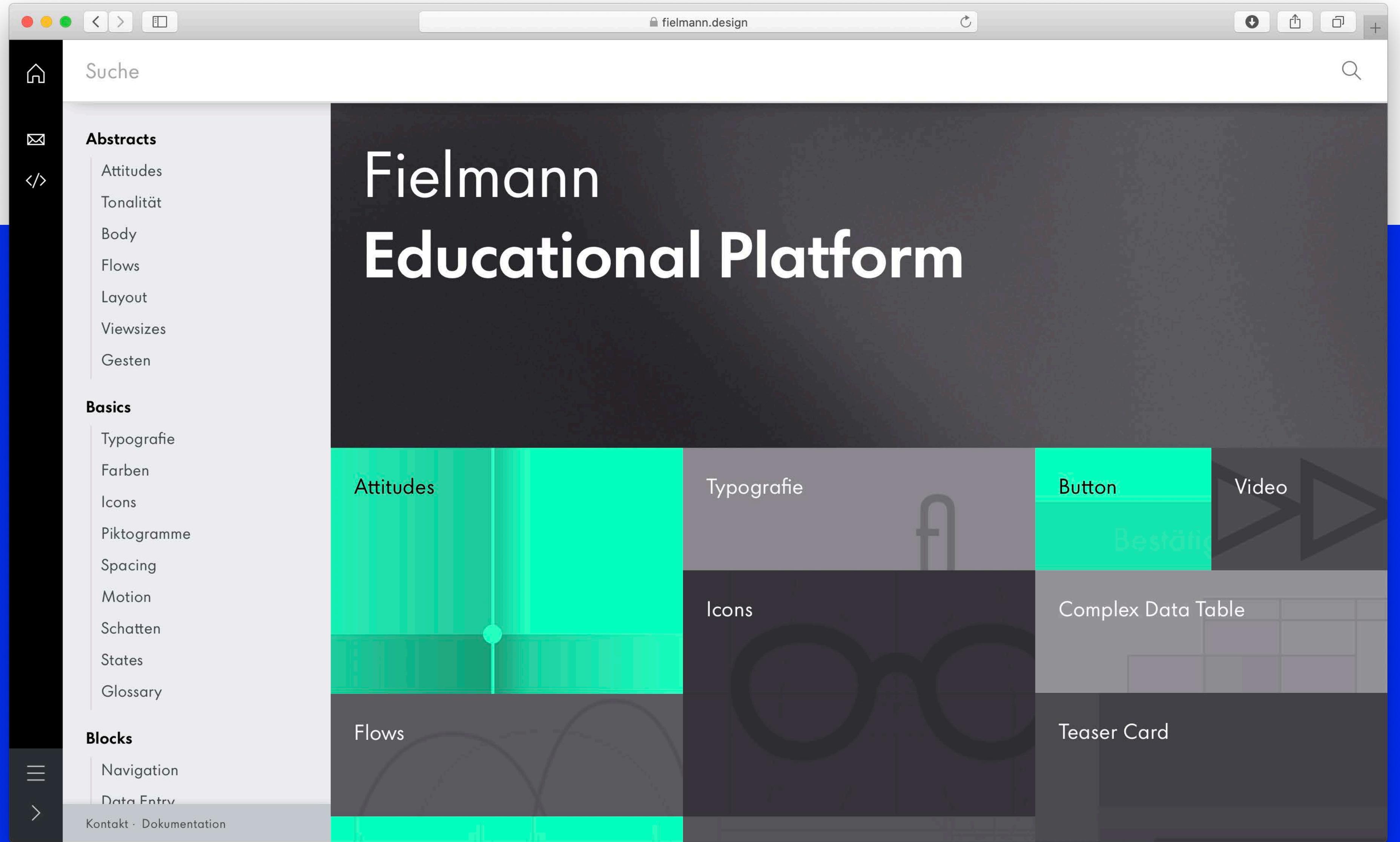

      {
        "raw": "<Banner title=\"Usage\" type=\"important\">Use these tokens to quickly access the defined s
        "position": 0
      }
    }
  ]
}
```

# Wide Walls in DSK

API

Custom Frontends

Custom  
Documentation  
Components



# Wide Walls in DSK

API

Custom Frontends

Custom  
Documentation  
Components

Suche

Übersicht Eigenschaften Icons gestalten

Suchen

Cards List

- ▼ ArrowDown
- ◀ ArrowLeft
- ▶ ArrowRight
- ^K ArrowUp
- 💬 Beratung
- ▣ Boards
- 📦 Box
- ∞ Brille
- BrilleSonne
- (passport) Brillenpass
- ☰ Burger

Downloads

## Principle II

low floor — easy to start  
high ceilings — scalable  
wide walls — many ways

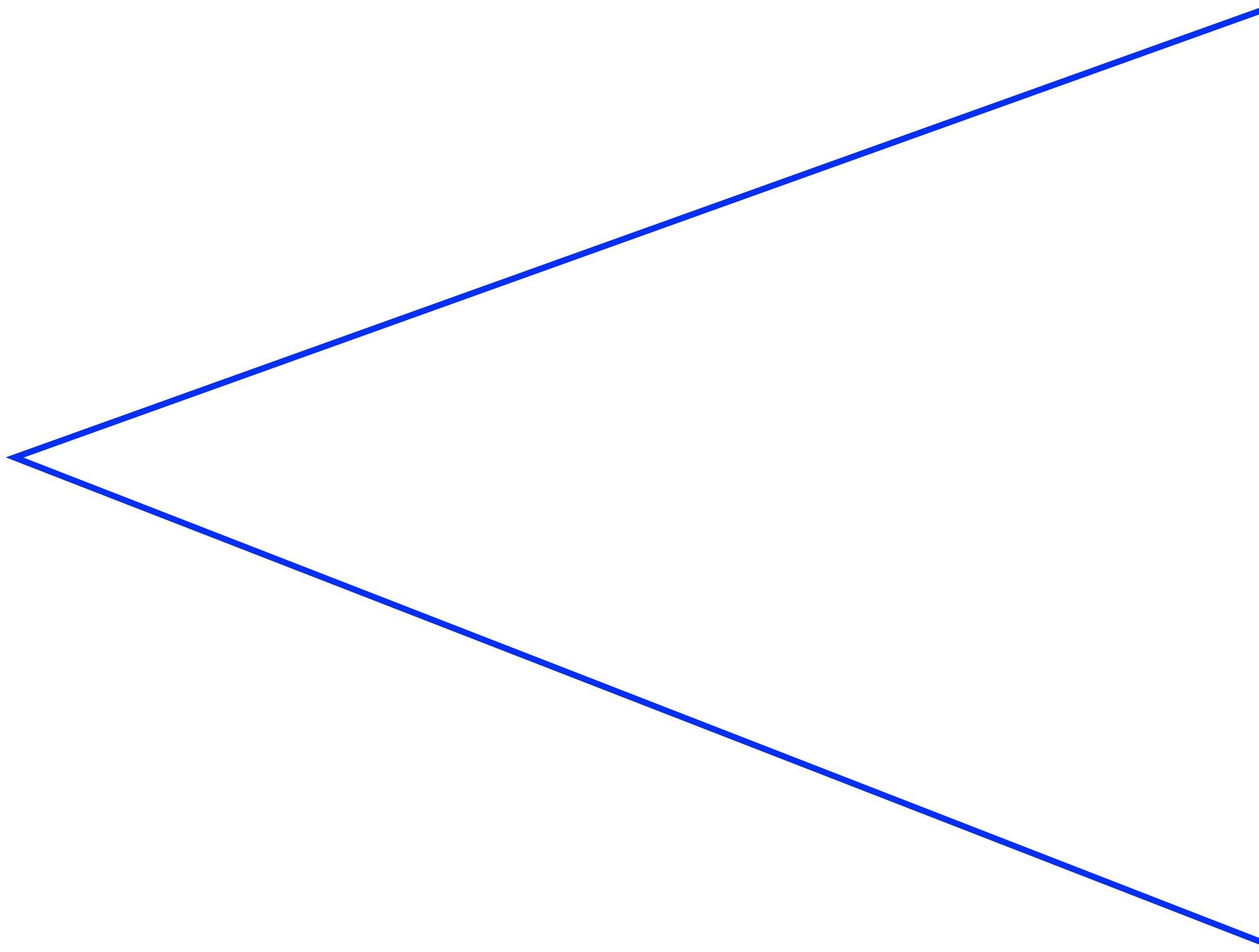
Principle III

Designed for Uncertainty

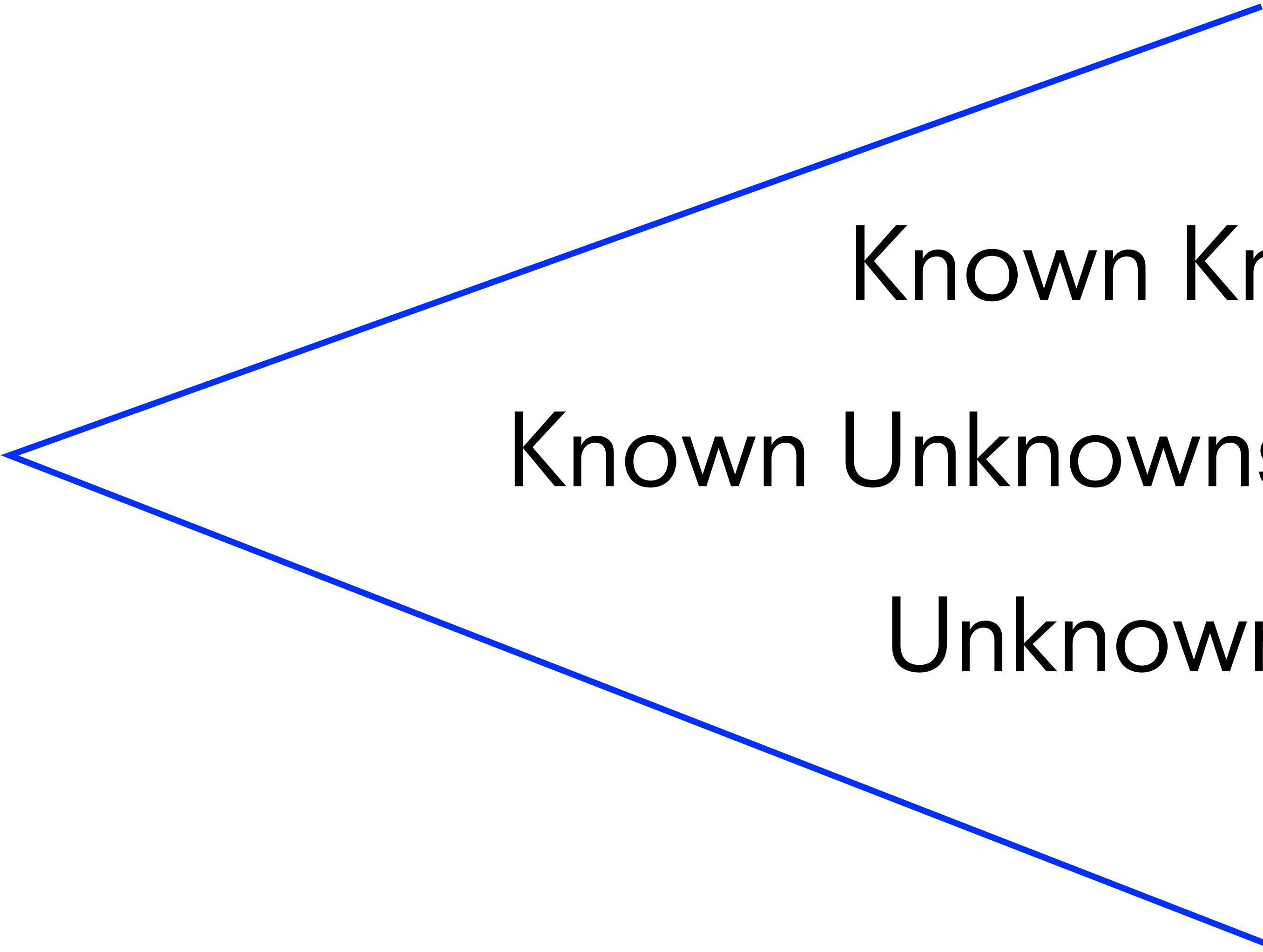
Principle III

Designed for Uncertainty

### Principle III — Designed for [Uncertainty](#)



Principle III — Designed for [Uncertainty](#)



Known Knowns

Known Unknowns

Unknown Unknowns

Principle III — Designed for [Uncertainty](#)

**Designed for Uncertainty**

Principle III — Designed for [Uncertainty](#)

# Compass over Maps

Principle III — Designed for [Uncertainty](#)

- Develop new skills
- Reflect on past successes
- Seek support from ones you trust
- Control what you can
- Ask for help

Uncertainties in product development should be anticipated.

**Sustain uncertainties for  
a while, resist immediate  
clarification.**

Principle III — Designed for [Uncertainty](#)

Have a phase of  
divergence at all.

DSK is built for content  
that is uncertain.

Principle III — Designed for [Uncertainty](#)

As users of DSK we needed a place...

... to »shape« the Design System

As users of DSK we needed a place...

... for fragments

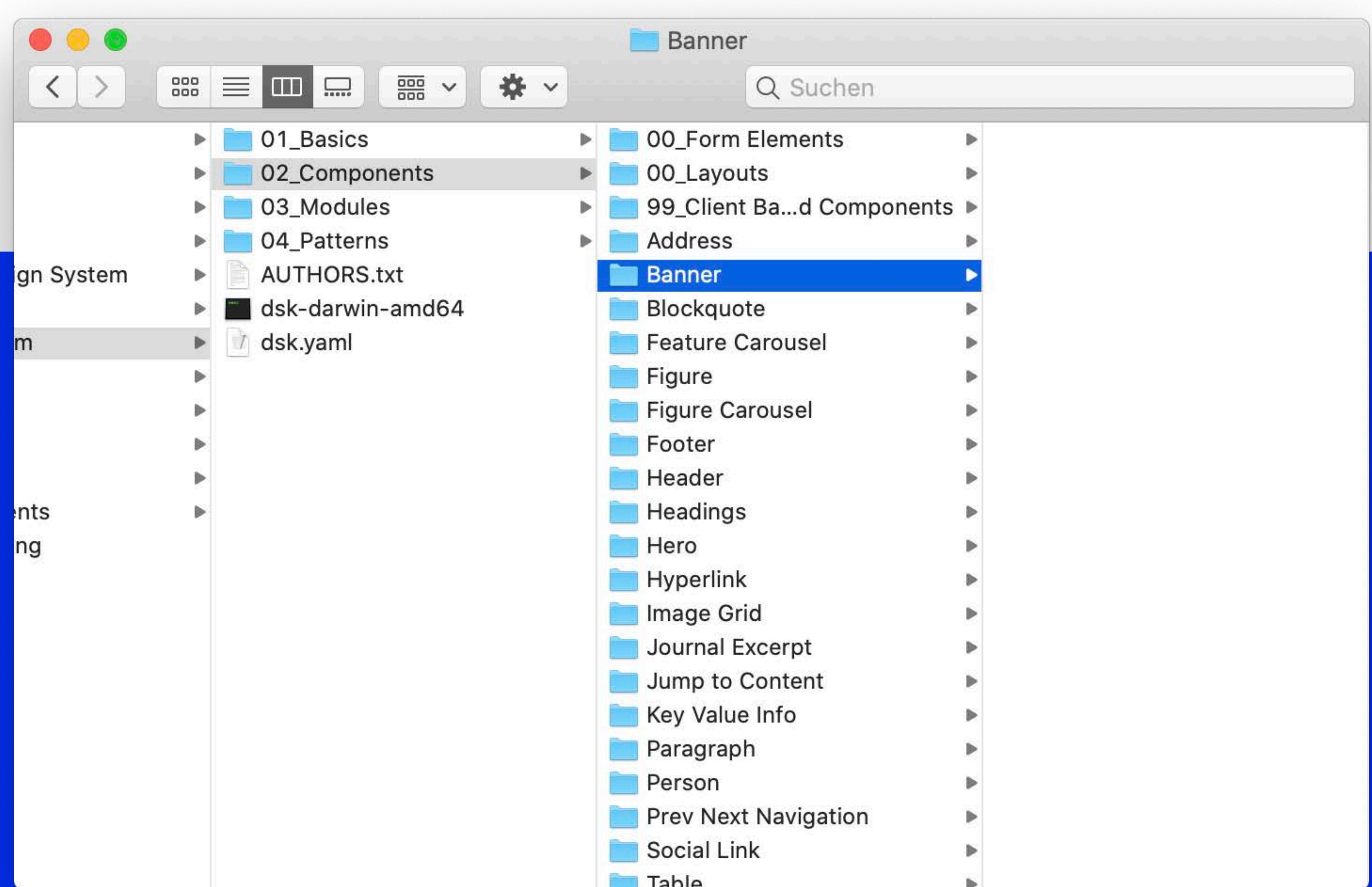
... that allows for chaos

... that allows for structure

... with flexibility to adapt

... to »shape« the Design System

# Uncertainty in DSK

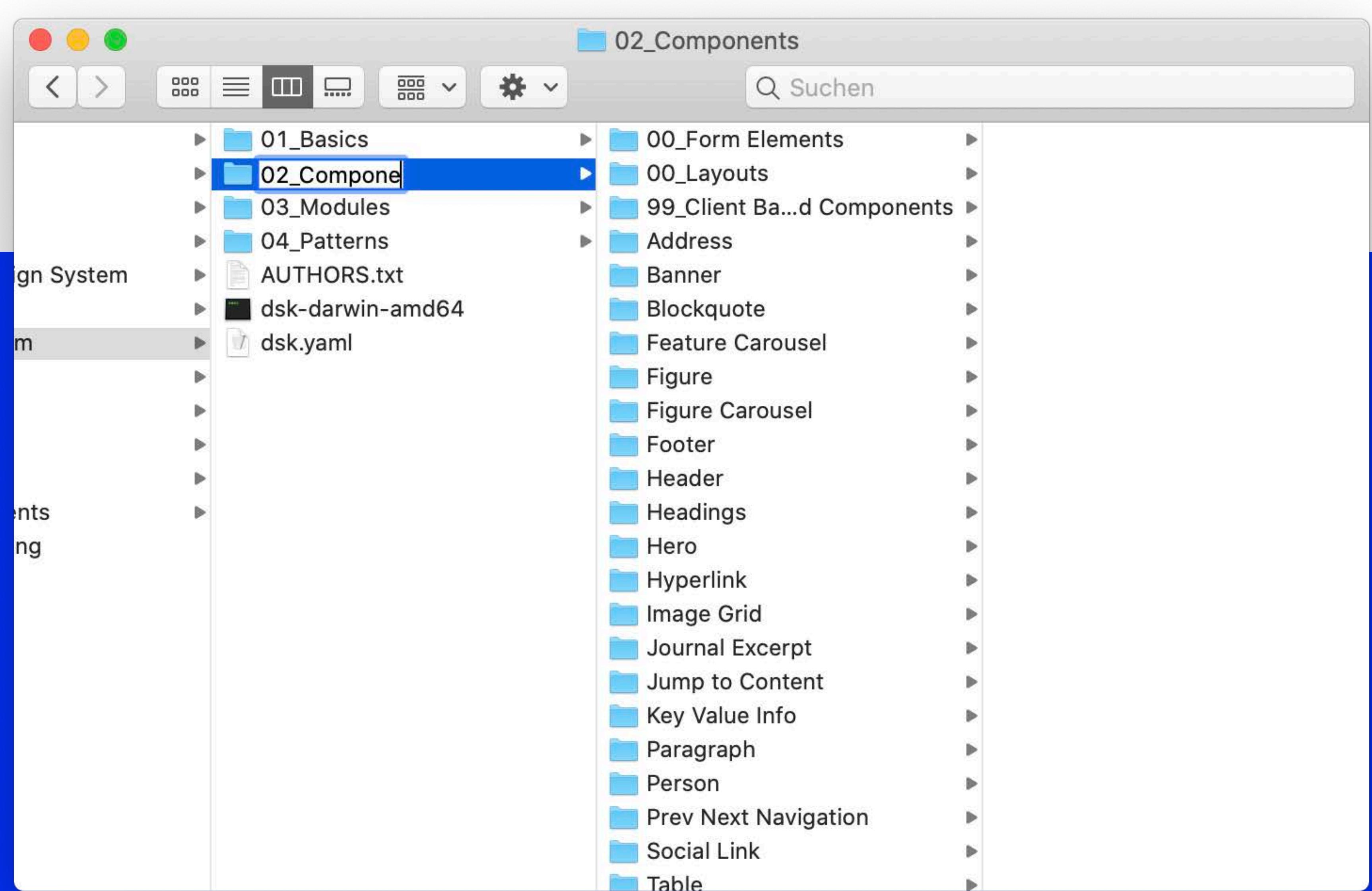


Stubs & Placeholders

Change Your Mind

Copies Are Cheap

# Uncertainty in DSK

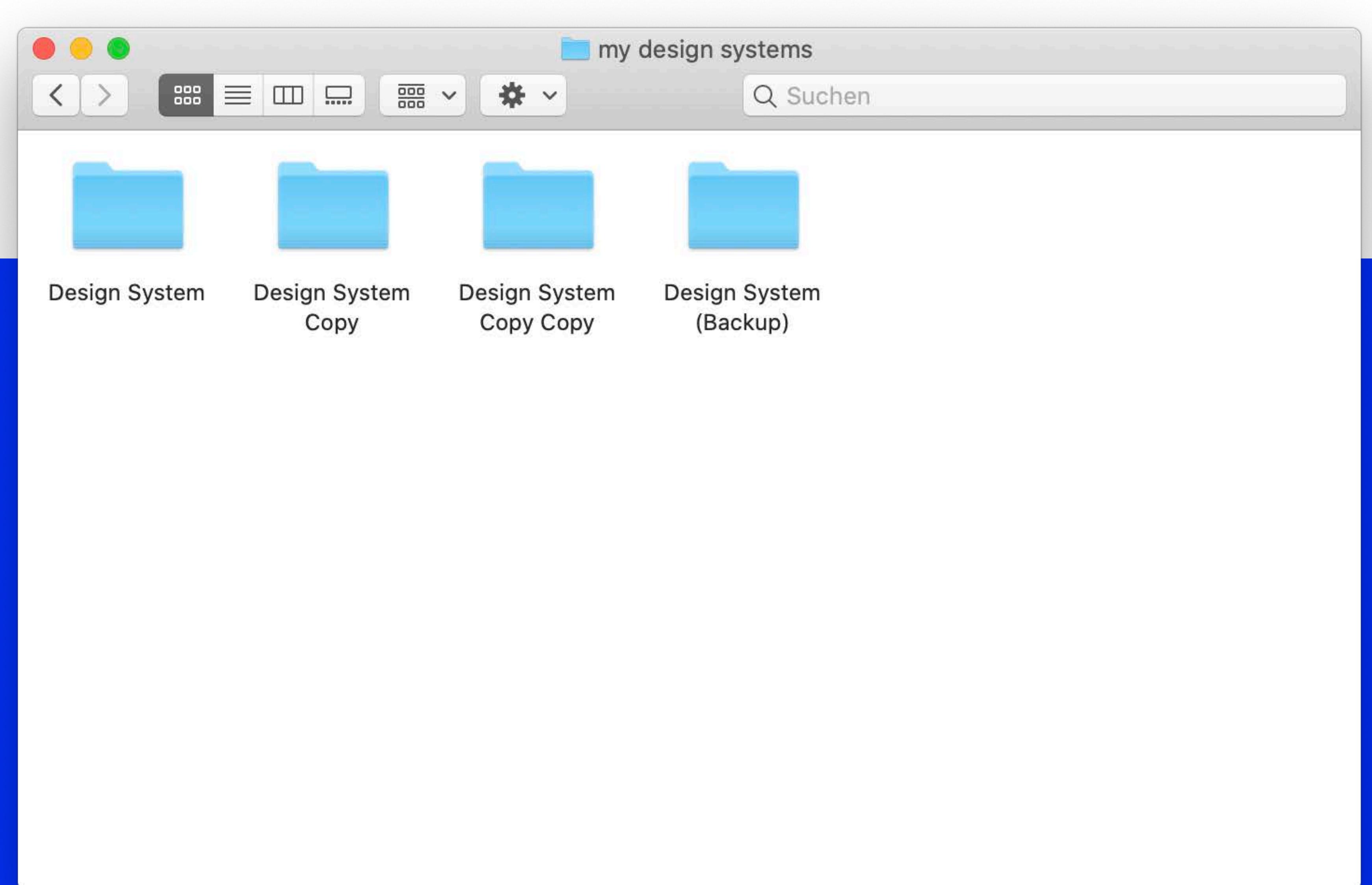


Stubs & Placeholders

Change Your Mind

Copies Are Cheap

# Uncertainty in DSK



Stubs & Placeholders

Change Your Mind

Copies Are Cheap

Principle IV

# Resourcefulness

Services are well practiced,  
but long-term product building  
is not fully understood.

No extra budget, therefore  
a by-product on a running  
project.

Principle IV — Resourcefulness

DIY?

NIH?

Principle IV — Resourcefulness

We are no geniuses and are  
not infinitely capable.

Principle IV

# Resourcefulness

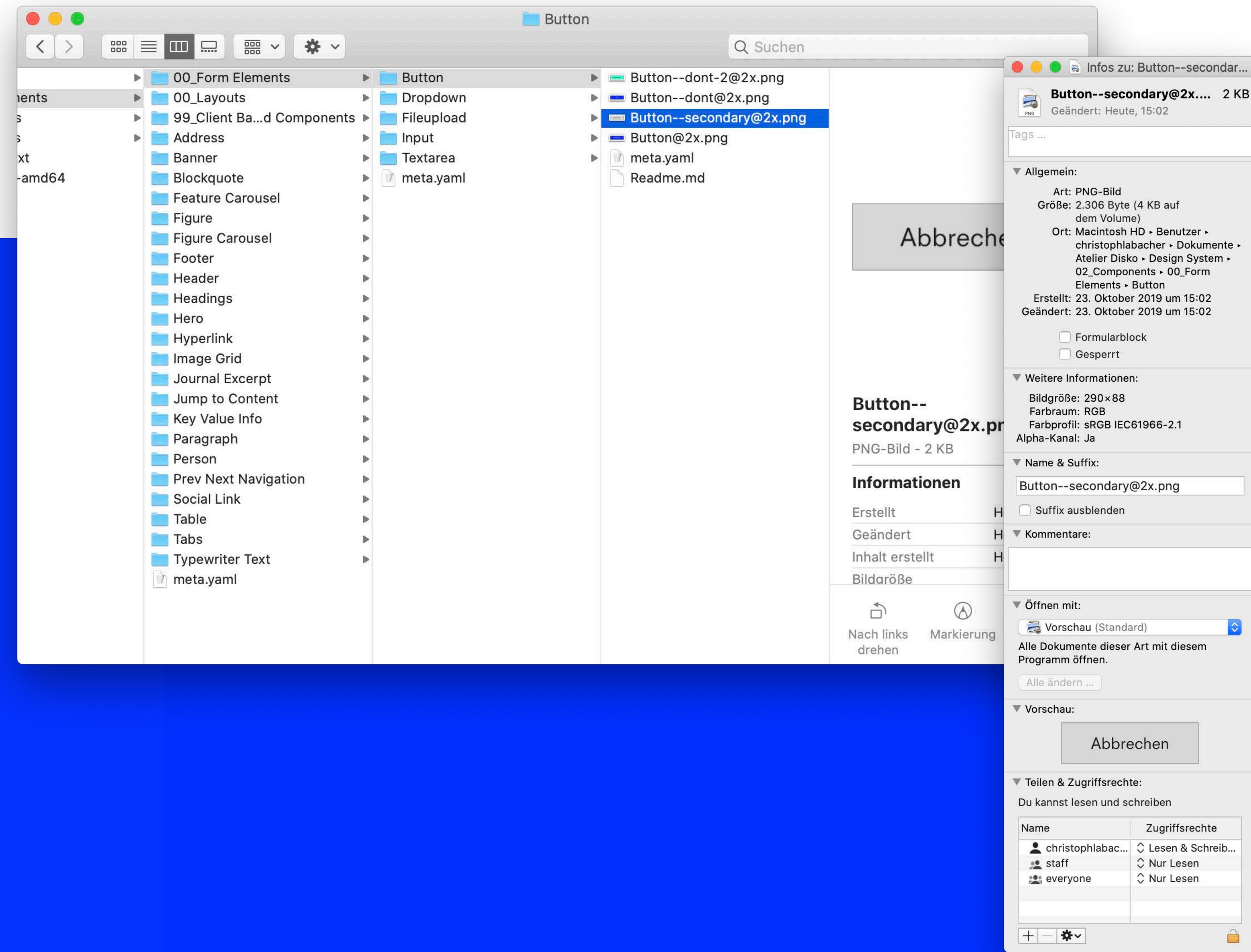
Prioritized features by our capabilities.

Worked with existing  
components and knowledge.

We didn't forget about our  
emotional resources.

Practiced »release early —  
release often« paradigm.

# Resourcefulness in DSK



Filesystem

Architecture

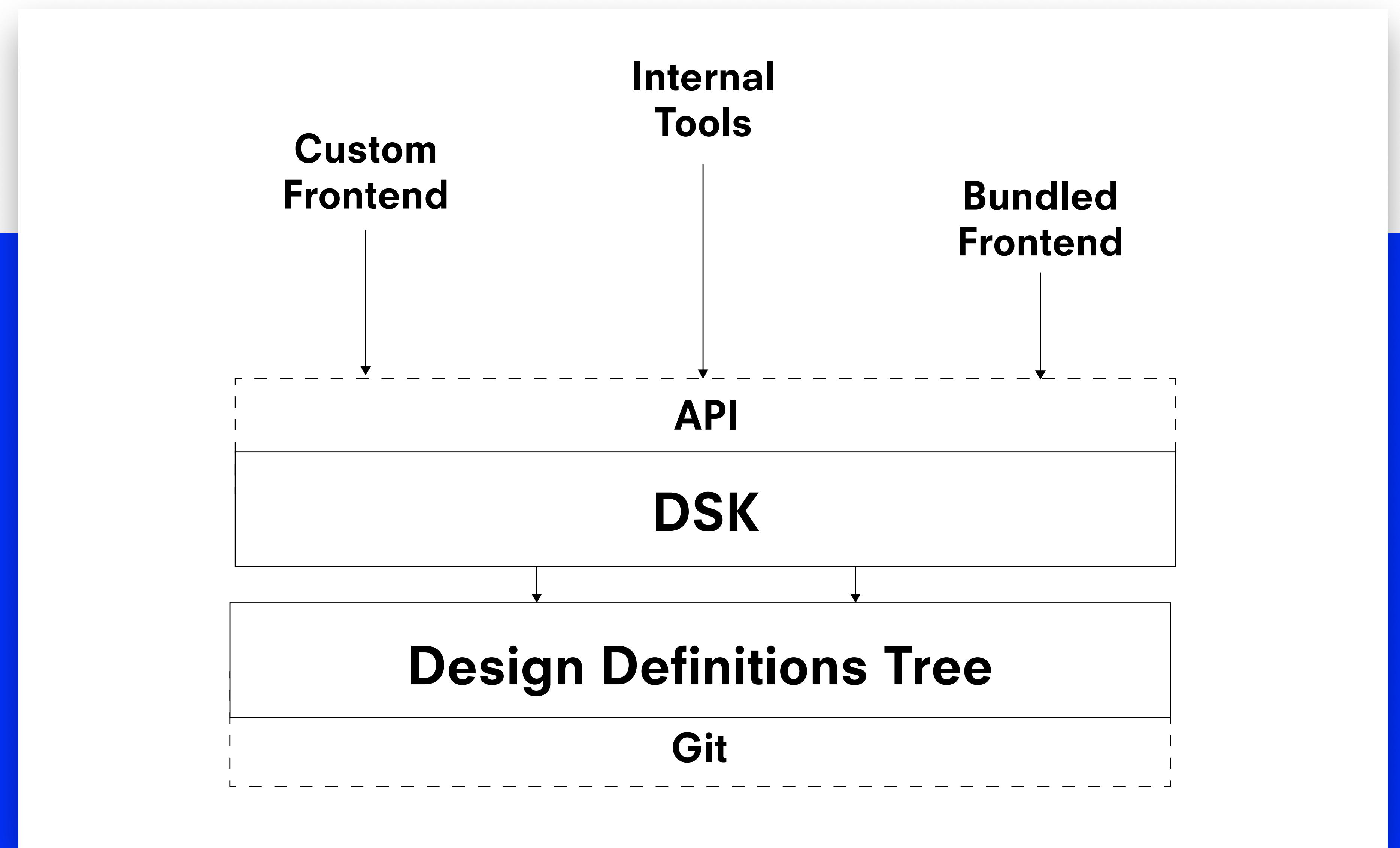
Existing Formats

## Resourcefulness in DSK

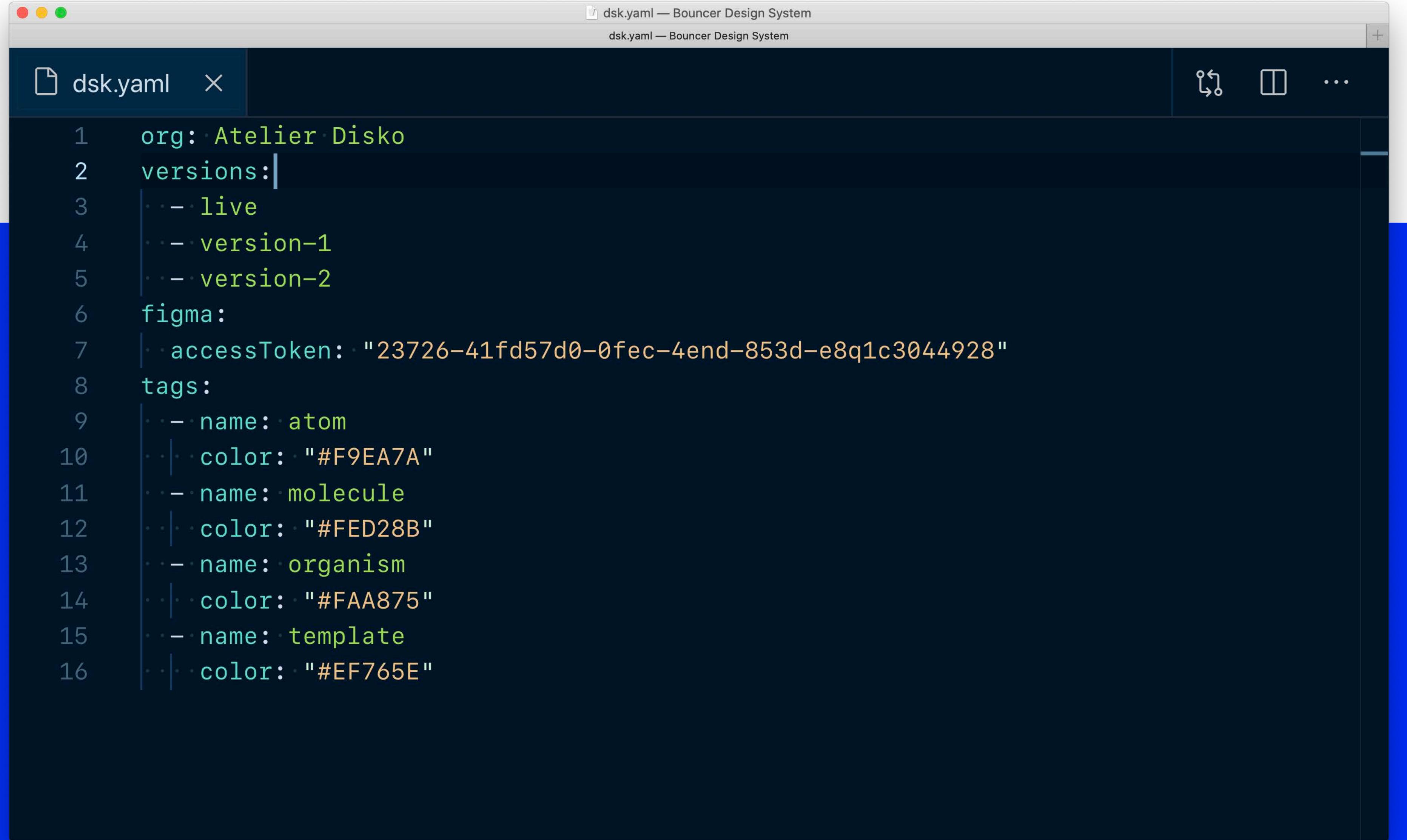
Filesystem

Architecture

Existing Formats



# Resourcefulness in DSK



```
1 org: Atelier Disko
2 versions:
3   - live
4   - version-1
5   - version-2
6 figma:
7   accessToken: "23726-41fd57d0-0fec-4end-853d-e8q1c3044928"
8 tags:
9   - name: atom
10    color: "#F9EA7A"
11   - name: molecule
12    color: "#FED28B"
13   - name: organism
14    color: "#FAA875"
15   - name: template
16    color: "#EF765E"
```

Filesystem

Architecture

Existing Formats

Principle V

# Being Principled

Principles guide you and help  
develop a **coherent product**.

Some principles are **worth**  
**sticking to** through the whole  
lifetime of a product.

Principle V — Being **Principled**

Sometimes it's time to let go.

let go — zero configuration  
sticked to — low floor  
questioning — format agnostic

You don't need a principle to  
start: **discover** them.

# Thank You!

rundsk.com

[github.com/atelierdisko/dsk](https://github.com/atelierdisko/dsk)

# atelierdisko.de

## Data Entry

- Data Entry Components
    - Counter
    - Counter
    - Datepicker
    - Datepicker
    - MultiSelect
    - MultiSelect
    - SingleSelect
    - SingleSelect
    - Enumeration
    - Enumeration
    - RadioButton
    - RadioButton
  - TextField
    - TextField
    - Email
    - Email
    - Number
    - Number
    - Password
    - Password

## Displaying Data

- Badge
  - Cards
  - Carousel
  - ExpandableSection
  - Hyperlink
  - List

## References

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- **Photography of Mitchell Resnick:** [https://en.wikipedia.org/wiki/Mitchel\\_Resnick#/media/File:Mitchel\\_Resnick.jpg](https://en.wikipedia.org/wiki/Mitchel_Resnick#/media/File:Mitchel_Resnick.jpg)
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- **Tips for Dealing With the Stress of Uncertainty:** American Psychological Association, 2017, <https://www.apa.org/helpcenter/stress-uncertainty>