DESIGN TOKENS

IN INDUSTRIELLEN HMIs

JOHANNES ZIEBANDT / HMI PROJECT / 23.10.2024

INHALT

1

WAS SIND DESIGN-TOKENS?

WAS SIND DESIGN TOKENS?

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WAS SIND DESIGN TOKENS?

Unterschiede

- Farben und Größen
- Styleguide

Gemeinsamkeiten

- Inhalt
- Usability Prinzipien

WAS SIND DESIGN TOKENS?

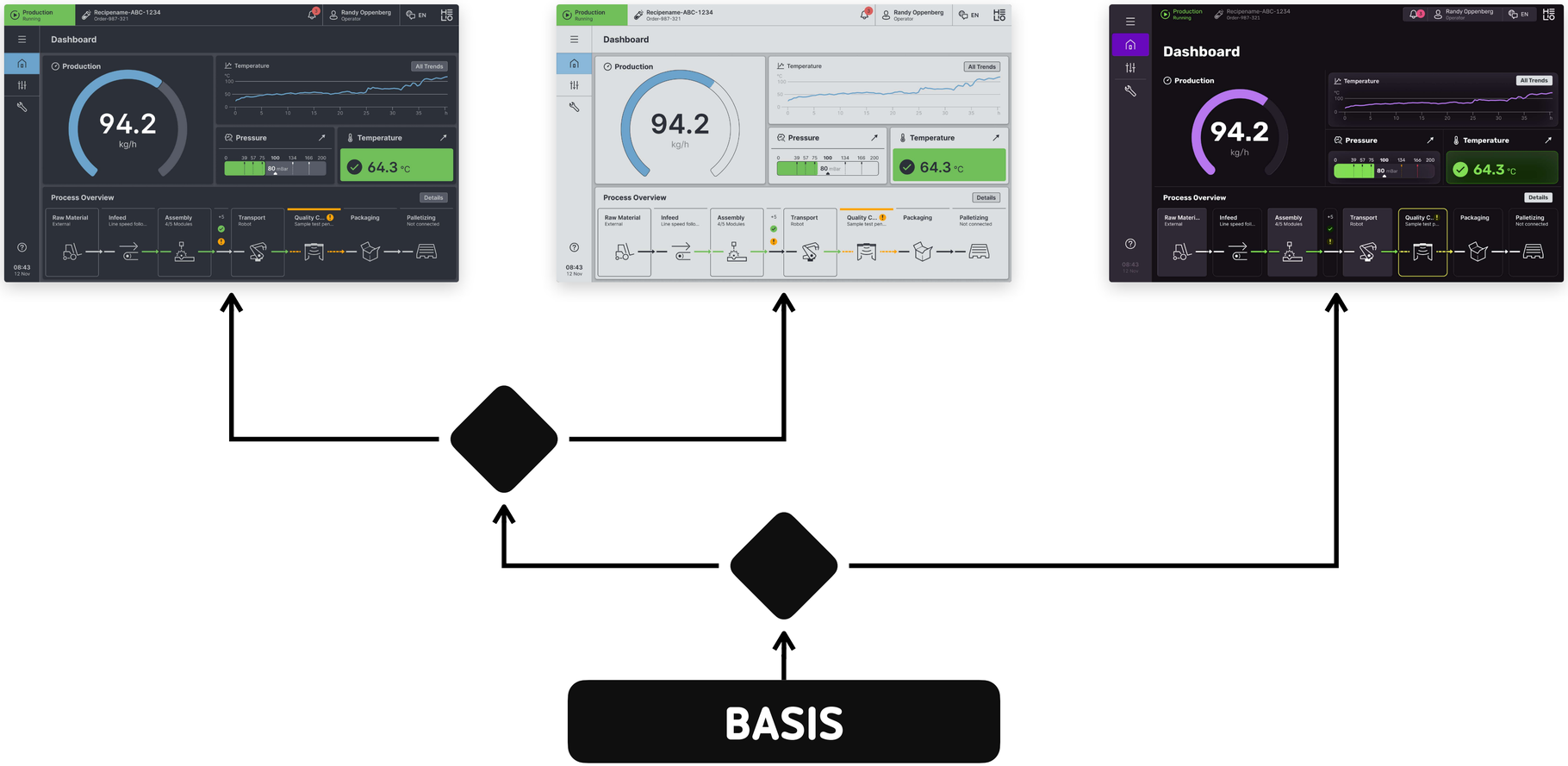
Unterschiede

- Designentscheidungen

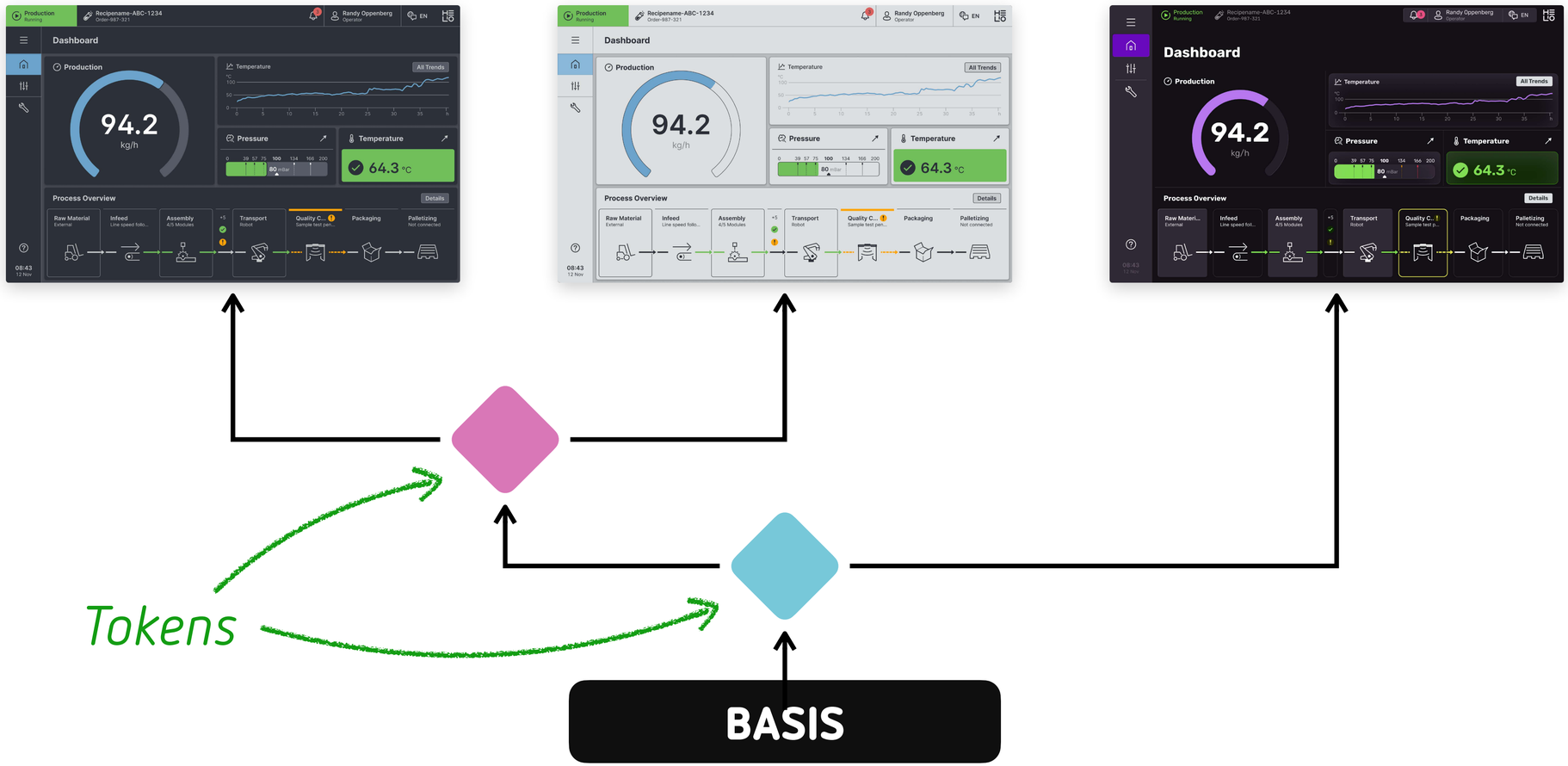
Gemeinsamkeiten

- Inhaltliche Basis

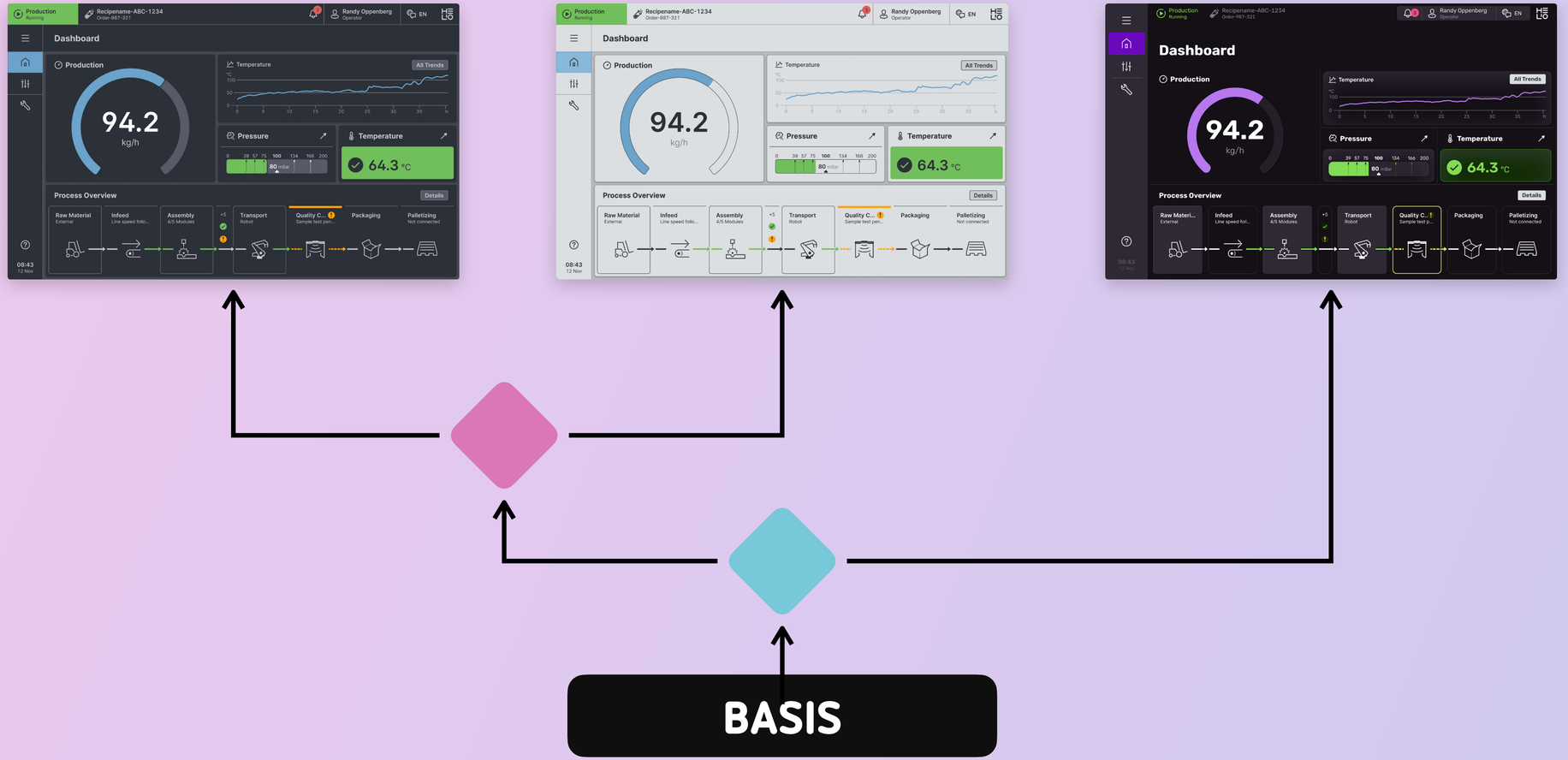
WAS SIND DESIGN TOKENS?



WAS SIND DESIGN TOKENS?



Design-System



BASIS

1.1

DESIGNSYSTEME

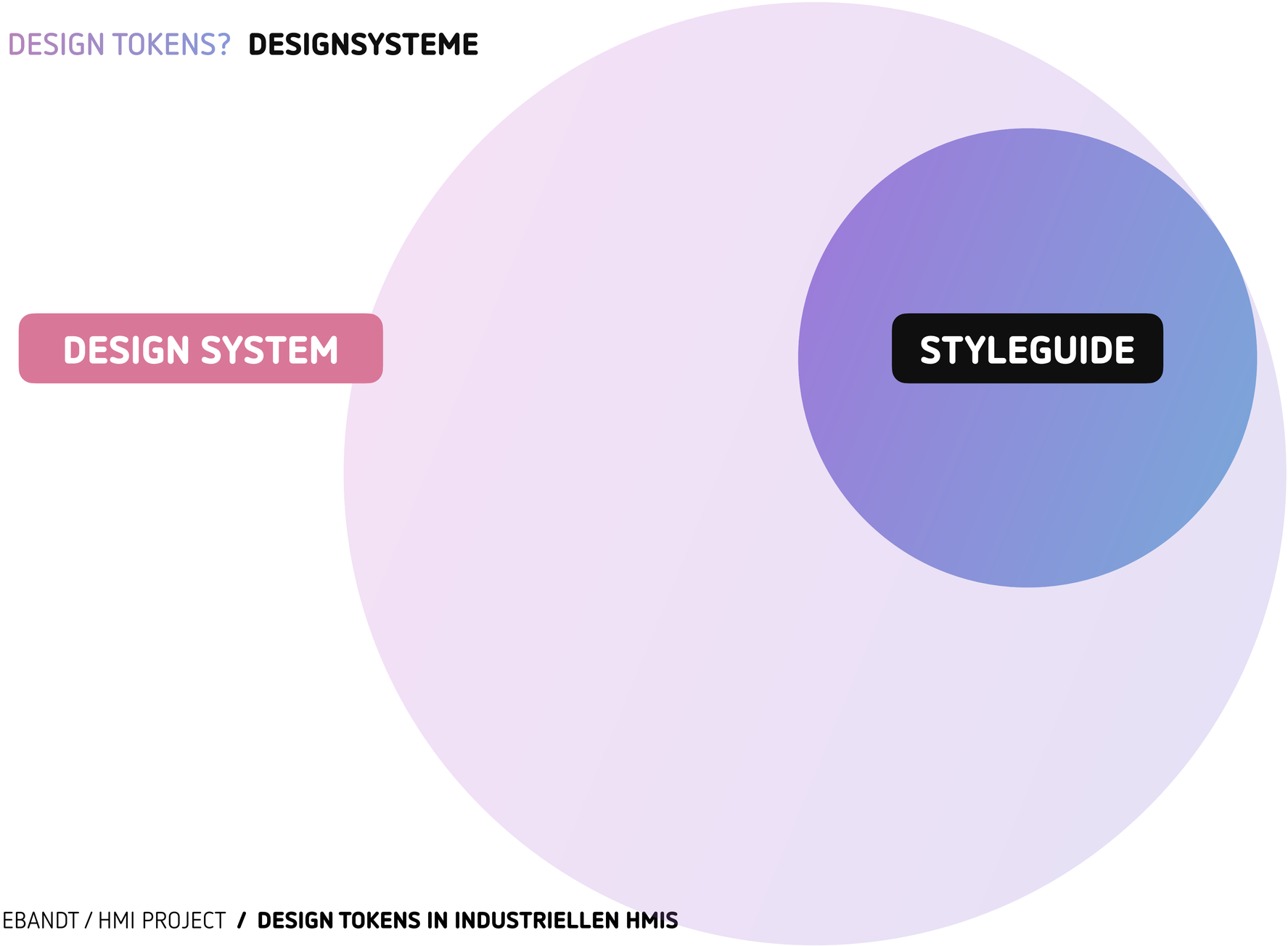
Design System vs Styleguide

Design System

- Austauschbasis zwischen Design und Entwicklung
- Toolkit
- Infrastruktur für die Produktentwicklung
- Enthält technische Implementierungsdetails

Styleguide

- Von Designern für Designer
- Design-Regelwerk
- Medien-unabhängig bzw. übergreifend (Print bis Interfaces)
- Fokus auf Marken- bzw. Design-Konsistenz
- Teil eines Designsystem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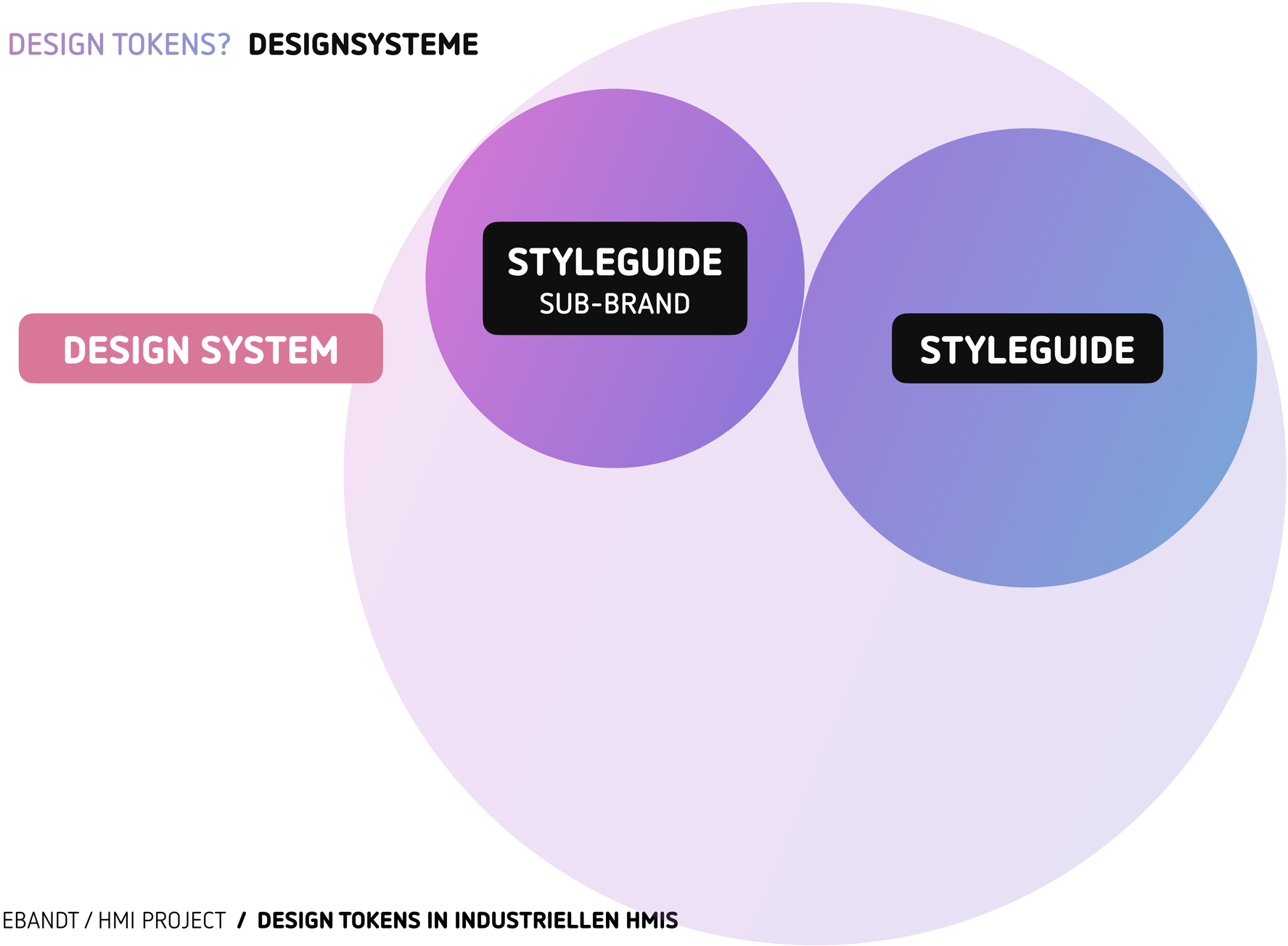
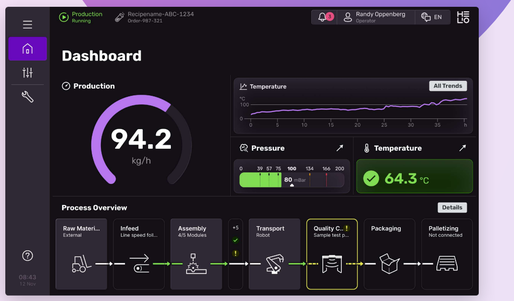
STYLEGUIDE


DESIGN SYSTEM
STYLEGUIDE
SUB-BRAND
STYLEGUIDE

DESIGN SYSTEM

STYLEGUIDE
SUB-BRAND



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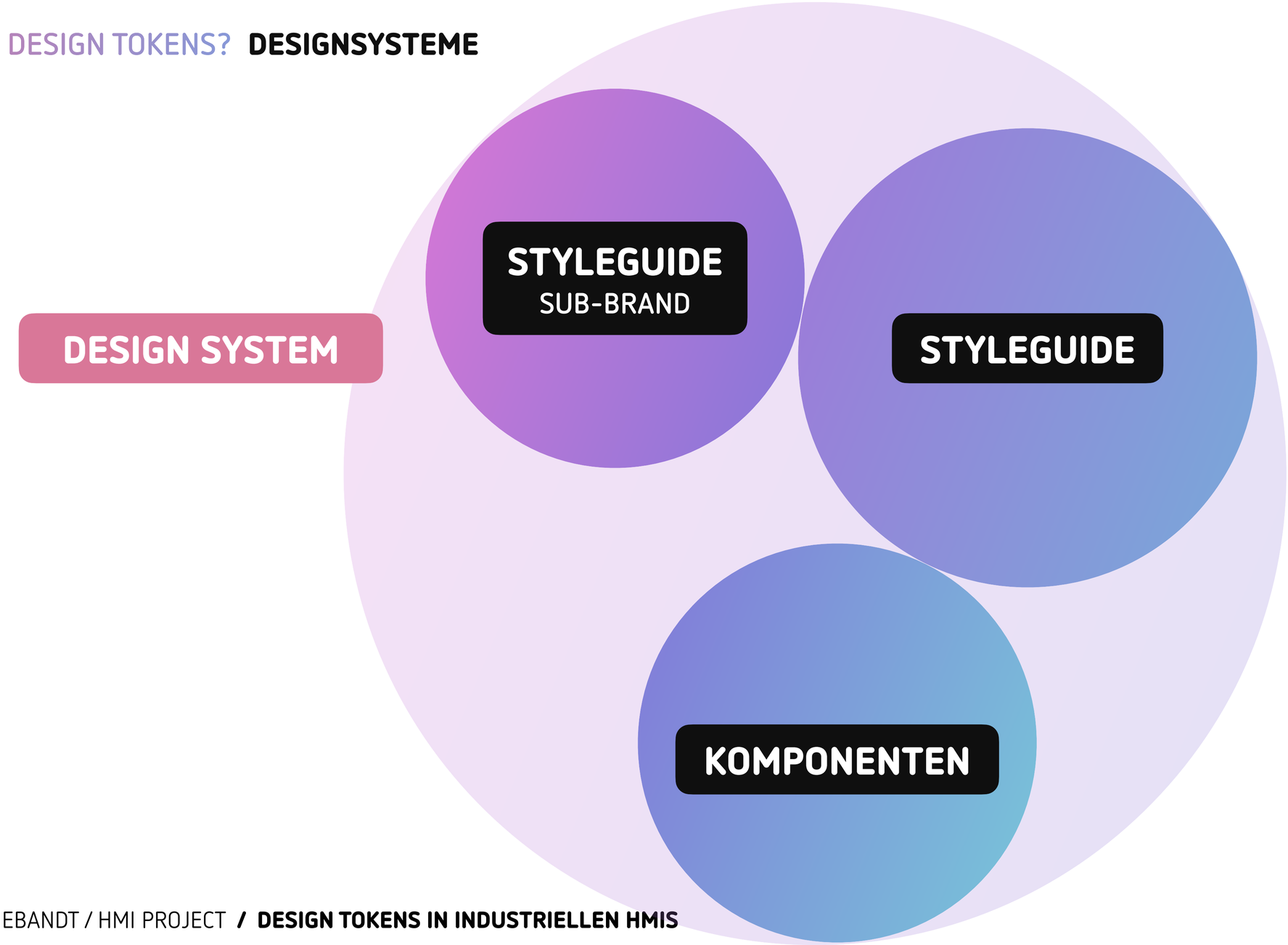
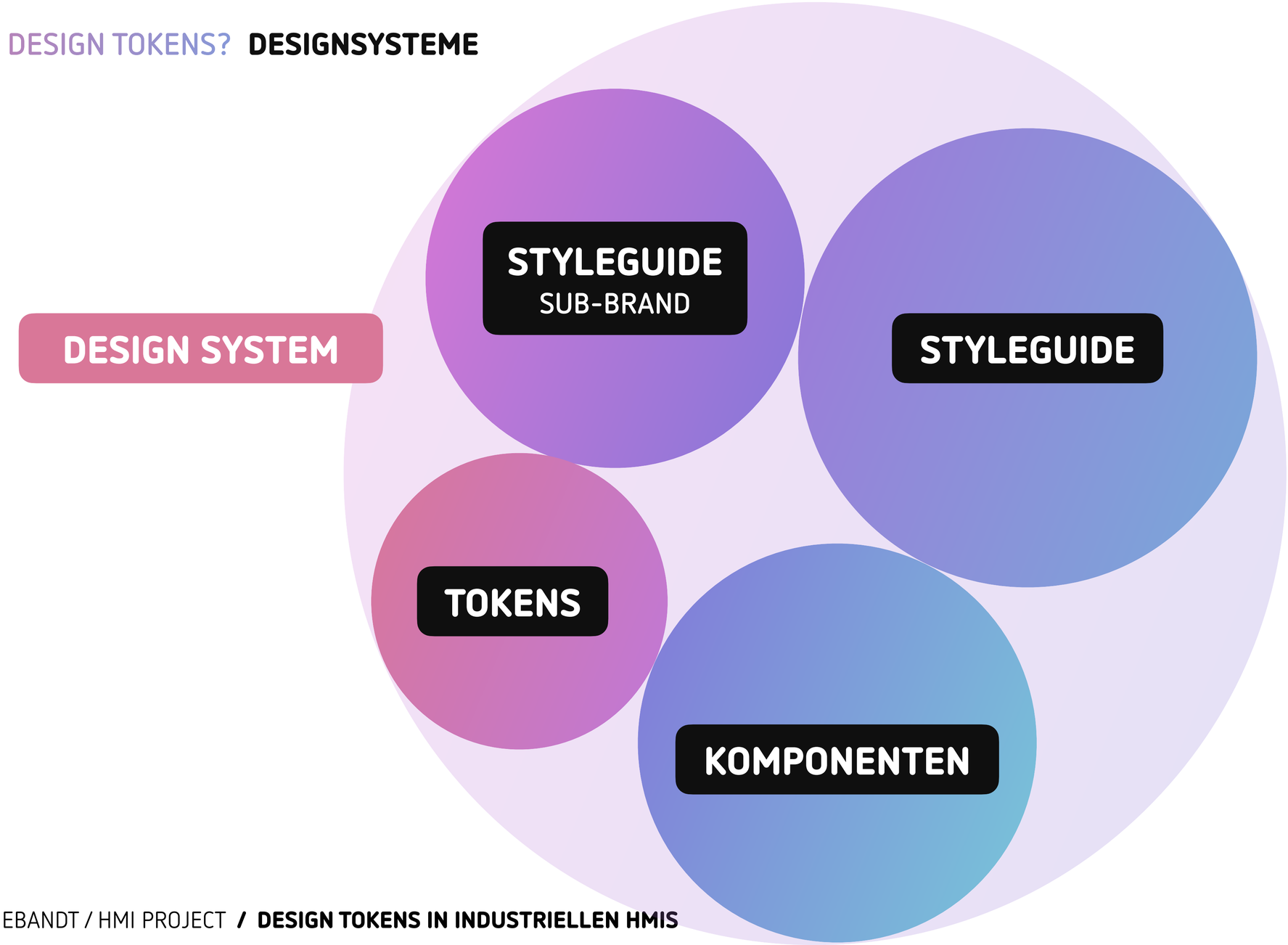

DESIGN SYSTEM
STYLEGUIDE
SUB-BRAND
STYLEGUIDE
KOMPONENTEN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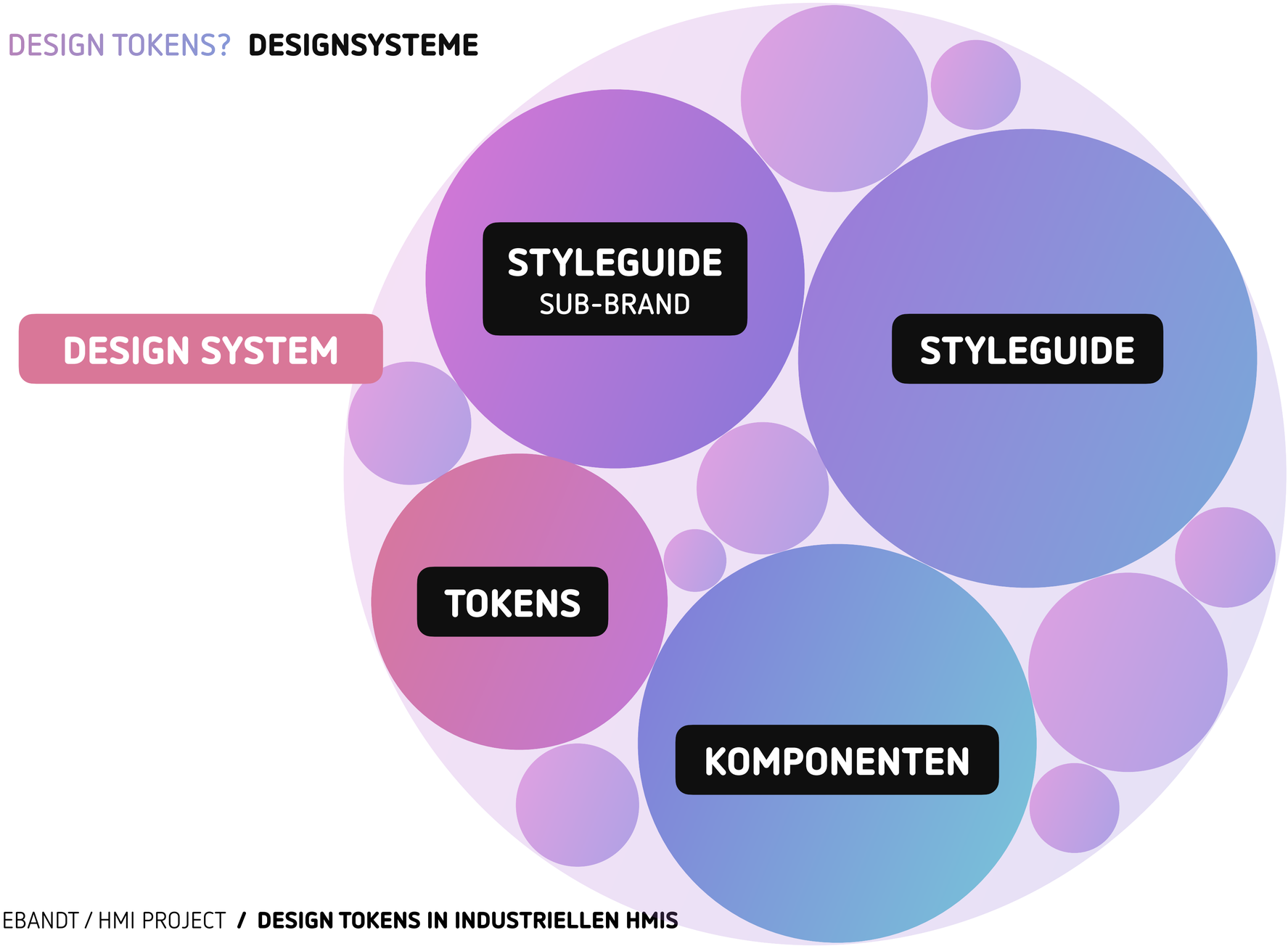
STYLEGUIDE
SUB-BRAND
STYLEGUIDE
TOKENS
KOMPONENTEN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STYLEGUIDE
SUB-BRAND
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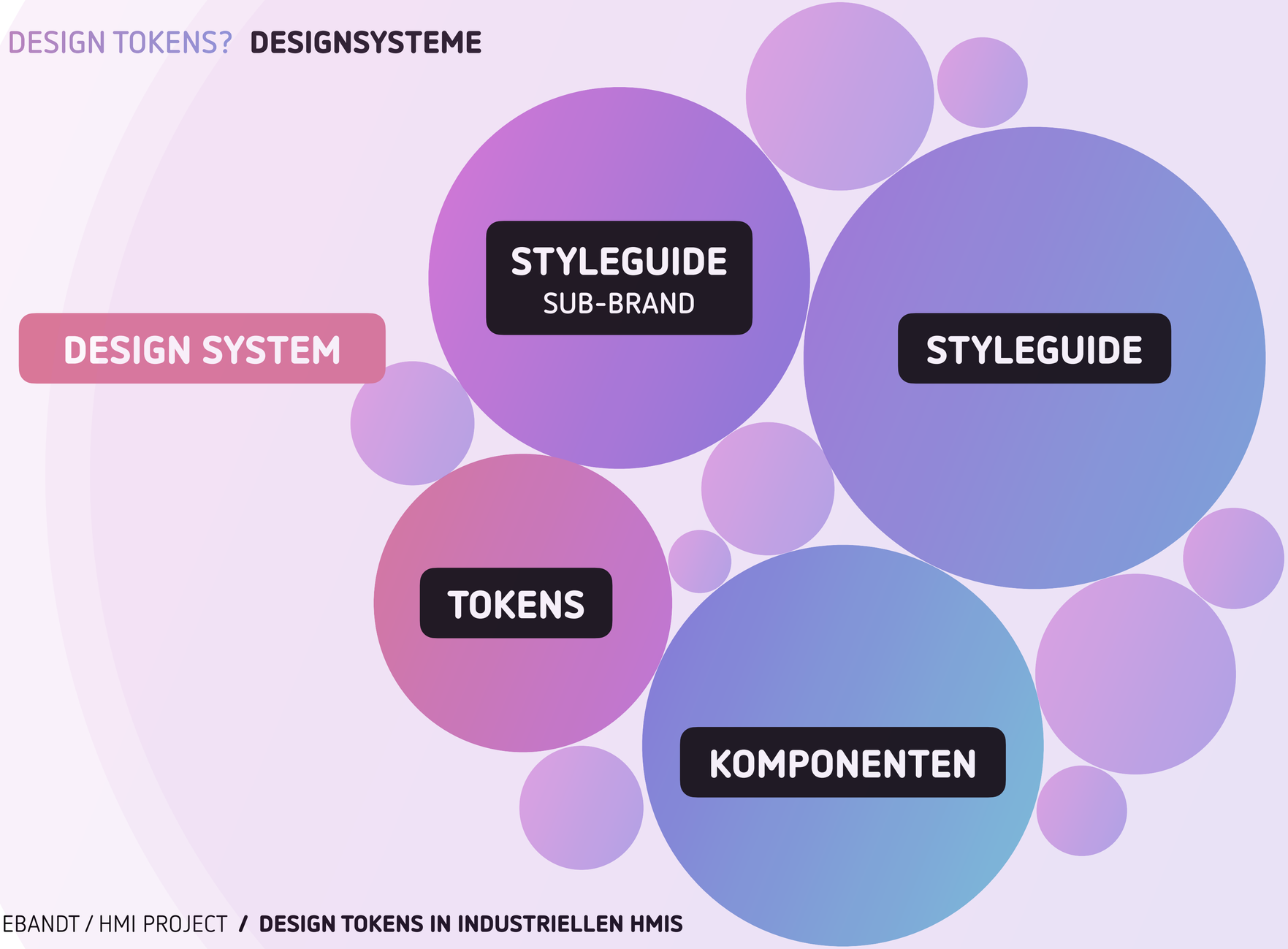
TOKENS
KOMPONENTEN


DESIGN SYSTEM
STYLEGUIDE
SUB-BRAND
STYLEGUIDE
TOKENS
KOMPONENTEN

Sind Tokens nicht einfach Stile?

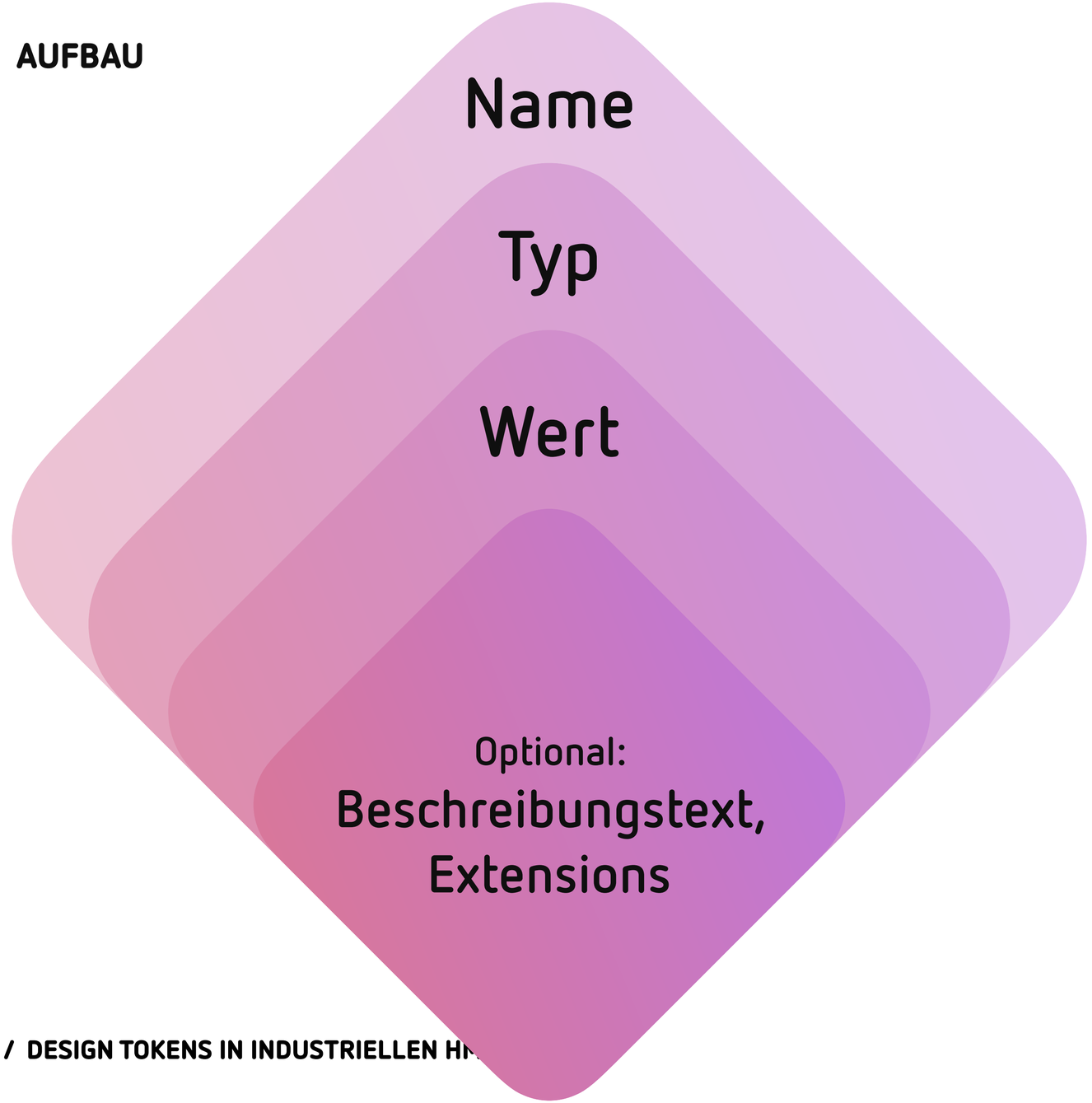
Sind Tokens nicht einfach CSS?

- Standardisiertes Format
- Platform-agnostic
- Der Austausch von Tokens ist zentraler Bestandteil ihrer Idee
- Ermöglicht: Best-Practice zum Aufbau von UI Projekten über alle Disziplinen

1.2

DER AUFBAU VON DESIGN TOKENS


Designentscheidung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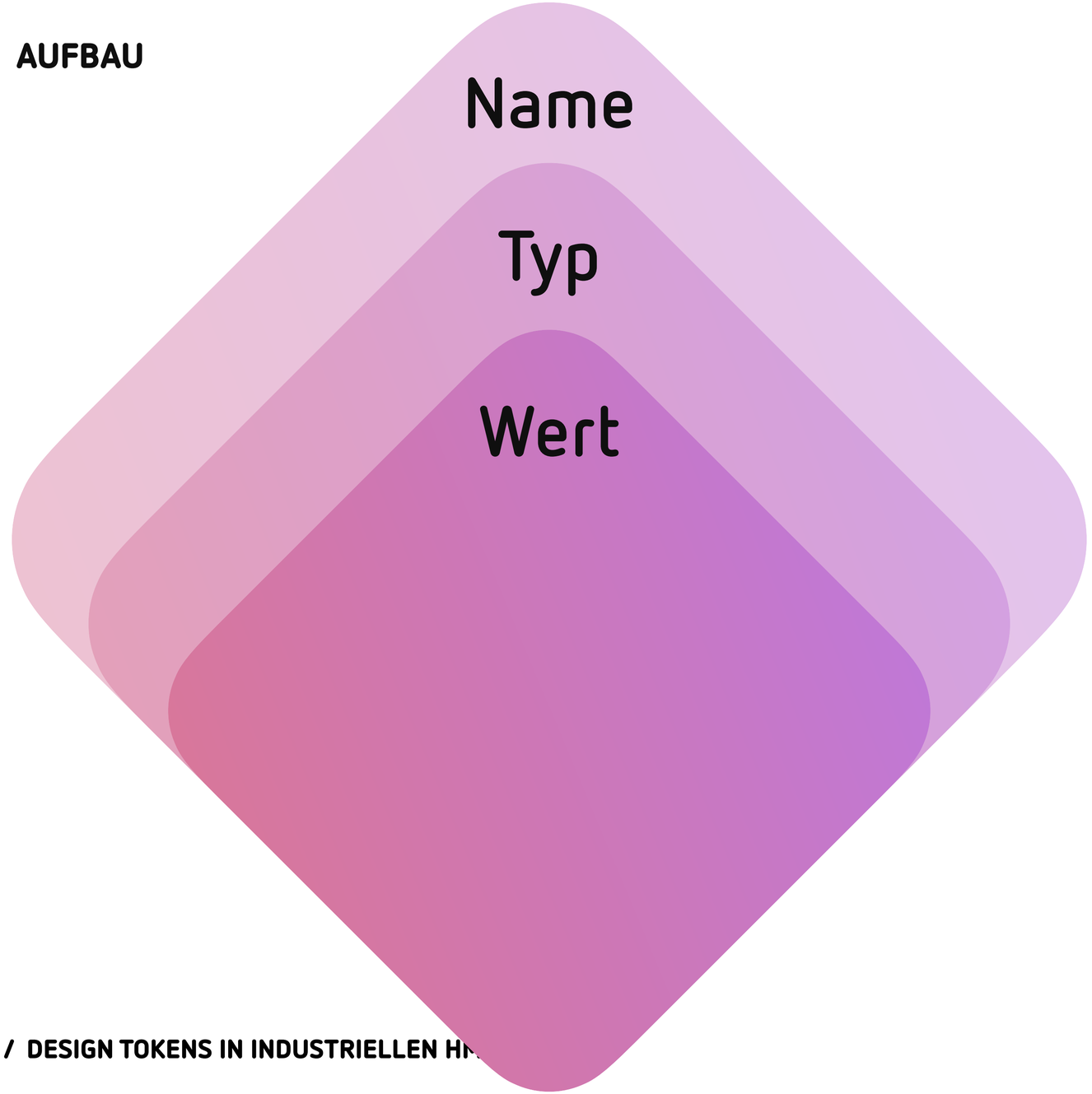
Wert
Optional:
Beschreibungstext,
Extensions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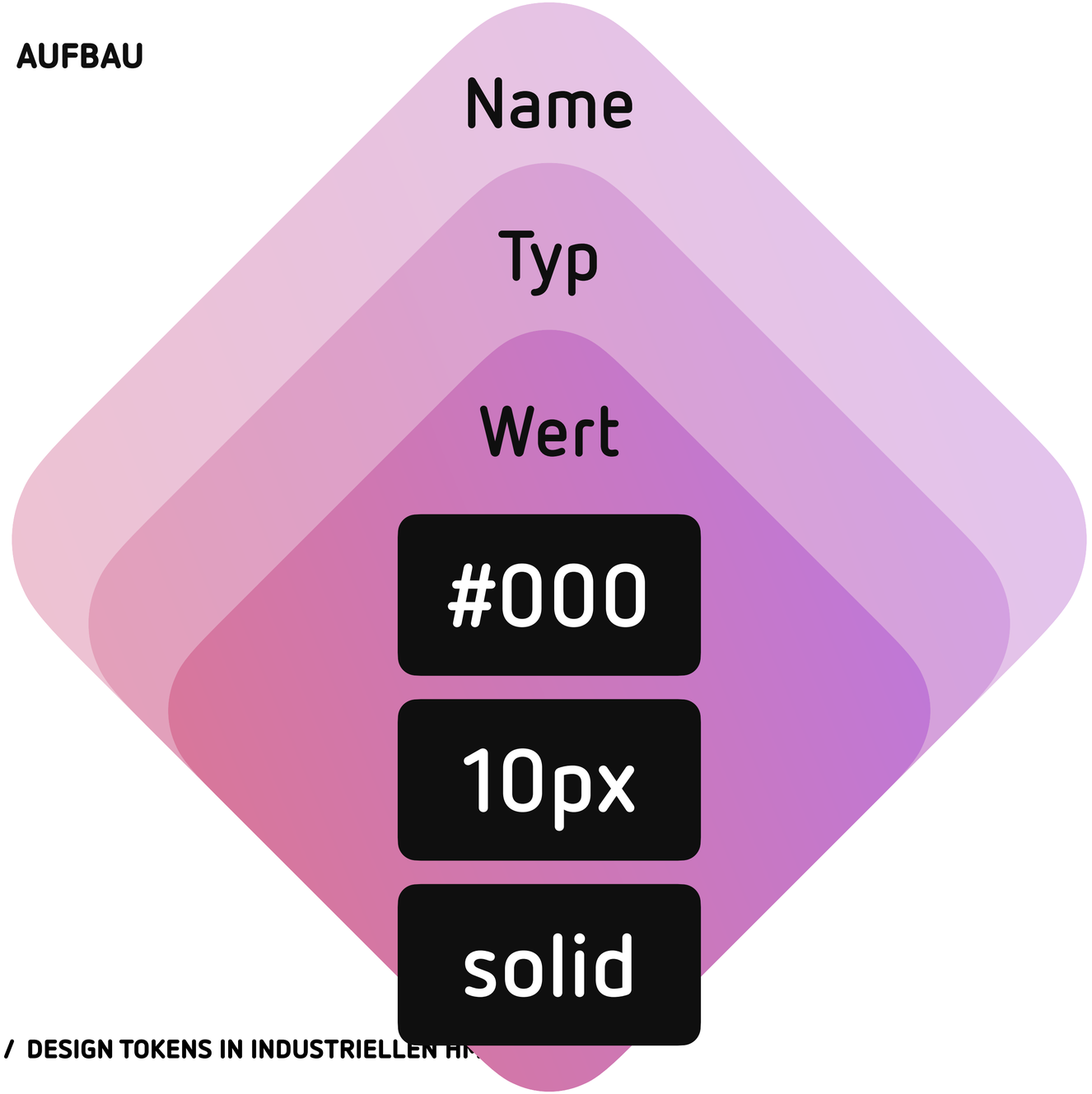
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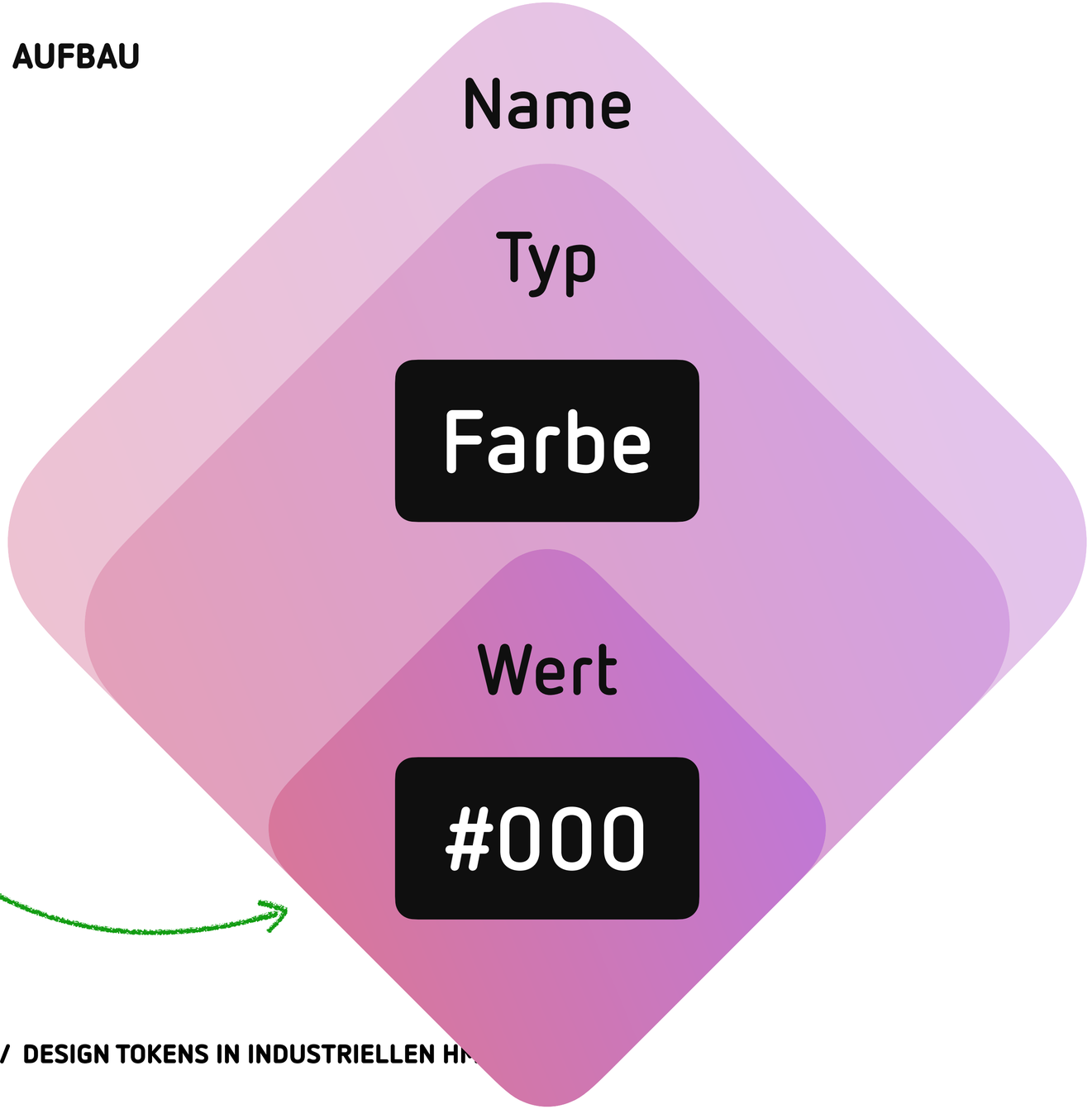
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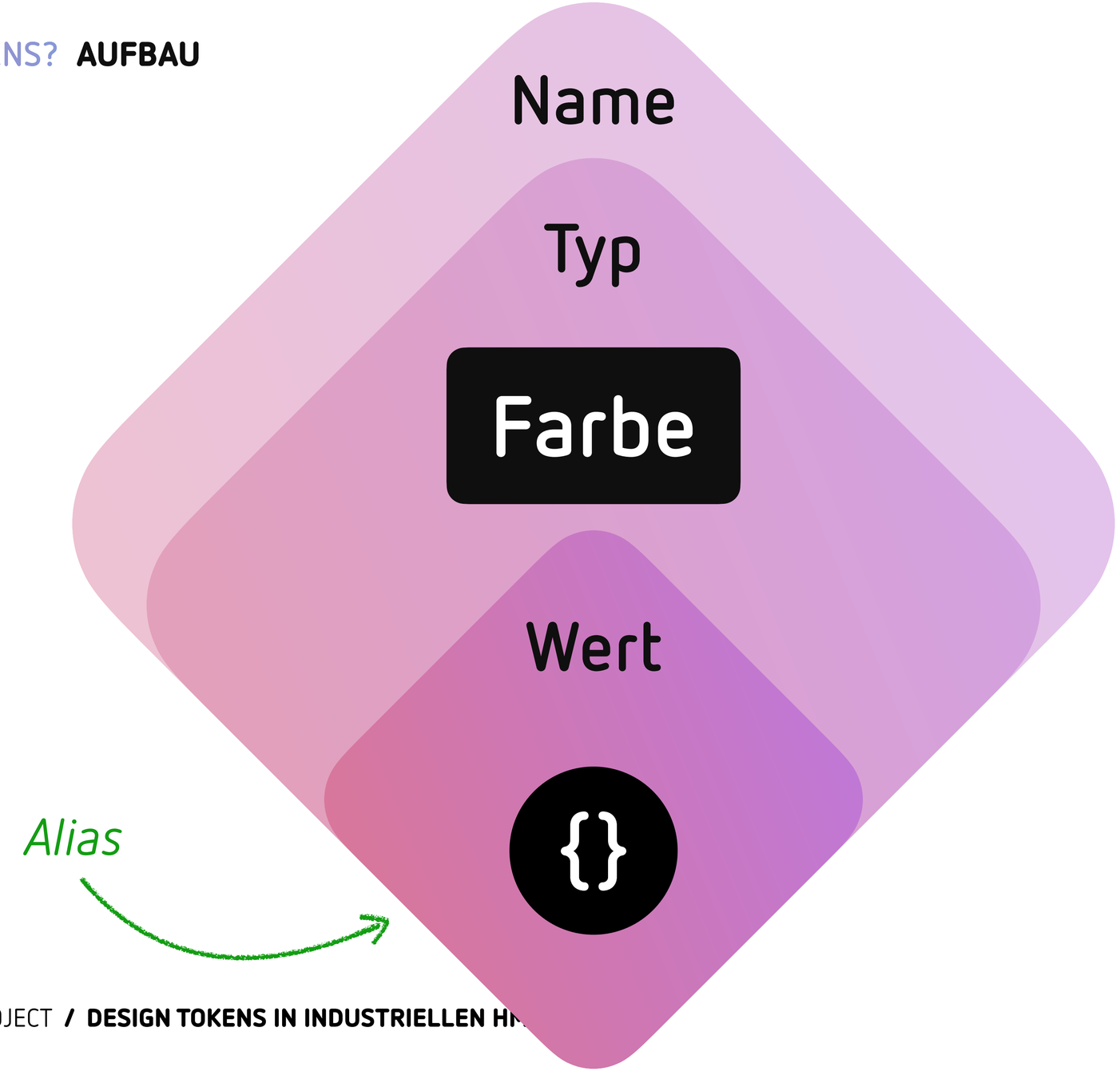
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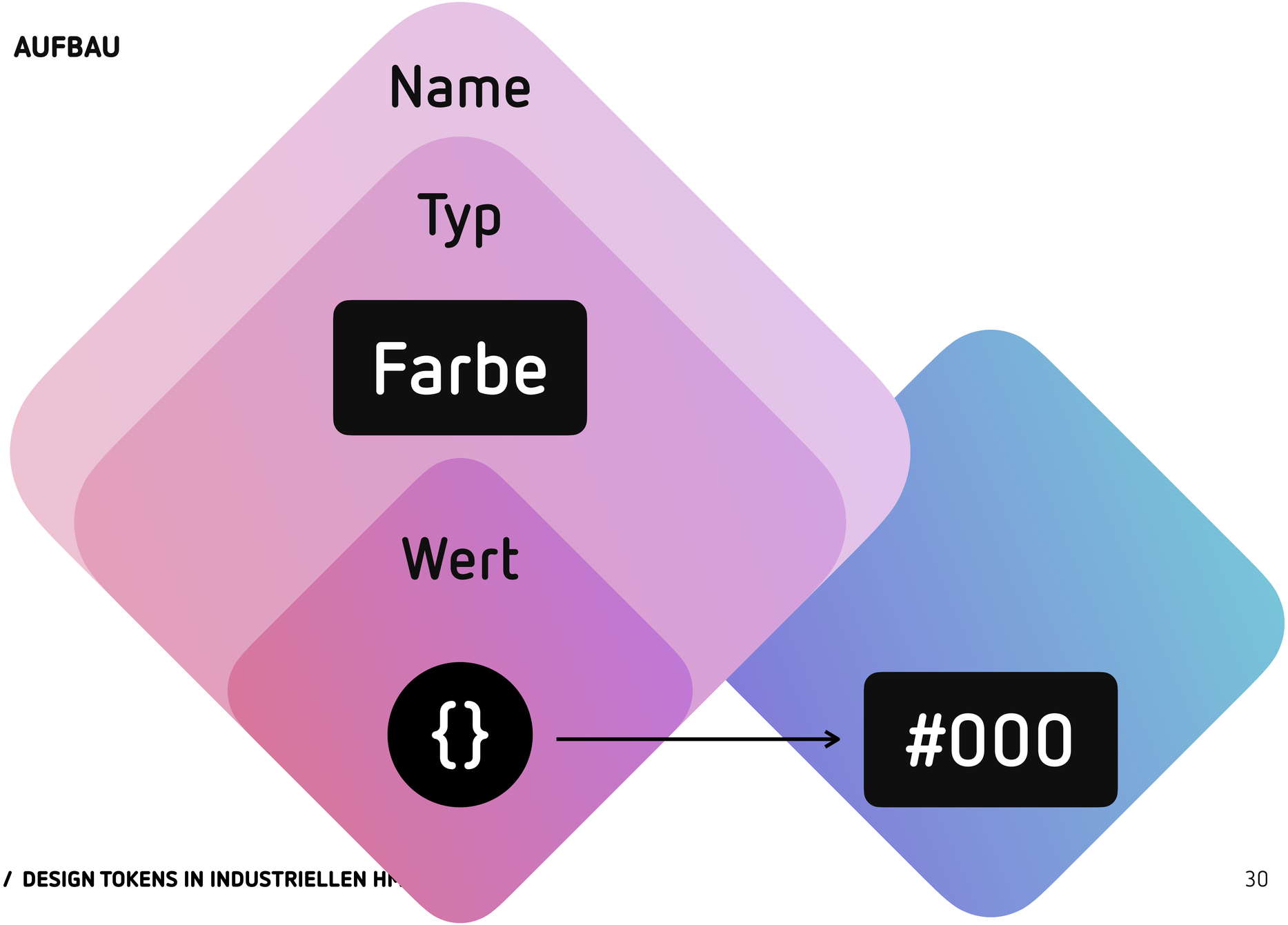
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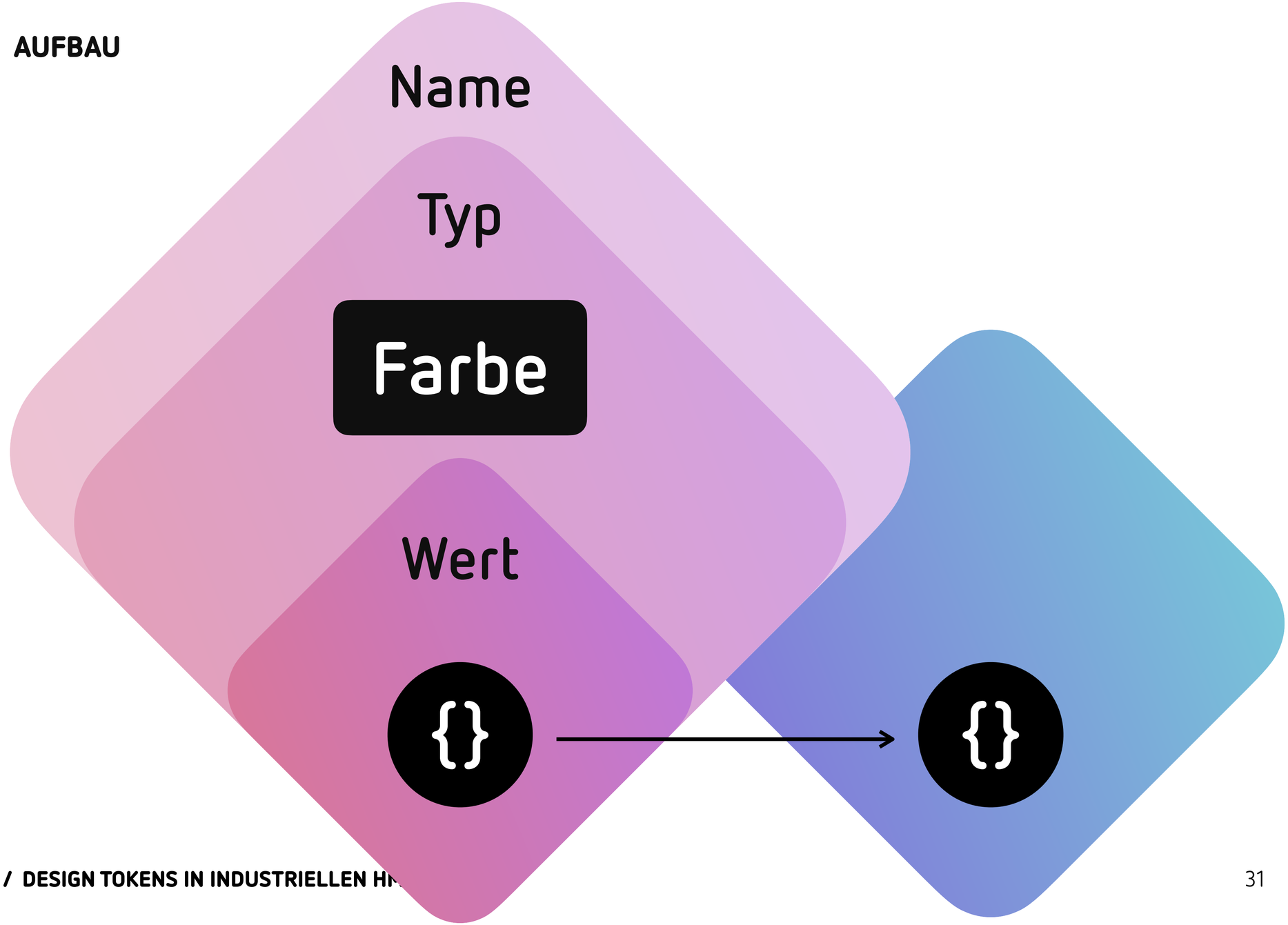
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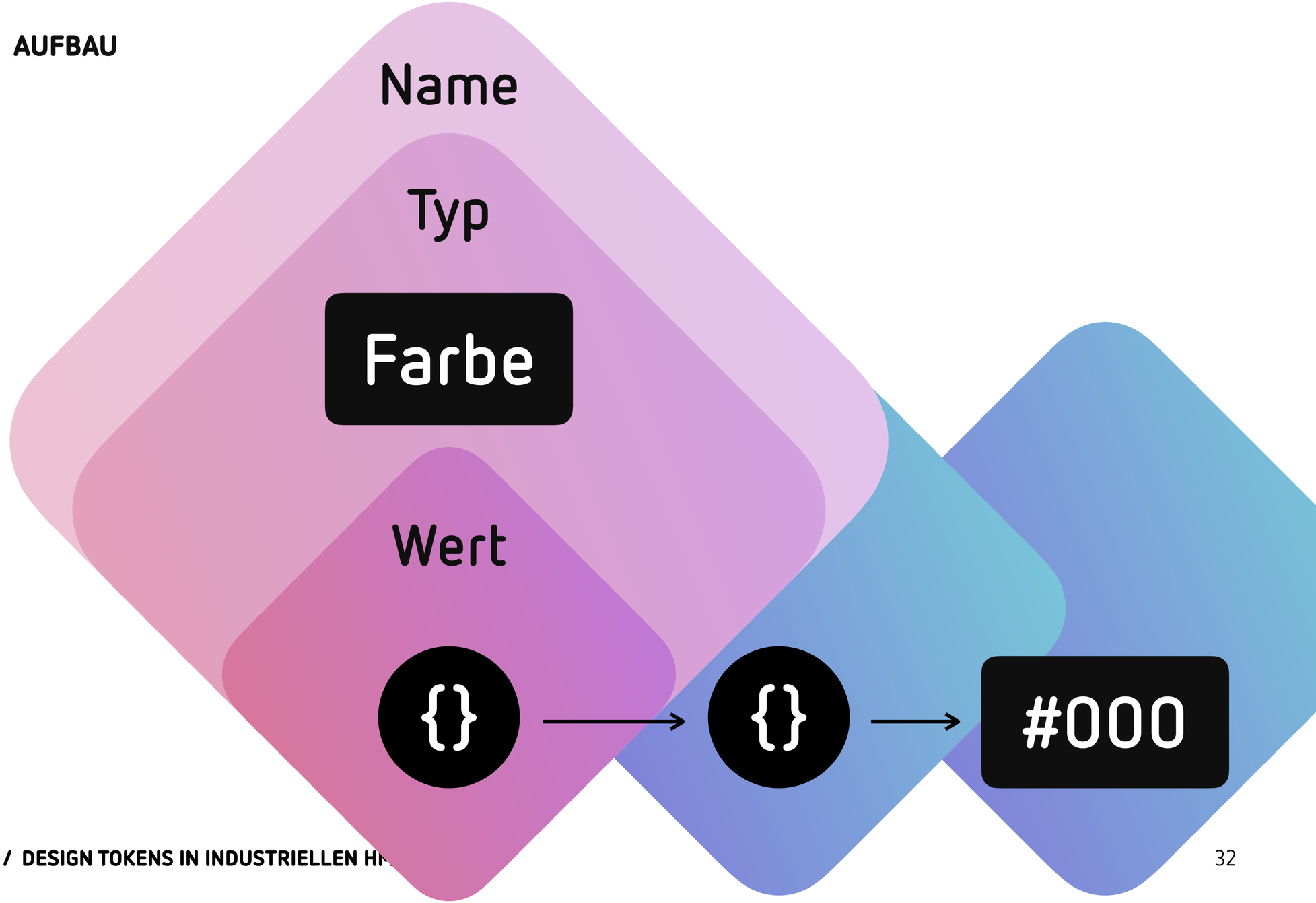
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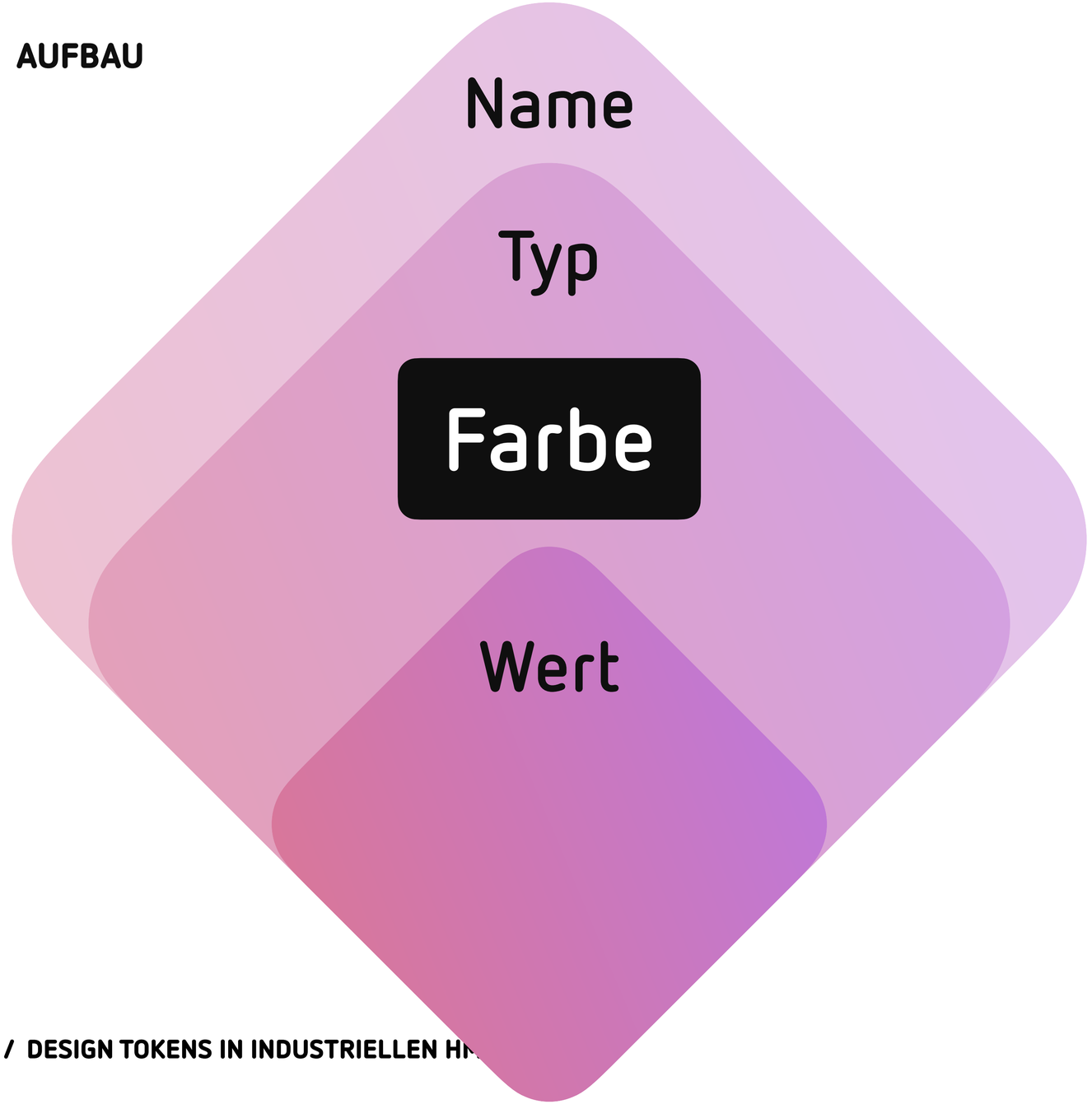
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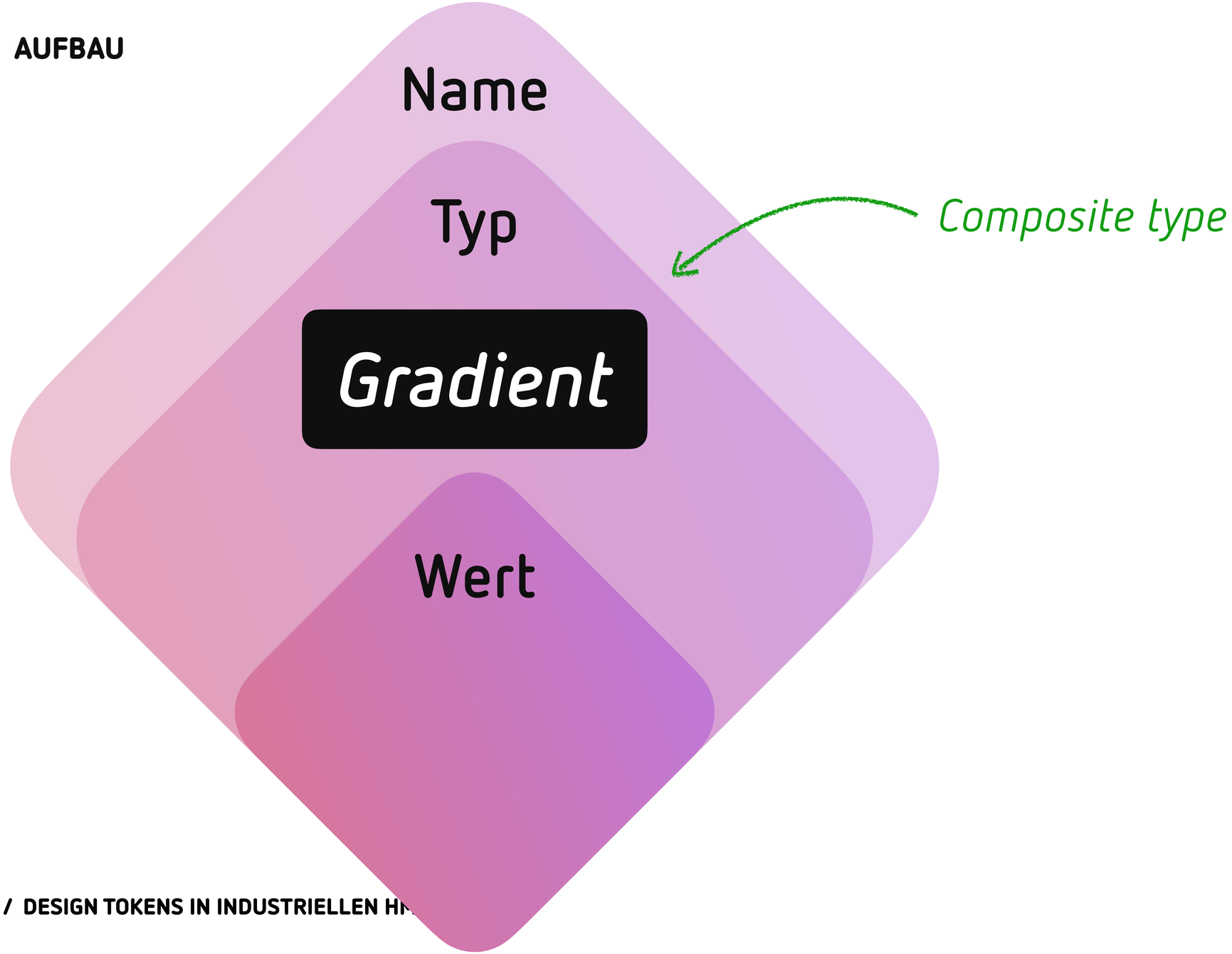
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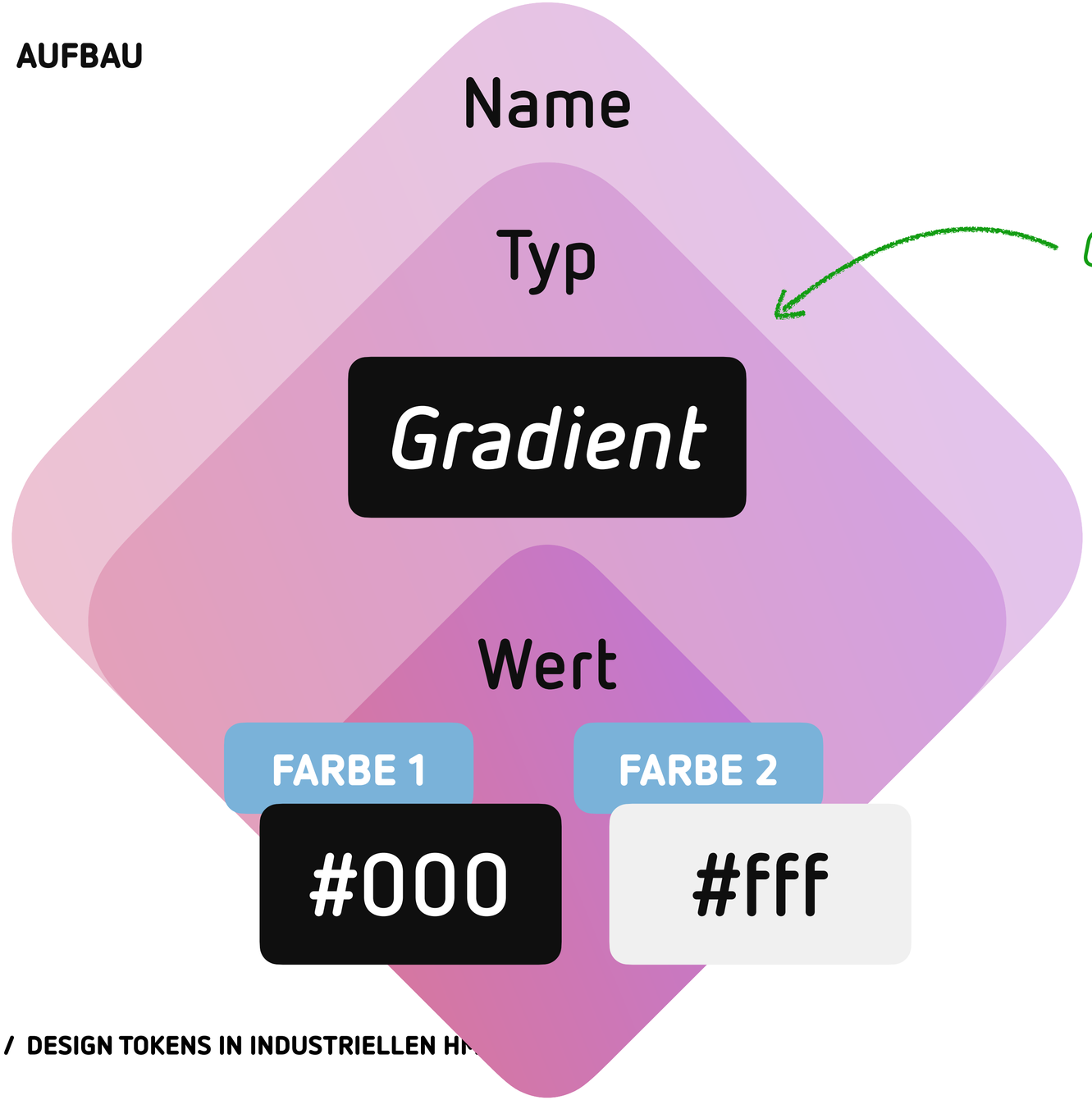
Composite type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FARBE 2
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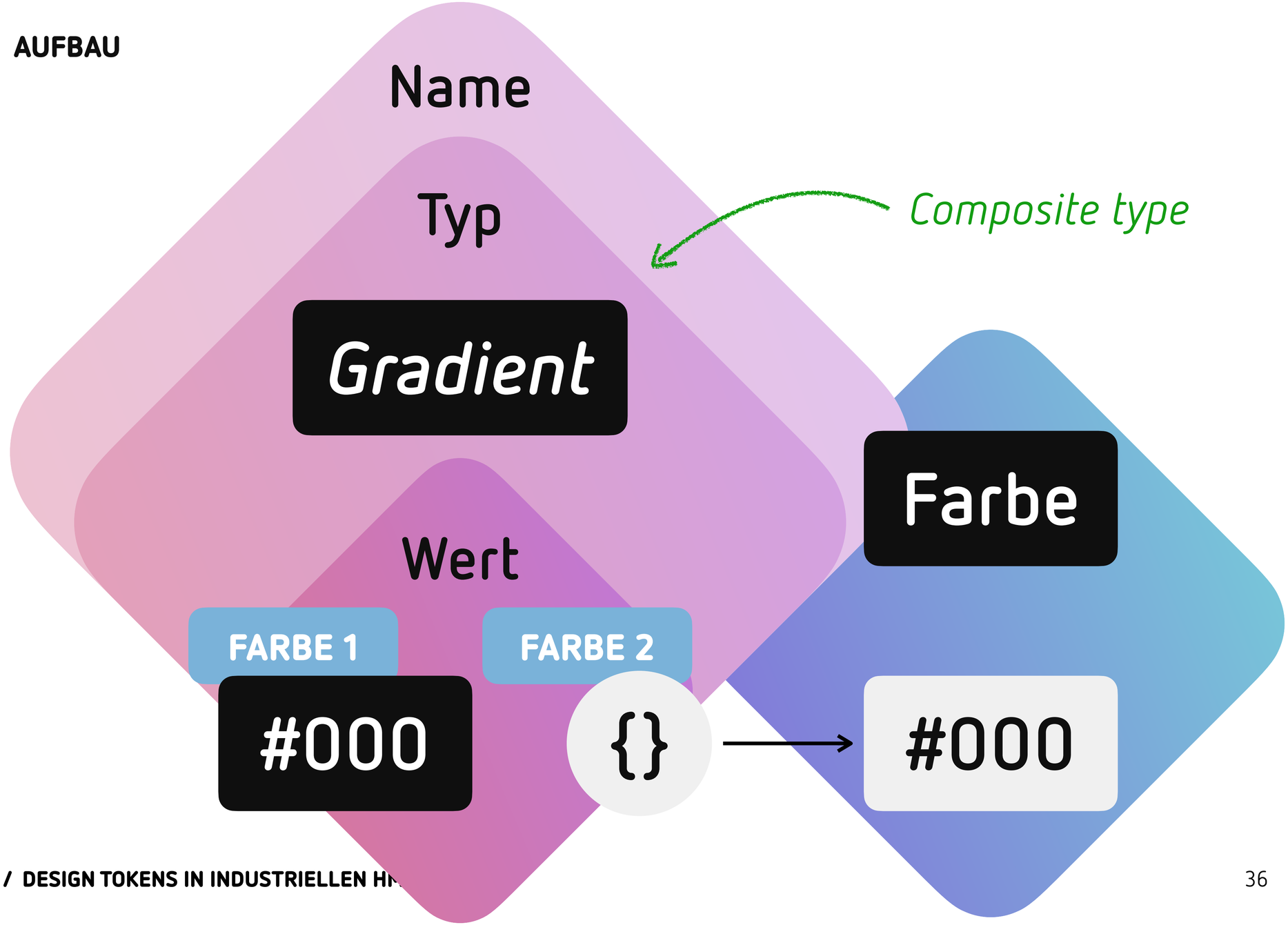
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Gradient
Composite type
Wert
FARBE 1
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FARBE 2
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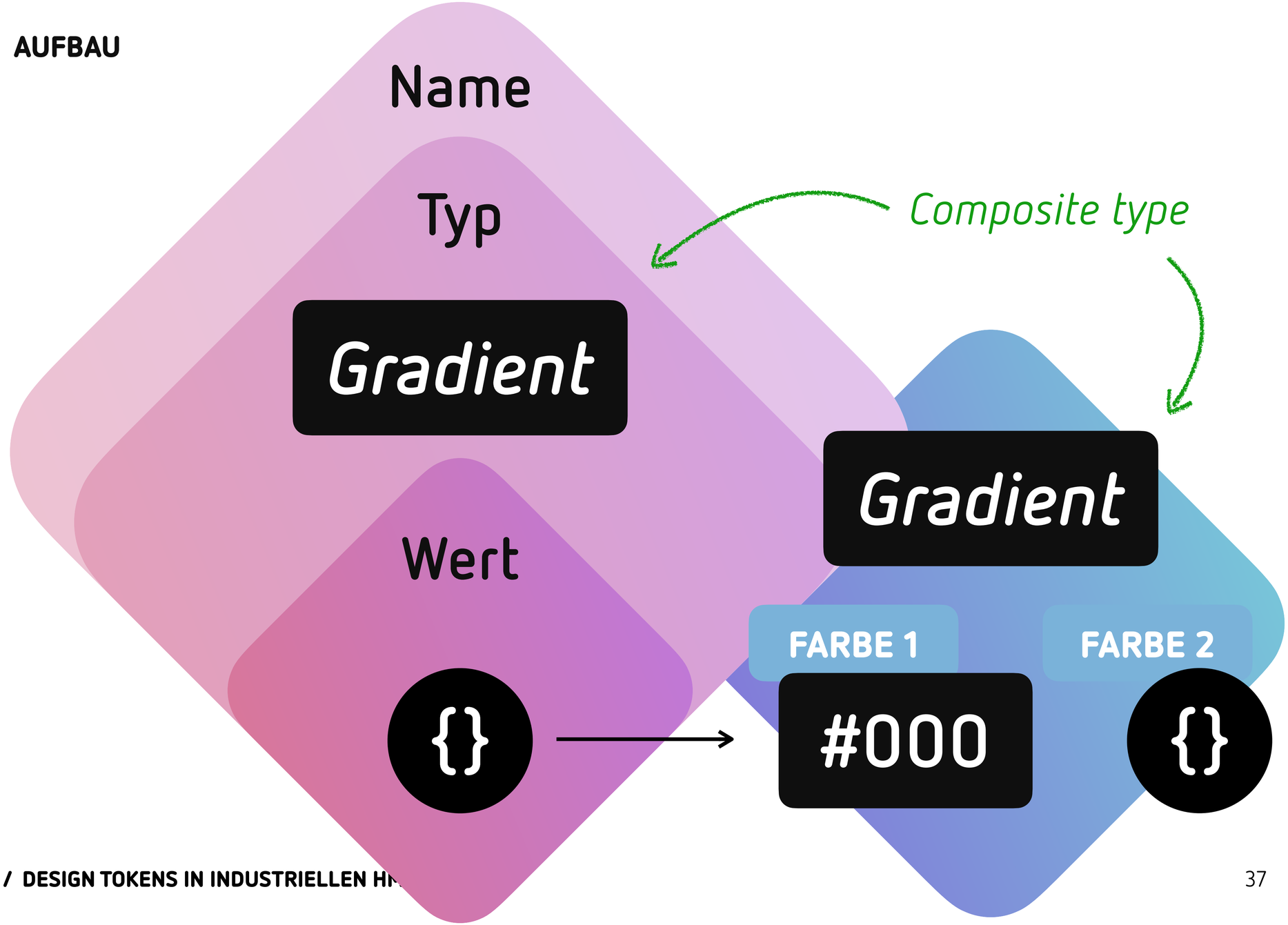
Farbe
#000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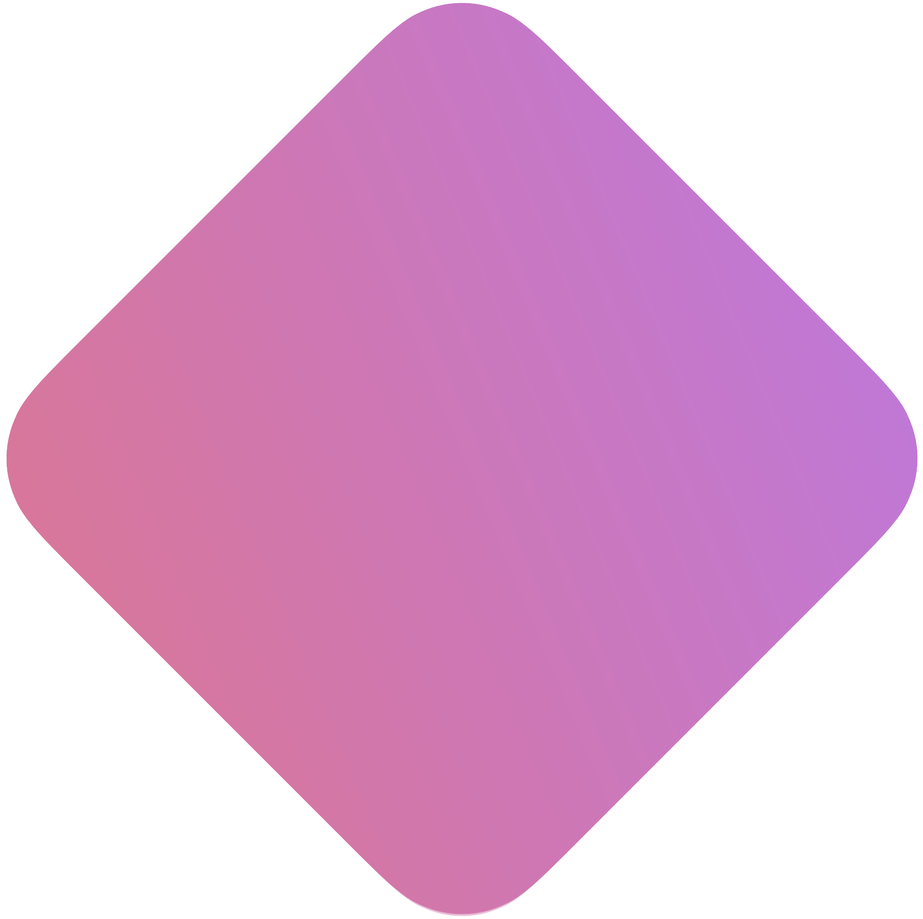

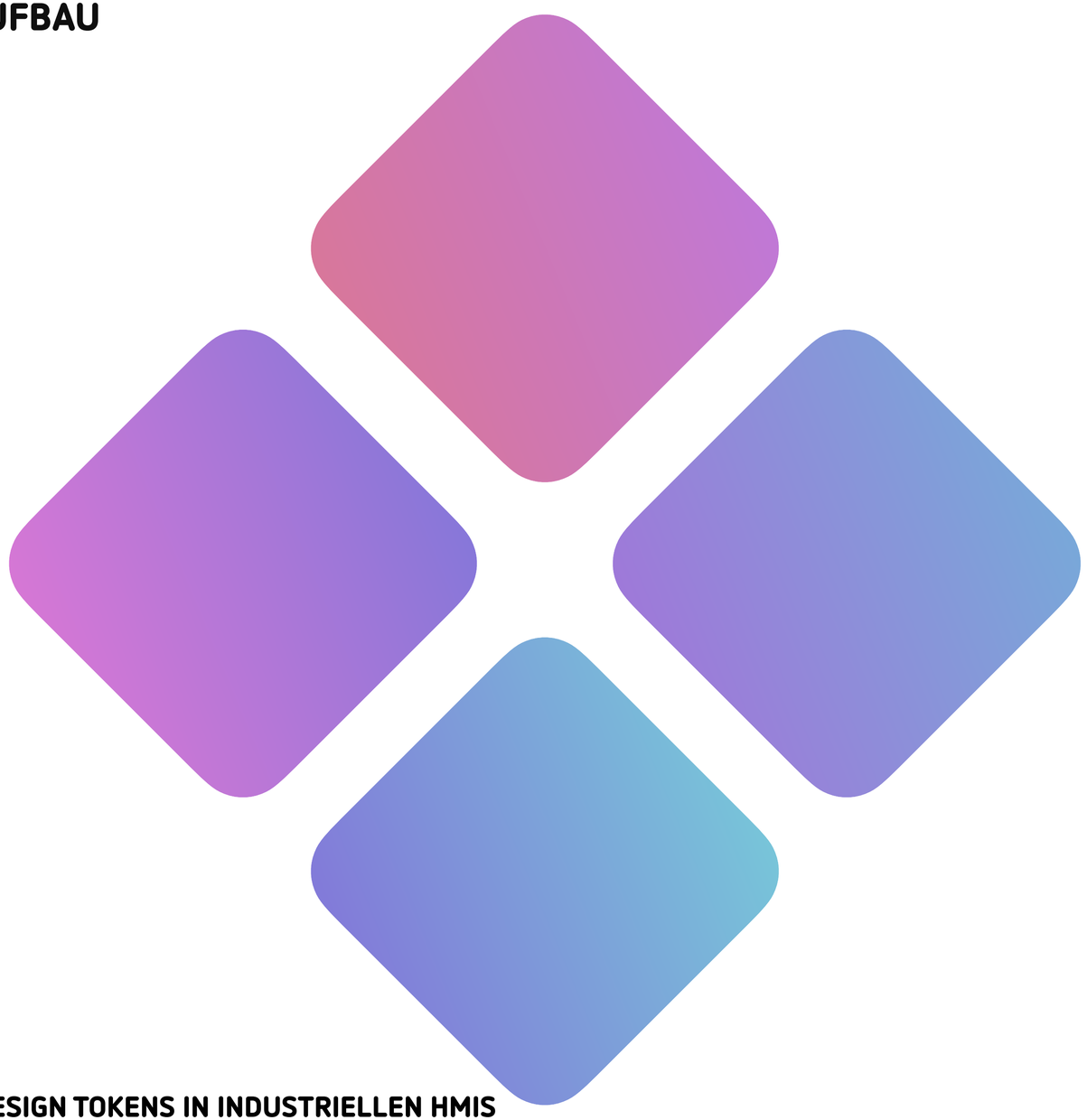

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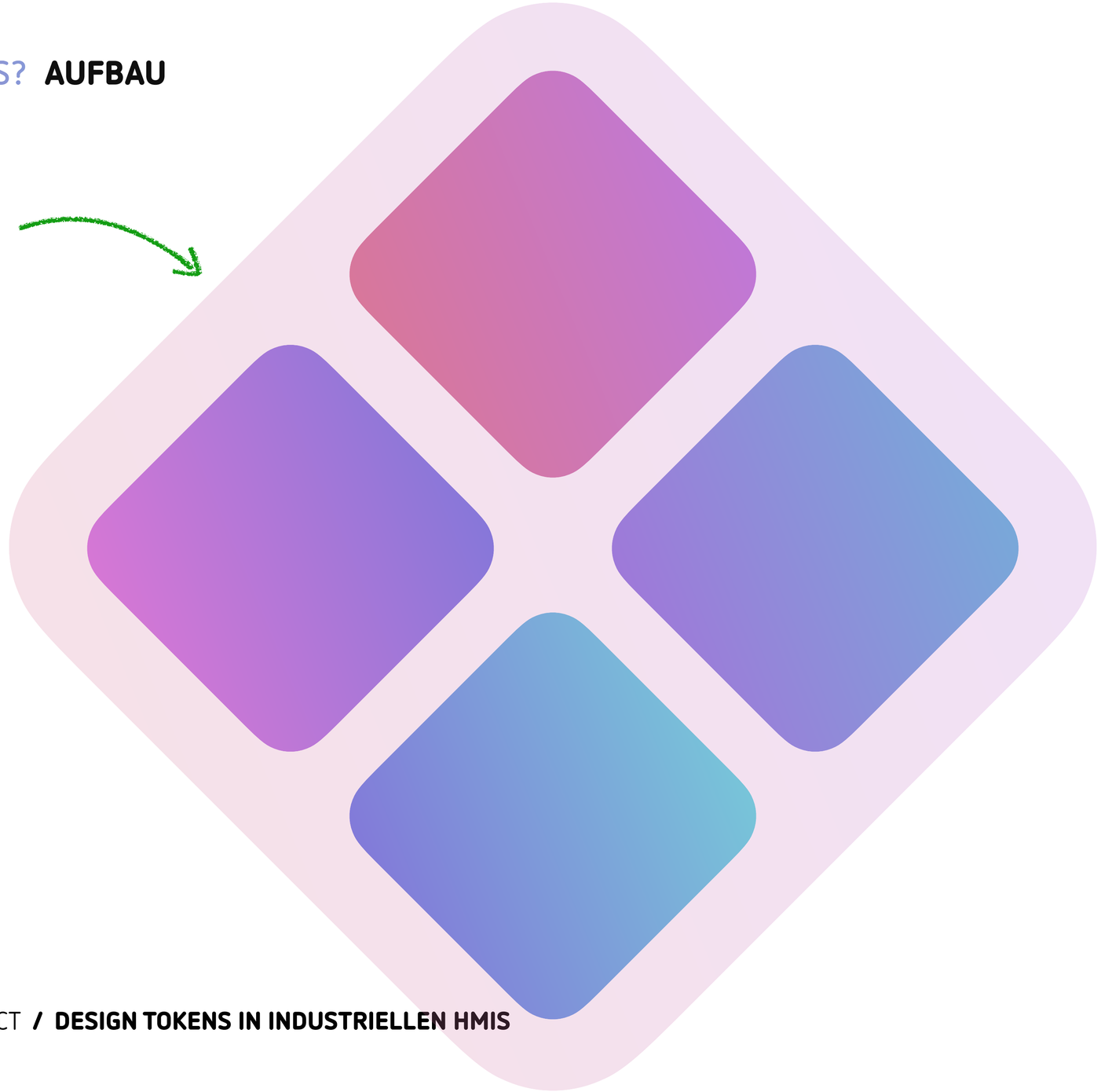
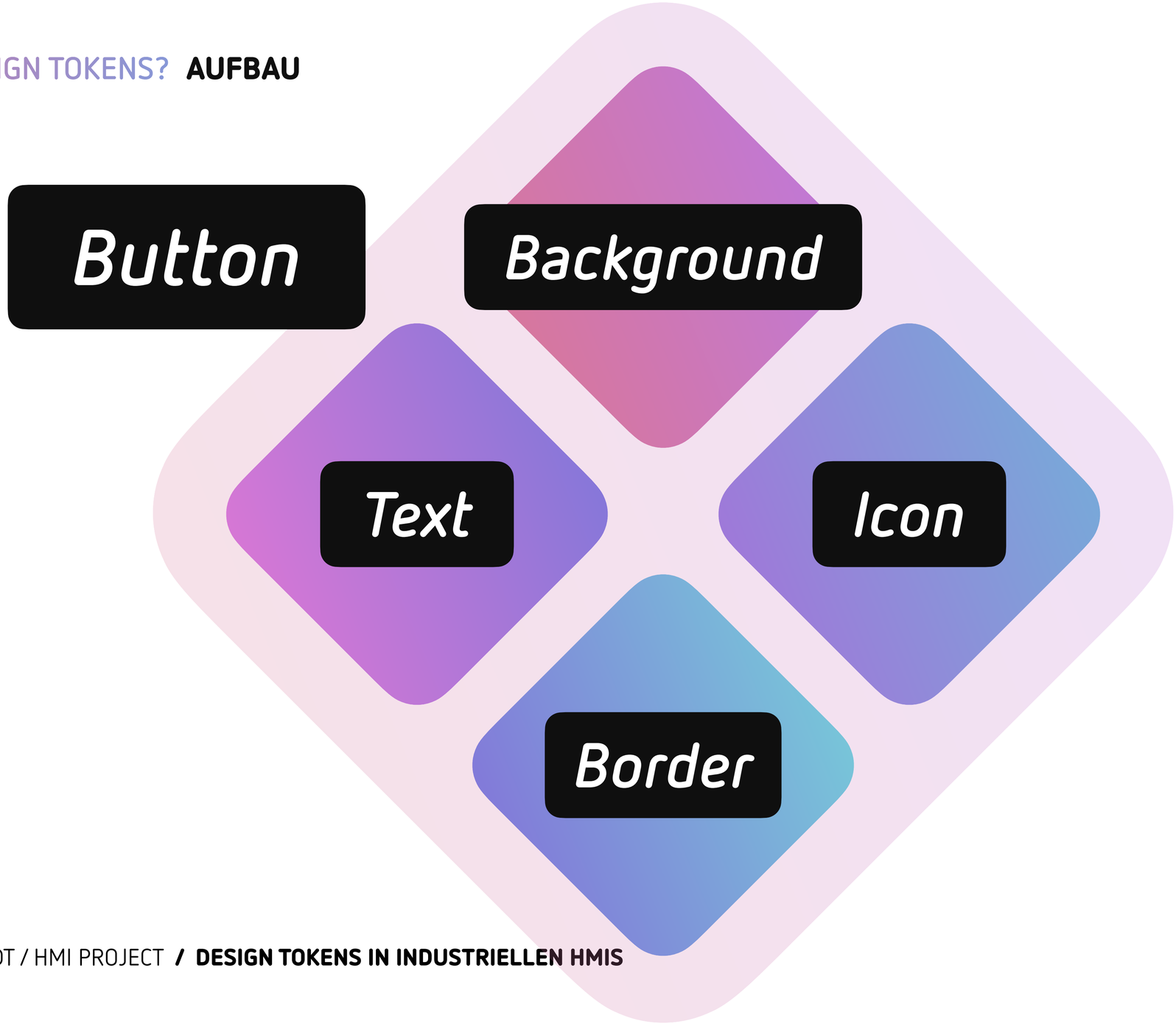
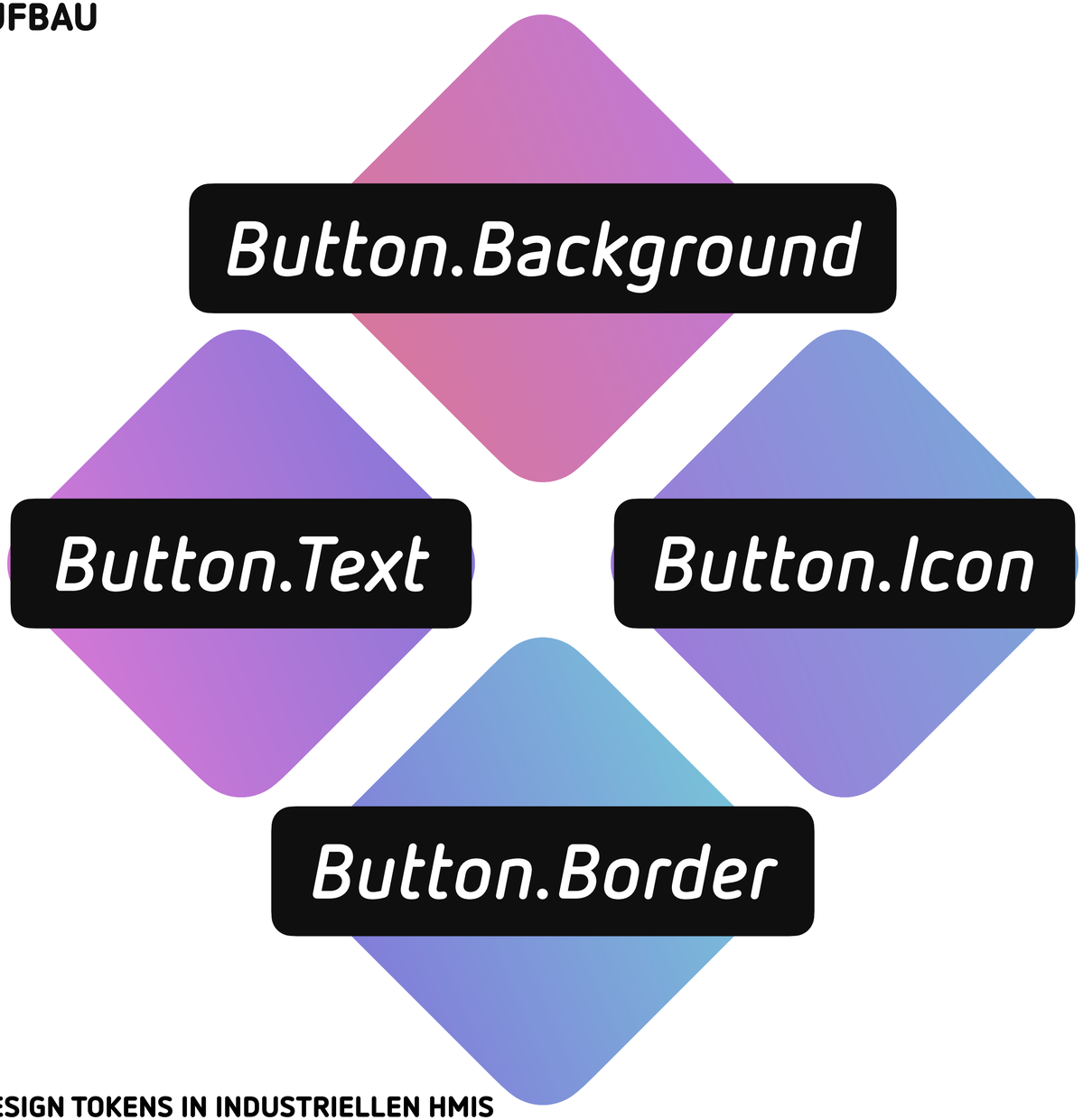



Button
Background
Text
Icon
Border


Button.Background
Button.Text
Button.Icon
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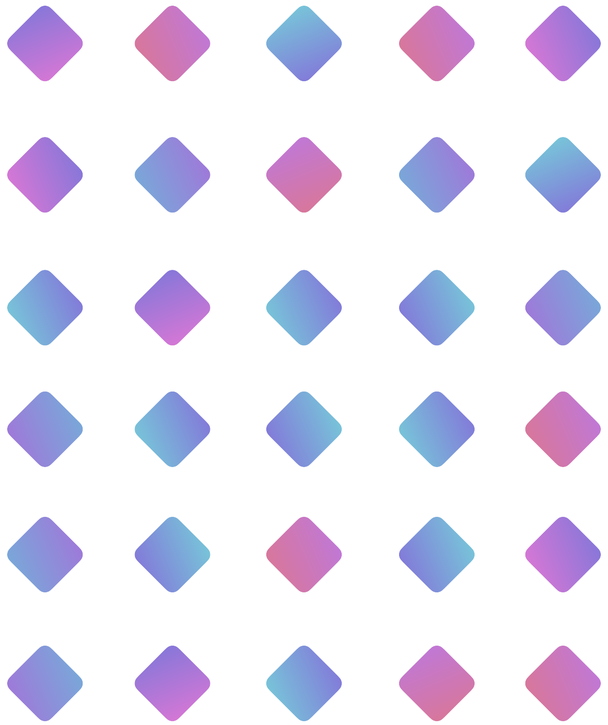
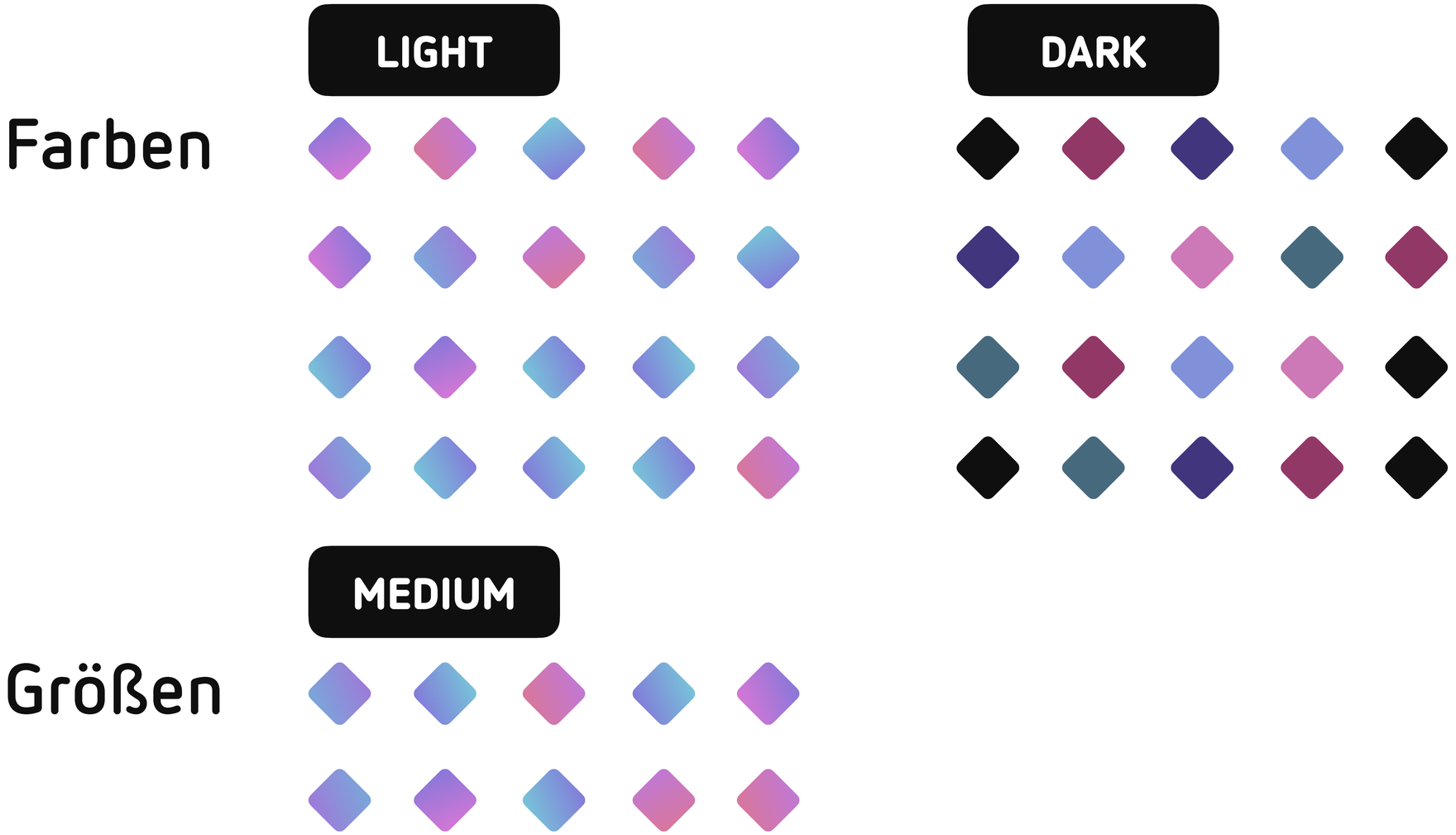
1.3

ORGANISATION VON TOKENS

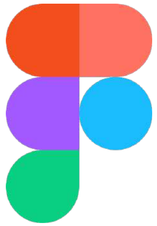


Farben

Größen


LIGHT
DARK
Farben
MEDIUM
Größen

- Diese Aufteilung ist eine Frage der Organisation innerhalb der **Design-Software**
- Sie wird nicht notwendigerweise exportiert, ist also nicht immer Teil des Austausches



Figma

- Collections
- Modes

Farben

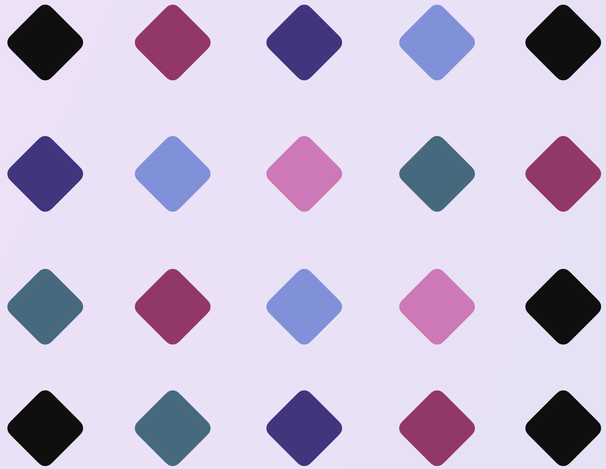
Größen

Collections

LIGHT

DARK

Farben

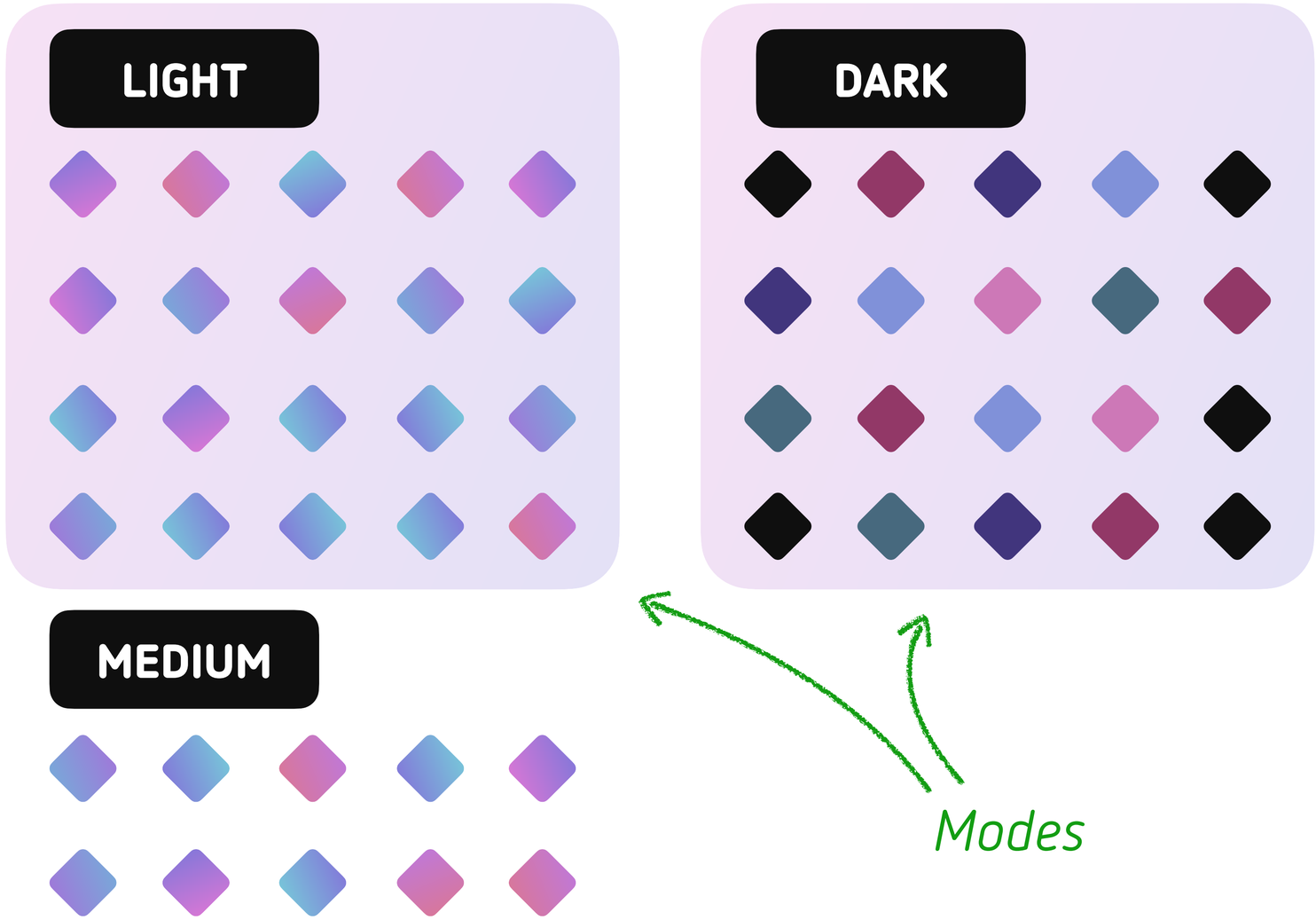


MEDIUM

Größen

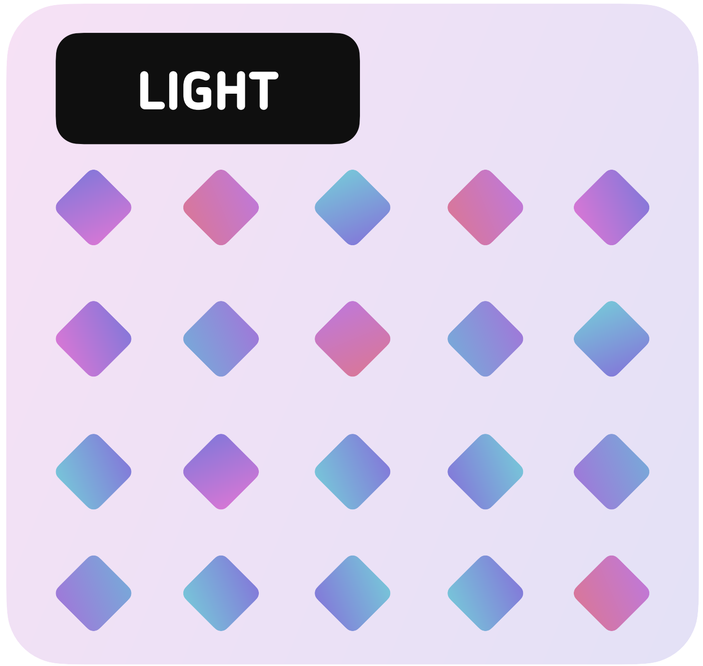
Farben

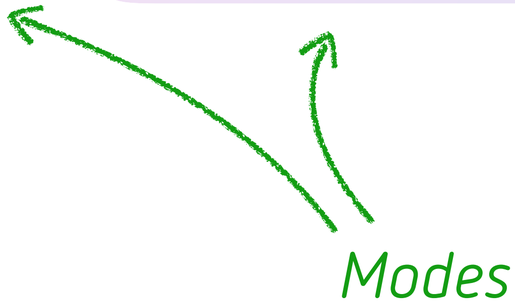
Größen

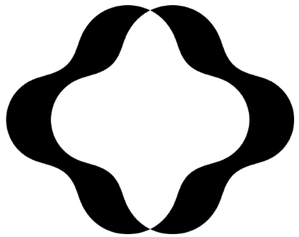


Farben

Größen

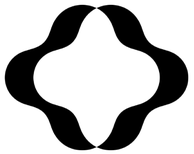






Tokens Studio

- Sets
- Themes



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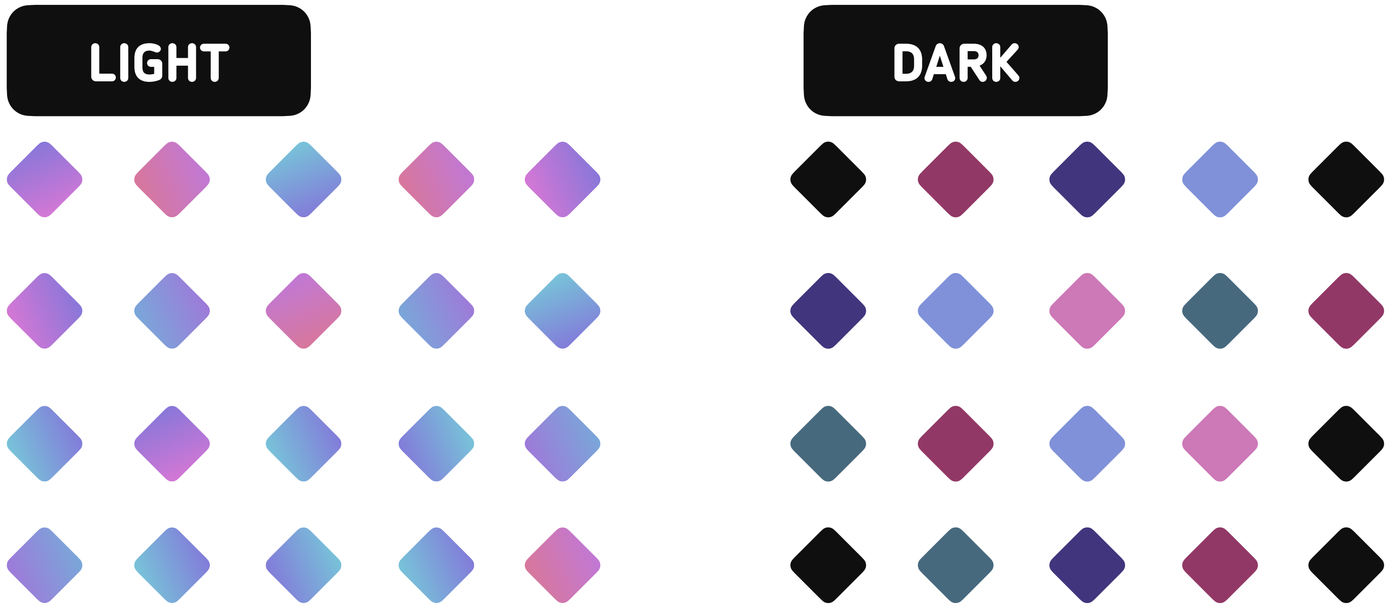
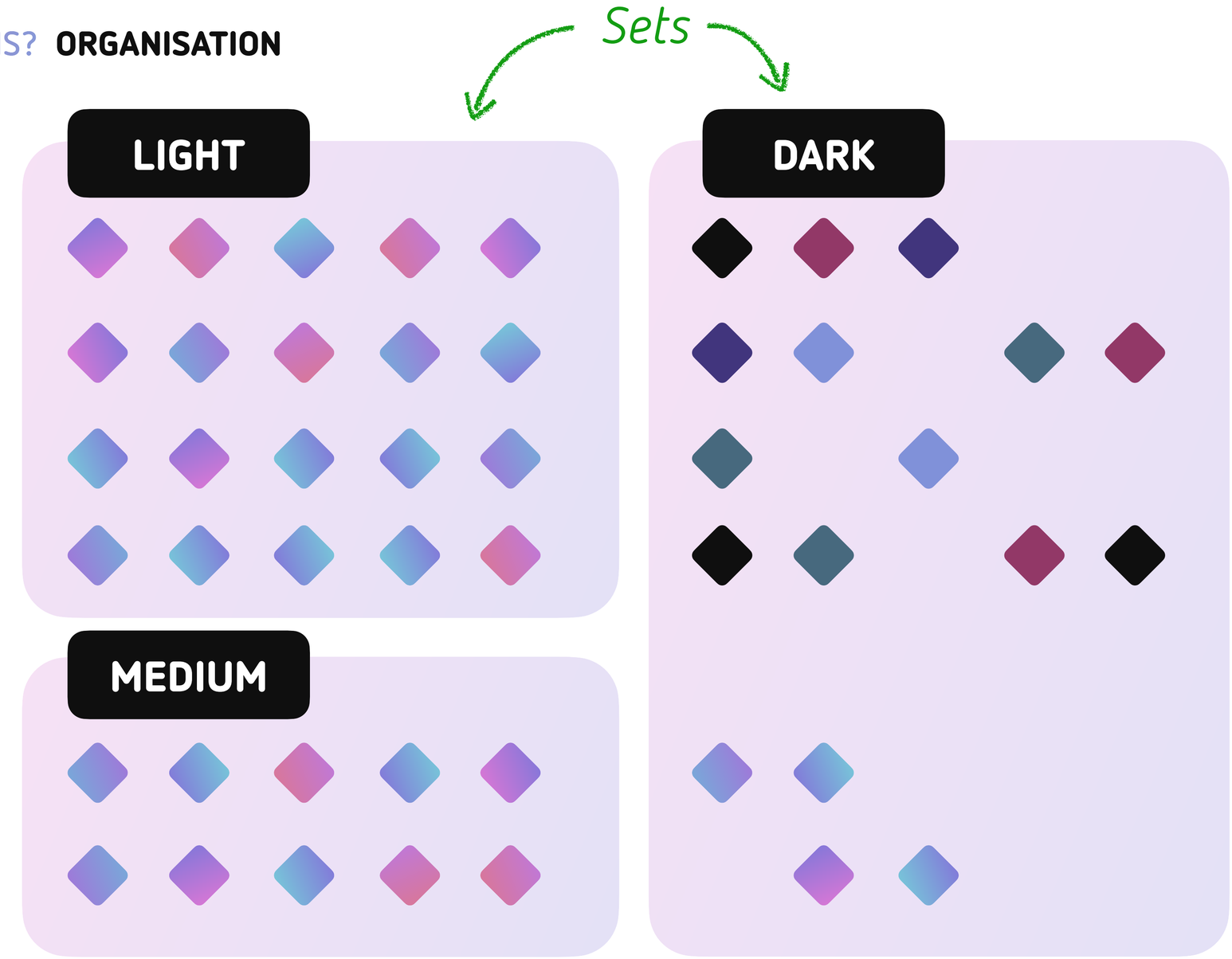
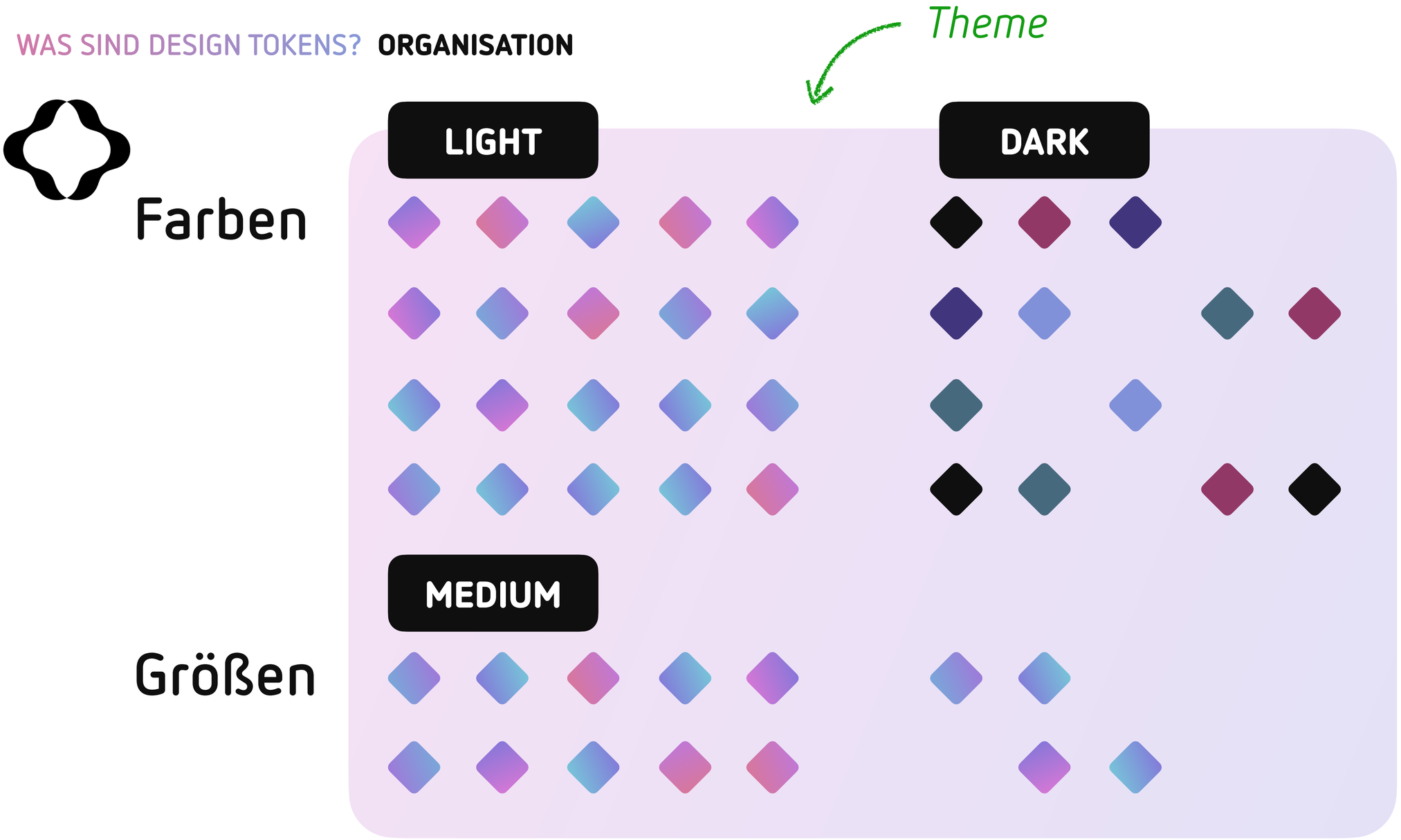


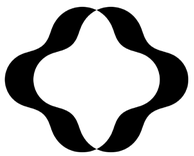
Größen

Farben

Größen




Theme
LIGHT
DARK
Farben
MEDIUM
Größen



Farben

Größen

Theme

LIGHT

DARK

MEDIUM

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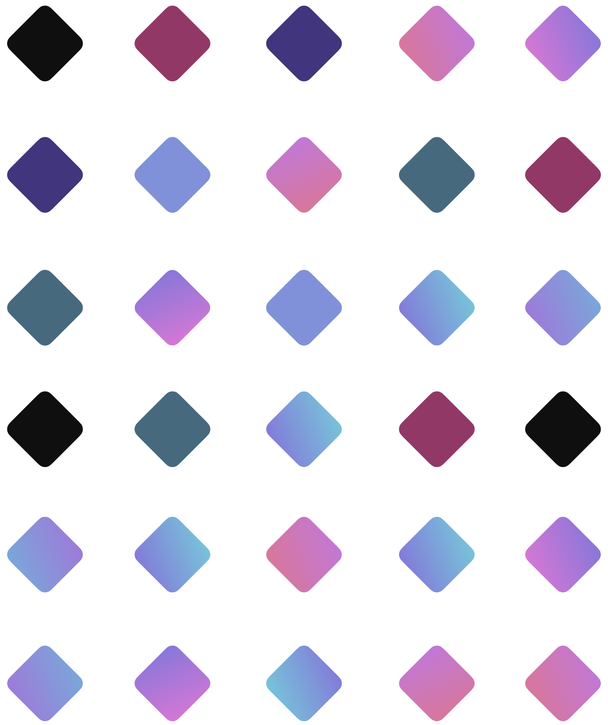

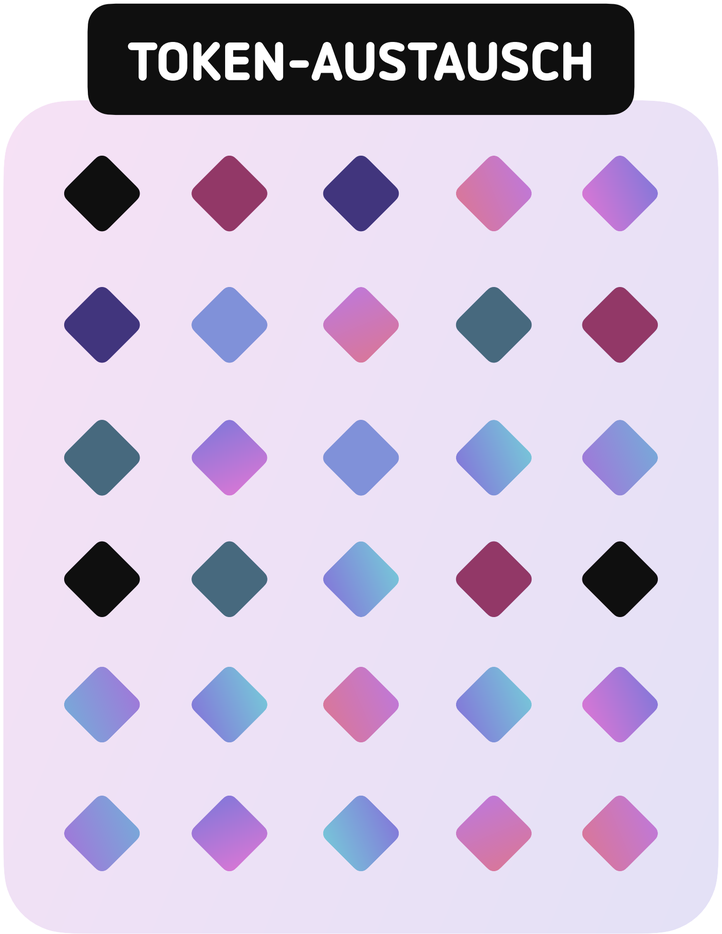
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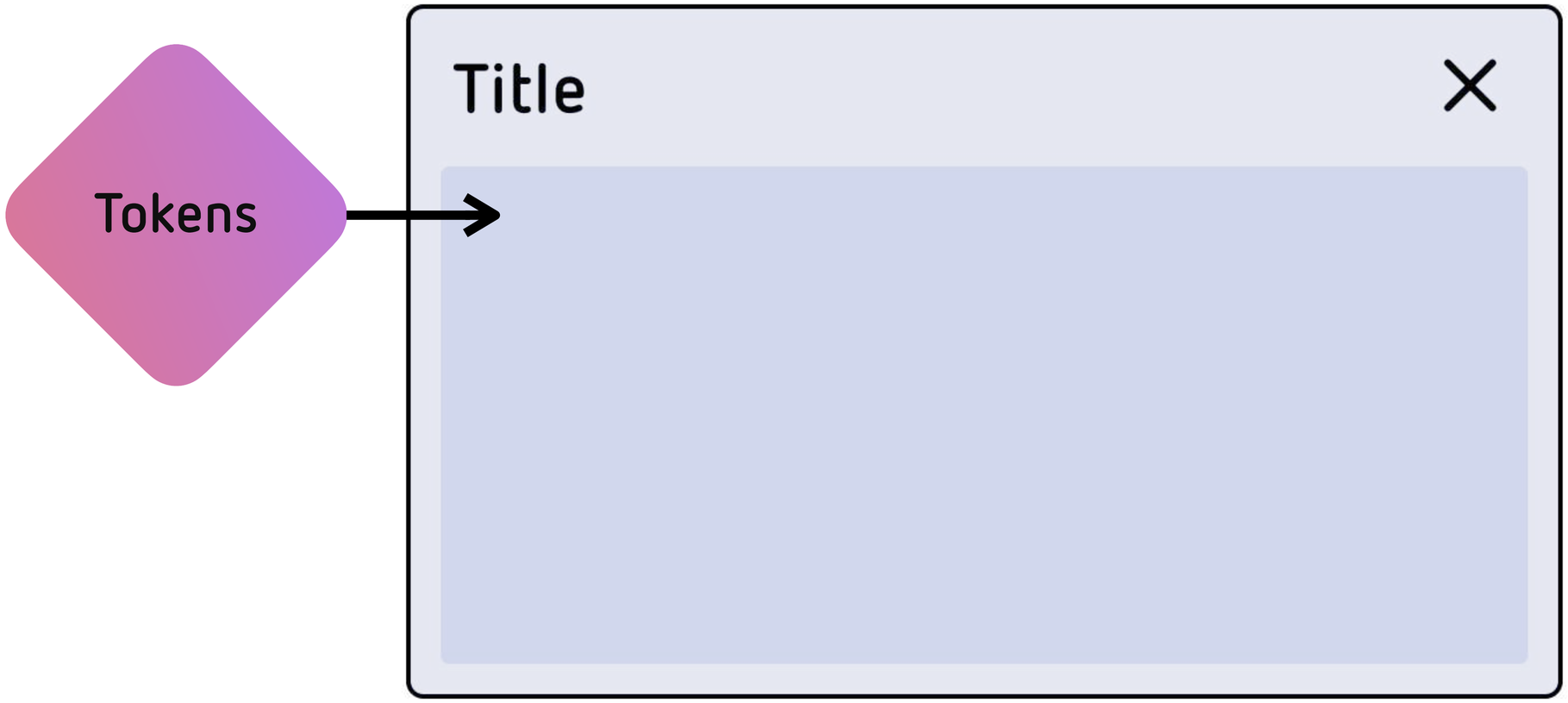
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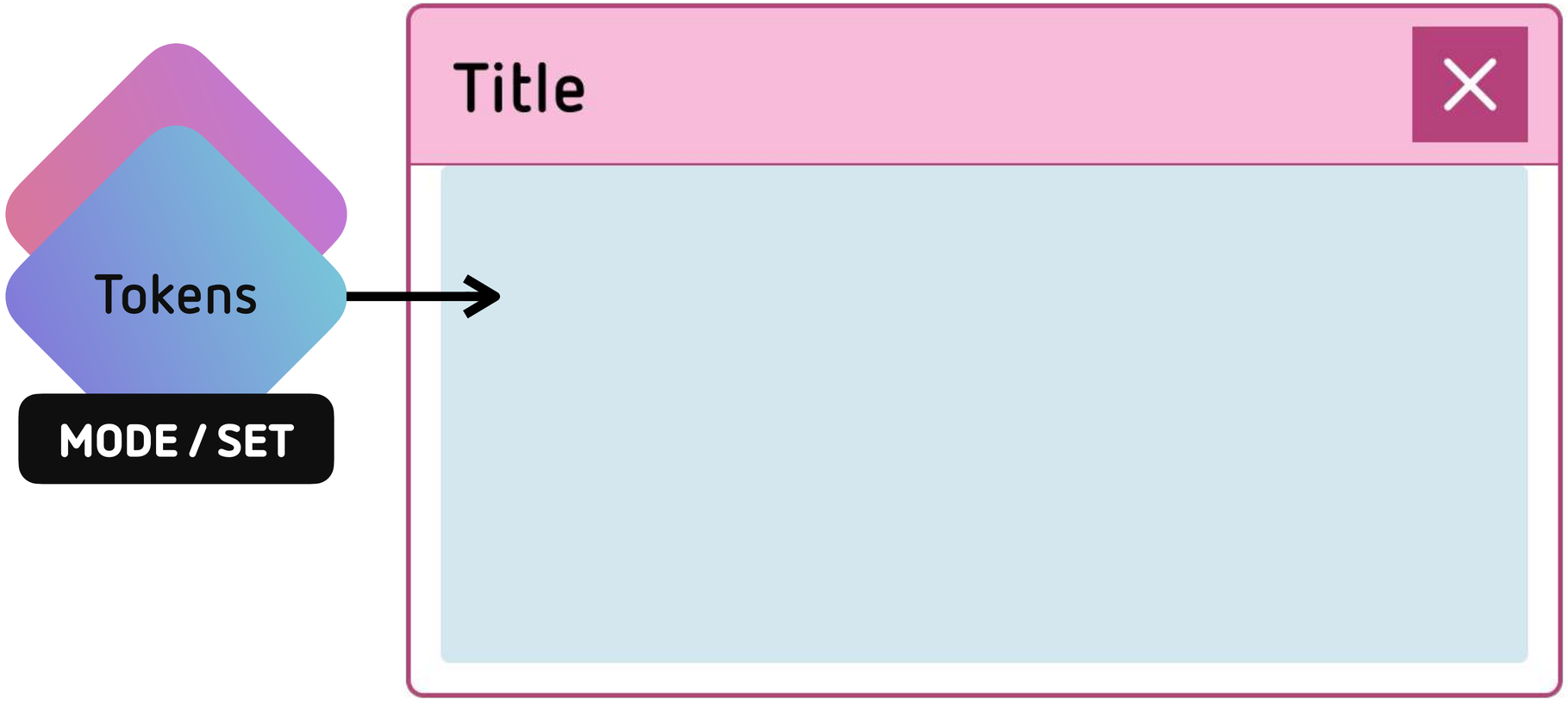
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MODE / SET
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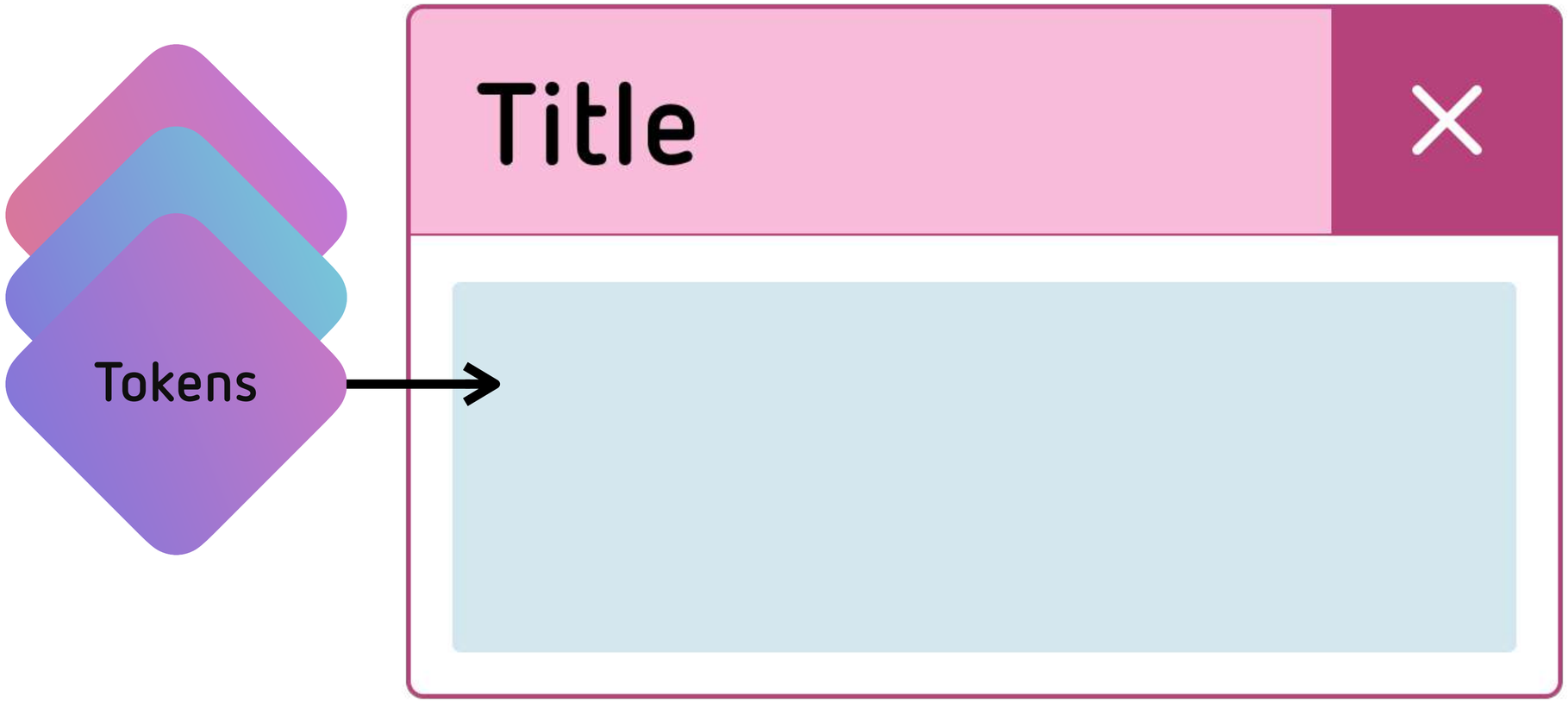
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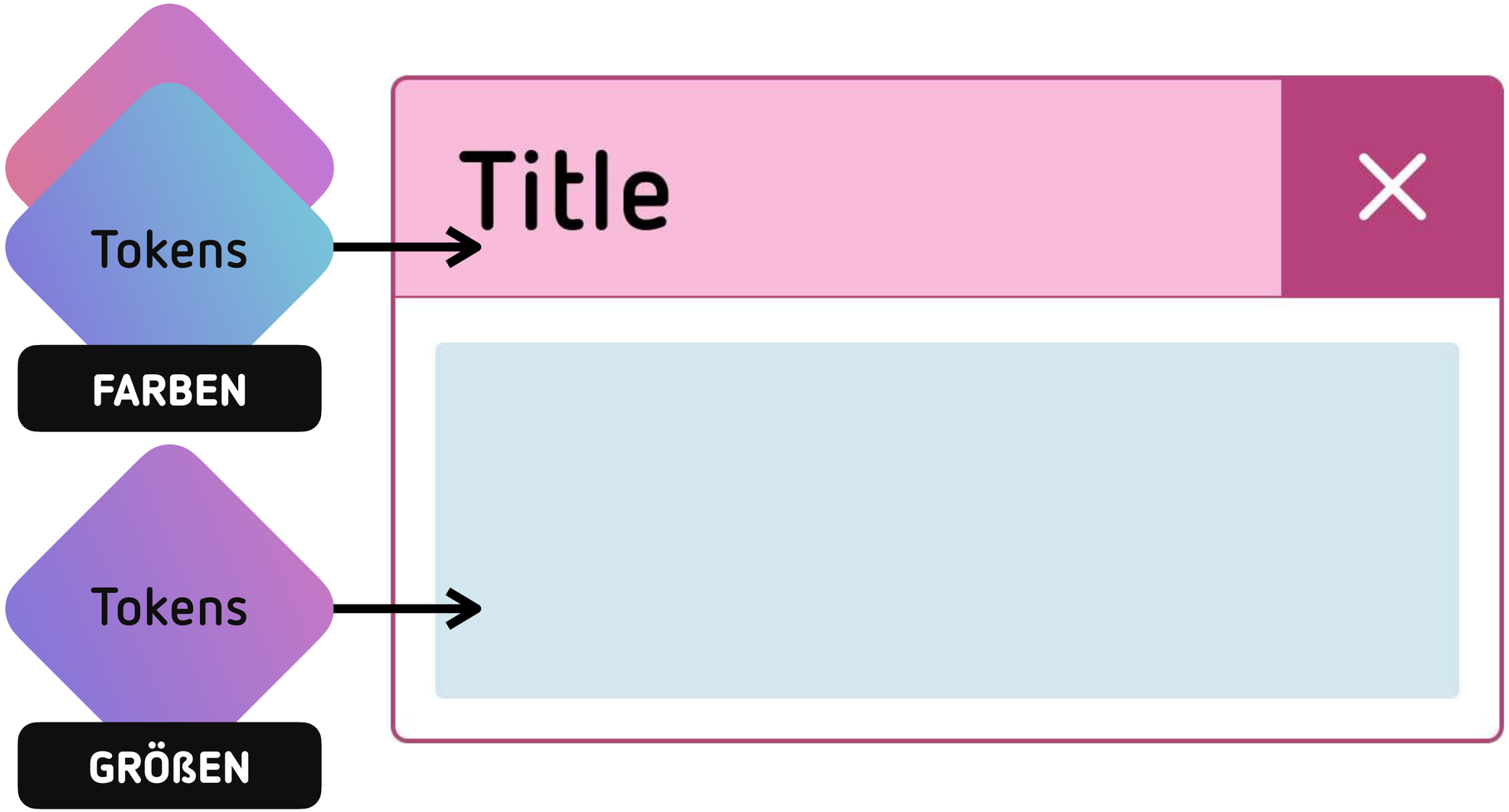
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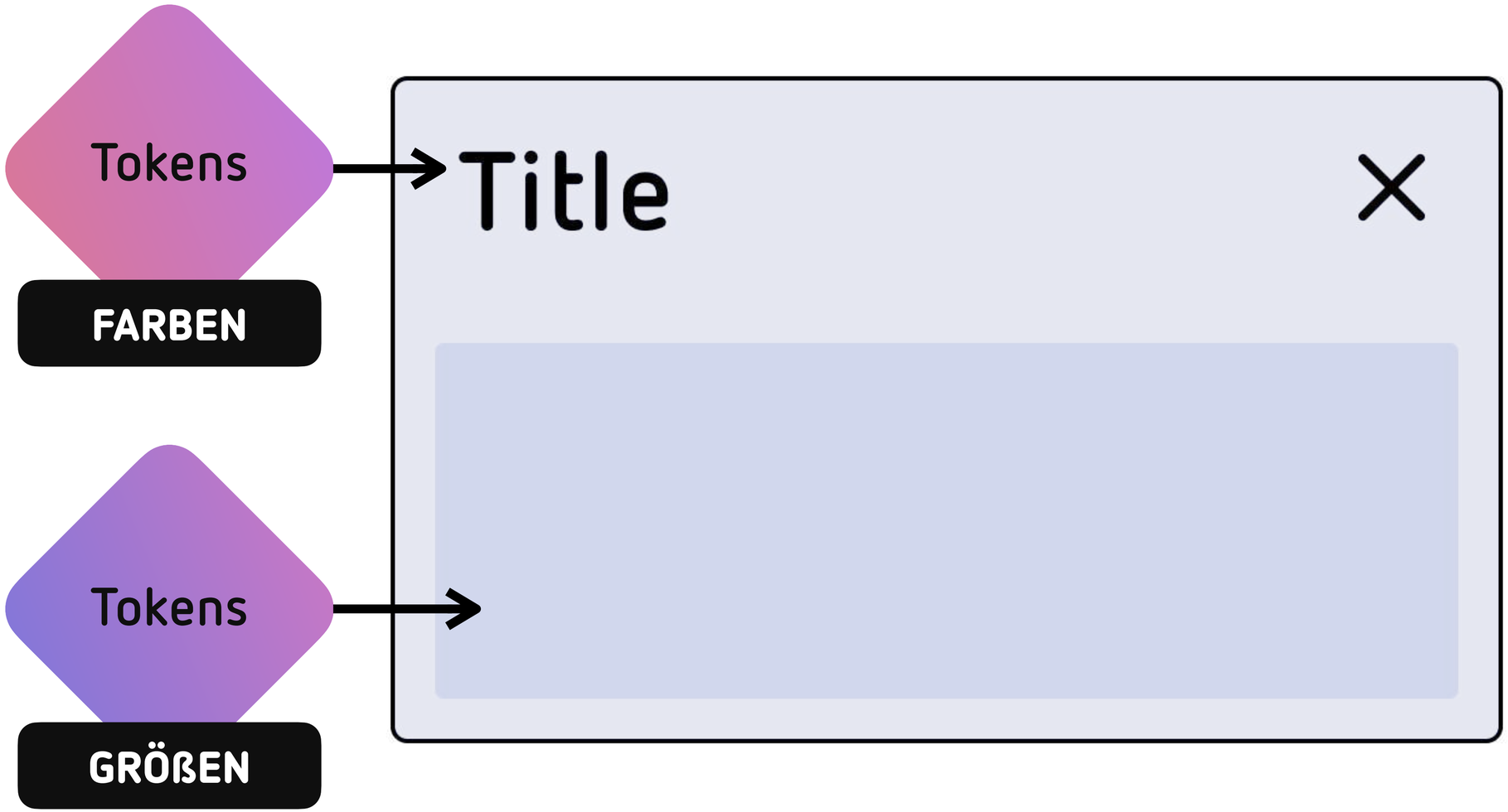
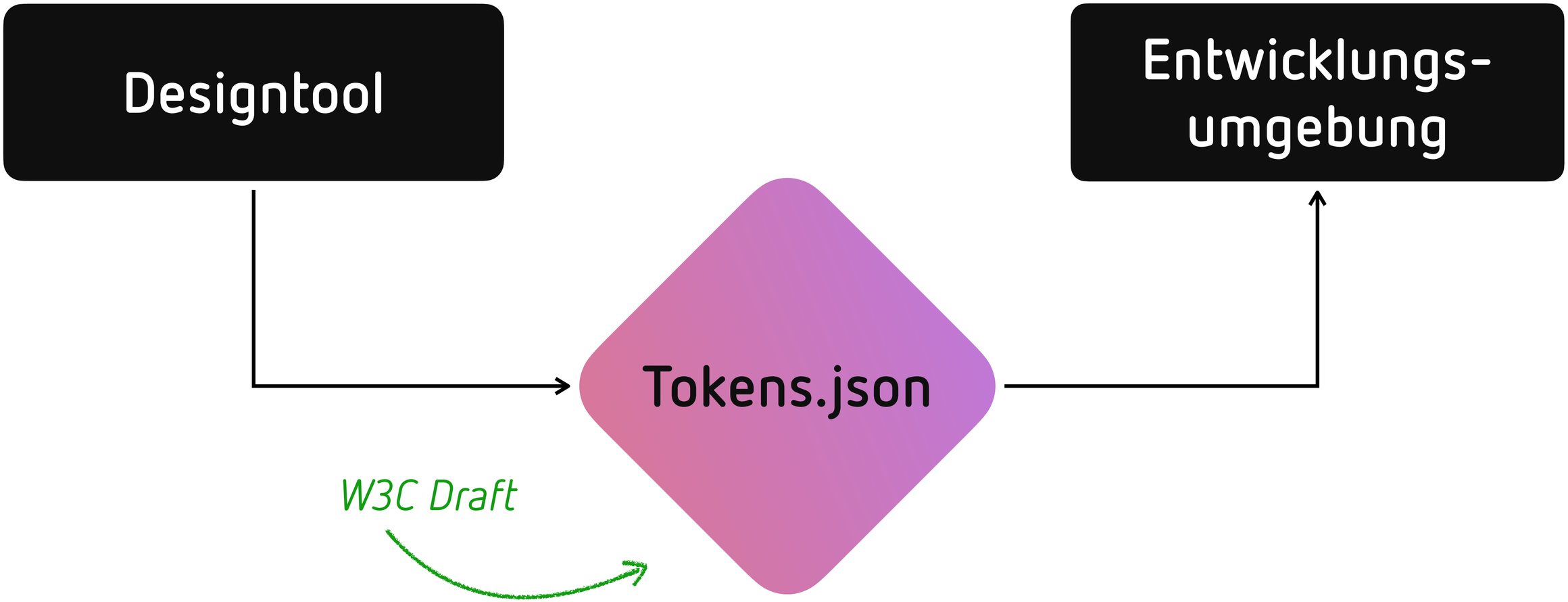
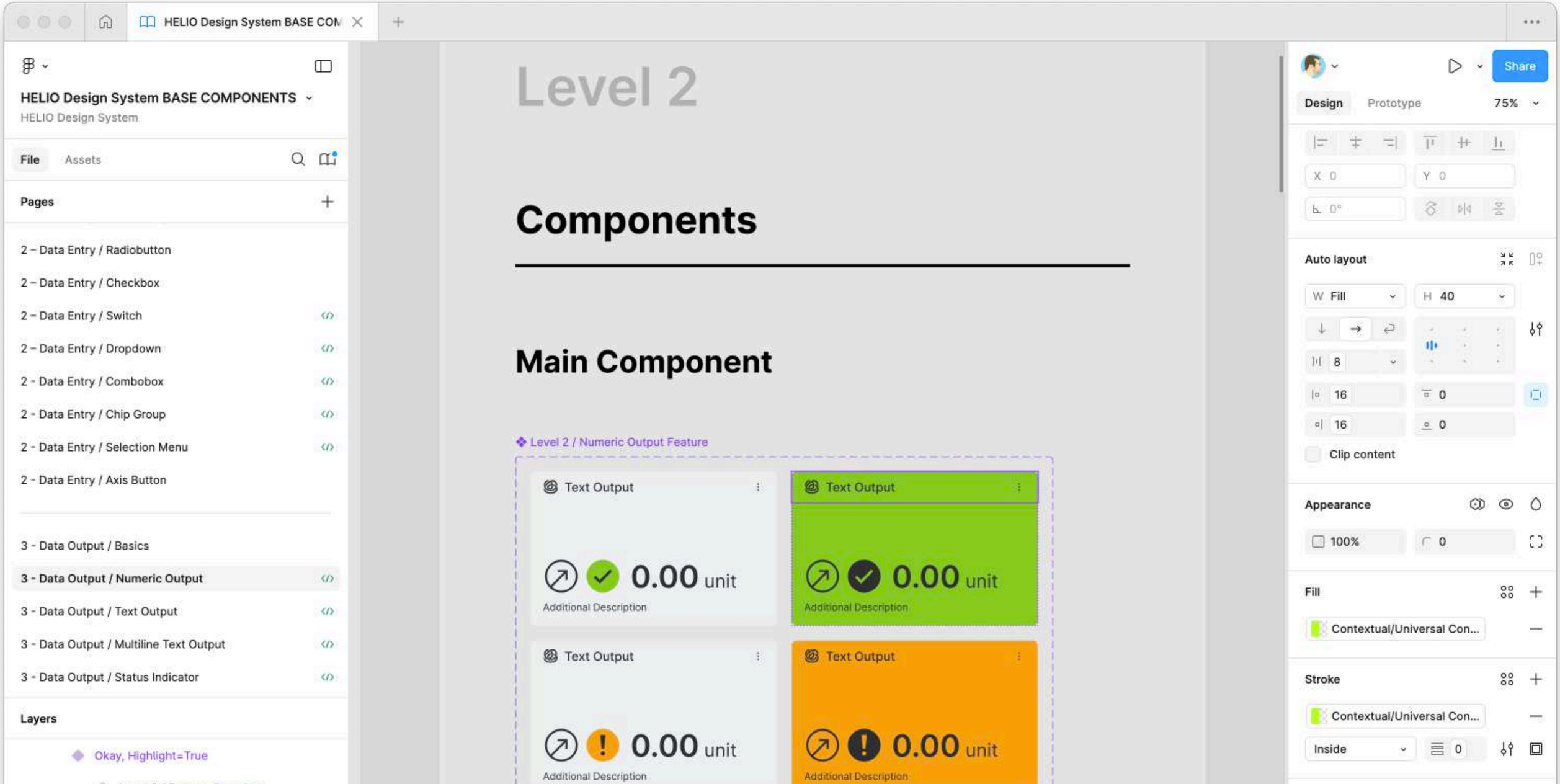
FARBEN
Tokens
GRÖßEN
Title


Tokens
FARBEN
Tokens
GRÖßEN
Title

1.4

WIE FUNKTIONIEREN SIE TECHNISCH?


Designtool
Entwicklungs-
umgebung
Tokens.json
W3C Draft


HELIO Design System BASE CON
HELIO Design System BASE COMPONENTS
HELIO Design System
File
Assets
Pages
2 – Data Entry / Radiobutton
2 – Data Entry / Checkbox
2 – Data Entry / Switch
2 – Data Entry / Dropdown
2 - Data Entry / Combobox
2 - Data Entry / Chip Group
2 - Data Entry / Selection Menu
2 - Data Entry / Axis Button
3 - Data Output / Basics
3 - Data Output / Numeric Output
3 - Data Output / Text Output
3 - Data Output / Multiline Text Output
3 - Data Output / Status Indicator
Layers
Okay, Highlight=True
Level 2
Components
Main Component
Level 2 / Numeric Output Feature
Text Output
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Additional Description
Text Output
0.00 unit
Additional Description
Text Output
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Additional Description
Text Output
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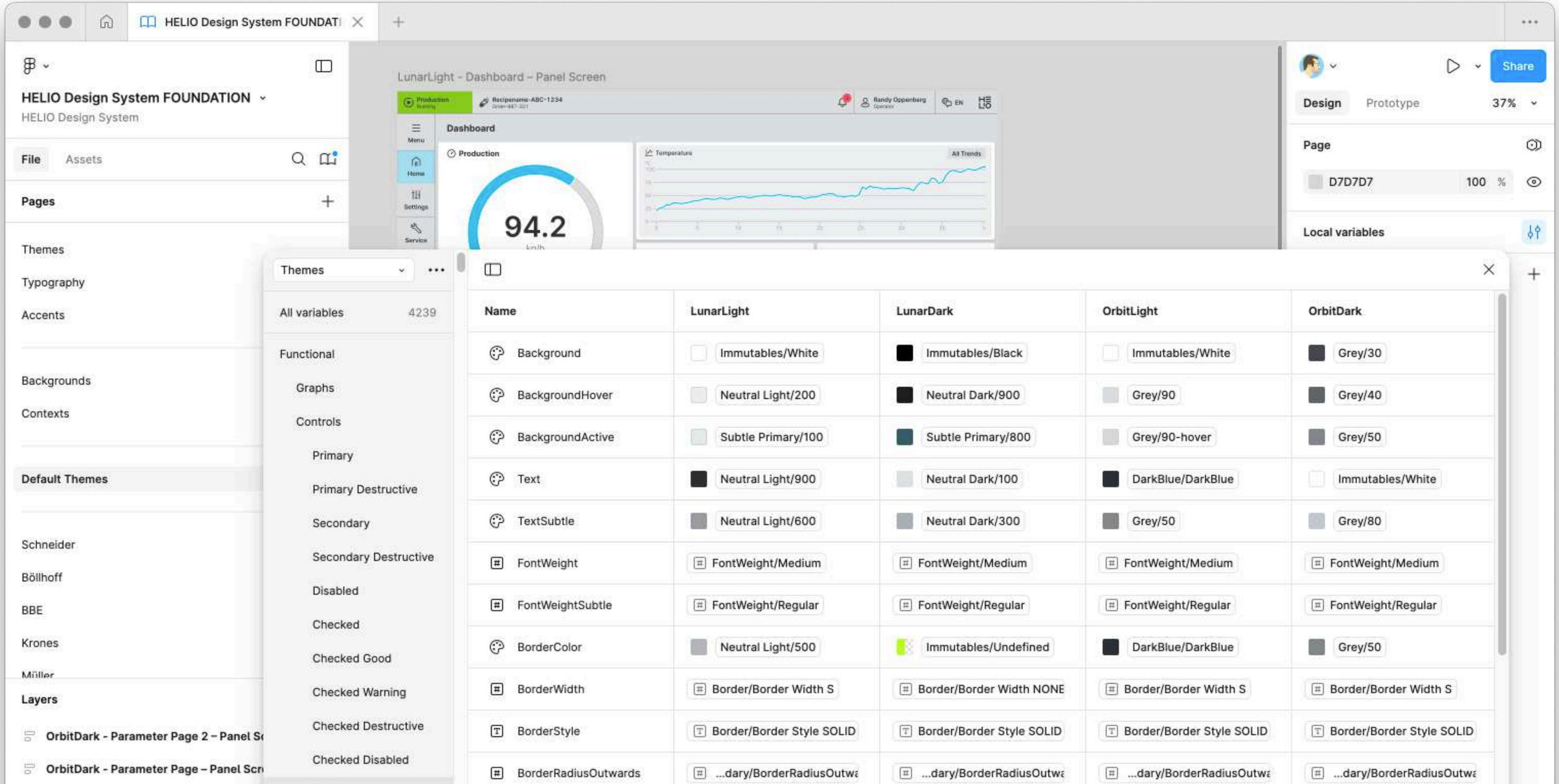
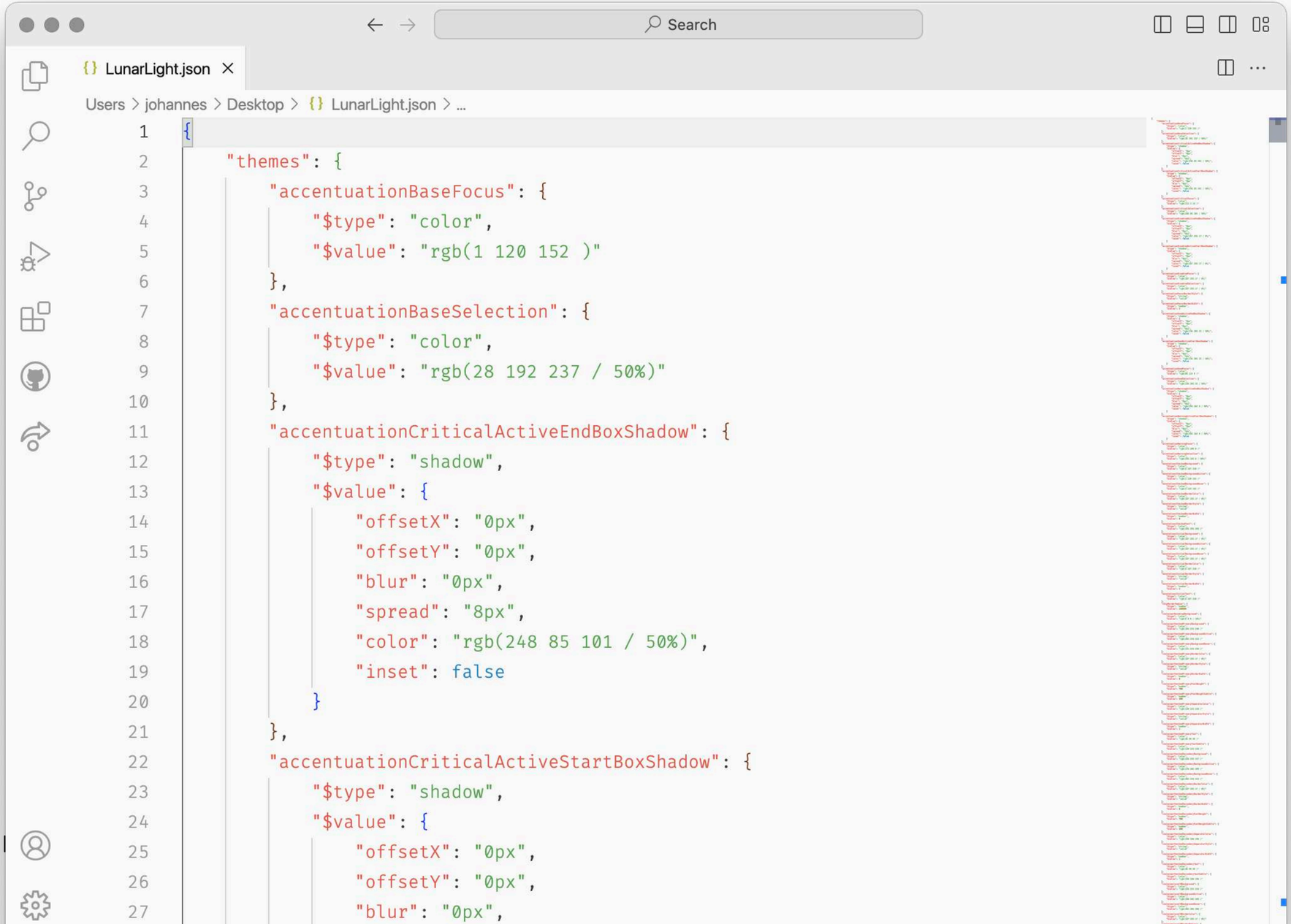
Additional Description
Share
Design
Prototype
75%
Auto layout
W Fill
H 40
Clip content
Appearance
100%
Fill
Contextual/Universal Con...
Stroke
Contextual/Universal Con...
Inside

WAS SIND DESIGN TOKENS? **TECHNIK**




Search
LunarLight.json
Users > johannes > Desktop > LunarLight.json > ...
{
"themes": {
"accentuationBaseFocus": {
"$type": "color",
"$value": "rgb(1 120 152)"
},
"accentuationBaseSelection": {
"$type": "color",
"$value": "rgb(28 192 237 / 50%)"
},
"accentuationCriticalActiveEndBoxShadow": {
"$type": "shadow",
"$value": {
"offsetX": "0px",
"offsetY": "0px",
"blur": "0px",
"spread": "8px",
"color": "rgb(248 85 101 / 50%)",
"inset": false
}
},
"accentuationCriticalActiveStartBoxShadow": {
"$type": "shadow",
"$value": {
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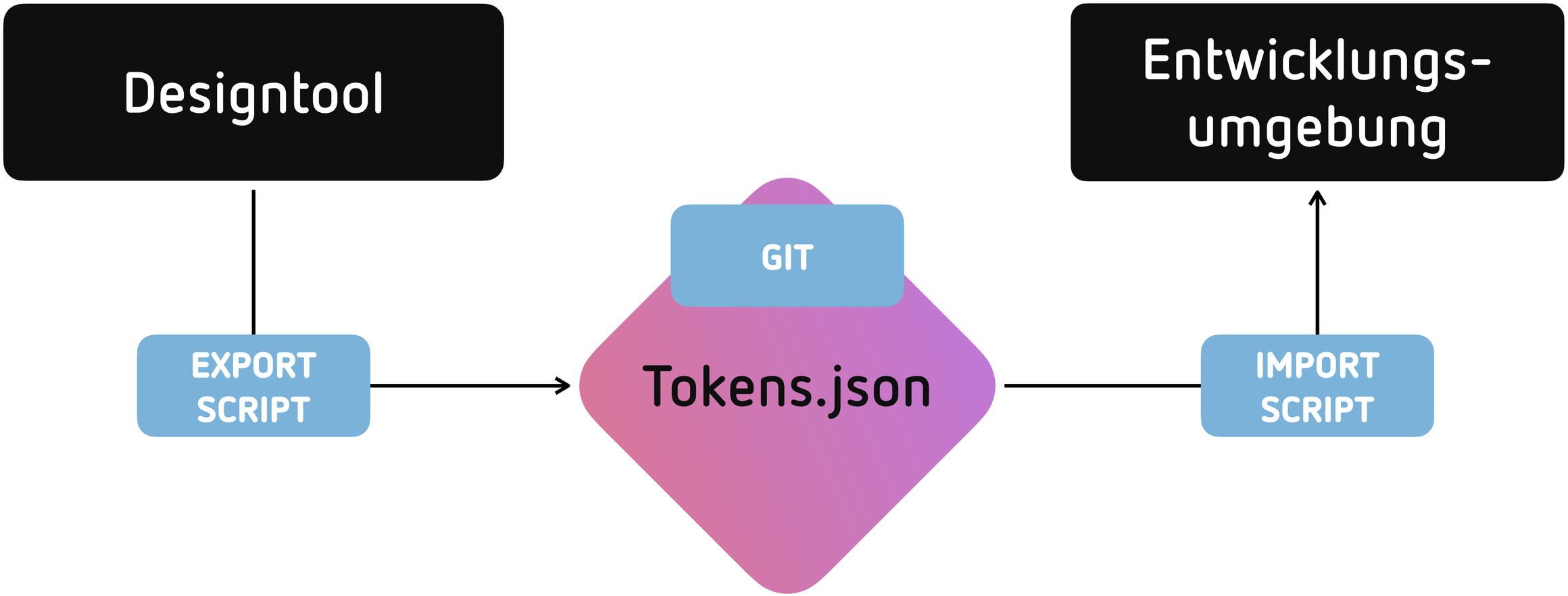
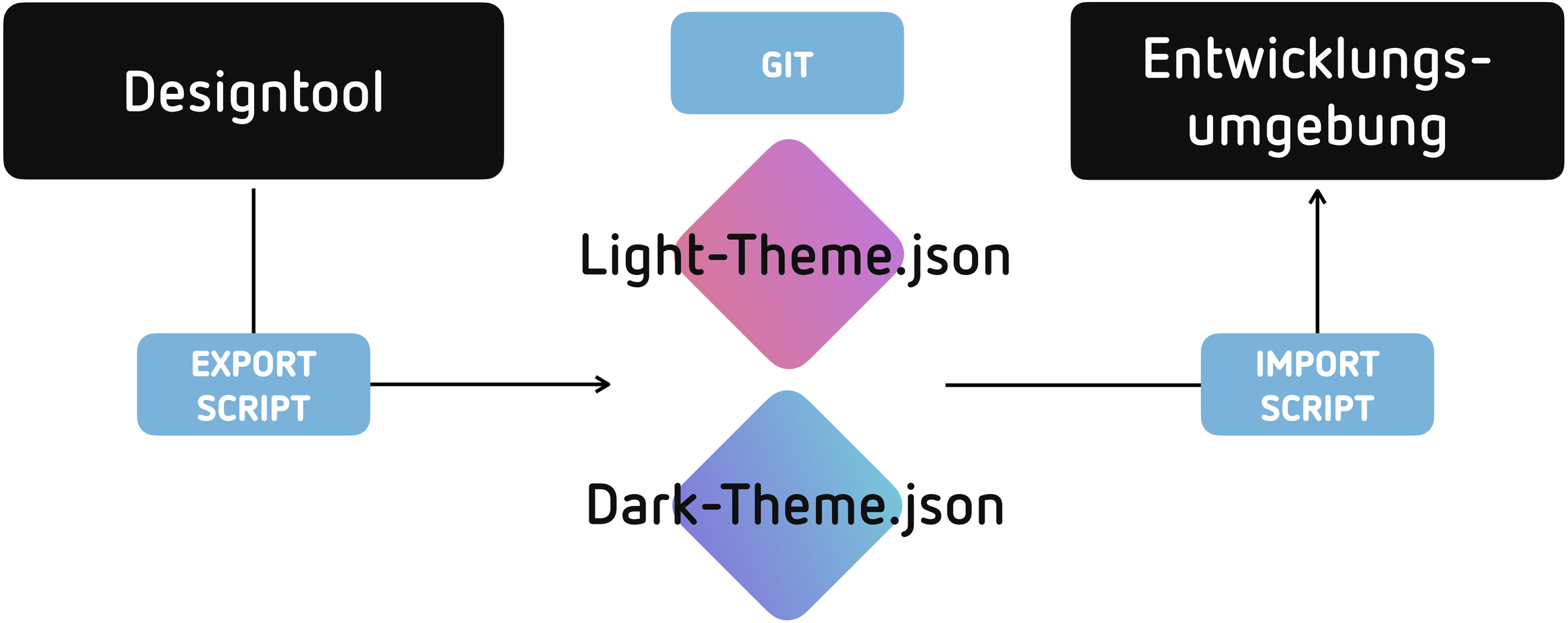

Designtool
Entwicklungs-
umgebung
GIT
EXPORT
SCRIPT
Tokens.json
IMPORT
SCRIPT

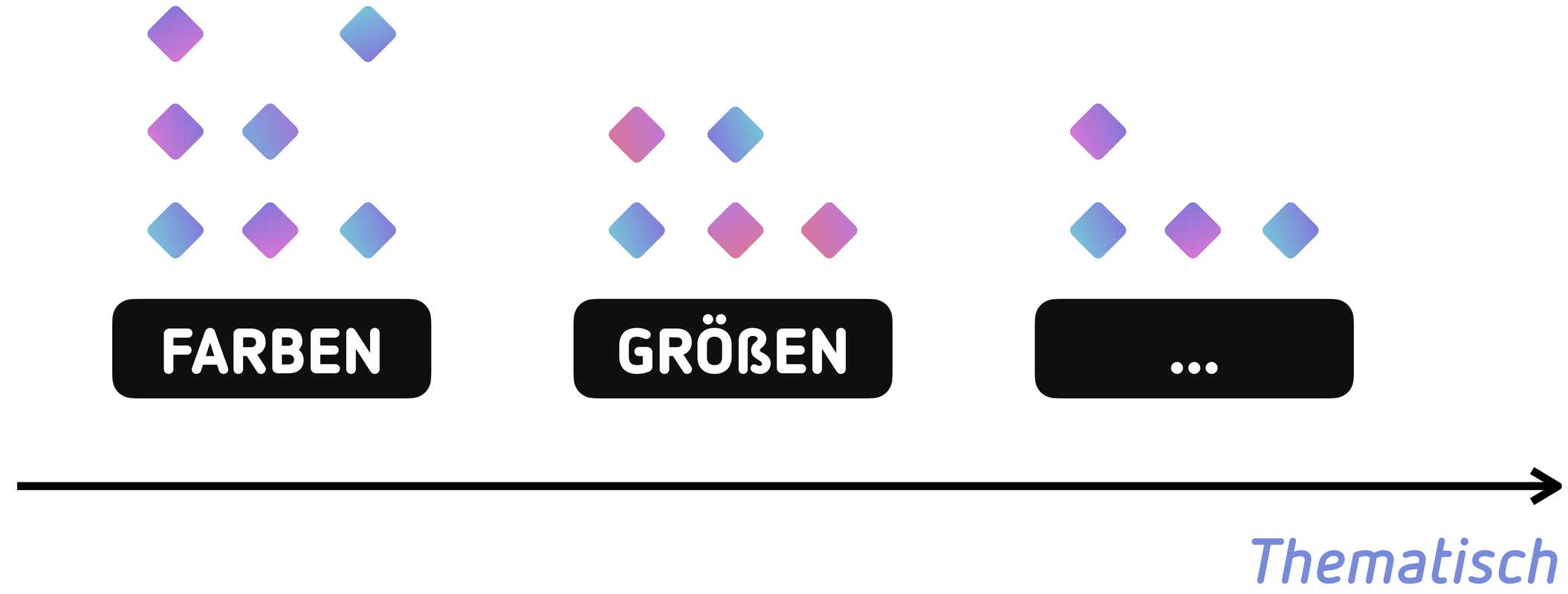

Designtool
GIT
Entwicklungs-
umgebung
Light-Theme.json
EXPORT
SCRIPT
IMPORT
SCRIPT
Dark-Theme.json

2

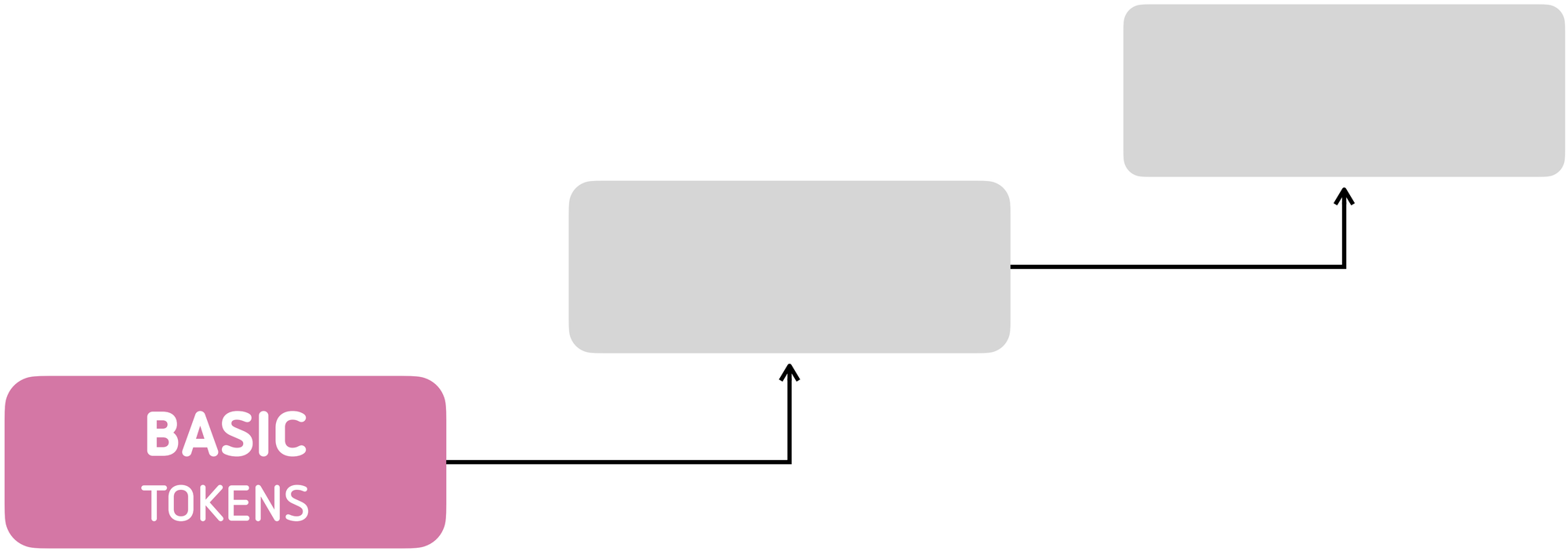
ARBEITEN MIT TOKENS

2.1

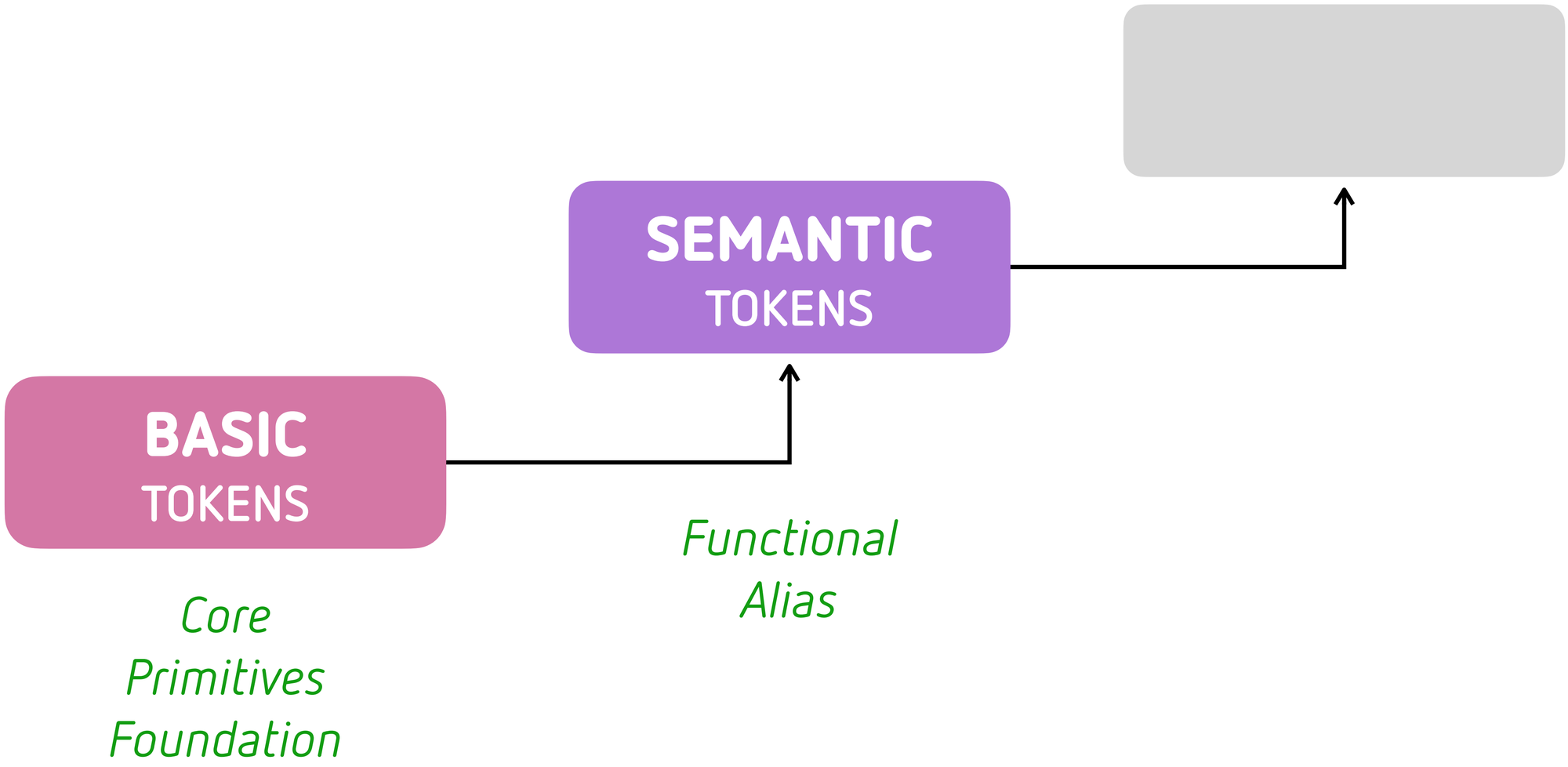
STRUKTUR EINES TOKEN-SYSTEMS

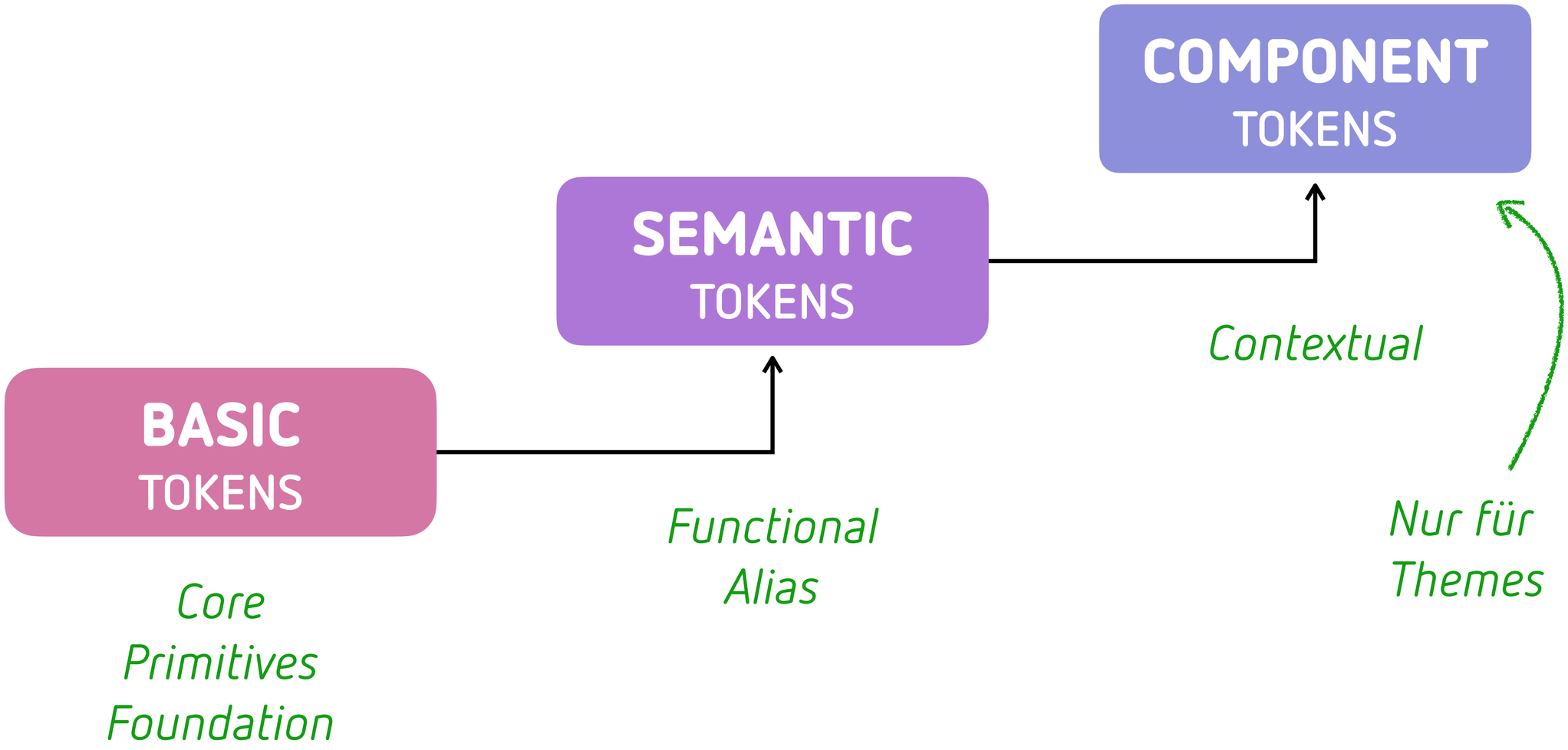

FARBEN
GRÖßEN
...
Thematisch

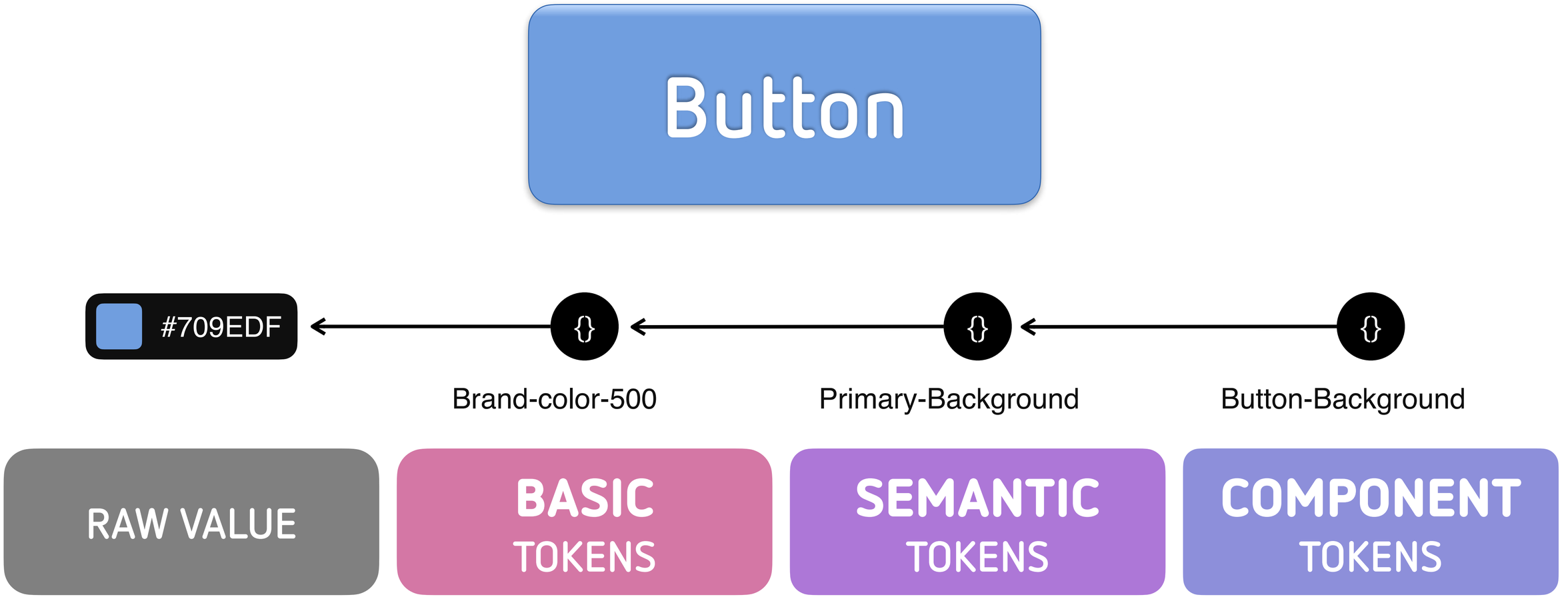

Hierarchisch
Thematisch

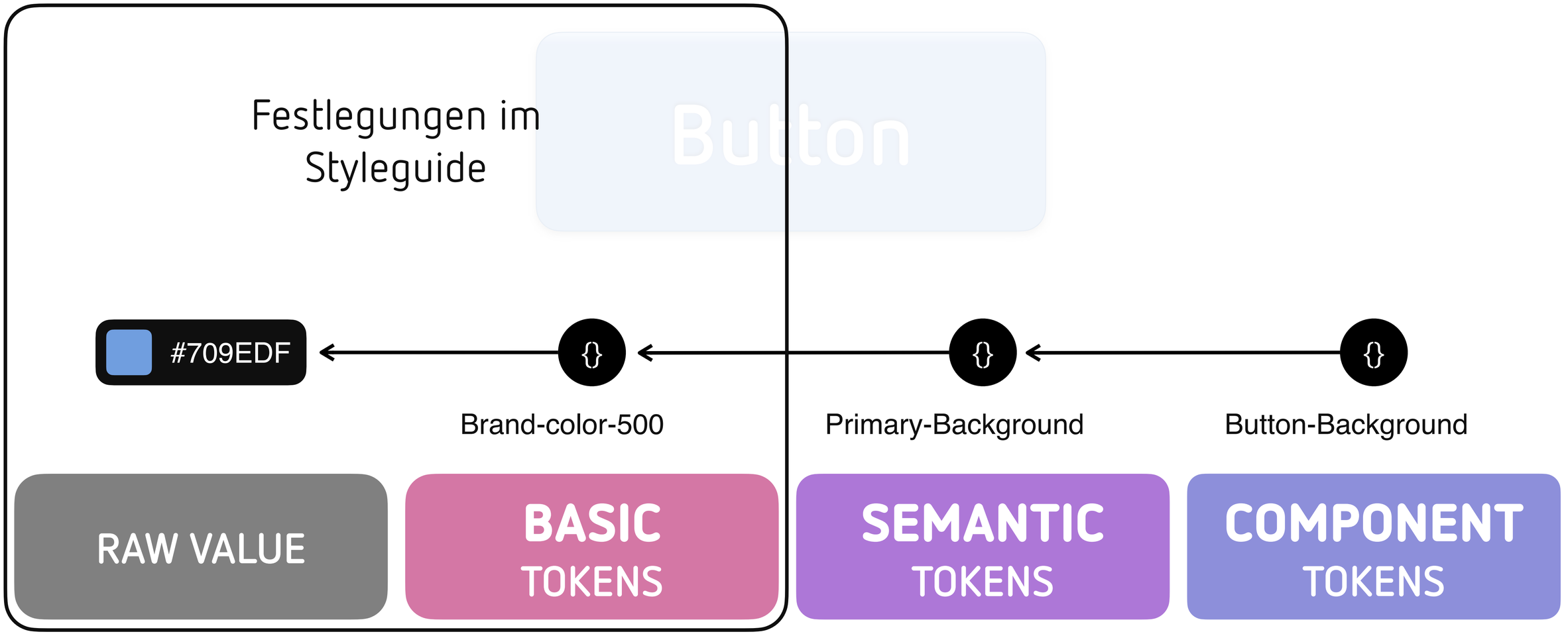


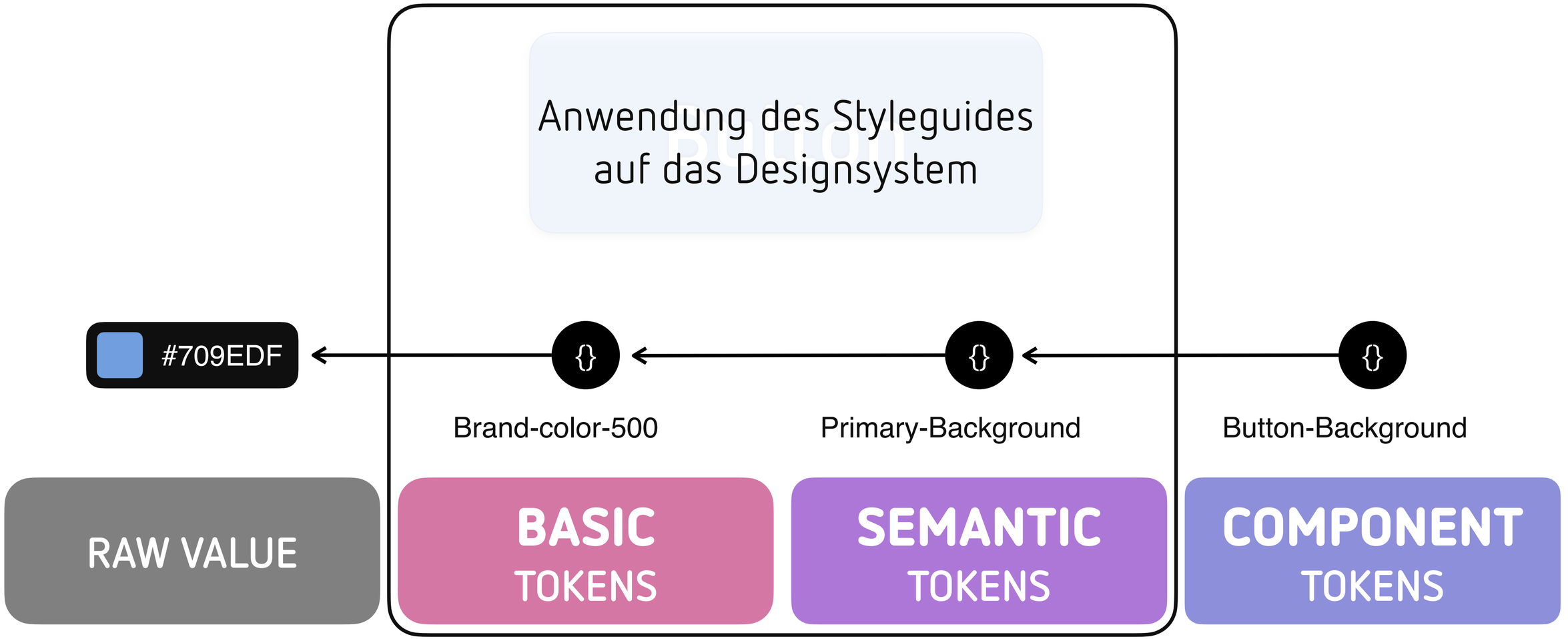
Core
Primitives
Foundation

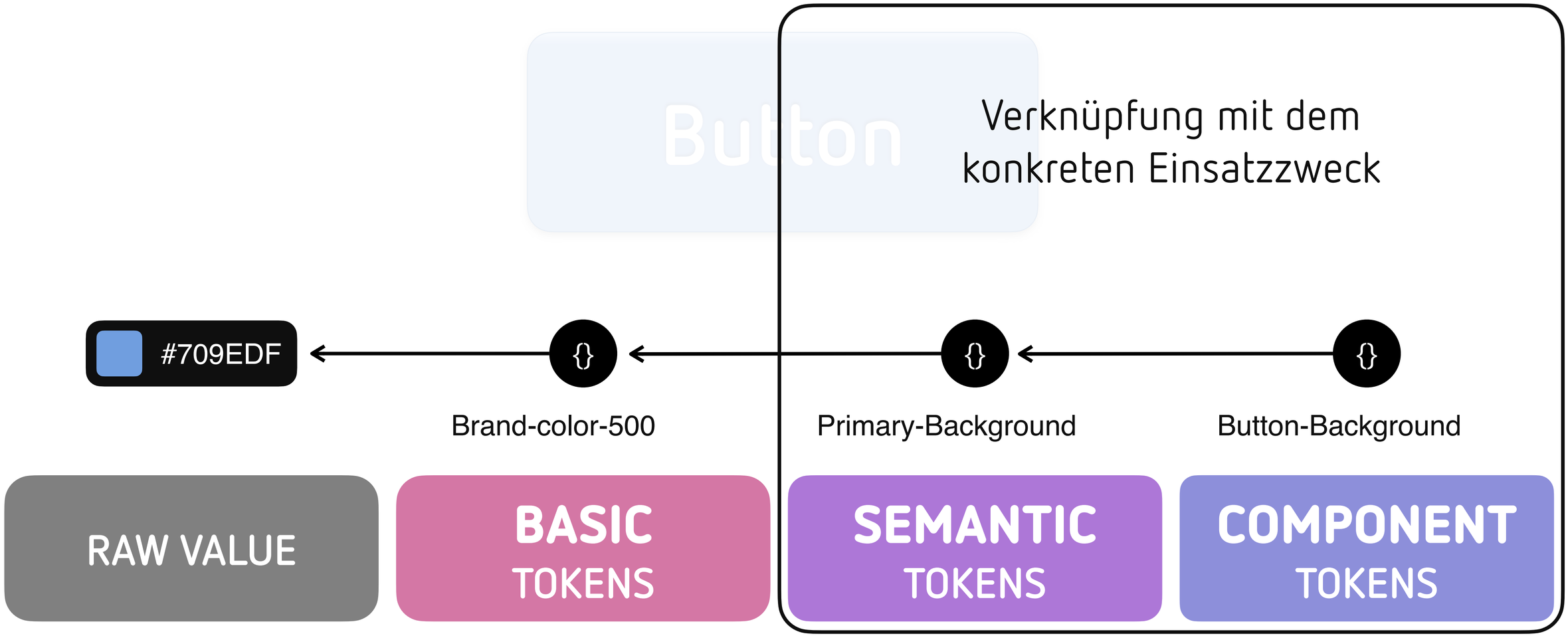

SEMANTIC
TOKENS
BASIC
TOKENS
Functional
Alias
Core
Primitives
Foundation

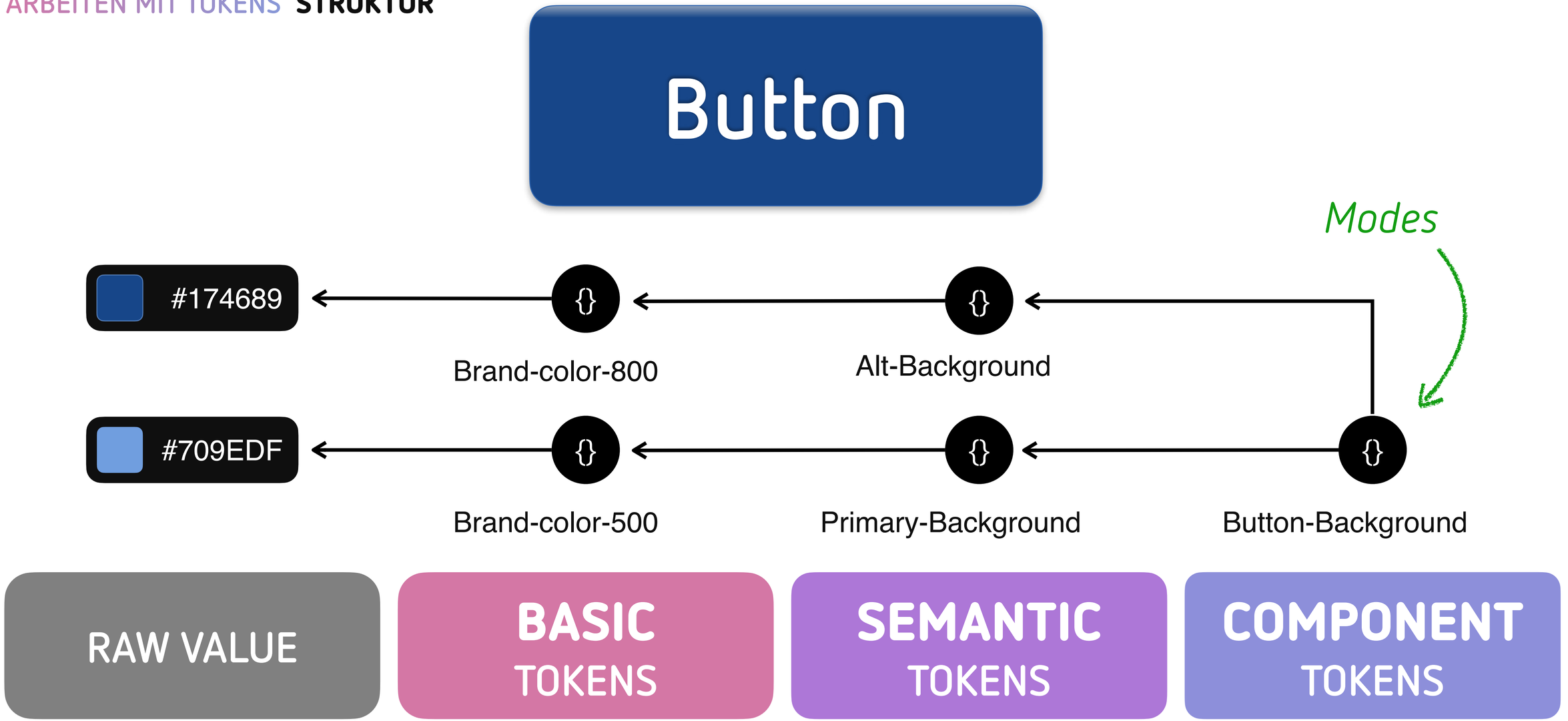

COMPONENT
TOKENS
SEMANTIC
TOKENS
BASIC
TOKENS
Contextual
Functional
Alias
Nur für
Themes
Core
Primitives
Foundation

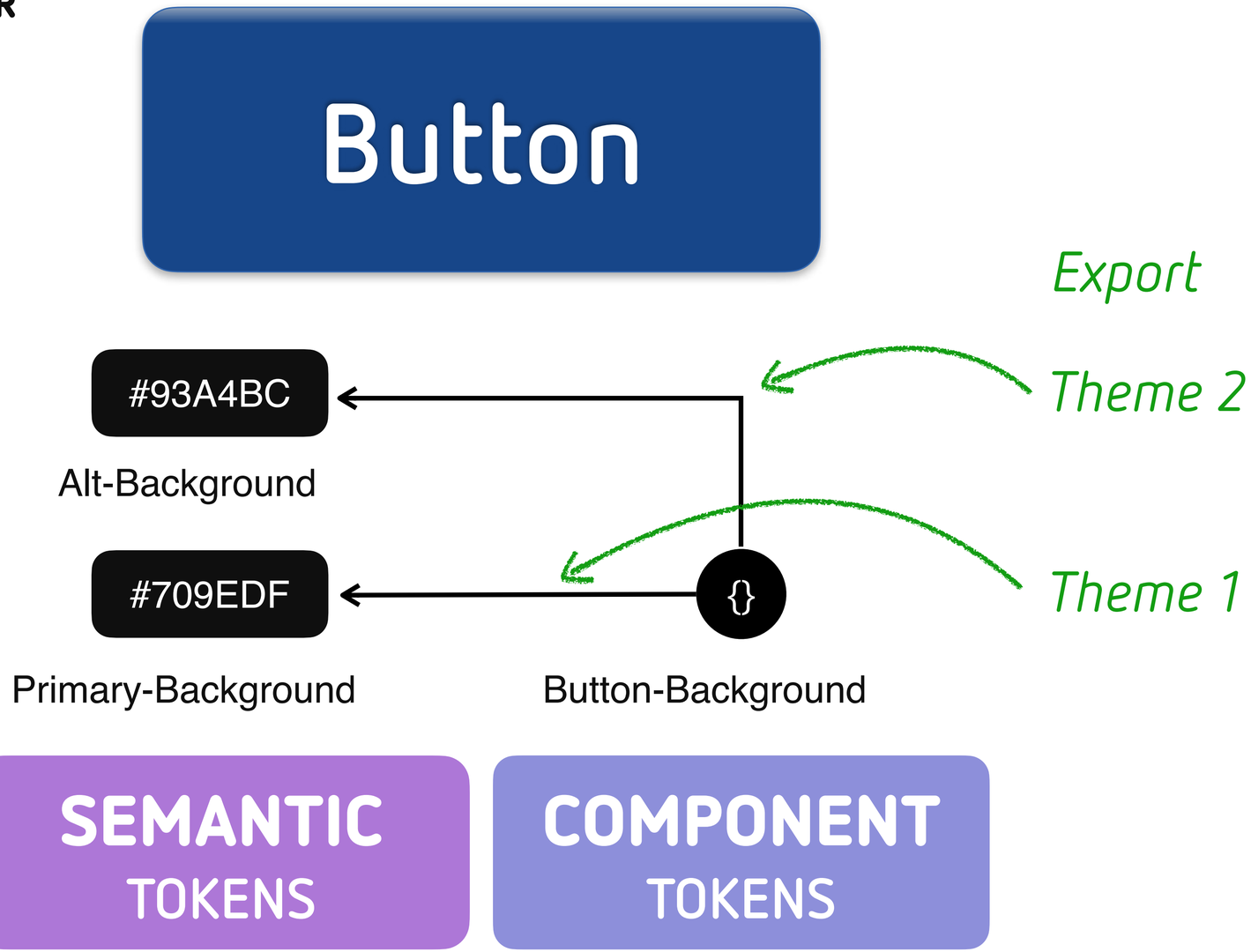

Button
#709EDF
{}
{}
{}
Brand-color-500
Primary-Background
Button-Background
RAW VALUE
BASIC TOKENS
SEMANTIC TOKENS
COMPONENT TOKENS


Festlegungen im Styleguide
Button
#709EDF
{}
{}
{}
Brand-color-500
Primary-Background
Button-Background
RAW VALUE
BASIC TOKENS
SEMANTIC TOKENS
COMPONENT TOKENS


Anwendung des Styleguides
auf das Designsystem
#709EDF
{}
{}
{}
Brand-color-500
Primary-Background
Button-Background
RAW VALUE
BASIC
TOKENS
SEMANTIC
TOKENS
COMPONENT
TOKENS


Button
Verknüpfung mit dem
konkreten Einsatzzweck
#709EDF
{}
{}
{}
Brand-color-500
Primary-Background
Button-Background
RAW VALUE
BASIC
TOKENS
SEMANTIC
TOKENS
COMPONENT
TOKENS


Button
Modes
#174689
#709EDF
Brand-color-800
Brand-color-500
Alt-Background
Primary-Background
Button-Background
RAW VALUE
BASIC TOKENS
SEMANTIC TOKENS
COMPONENT TOKENS


Button
Export
#93A4BC
Theme 2
Alt-Background
#709EDF
{}
Theme 1
Primary-Background
Button-Background
SEMANTIC
TOKENS
COMPONENT
TOKENS

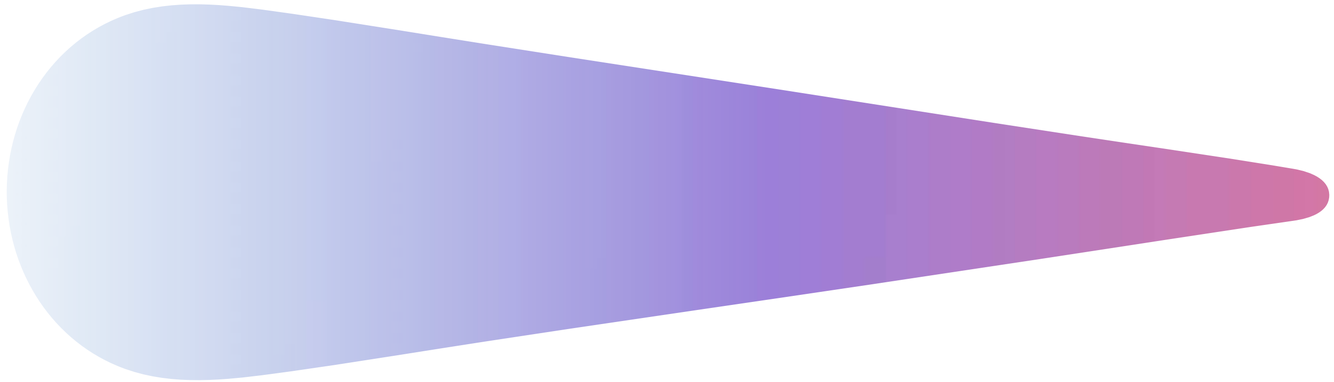
2.2

BENENNUNG VON TOKENS

„BEM“
(Block-Element-modifier)

BACKGROUND-BUTTON-PRIMARY

Allgemein

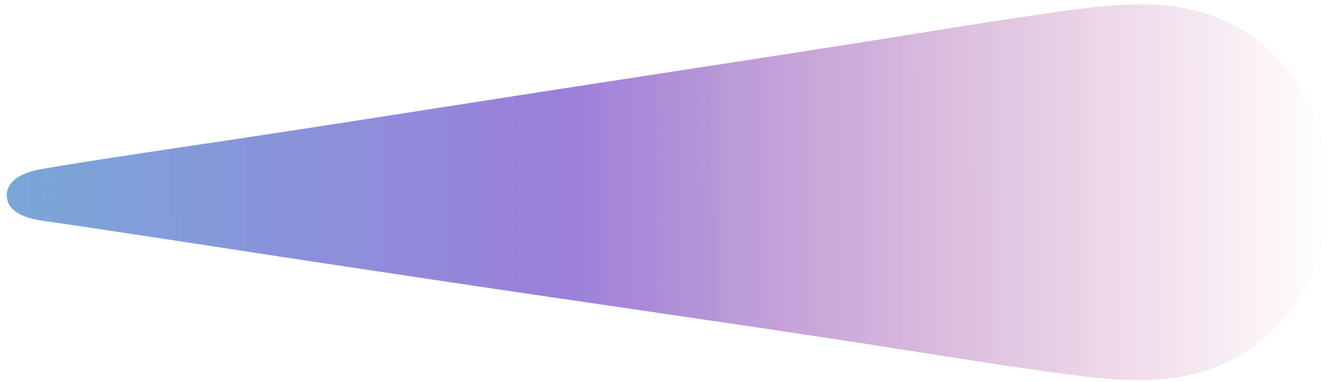


Spezifisch

„Functional“

PRIMARY-BUTTON-BACKGROUND

Spezifisch



Allgemein

BEM

Background

- Button-Primary
- Button-Secondary

Border

- Button-Primary
- Button-Secondary

Text

- Button-Primary
- Button-Secondary

Functional

Primary-Button

- Background
- Border
- Text

Secondary-Button

- Background
- Border
- Text

BEM

- Unterstützt das Entwerfen mit dem Designsystem
- Vereinfacht das Kombinieren von Eigenschaften für neue Komponenten
- Potential für Abweichungen von Brand- oder A11y-Richtlinien

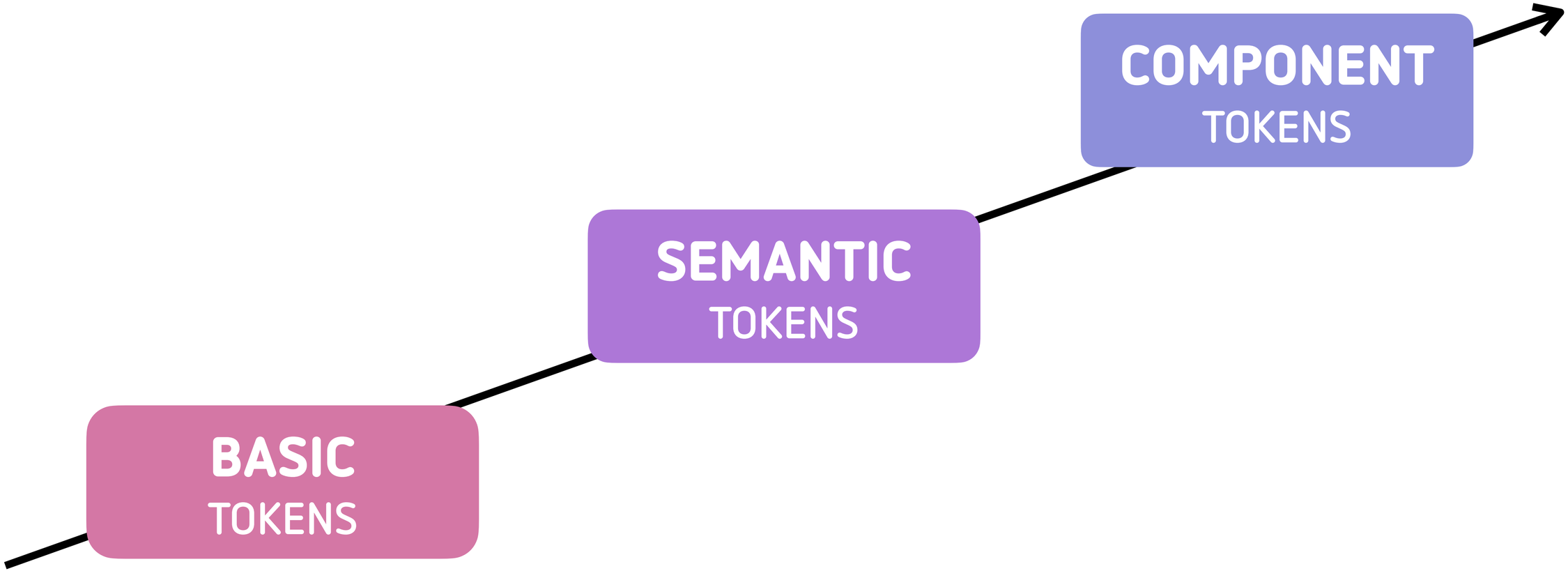
Functional

- Weniger Unklarheiten: Gruppierungen sind fest vordefiniert
- Das Ausbrechen aus dem System erfordert aufwändige Neu-Definitionen
- Der Aufbau vereinfacht das erstellen neuer Themes

2.3

WACHSEN MIT DEM SYSTEM

- Wie nenne ich den ersten Token?
- Kann ich alles falsch machen, wenn ich am Anfang die falsche Struktur wähle?
- Müssen zuerst alle Tokens fertig sein, bevor ich an die Entwickler übergebe?
- Fange ich mit Semantic Tokens an oder brauche ich gleich Component-Tokens?


BASIC
TOKENS
SEMANTIC
TOKENS
COMPONENT
TOKENS

- Moodboards
- Stilrecherche
- Entwürfe
- Abstufung einer sinnvollen Palette

- Zuweisung zu Standard-Elementen
- Vereinheitlichung nach Bedeutung und Funktion
- Finden von Mustern und Prinzipien

- Spezialisierungen
- Sonderfälle
- Ausarbeitung in der Breite

- Tokens können den gesamten Prozess vom Entwurf bis zum fertigen Produkt begleiten
- Anpassungen und Umarbeitungen kommen dabei unvermeidlicher Weise vor, schaffen aber auch eine gemeinsames Verständnis für die (Design-)Entscheidungen
- Abstimmungen aller Beteiligten (Designer bis Entwickler) ist dabei unerlässlich

3

TOKENS IN DER PRAXIS

Key Benefits

- „Bridging The Gap“ – Förderung eines besseren Austausch zwischen allen Beteiligten
- Automatisierung von Übergabe-Prozessen
- Themes!

wichtig

mächtig

beeindruckend

3.1

WIE NUTZEN TOOLS DIESE VORTEILE

- Figma

- Web
- iOS
- Android
- Powerpoint?

- Figma

- Projektierungs-
umgebung?

HELLA

- Farben
- Rahmen, Größen, Abstände
- Schriften, Schriftgrößen
- Effekte
- JSON

✔

zenon by COPA-DATA

- Farben
  - Mehrere Paletten, die während der Laufzeit umgeschaltet werden können
- Schriften, Schriftgrößen
- Schatten
- XML

(✔)

SIEMENS **SIMATIC WinCC Unified System**

- V19 Update 2
  - 500 Farben pro Palette
- WinCC Unified Corporate Designer
  - Stilbibliothek
  - Proprietäres Austauschformat

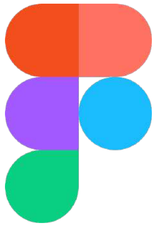
Eigenes Ökosystem

- Figma

Aber hier geht alles?

- Projektierungs-
umgebung?

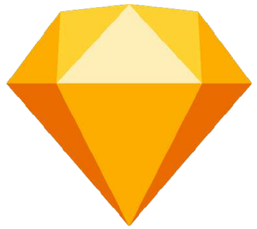
bedingt



Figma

- „Variables“
- Vermischt Tokens mit Inhalt und Prototyping
- Kein nativer Export
- Große Projekte brauchen teure Abonnements

✔



Sketch

- Limitiert auf Farben, Stile und Schriften
- Mehr über Plugins

Eingeschränkt

Adobe XD

- Stile
- Export als CSS

„Wartungsmodus“

Penpot

- Open Source
- Wenig Verbreitung
- Standardkonforme Integration geplant

(✔)

- Figma

Es wird…

- Projektierungs-
umgebung?

bedingt

Lohnt sich der Einsatz in industriellen UIs?

3.2

ERKENNTNISSE UND CHANCEN

Design

- Schaffung eigener Guidelines, die das Design konsistent halten.
- Benennung schafft Klarheit, spart Dokumentation (ist aber auch schwierig)
- Vereinfacht arbeiten im Team (Designer zu Designer)
- „Fundamentale" Änderungen können schnell umgesetzt werden
- Unabhängigkeit von Tools: Standardisierung statt proprietären Stilen

Entwicklung

- Gemeinsames Verständnis über den Aufbau von Komponenten
- Bessere Trennung von Inhalt und Design
- Änderungen (auch wenn sie manuell übernommen werden müssen) können einfach mit Git nachvollzogen werden


A11Y

A11Y

WCAG-Konformität

EAA / BFSG

Flexibilität & Geschwindigkeit

Für große Projekte

Kaum Nachteile*

Auch bei kleinen Projekten

VIELEN DANK!

W3C Draft

https://second-editors-draft.tr.designtokens.org/

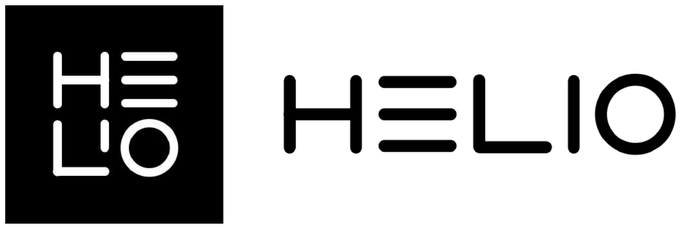
Naming Tokens

Unterhaltsam: https://thedesignsystem.guide/design-tokens-naming-playbook

Ausführlich: https://medium.com/eightshapes-llc/naming-tokens-in-design-systems-9e86c7444676

BEM - Block Element Modifier

https://getbem.com/introduction/



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