

# **The Optimum CSS Architecture\***

Booking.com—Amsterdam, 2013

**\*...so far.**

**Who am I?**

@csswizardry, inuit.css, BSkyB

slay

es

**Problems we encounter...**

...and sometimes create.

**CSS sucks**

# CSS sucks

Specificity is a nightmare

Inherent global scope

Very loose syntax

Source order is critical

The cascade and inheritance



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**Developers kinda suck...**

# Developers kinda suck...

Laziness

Lack of self-discipline

Lack of documentation and comments

Lack of specialism/caring

# Developers kinda suck...

## Laziness

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Lack of specialism/caring

**Projects end up sucking**



**Keith Clark**  
@keithclarkcouk



Following

In a painful world of legacy CSS forcing me to write horrid, overly specific CSS selectors :(

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1

FAVORITE



3:09 PM - 4 Dec 13

# Projects end up sucking

We grow tired/bored

We stop caring as much

We introduce hacks

We bolt styles onto the end of stylesheets

Our code bloats

We're on a downward spiral

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**We need a way of taming it**

**Righting our wrongs...**

...the hard way.

**“What tools do you use  
for documentation?”**

**“Can’t you generate this  
stuff automatically?”**



**“What if other developers on  
my team don’t understand it?”**

**“Won’t this take a  
long time to learn?”**

**We can't always take the easy route.**

# Rules

Define how we work

# **Self-discipline**

Stick to the rules

# **Diligence**

Work hard, work smart

**A new approach**  
Self-discipline and rules.

# SMACSS

bookit





# A new approach

Rules

Self-discipline

A meta-framework

# A new approach

Rules

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Self-discipline

A meta-framework

# A new approach

Rules

Self-discipline

A meta-framework

**Problems we need to solve**

# Sane CSS architecture

Manage the dependency tree

Set the source order

Tame inheritance and the cascade

Write CSS for the browser

# Sane CSS architecture

Manage the dependency tree

Set the source order

Tame inheritance and the cascade

Write CSS for the browser

```
element.style {  
}
```



```
h1, h2, h3, h4, h5, h6, hgroup, ul, ol, dl, csswizardry.min.css:5  
blockquote, p, address, table, fieldset, figure, pre, .page-head,  
.media, .island, .islet {  
☒ margin-bottom: 24px;  
☒ margin-bottom: 1.5rem;  
}
```

```
h1, h2, h3, h4, h5, h6, p, blockquote, pre, csswizardry.min.css:5  
dl, dd, ol, ul, form, fieldset, legend, table, th, td, caption, hr  
{  
    margin: ▶ 0;  
    padding: ▶ 0;  
}
```

```
*, *:before, *:after { csswizardry.min.css:5  
☒ -webkit-box-sizing: border-box;  
    -moz-box-sizing: border-box;  
    -ms-box-sizing: border-box;  
    -o-box-sizing: border-box;  
☒ box-sizing: border-box;  
}
```

```
p { user agent stylesheet  
    display: block;  
    -webkit-margin-before: 1em;  
    -webkit-margin-after: 1em;  
    -webkit-margin-start: 0px;  
    -webkit-margin-end: 0px;  
}
```

#### Pseudo ::before element

```
*, *:before, *:after { csswizardry.min.css:5  
☒ -webkit-box-sizing: border-box;  
    -moz-box-sizing: border-box;  
    -ms-box-sizing: border-box;
```



# Sane CSS architecture

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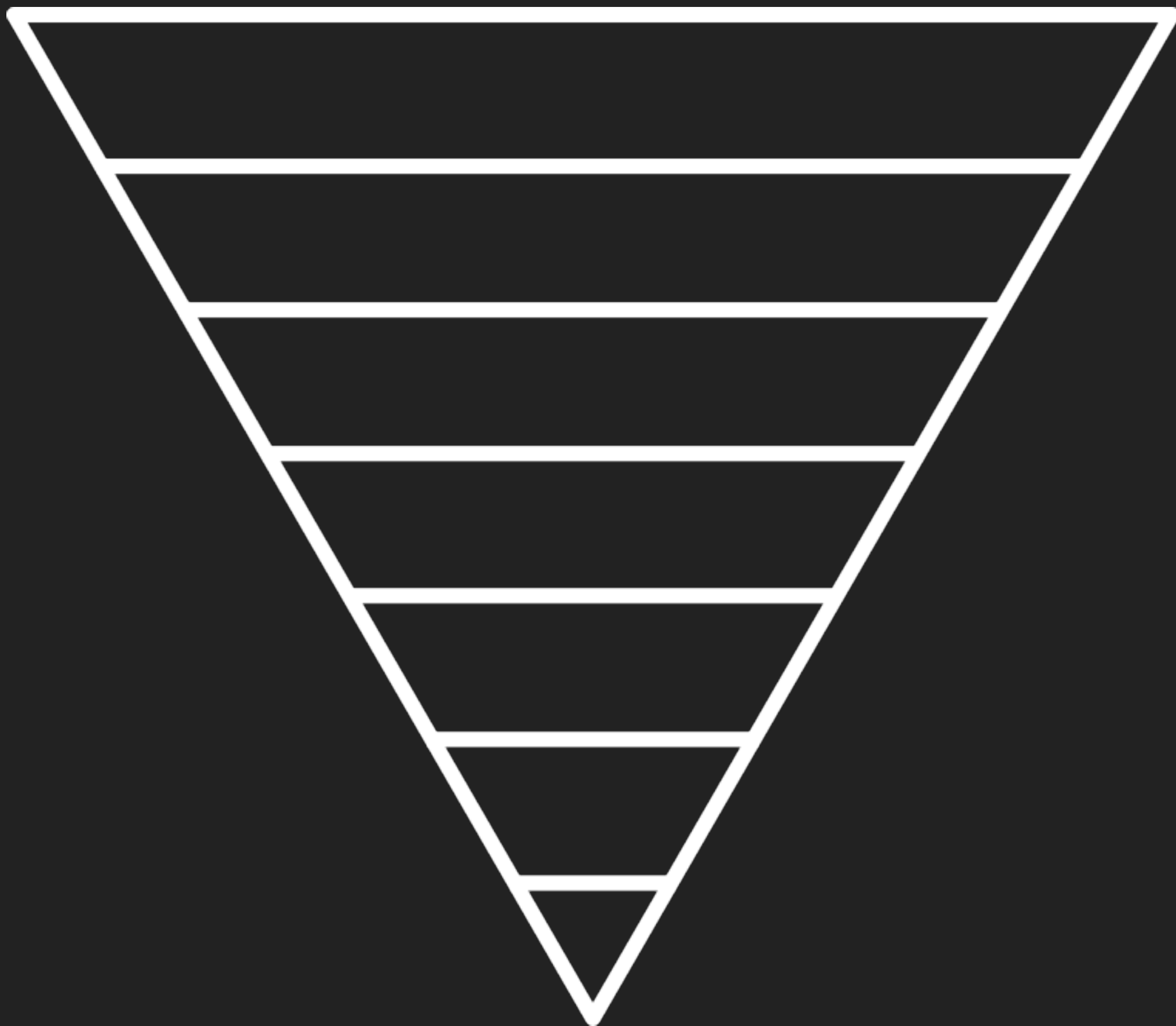
Write CSS for the browser

# **A meta framework**

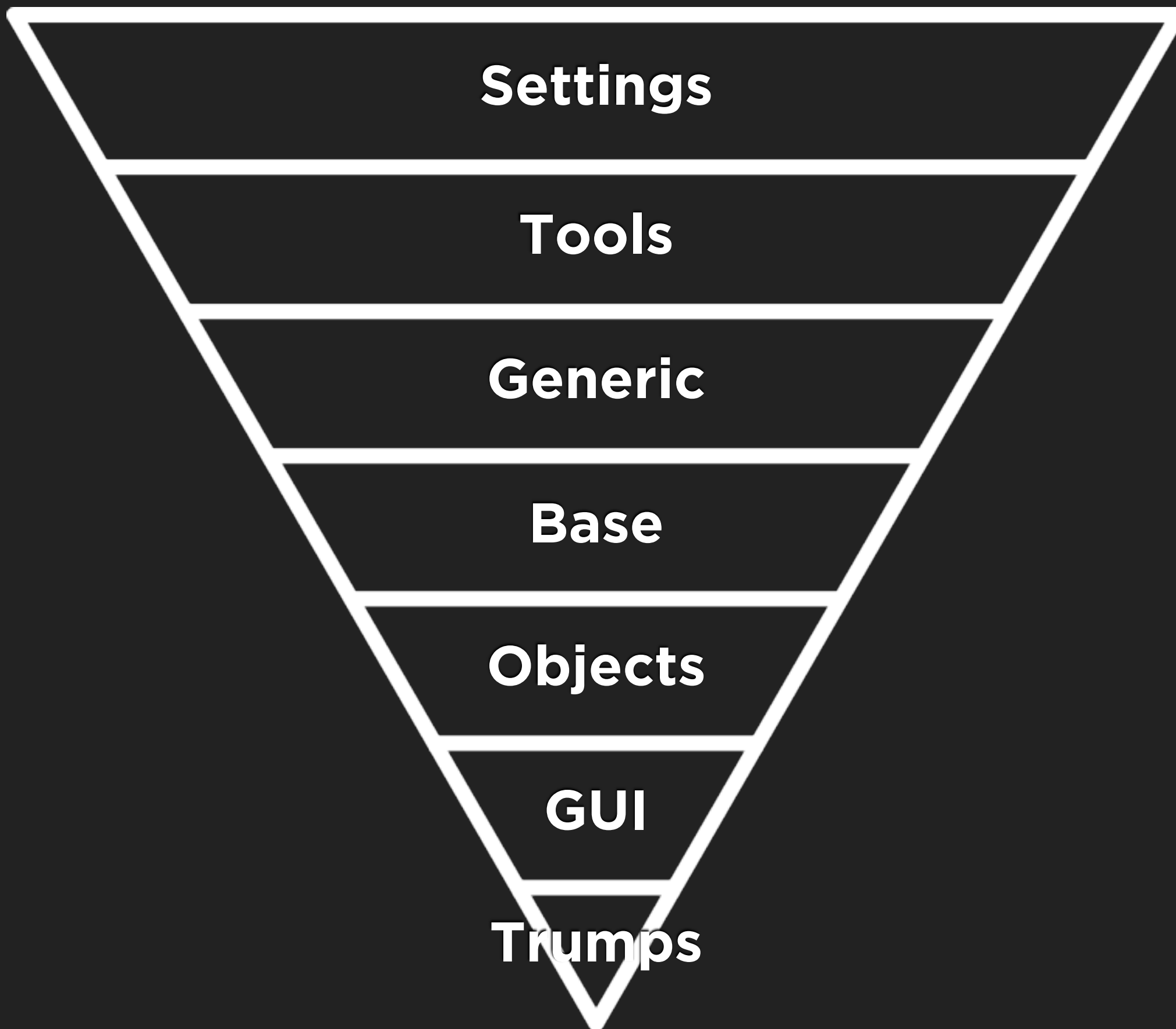
A framework for frameworks

# **The inverted triangle**

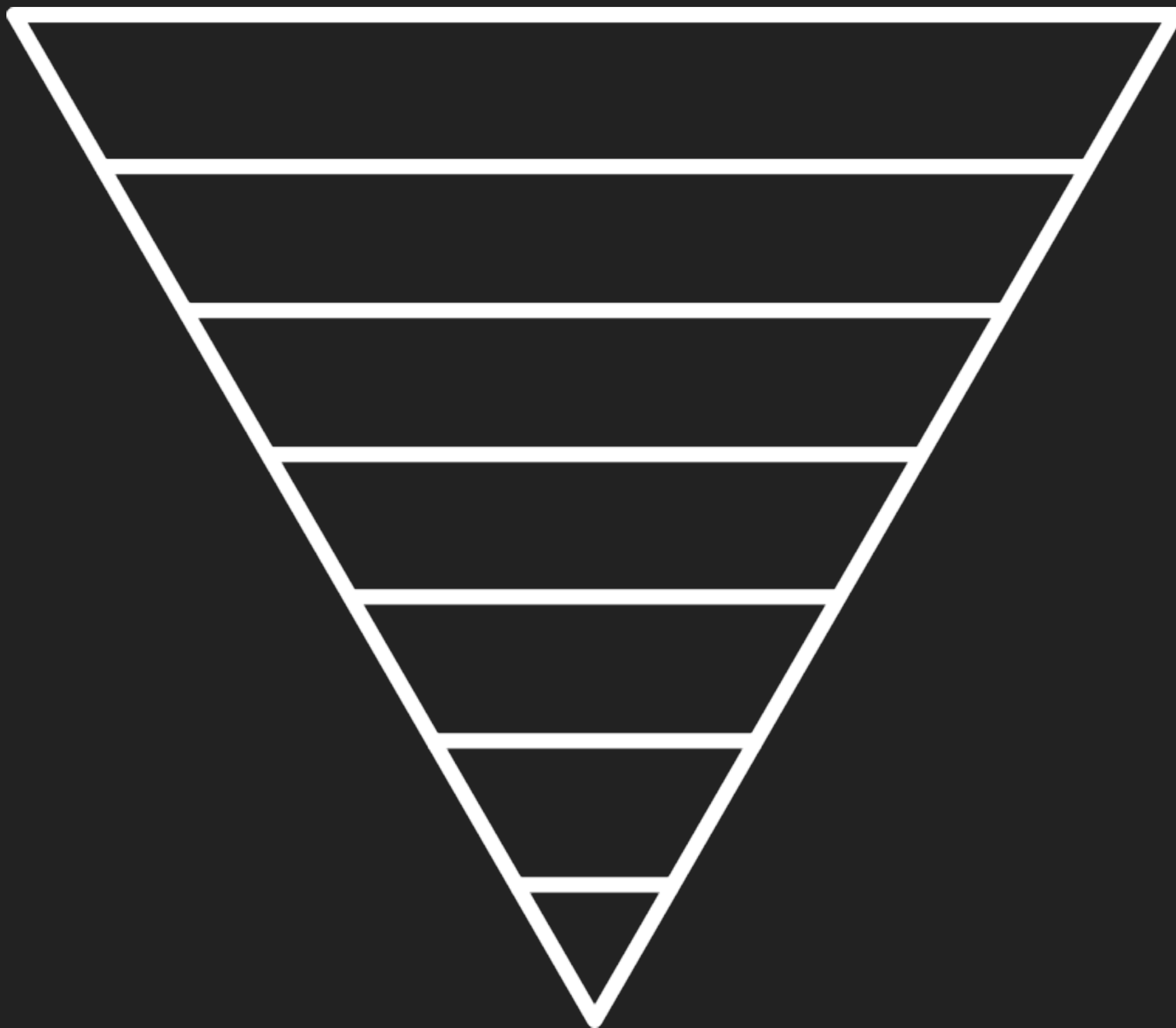
A model for sane CSS architecture







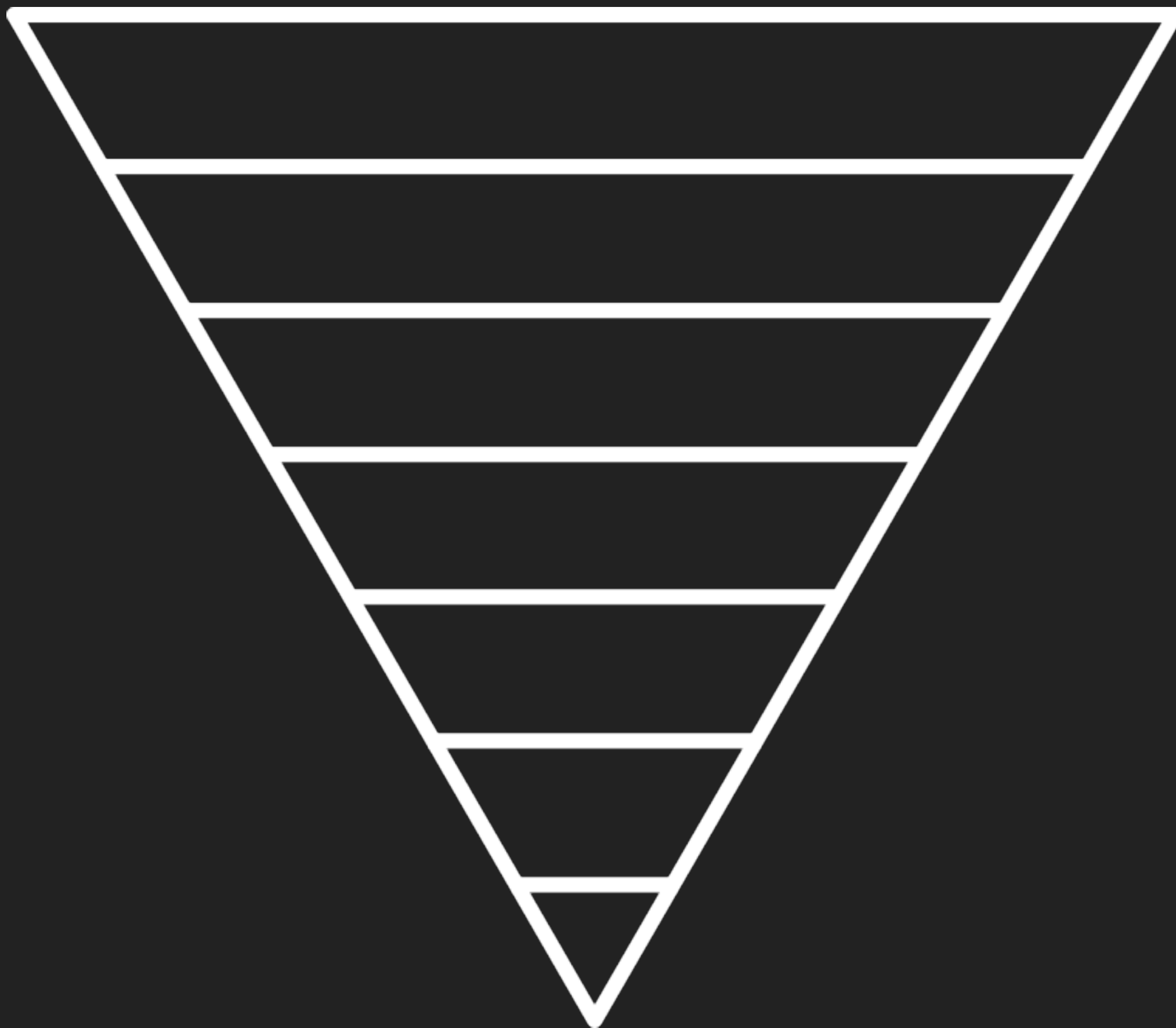




**Generic**



**Specific**



\* {}



.error {}

# **Why a triangle?**

What does this shape tell us?

# Why a triangle

Denotes the reach of the selectors

Filters explicitness

Guides specificity

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Denotes the reach of the selectors

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# **Shearing layers**

Real life architecture



"A classic and probably a work of genius" —JANE JACOBS, author of *The Death and Life of Great American Cities*

# HOW BUILDINGS LEARN

What happens after they're built



New Orleans, 1857



The same two buildings, 1993

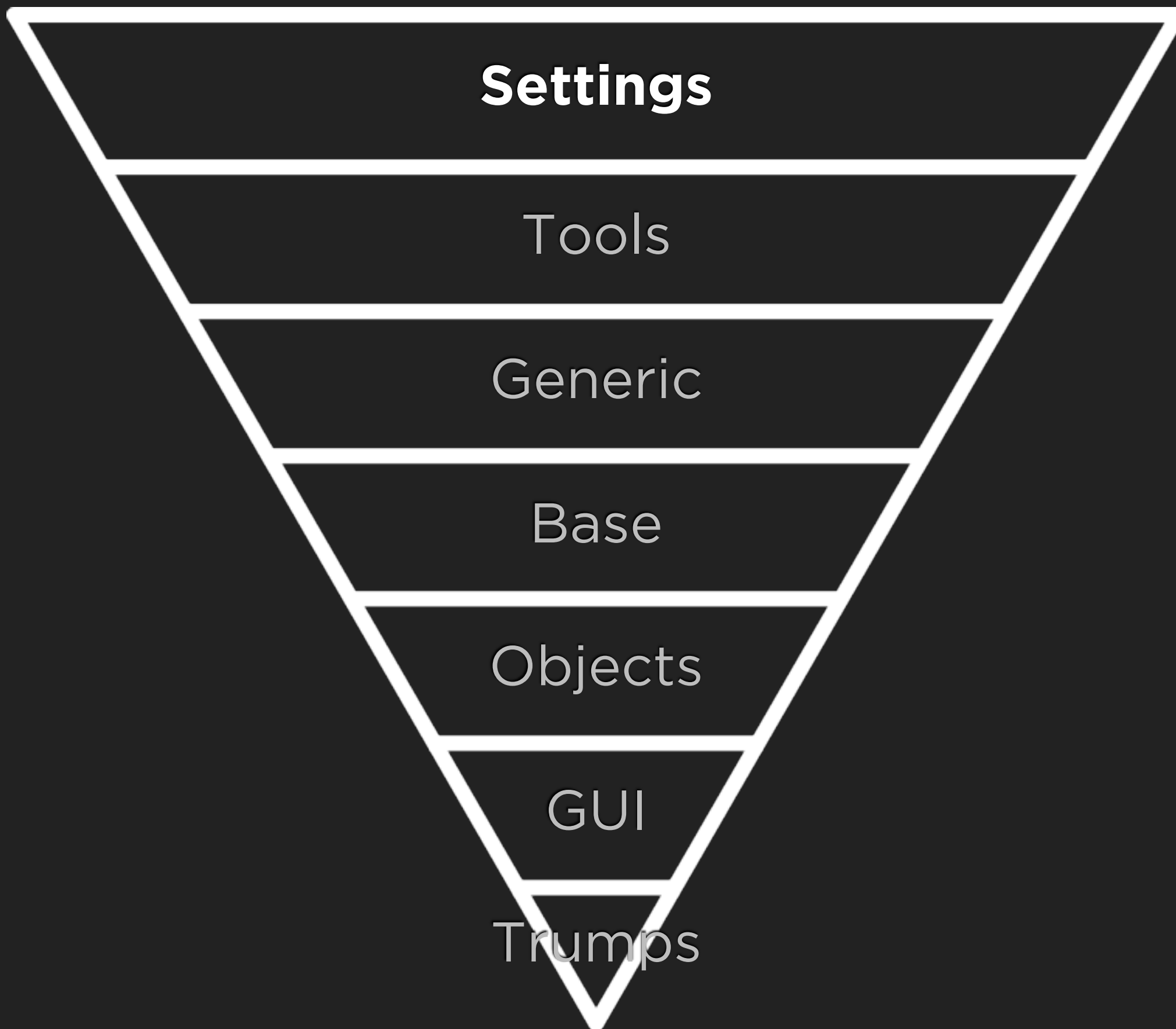
STEWART BRAND

creator of *THE WHOLE EARTH CATALOG*



# Settings

Variables, config switches, etc.



# Settings

Sass, LESS variables (`$link-color`, `$base-spacing-unit`)

Config variables (`$image-path`)

Doesn't actually produce any CSS

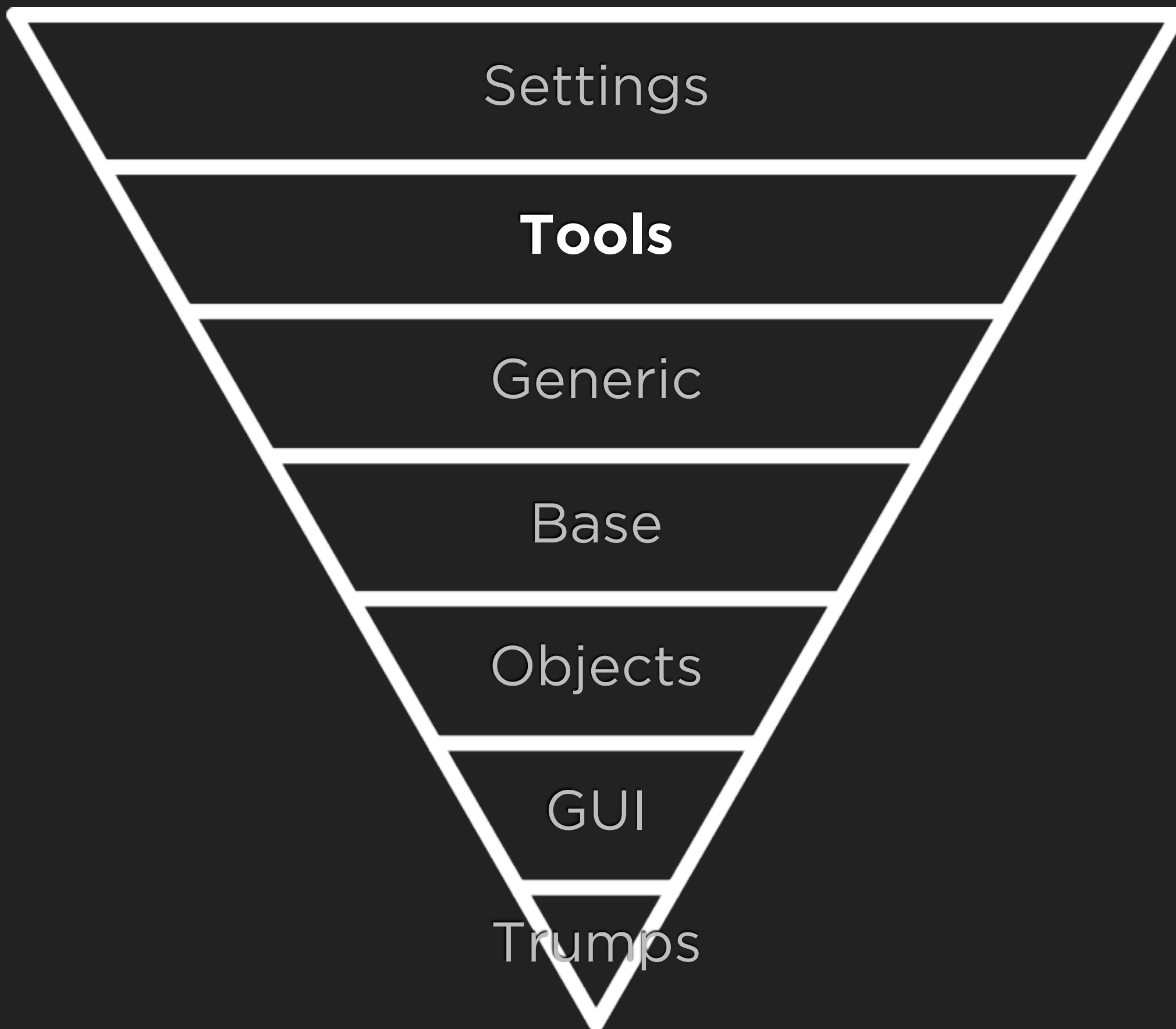


## **Lorem ipsum dolor sit amet**

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# Tools

Mixins, functions, etc.



# Tools

Mixins (vendor prefixes, CSS gradients, etc.)

Functions (maths helpers, custom functions, etc.)

Doesn't actually produce any CSS



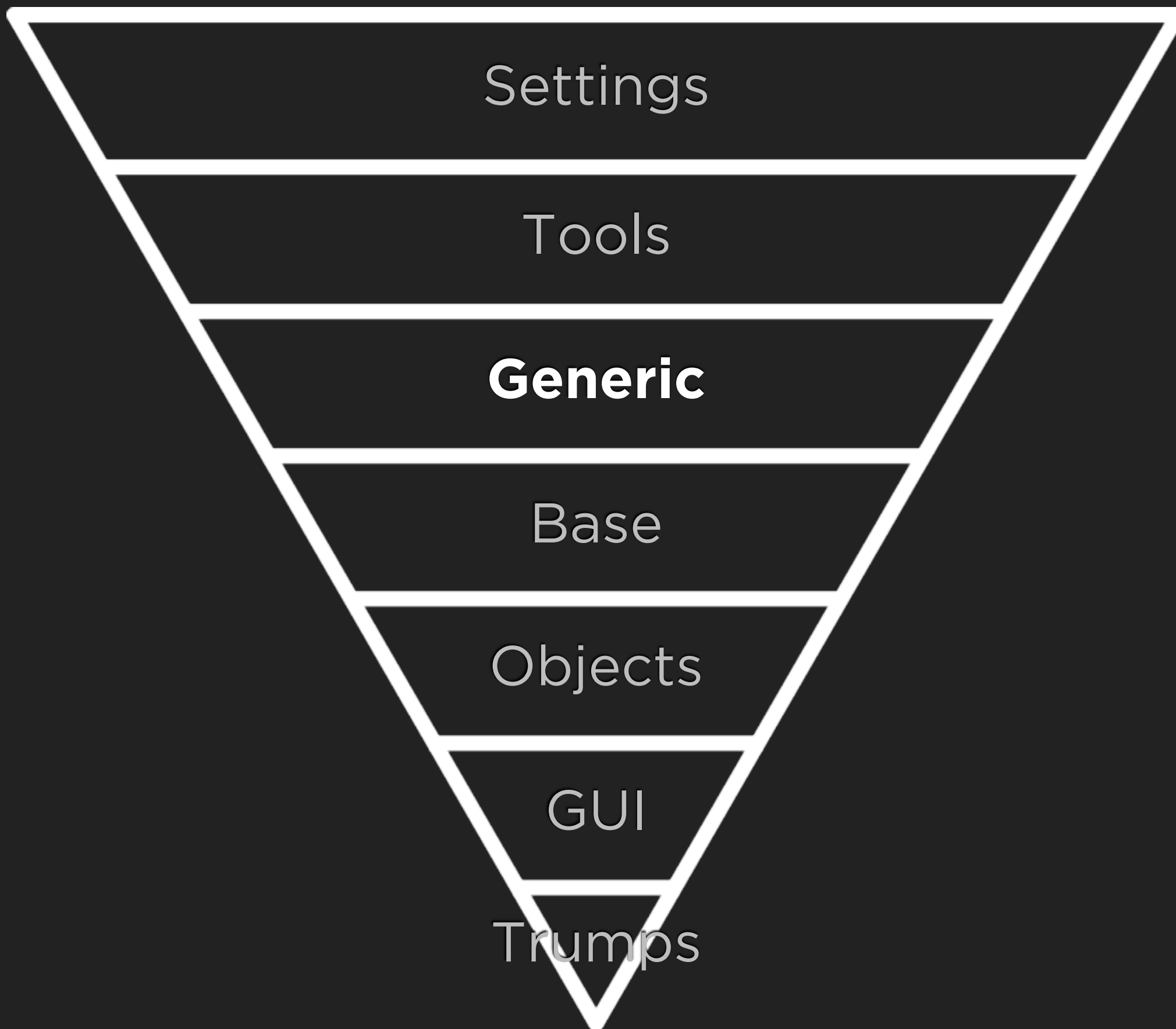


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# Generic

Normalize.css, reset, clearfix, etc.



# Generic

Normalize.css

CSS reset

Shared section

Global box-sizing

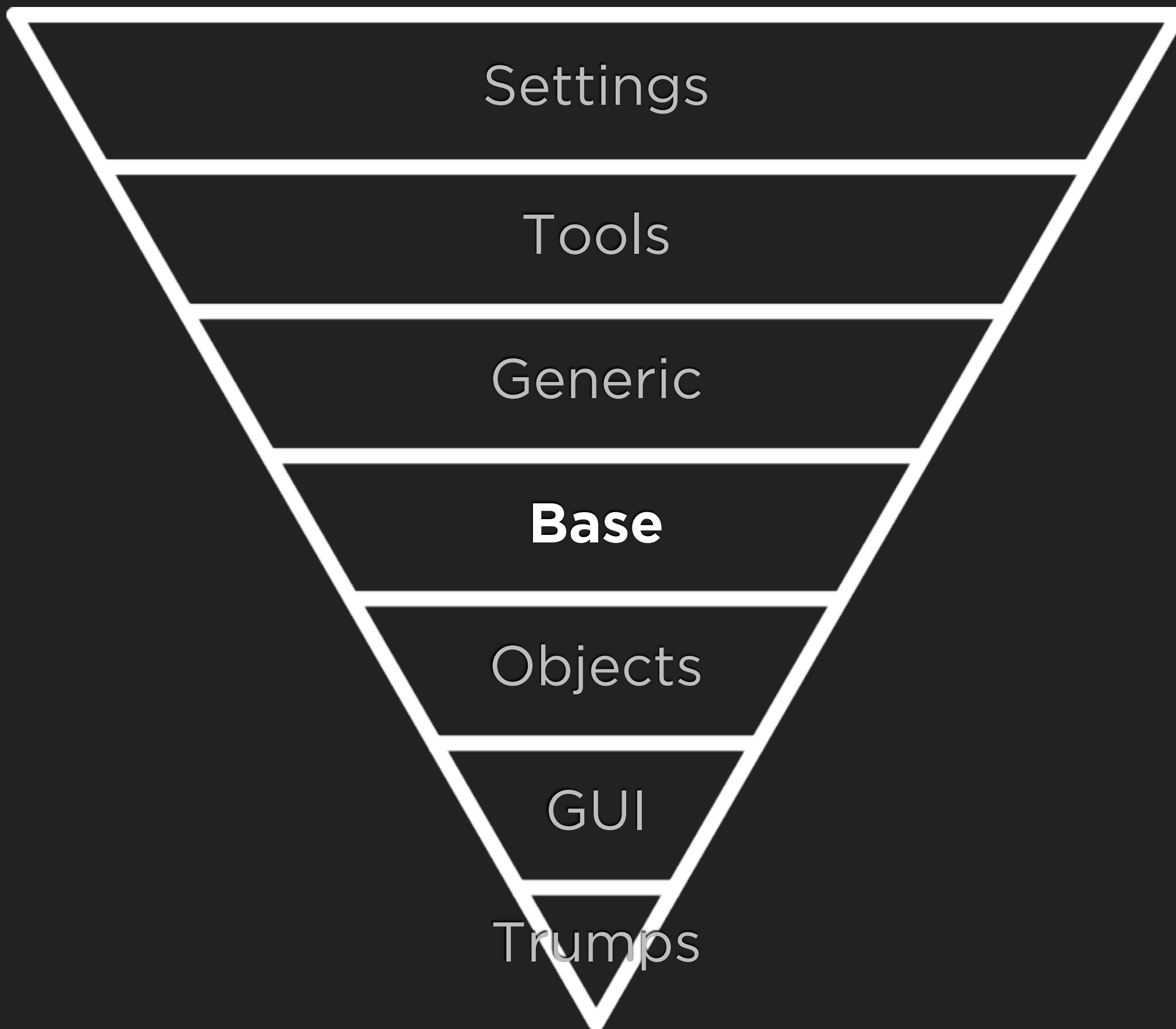


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# Base

Unclassed HTML elements



# Base

Unclassed HTML elements

Type selectors (e.g. `h1 {}`)



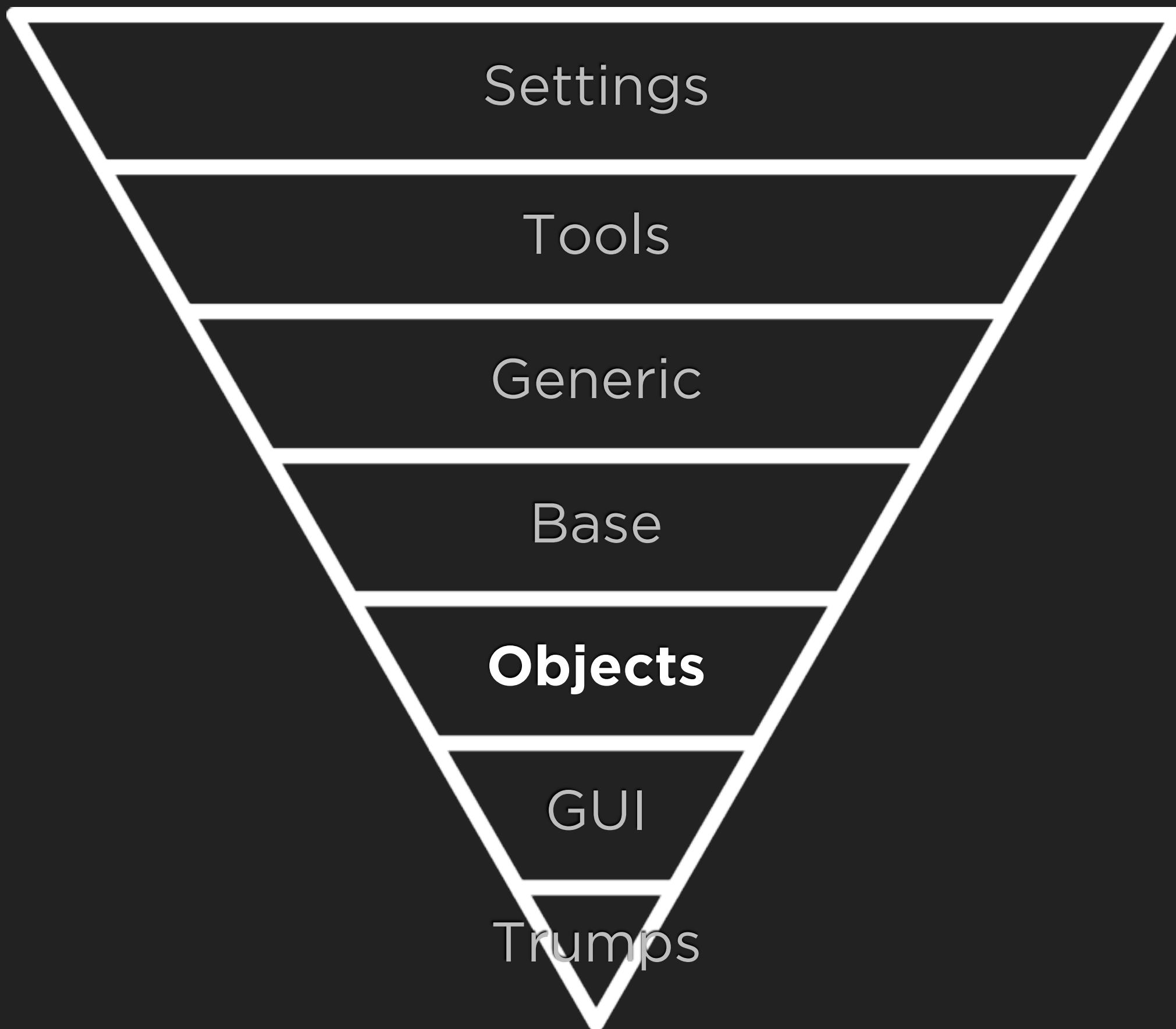


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# Objects

Design patterns, objects, and abstractions



# Objects

Generic objects and abstractions (e.g. media object)

Class selectors

Agnostically named

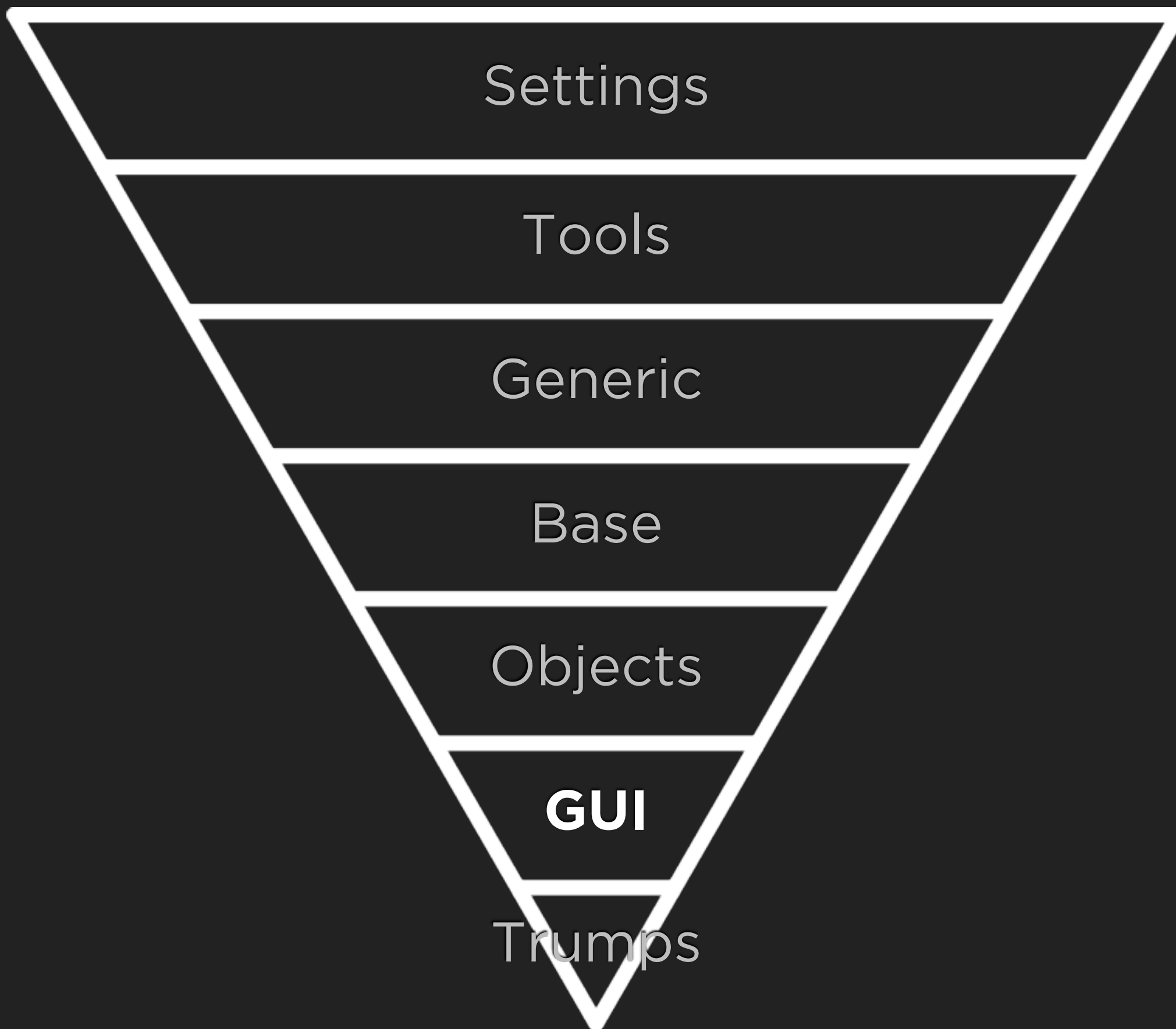


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# GUI

Designed components and modules



# GUI

Designed components

Class selectors

More explicitly named



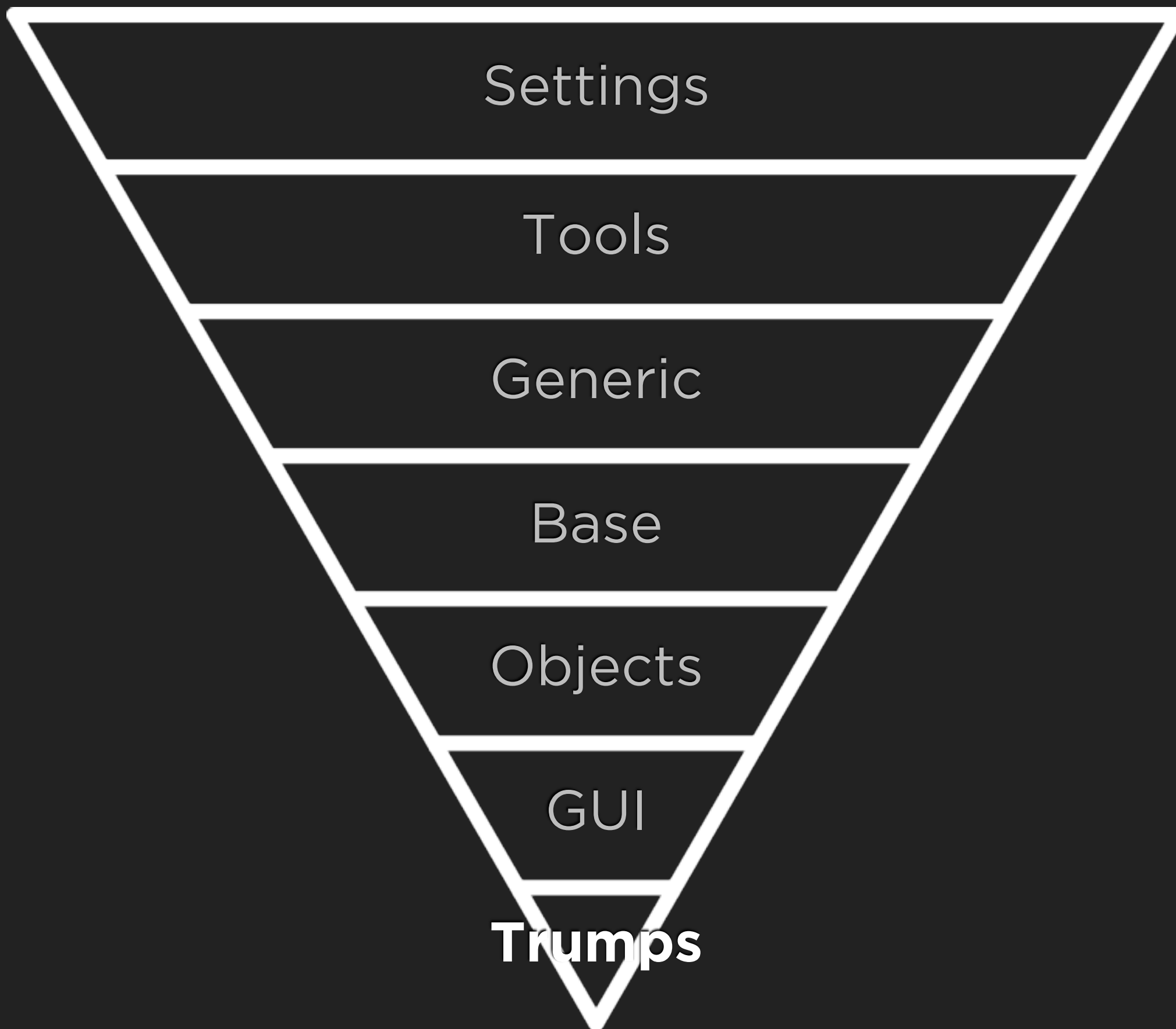


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# Trumps

Overrides and ‘trump cards’



# Trumps

Helper classes

Overrides

Okay (advised) to use !important

You want these to win out

Define them last



## Lorem ipsum dolor sit amet

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**Putting it all together**



## **Lorem ipsum dolor sit amet**

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# **The outcome**

What does this give us?

# The outcome

A framework for frameworks

Everything has a place to live

A sane CSS architecture

A managed, efficient source order

Ability to peel back layers

Improved scalability

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**Let's recap**

# Recap

CSS is pretty poor because...

Source order is critical, it's very loose, inheritance sucks.

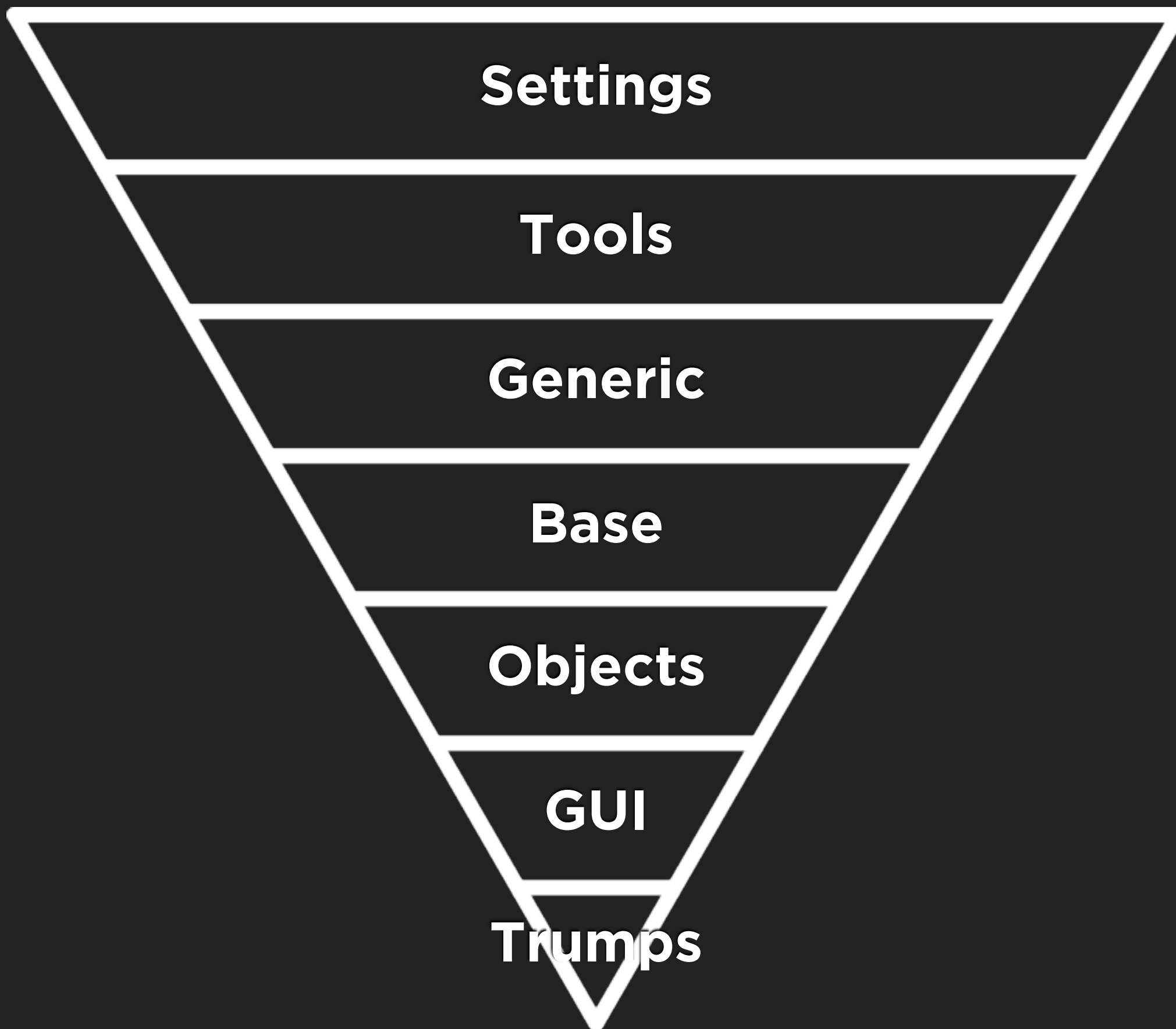
We need to apply some rules and self-discipline to...

Manage CSS in a meta-framework which will...

Order CSS in a more useful manner which means...

Everything has a place to live and...

CSS becomes a lot more efficient, sane, and well-formed.



# Thank you

Harry Roberts

Consultant Front-end Architect

@csswizardry

[csswizardry.net/talks/ocssa.pdf](https://csswizardry.net/talks/ocssa.pdf)