



# Building a stylesheet using @layers

Note:

Credit for a lot of information on this post goes to Miriam Zuzanne's [A Complete Guide to CSS Cascade Layers](#) published in CSS Tricks.

CSS layers present an interesting design paradigm. They allow developers to group styles based on criteria we define.

For the example, we'll define four layers.

```
@layer
  base
  layout
  utilities
  theme;
```

The order we declare our layers is important. The order of the layers will dictate how they cascade.

In our example, the rules from the theme layer will have precedence over the rules in the layout layer.

Using the layers we defined earlier, the cascade precedence order (from more to least important) is:

1. Styles outside a layers
2. base
3. layout
4. utilities
5. theme

The [!important](#) property will change the order of properties in @layers as it does in regular stylesheets using !important the order of precedence will be reversed

before we apply our regular layer ordering

1. !important theme
2. !important utilities
3. !important layout
4. !important base
5. base
6. layout
7. utilities
8. theme

## revert-layer

The `revert-layer` keyword allow us to revert the property to the value held in the previous `@layer`.

In the example below, the `no-theme` class will revert the color to the previous layer, setting it green.

```
@layer default {  
  a { color: green; }  
}  
  
@layer theme {  
  a { color: purple; }  
  
  .no-theme {  
    color: revert-layer;  
  }  
}
```

## Adding rules to layers

Since we declared the project layers at the top of the document and set their precedence order, we then add rules to individual layers by calling the `@layer` at-rule with the name of the layer we want to place the rules in and then add as many rules as we need to.

```
@layer utilities {  
  .padding-lg {  
    padding: .8rem;  
  }  
}
```

We can add multiple rules to each layer and we can repeat the process multiple times. Each time it will append the new rules to the layer.

## Adding entire stylesheets to a layer

We can also import stylesheets directly to a @layer using the [@import](#) at rule with a layer attribute indicating what @layer the browser should attach the stylesheet to.

This is particularly useful when using third-party scripts or when working with a modular architecture.

In this example, we add a local copy of [normalize.css](#) to the reset @layer.

```
@import url('normalize.css') layer(reset);
```

## Nesting layers

we can also nest layers:

```
@layer defaults {  
  /* Ordering the sublayers */  
  @layer reset, typography;  
  
  @layer typography {  
    /* Styles go here */  
  }  
  
  @layer reset {  
    /* Styles go here */  
  }  
}
```

```
}  
}
```

We can reference these nested layers using a dot notation like `defaults.reset` and `defaults.typography`.

The rules of layer-ordering apply at each level of nesting. Any styles that are not further nested are considered “un-layered” in that context, and have priority over further nested styles:

```
@layer defaults {  
  :any-link { color: green; }  
  
  /* layered defaults (lower priority) */  
  @layer reset {  
    a[href] { color: red; }  
  }  
}
```

## Mixing with existing content

My biggest issue is what to do if we’re implementing layers with existing code.

All styles outside of layers are put in an implicit layer at the end of the document, making these styles the ones with the highest priority and will override all content in layers.

```
h1 {  
  color: green;  
}  
  
@layer layer-1 { h1 { color: red; } }  
@layer layer-2 { h1 { color: orange; } }  
@layer layer-3 { h1 { color: yellow; } }
```

We can build get around this limitation by adding layers before the layers created

for the framework. The example below uses a lower layer to override !important styles from the framework, and a higher layer to override normal styles.

```
@layer
  bootstrap.important,
  bootstrap.bootstrap,
  bootstrap.local;

@import url('bootstrap.css') layer(bootstrap.bootstrap);

@layer bootstrap.local {
  /* most of our normal bootstrap overrides can live here */
}

@layer bootstrap.important {
  /*
    add !important styles in a lower layer
    to override any !important bootstrap
    styles
  */
}
```

## Why would we want @layers

Layers have some interesting use cases. We've discussed some already so I'll cover one that is think an important one: building a CSS architecture.

## Building a CSS architecture

In [ITCSS: Scalable and Maintainable CSS Architecture](#) the author documents ITCSS, an architecture for CSS styles and Miriam Suzanne documents one possibility of implementing such technology in [A Complete Guide to CSS Cascade Layers](#).

The pyramid below

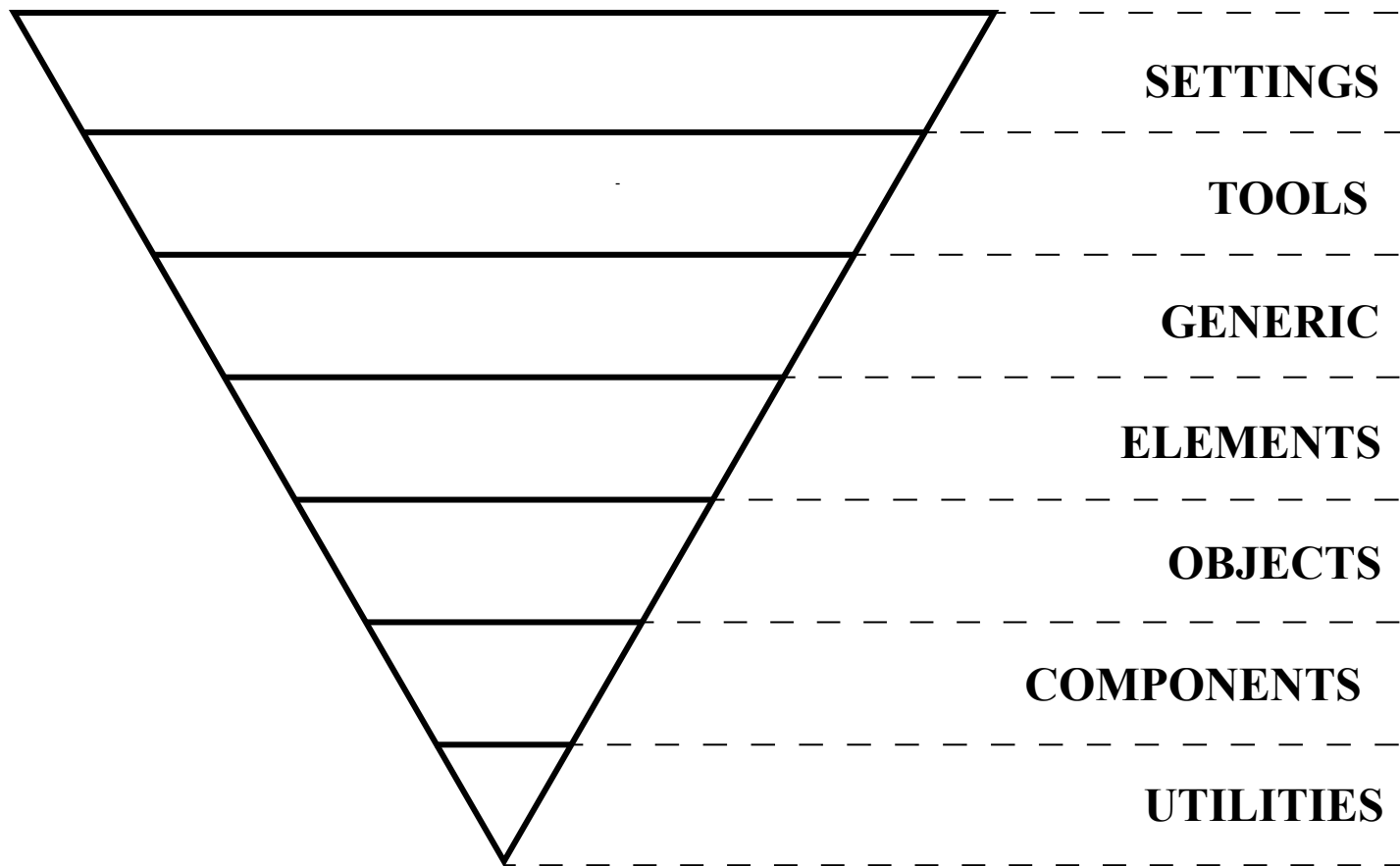


Figure 1: ITCSS Pyramid

We can build the pyramid using `@layers` representing each step in the pyramid, from generic to specific.

1. low level normalization styles
2. element defaults, for basic typography and legibility
3. themes, like light and dark modes
4. re-usable patterns
5. layouts and larger page structures individual components
6. overrides and utilities

This model presets a flat structure. We can go deeper and nest items in them. We could load `normalize.css` as a nested layer under a normalization layer.

We could also load nest light and dark mode themes into the themes `@layer`

In the end, how you structure your layers is up to you and what makes the most sense for your project.

# Links and resources

- [@layer](#) — MDN
- [Cascade Layers](#) — Chrome Developers
- [A Complete Guide to CSS Cascade Layers](#)
- [Hello, CSS Cascade Layers](#)
- [ITCSS: Scalable and Maintainable CSS Architecture](#)