EDIT THIS PAGE

Customizing components

You can easily customize the appearance of a Material-UI component.

As components can be used in different contexts, there are several approaches to this. Going from the narrowest use-case to the broadest, these are:

1. Specific variation for a one-time situation
2. Dynamic variation for a one-time situation
3. Specific variation of a component re-used in different contexts
4. Material Design variations such as with the button component
5. Global theme variation

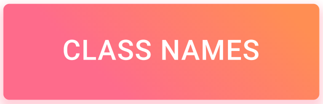
1. Specific variation for a one-time situation

You might need to change the style of a component for a specific implementation, for which you have the following solutions available:

Overriding styles with class names

The first way to override the style of a component is to use **class names**. Every component provides a `className` property which is always applied to the root element.

This example uses the `withStyles()` higher-order component to inject custom styles into the DOM, and to pass the class name to the `ClassNames` component via its `classes` property. You can choose any other styling solution, or even plain CSS to create the styles, but be sure to consider the CSS injection order, as the CSS injected into the DOM by Material-UI to style a component has the highest specificity possible, since the `<link>` is injected at the bottom of the `<head />` to ensure the components always render correctly.



CLASS NAMES

Overriding styles with classes

When the `className` property isn't enough, and you need to access deeper elements, you can take advantage of the `classes` object property to customize all the CSS injected by Material-UI for a given component.

The list of classes for each component is documented in the component API page, you should refer to the **CSS section** and **rule name column**. For instance, you can have a look at the Button CSS API. Alternatively, you can use the browser dev tools.

This example also uses `withStyles()` (see above), but here, `ClassesNesting` is using `Button`'s `classes` prop to provide an object that maps the **names of classes to override** (style rules) to the **CSS class names to apply** (values). The component's existing classes will continue to be injected, so it is only necessary to provide the specific styles you wish to add or override.

Notice that in addition to the button styling, the button label's capitalization has been changed:

Classes Nesting

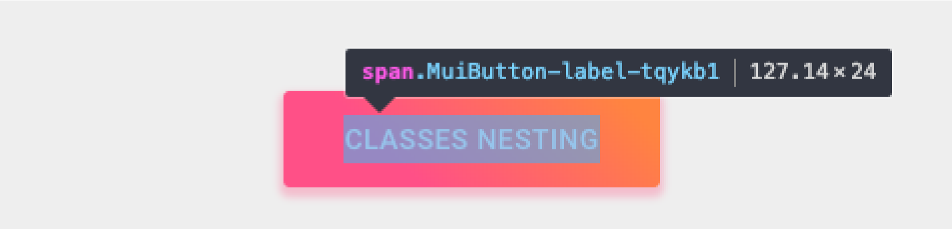
Overriding styles with global class names

Follow this section.

Using the dev tools

The browser dev tools can save you a lot of time. Material-UI's class names follow a simple pattern in development mode: `Mui[component name]-[style rule name]-[UUID]`.

Let's go back to the above demo. How can you override the button label?



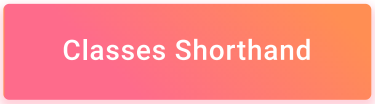
Using the dev tools, you know that you need to target the `Button` component and the `label` style rule:

```
<Button classes={{ label: 'my-class-name' }} />
```

Shorthand

The above code example can be condensed by using **the same CSS API** as the child component. In this example, the `withStyles()` higher-order component is injecting a `classes` property that is used by the `Button` component.

```
const StyledButton = withStyles({
  root: {
    background: 'linear-gradient(45deg, #FE6B8B 30%, #FF8E53 90%)',
    borderRadius: 3,
    border: 0,
    color: 'white',
    height: 48,
    padding: '0 30px',
    boxShadow: '0 3px 5px 2px rgba(255, 105, 135, .3)',
  },
  label: {
    textTransform: 'capitalize',
  },
})(Button);
```



Pseudo-classes

The components special states, like *hover*, *focus*, *disabled* and *selected*, are styled with a higher CSS specificity. Specificity is a weight that is applied to a given CSS declaration.

In order to override the components special states, **you need to increase specificity**. Here is an example with the *disable* state and the button component using a **pseudo-class** (`:disabled`):

```
.Button {
  color: black;
}
.Button:disabled { /* Increase the specificity */
  color: white;
}
```

```
<Button disabled className="Button">
```

Sometimes, you can't use a **pseudo-class** as the state doesn't exist in the platform. Let's take the menu item component and the *selected* state as an example. Aside from accessing nested elements, the `classes` property can be used to customize the special states of Material-UI components:

```
.MenuItem {
  color: black;
}
.MenuItem.selected { /* Increase the specificity */
  color: blue;
}
```

```
<MenuItem selected classes={{ root: 'MenuItem', selected: 'selected' }}>
```

Why do I need to increase specificity to override one component state?

By design, the CSS specification makes the pseudo-classes increase the specificity. For consistency, Material-UI increases the specificity of its custom pseudo-classes. This has one important advantage, it allows you to cherry-pick the state you want to customize.

Can I use a different API that requires fewer boilerplate?

Instead of providing values to the `classes` prop API, you can rely on the global class names generated by Material-UI. It implements all these custom pseudo-classes:

classes key	Global class name
checked	Mui-checked
disabled	Mui-disabled
error	Mui-error
focused	Mui-focused
focusVisible	Mui-focusVisible
required	Mui-required
expanded	Mui-expanded
selected	Mui-selected

```css
.MenuItem {
  color: black;
}
.MenuItem.Mui-selected { /* Increase the specificity */
  color: blue;
}
```

```jsx
<MenuItem selected className="MenuItem">
```

Use `$ruleName` to reference a local rule within the same style sheet

The jss-nested plugin (available by default) can make the process of increasing specificity easier.

```
const styles = {
  root: {
    '&$disabled': {
      color: 'white',
    },
  },
  disabled: {},
};
```

compiles to:

```
.root-x.disable-x {
  color: white;
}
```

⚠ You need to apply the two generated class names (`root` & `disabled`) to the DOM to make it work.

```
<Button
  disabled
  classes={{
    root: classes.root, // class name, e.g. `root-x`
    disabled: classes.disabled, // class name, e.g. `disabled-x`
  }}
>
```

CLASSES STATE

Overriding with inline-styles

The second way to override the style of a component is to use the **inline-style** approach. Every component provides a `style` property. These properties are always applied to the root element.

You don't have to worry about CSS specificity as the inline-style takes precedence over the regular CSS.

INLINE-STYLE

When should I use inline-style vs classes?

2. Dynamic variation for a one-time situation

You have learned how to override the style of a Material-UI component in the previous section. Now, let's see how we can make these overrides dynamic. Here are five alternatives; each has its pros and cons.

Dynamic CSS

○ Blue DYNAMIC CSS

Class name branch

○ Blue CLASS NAME BRANCH

CSS variables

○ Blue CSS VARIABLES

Inline-styles

Blue DYNAMIC INLINE-STYLE

Theme nesting

Blue THEME NESTING

3. Specific variation of a component

You might need to create a variation of a component and use it in different contexts, for instance a colorful button on your product page, however you probably want to keep your code *DRY*.

The best approach is to follow option 1 and then take advantage of the composition power of React by exporting your customized component to use wherever you need it.

COMPONENT

4. Material Design variations

The Material Design specification documents different variations of certain components, such as how buttons come in different shapes: text (formerly "flat"), contained (formerly "raised"), FAB and more.

Material-UI attempts to implement all of these variations. Please refer to the Supported Components documentation to find out the current status of all supported Material Design components.

5. Global theme variation

In order to promote consistency between components, and manage the user interface appearance as a whole, Material-UI provides a mechanism to apply global changes.

The demos of this section covers how to the change the button's font size.

Theme variables

You can adjust the theme configuration variables.

```
const theme = createMuiTheme({
  typography: {
    button: {
      fontSize: '1rem',
    },
  },
});
```

FONT-SIZE: 1REM

Global CSS override

You can also customize all instances of a component with CSS. Components expose global class names to enable this. It's very similar to how you would customize Bootstrap.

```
const GlobalCss = withStyles({
  // @global is handled by jss-plugin-global.
  '@global': {
    // You should target [class*="MuiButton-root"] instead if you nest themes.
    '.MuiButton-root': {
      fontSize: '1rem',
    },
  },
})(() => null);

// …

<GlobalCss />
```

FONT-SIZE: 1REM

Global theme override

You can take advantage of the `overrides` key of the `theme` to potentially change every single style injected by Material-UI into the DOM. Learn more about it in the themes section of the documentation.

```
const theme = createMuiTheme({
  overrides: {
    MuiButton: {
      root: {
        fontSize: '1rem',
      },
    },
  },
});
```

FONT-SIZE: 1REM

‹ Globals Color ›