

Android & Colors

Dark Mode

Intro

Bernat Borrás

Android developer



alorma



lepetitbernat

Index

1. Material colors
2. Themes
3. Color tips
4. Color tools
5. Q&A

Material

Colors

Material

MDC provides 12 color slots:

- `colorPrimary` / `colorPrimaryVariant`
 - `colorSecondary` / `colorSecondaryVariant`
 - `colorError`
 - `colorSurface`
 - `android:colorBackground`
-
- `colorOnPrimary`
 - `colorOnSecondary`
 - `colorOnError`
 - `colorOnSurface`
 - `colorOnBackground`

Attributes vs Colors – XML

- **@ColorRes** — `android:textColor="#6200EE"`
- **@ColorInt** — `android:textColor="@color/purple_700"`
- **@AttrRes** — `android:textColor="?colorPrimary"`

Attributes vs Colors

- @ColorRes

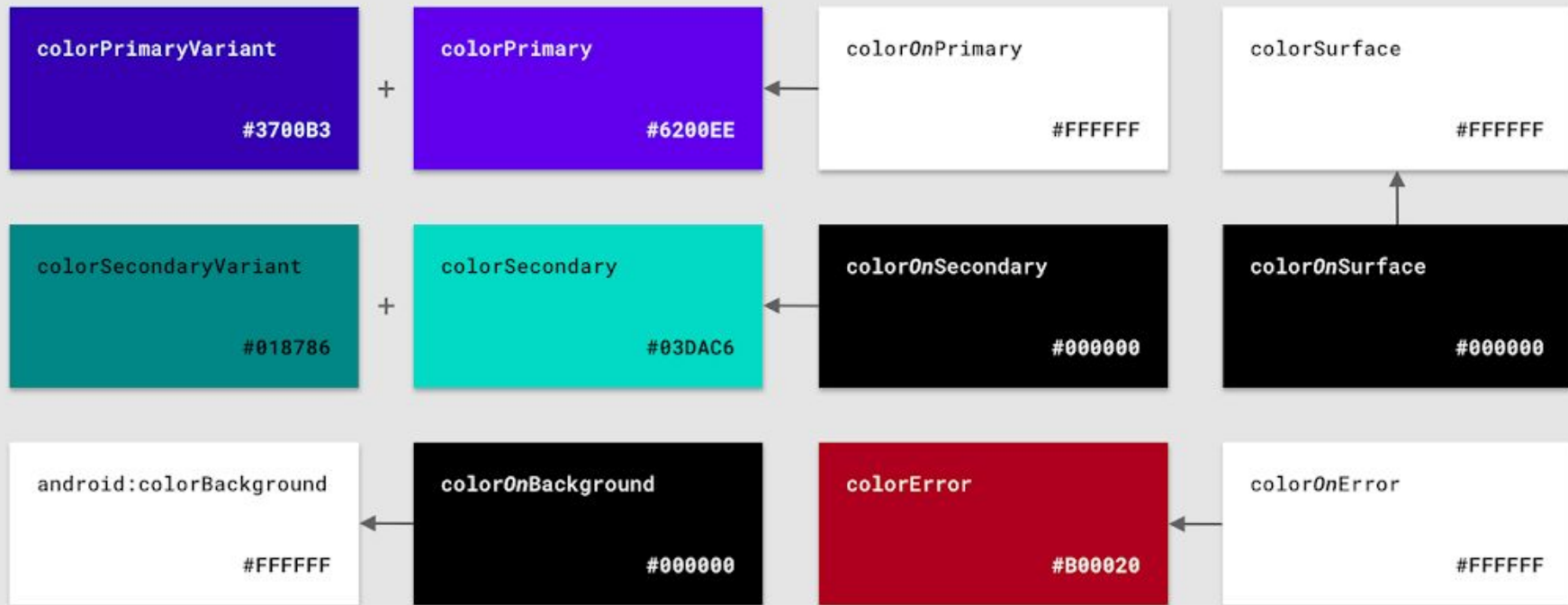
Color.parseInt(#RGB)
Resources.getColor(R.color)

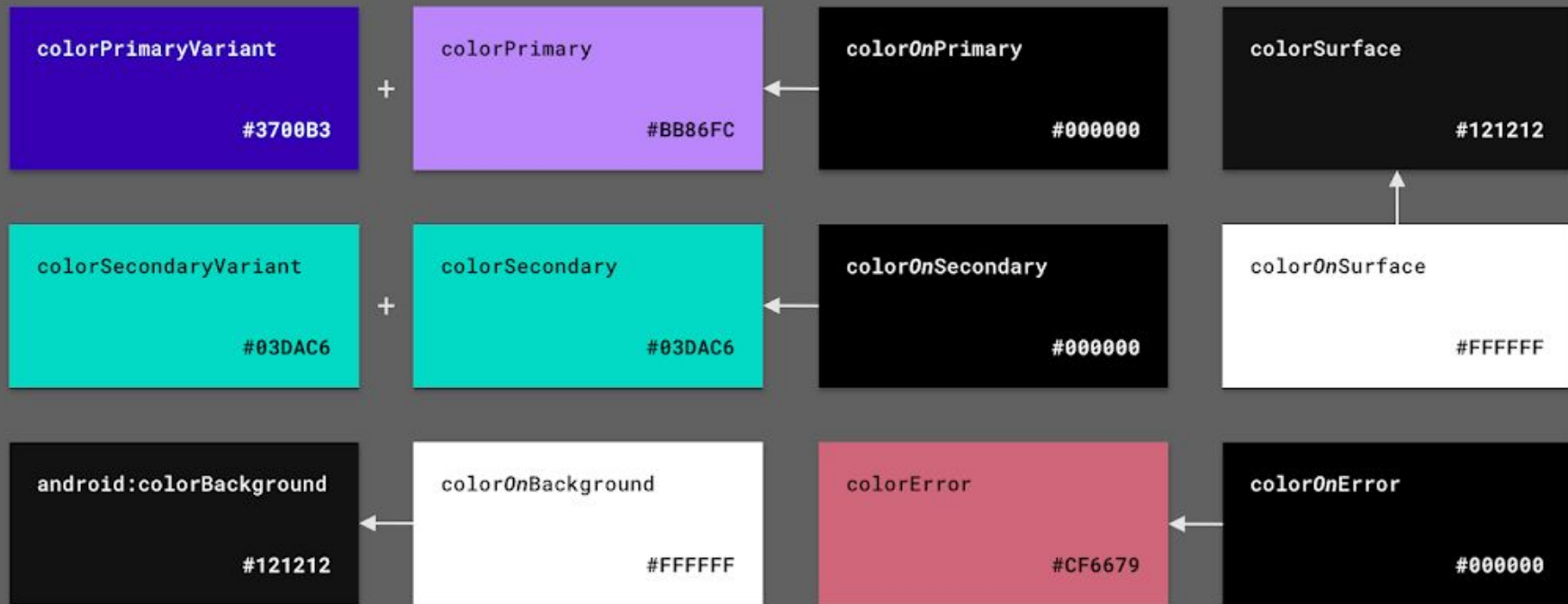
- @ColorInt

Resources.getColor(R.color)

- @AttrRes

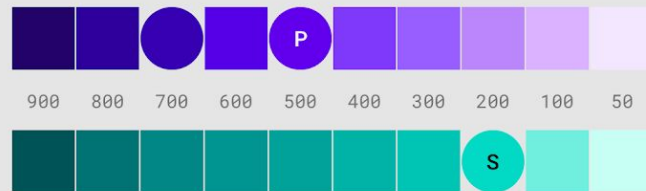
setColorAttr(R.attr)
MaterialColors.getColor(R.attr)





Primary Secondary

Brand colors



Primary
Purple

500

#6200EE

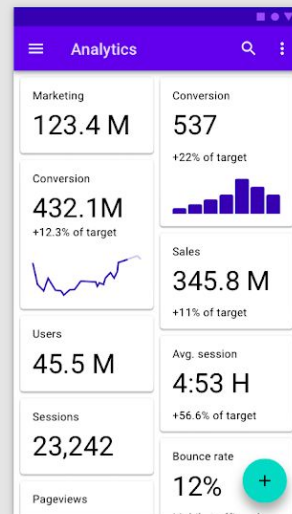
700

#3700B3

Secondary
Teal

200

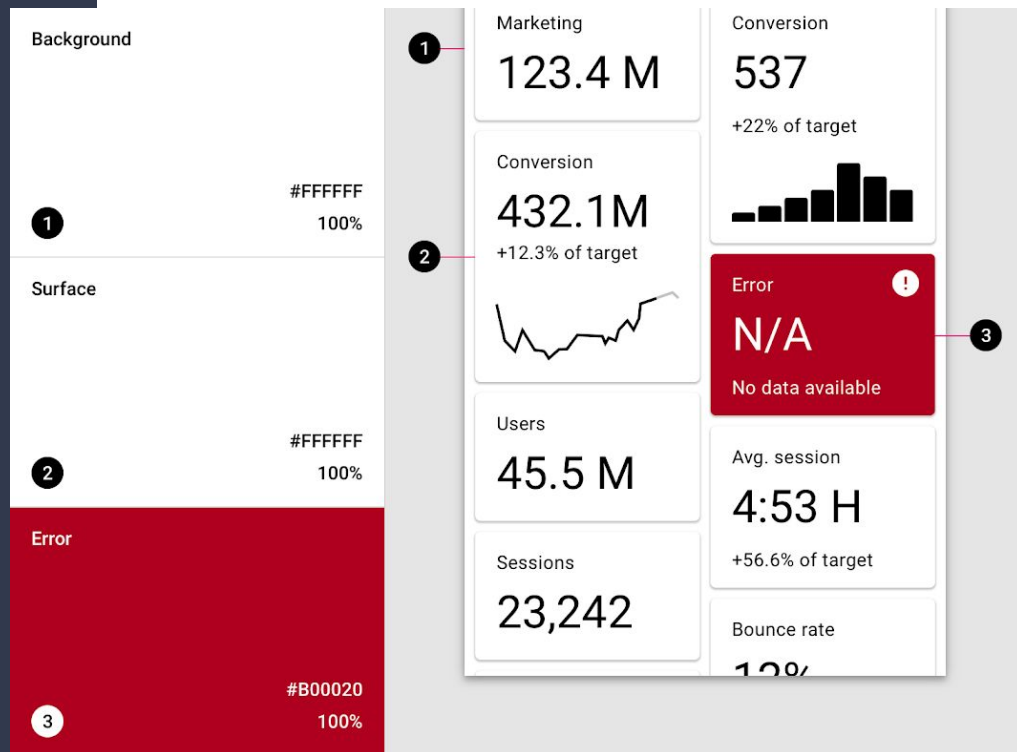
#03DAC5



Background Surface

Error

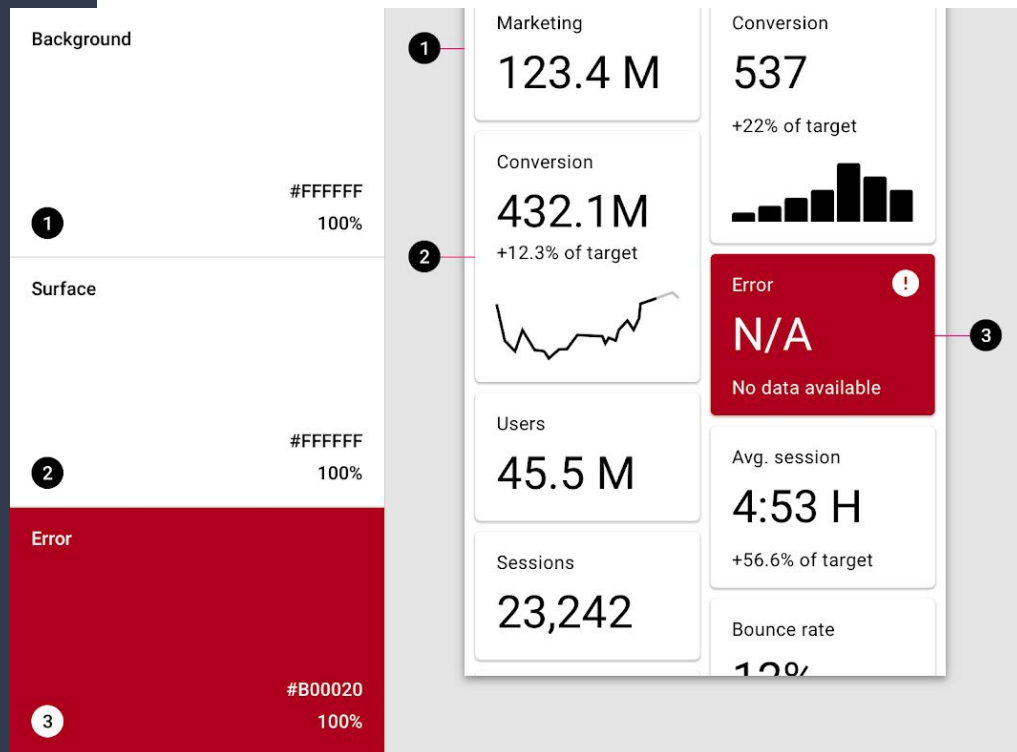
Sheets, Cards, Layouts



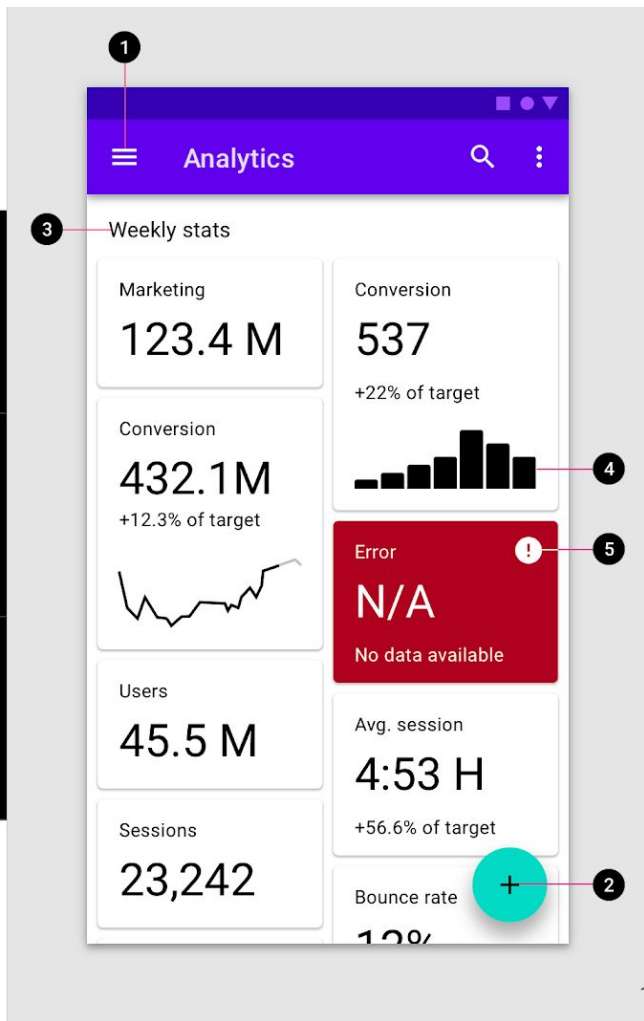
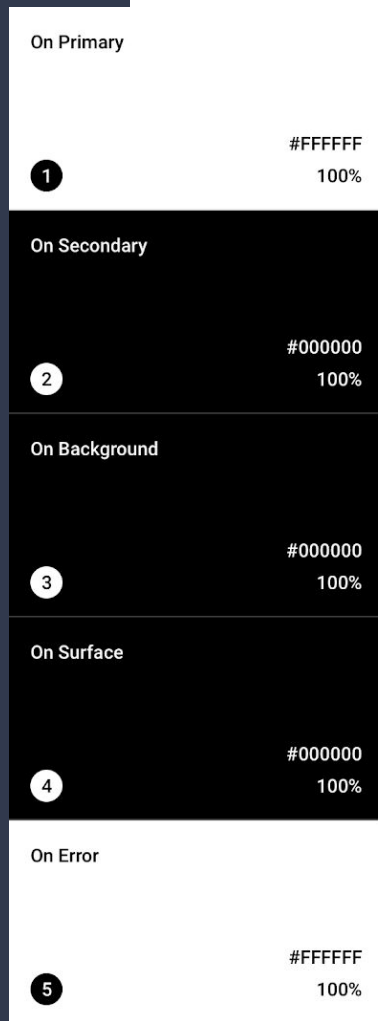
Background Surface

Error

Caution components



onPrimary
onSecondary
onSurface
onBackground
onError



Material

Themes

MDC Widgets

CONTAINED BUTTON

TEXT BUTTON

Label
Text field

+

+

✓

○

☑

Item 1

Item 2

Item 3


TAB 1

TAB 2

TAB 3

TAB 4

TAB 5



Title

Secondary text

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor

ACTION 1

ACTION 2

`colorPrimary = navy_700`

15

MDC Widgets

- MDC widgets use colors for disabled states, hovered vs. pressed states and so on.
- It's a good approach to use those attributes for custom views



lor sit amet, consectetur
ed do eiusmod tempor

CTION 2

CONTAINED BUTTON

Label
Text field



Item 1



Item

TAB 1

TAB 2

TAB

colorPrimary = navy_

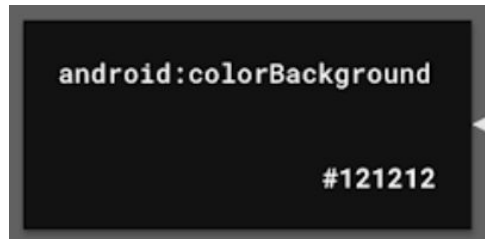
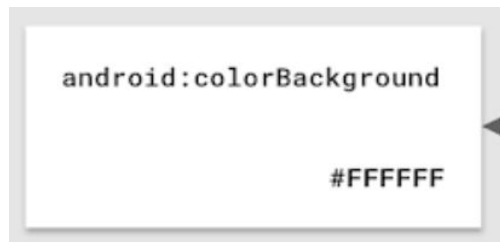
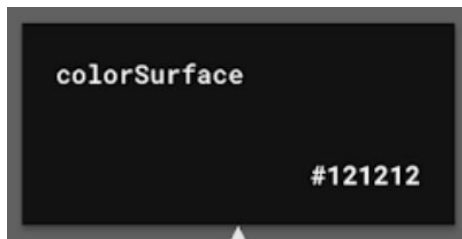
Define colors

<https://material.io/blog/android-material-theme-color>

```
<style name="Theme.App" parent="Theme.*">  
    <item name="colorPrimary">...</item>  
    <item name="colorSecondary">...</item>  
</style>
```

Define colors

<https://material.io/blog/android-material-theme-color>



Define colors

<https://material.io/blog/android-material-theme-color>

?colorPrimary

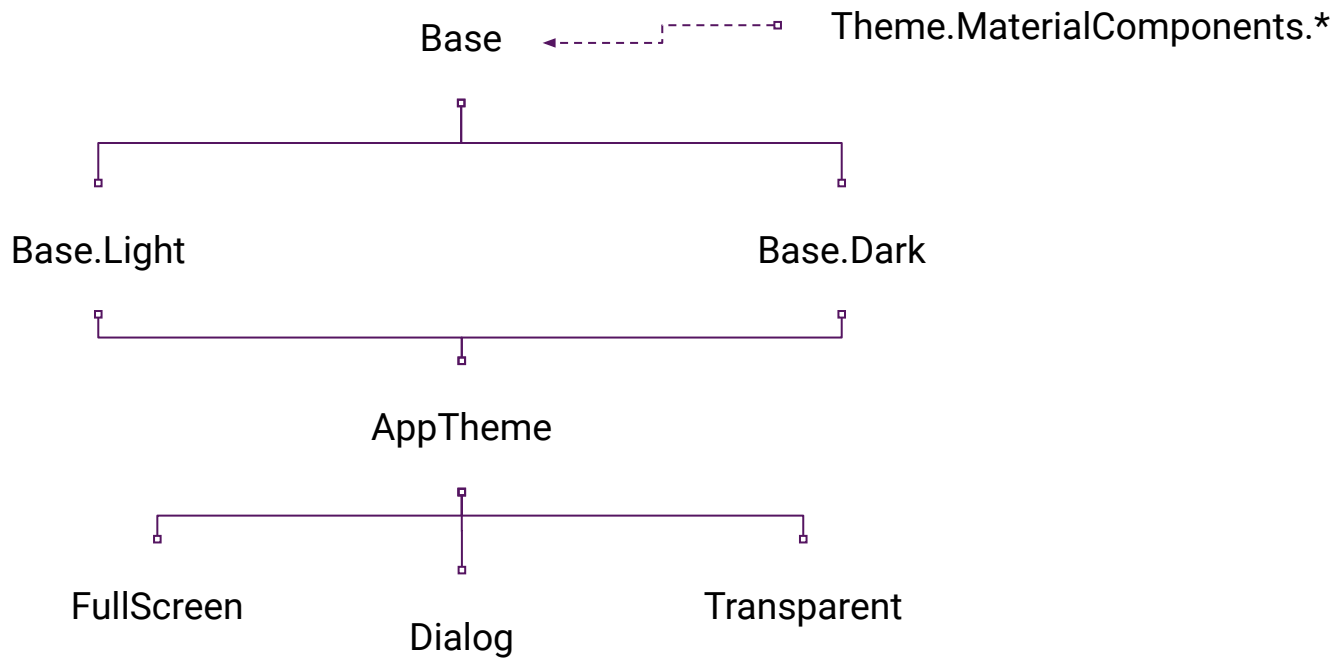
Theme.Purple	@color/purple	#6200EE
Theme.Green	@color/green	#03DAC6

Define colors – Dark mode

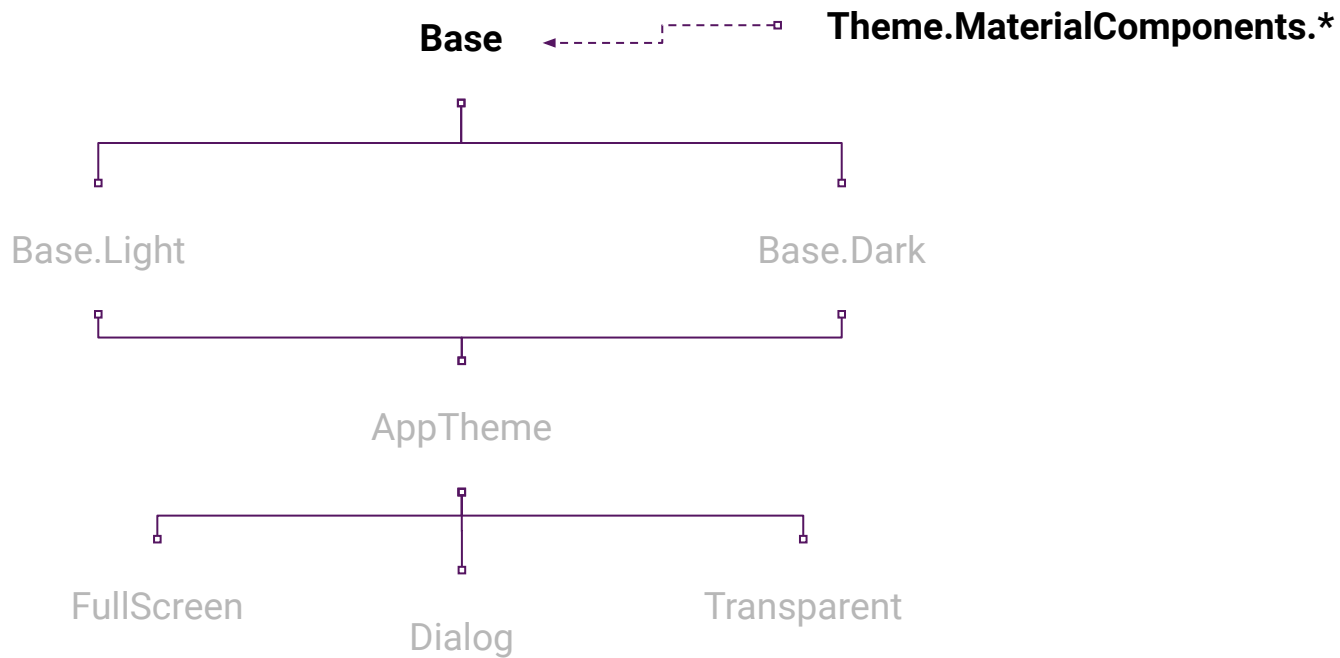
?colorPrimary

Theme.Light	@color/purple_700	#6002EE
Theme.Dark	@color/purple_200	#B794F6

Build perfect theming



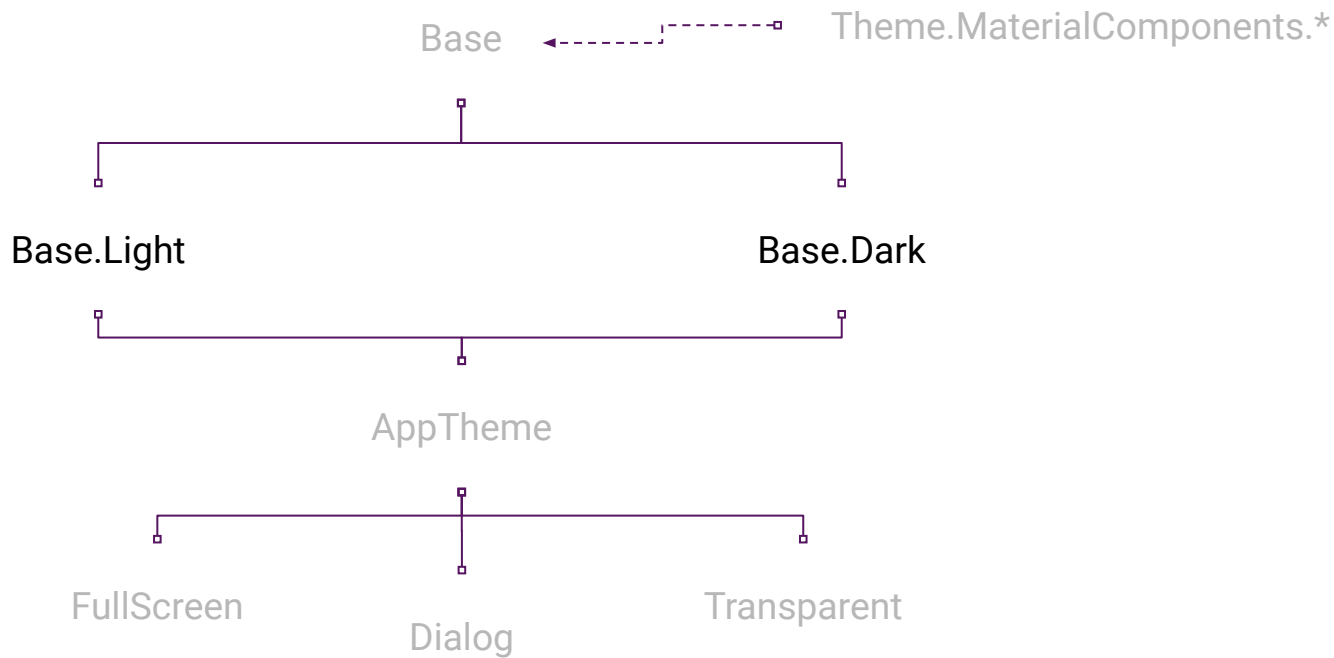
Build perfect theming



Base theme

```
<style name="Base" parent="Theme.MaterialComponents.DayNight">  
  
    <item name="bottomNavigationStyle">  
        @style/Widget.App.BottomNavigationStyle  
    </item>  
  
    <item name="dayMomentStyle">...</item>  
  
</style>
```

Build perfect theming



values/themes.xml

```
<style name="Base.Light">
    <item name="colorPrimary">@color/purple_700</item>
    <item name="colorOnPrimary">@color/white</item>

    <item name="colorSecondary">@color/teal_700</item>
    <item name="colorOnSecondary">@color/white</item>
</style>

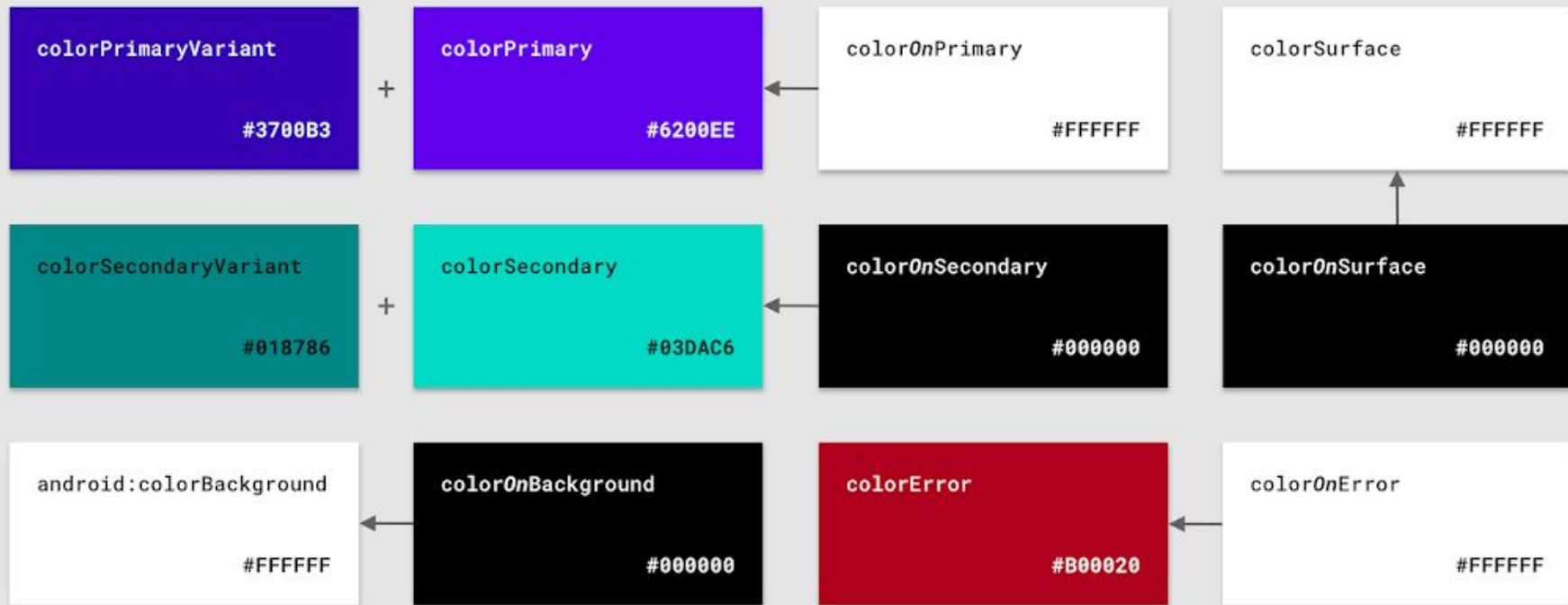
<style name="AppTheme" parent="Base.Light" />
```

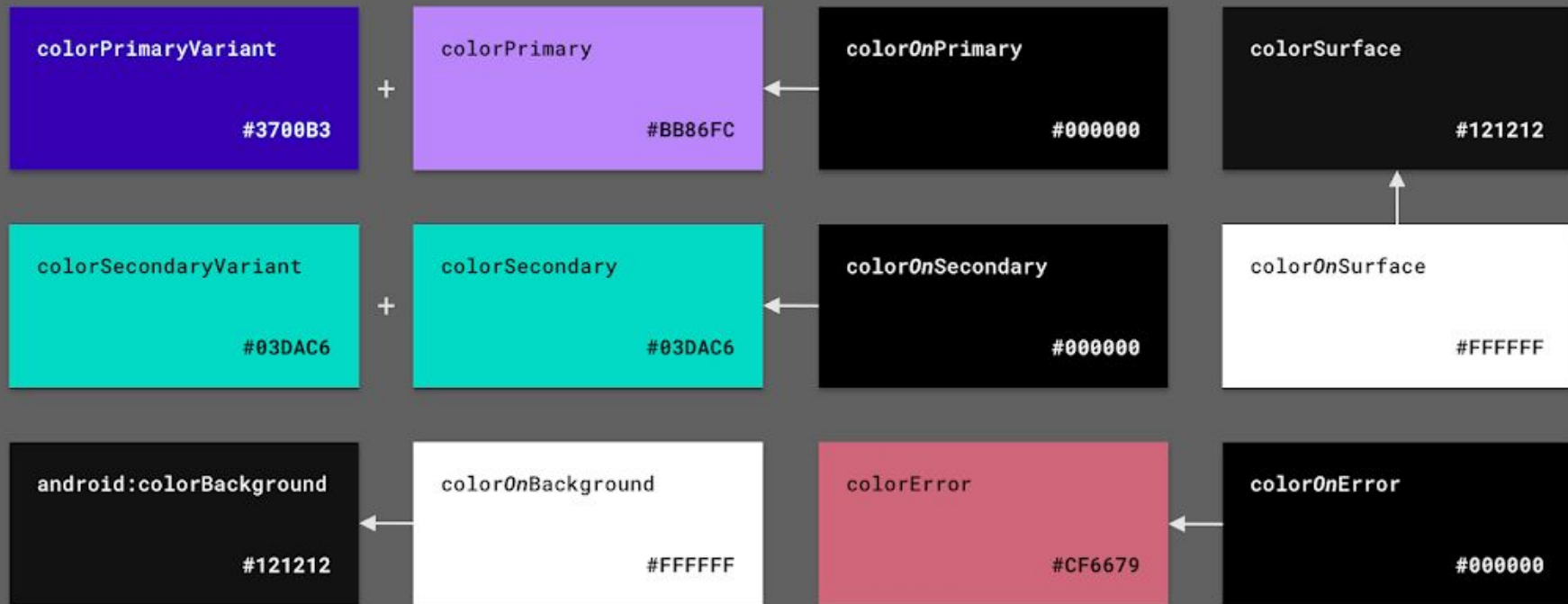
values-night/themes.xml

```
<style name="Base.Dark">
    <item name="colorPrimary">@color/purple_200</item>
    <item name="colorOnPrimary">@color/black</item>

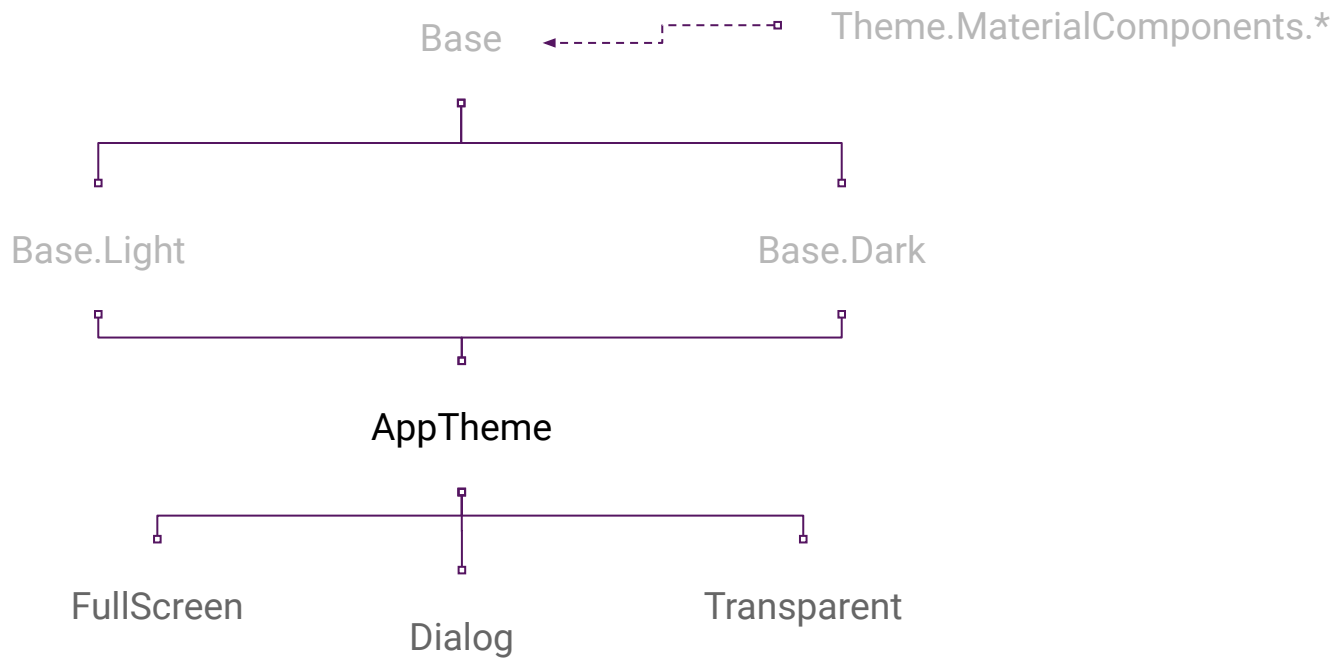
    <item name="colorSecondary">@color/teal_200</item>
    <item name="colorOnSecondary">@color/black</item>
</style>

<style name="AppTheme" parent="Base.Dark" />
```

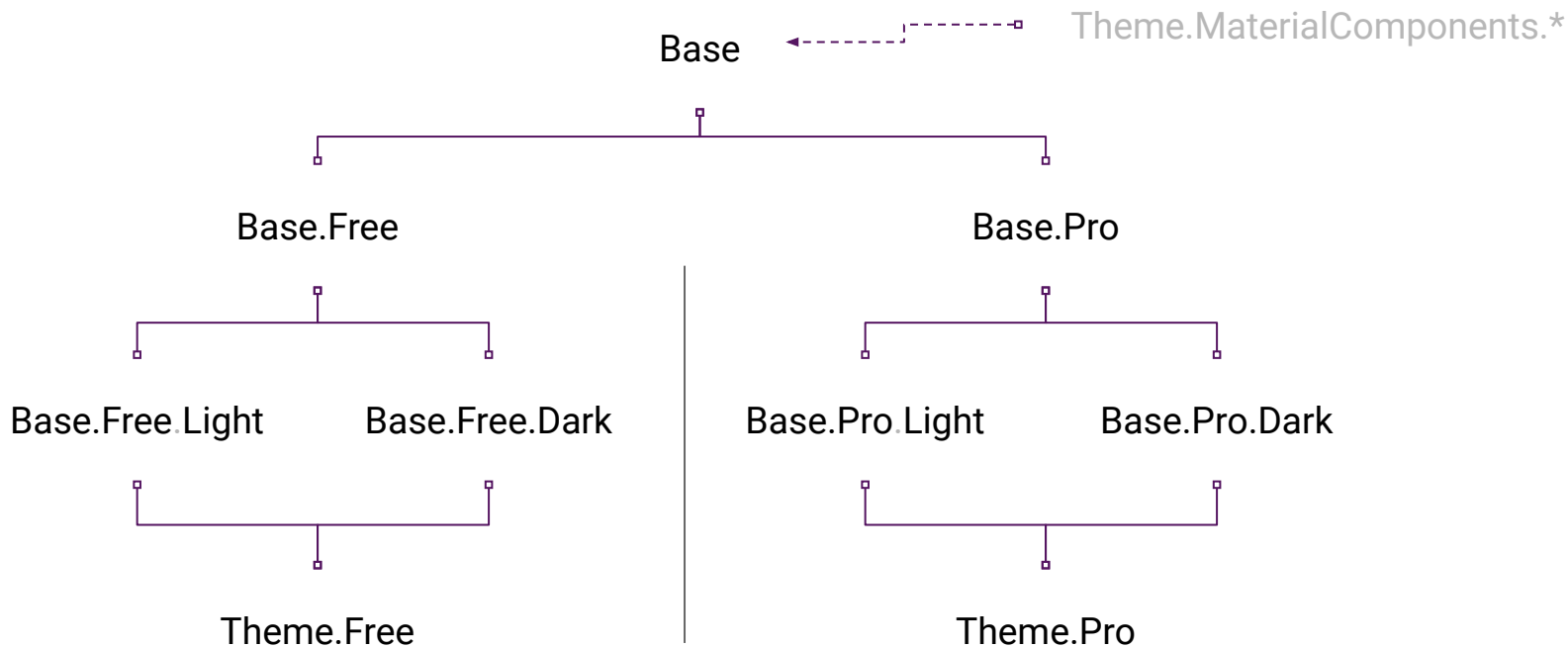




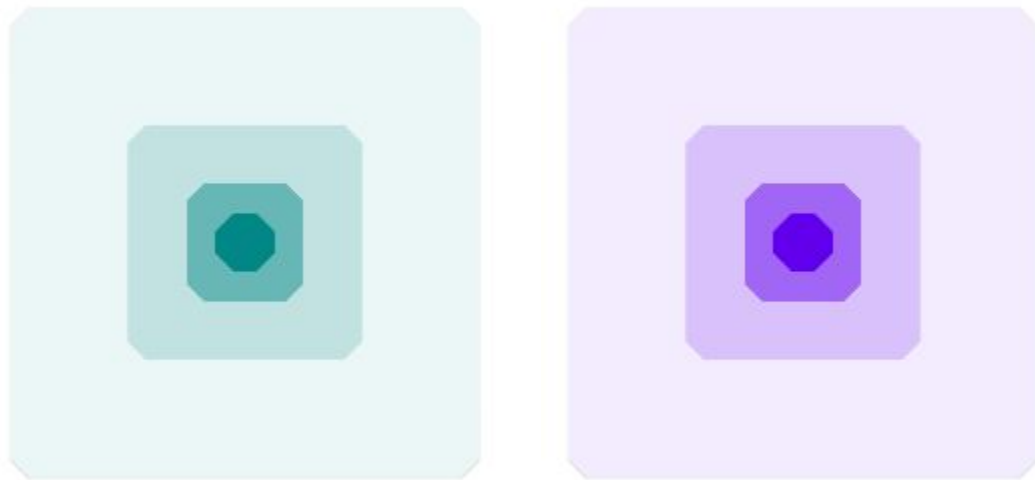
Build perfect theming



Build perfect multi theming



Colors & Alphas

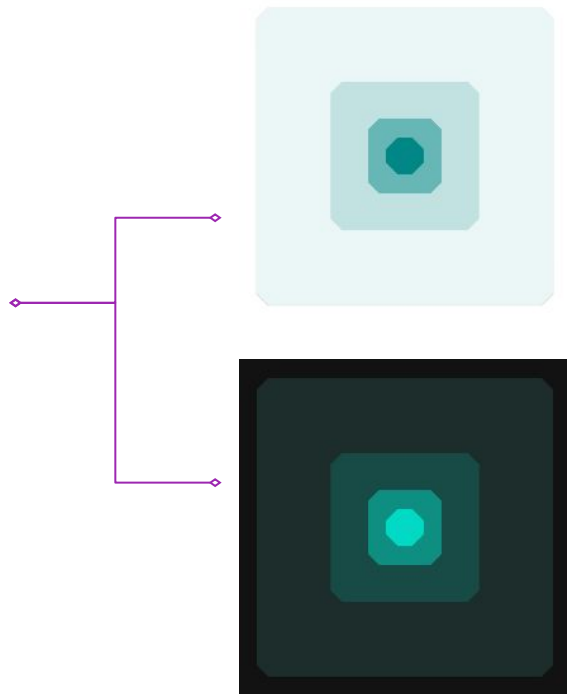


Colors & Alphas

```
<selector>
```

```
  <item android:alpha="#.##"  
        android:color="?colorPrimary" />
```

```
</selector>
```

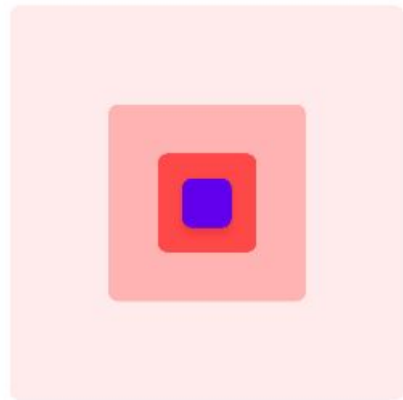


API 21

```
<selector>
```

```
  <item android:alpha="#.##"  
        android:color="?colorOnPrimary" />
```

```
</selector>
```



ERROR



API 21

```
val onPrimary40 = AppCompatResources.getColorStateList(  
    context, R.color.color_on_primary_40  
)  
  
val onPrimary = MaterialColors.getColor(  
    context, R.attr.colorOnPrimary  
)
```

API 21

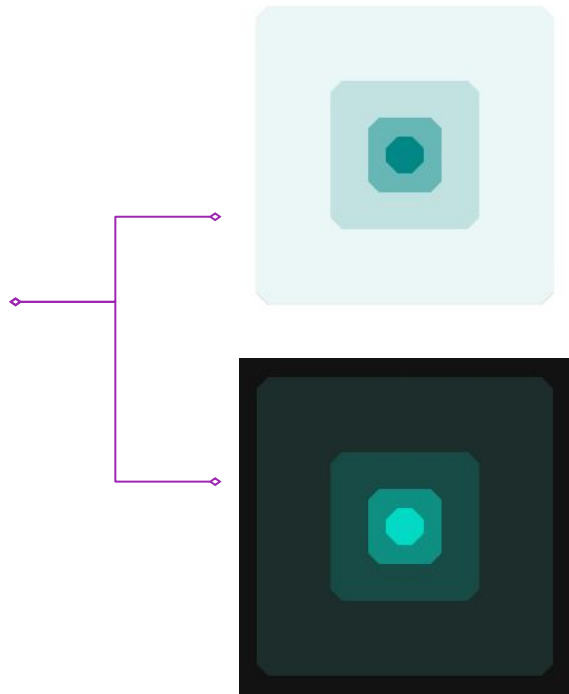


Remember...

```
<selector>
```

```
  <item android:alpha="#.##"  
        android:color="?colorPrimary" />
```

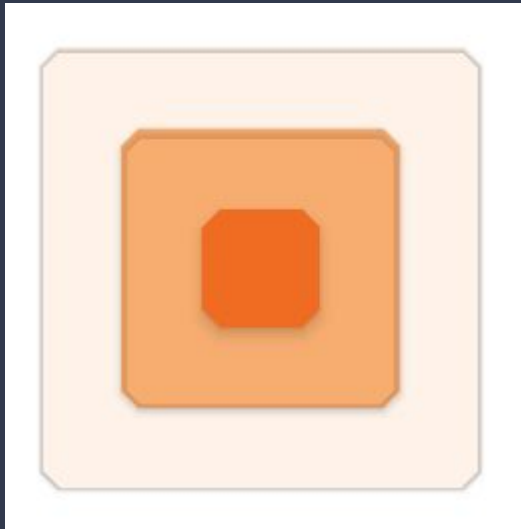
```
</selector>
```



Colors & Alphas

Colors with an alpha value other than 100% will allow light to go through.

This could affect the underlying shadow



Colors & Alphas

```
// Layer background color with overlay color
val backgroundColor = ... // color_surface
val overlayColor = ... // CSL_WITH_ALPHA

val layerColor = MaterialColors.layer(
    backgroundColor,
    overlayColor
)
```

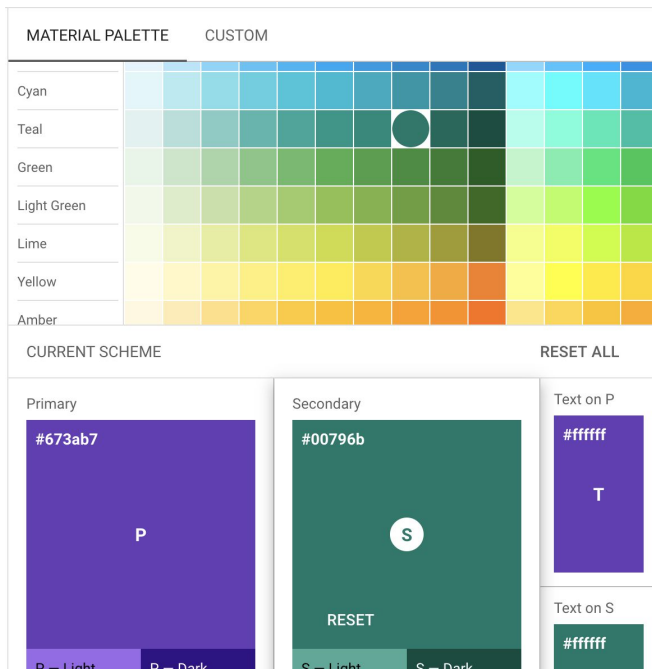
Colors & Alphas

```
// Layer background color with overlay color
val overlayColor = ... // CSL_WITH_ALPHA

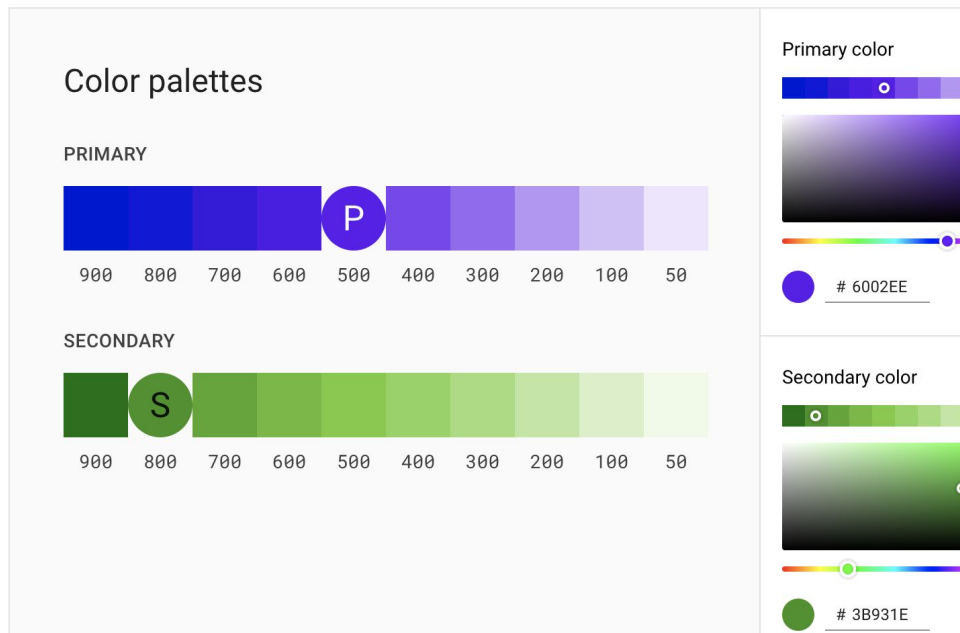
val layerColor = MaterialColors.layer(
    backgroundColor,
    overlayColor
)
```



Color tool



Palette generator



¿Q&A?

