# CORTEX Light Theme Color Style Guide

**Palette:** This guide uses a fixed palette of five core colors – **MIT Rosewood** (#750014), **Rich Black** (#011627), **Pine Green** (#007561), **Orange Peel** (#FF9F1C), and **Baby Powder** (#FDFFFC). These colors are applied following a balanced 60-30-10 approach (approx. 60% neutral base, 30% secondary accents, 10% primary brand color) to ensure a professional, executive feel[[1]](https://venngage.com/blog/brand-colors/#:~:text=Use%20your%20core%20brand%20color,as%20a%20design%20accent). The palette conveys trust and modernity: Rosewood (a deep MIT red) provides passionate, high-impact accents[[2]](https://artversion.com/blog/the-power-of-color-in-branding-a-deep-dive-into-corporate-color-palettes/#:~:text=%E2%80%A2%20Red%3A%20Evokes%20passion%2C%20urgency%2C,such%20as%20retail%20and%20entertainment), Pine Green offers a sense of stable growth[[2]](https://artversion.com/blog/the-power-of-color-in-branding-a-deep-dive-into-corporate-color-palettes/#:~:text=%E2%80%A2%20Red%3A%20Evokes%20passion%2C%20urgency%2C,such%20as%20retail%20and%20entertainment), Rich Black adds sophistication[[2]](https://artversion.com/blog/the-power-of-color-in-branding-a-deep-dive-into-corporate-color-palettes/#:~:text=%E2%80%A2%20Red%3A%20Evokes%20passion%2C%20urgency%2C,such%20as%20retail%20and%20entertainment), and the generous use of Baby Powder (off-white) maintains a clean, precise canvas. Orange Peel, a vibrant orange, is used sparingly as a tertiary highlight to add energy without overwhelming the design[[3]](https://artversion.com/blog/the-power-of-color-in-branding-a-deep-dive-into-corporate-color-palettes/#:~:text=A%20secondary%20palette%20introduces%20complementary,promotional%20materials%2C%20or%20seasonal%20campaigns). Throughout the UI, white space and neutral tones dominate, with brighter colors reserved for meaningful highlights – reinforcing a trustworthy, contemporary aesthetic suitable for executives in regulated industries[[3]](https://artversion.com/blog/the-power-of-color-in-branding-a-deep-dive-into-corporate-color-palettes/#:~:text=A%20secondary%20palette%20introduces%20complementary,promotional%20materials%2C%20or%20seasonal%20campaigns).

## Primary, Secondary, and Tertiary Color Roles

* **Primary Color – MIT Rosewood (#750014):** This deep crimson is the core **brand color** (as used in the logo and key branding)[[4]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L46-L49). It should appear sparingly, acting as a powerful accent for high-impact elements like primary call-to-action buttons, the logo, or important icons/indicators. Rosewood’s richness draws attention without needing large coverage – following the 60-30-10 rule, it should comprise roughly 10% or less of the UI[[1]](https://venngage.com/blog/brand-colors/#:~:text=Use%20your%20core%20brand%20color,as%20a%20design%20accent). When used, it signals importance and urgency (consistent with red’s connotations of passion and urgency[[2]](https://artversion.com/blog/the-power-of-color-in-branding-a-deep-dive-into-corporate-color-palettes/#:~:text=%E2%80%A2%20Red%3A%20Evokes%20passion%2C%20urgency%2C,such%20as%20retail%20and%20entertainment)). Avoid using Rosewood as large area backgrounds or flooding the UI with it; instead, deploy it for strategic highlights (e.g. an active state, a selected menu item, or a key metric) to leverage its impact. Typography may incorporate Rosewood in limited cases (such as section headers or emphasis text) to reinforce brand identity, but most text should remain neutral for readability.
* **Secondary Color – Pine Green (#007561):** This cool green serves as a **secondary accent** tone. Pine Green provides contrast to Rosewood and aligns with themes of growth, stability, and success[[2]](https://artversion.com/blog/the-power-of-color-in-branding-a-deep-dive-into-corporate-color-palettes/#:~:text=%E2%80%A2%20Red%3A%20Evokes%20passion%2C%20urgency%2C,such%20as%20retail%20and%20entertainment), which suits the executive and strategic subject matter. Use Pine Green for secondary actions and less dominant UI components – for example, as the color for link text, secondary buttons or toggles, iconography accents, and interactive states (hover/focus outlines). It’s vibrant enough to be noticeable but more muted than Orange, making it a reliable workhorse accent. Pine Green can also distinguish information that is positive or proactive (it will double as the **success** state color as noted later). Overall, it should be about 20–30% of the interface’s color usage (e.g. in charts, illustrations, or secondary highlights), ensuring the UI feels lively yet balanced[[5]](https://venngage.com/blog/brand-colors/#:~:text=%2A%2010,should%20be%20a%20neutral%20color). On light backgrounds, Pine Green has good contrast and should remain accessible; ensure sufficient contrast for any Pine Green text by using it mostly on white or very light grey backgrounds.
* **Tertiary Color – Orange Peel (#FF9F1C):** This bold orange is used as a **tertiary accent** for emphasis and warnings. Orange Peel injects warmth and attention in small doses – for example, highlighting important metrics, icons, or **warning** messages. It should *not* be a dominant UI color, but rather an occasional pop to draw the eye (for instance, an alert icon, an info graphic element, or a chart series color). Because it’s highly saturated, use Orange Peel carefully to avoid oversaturation of the interface. Small UI elements like badges or status indicators can use Orange Peel to signify activity or caution. In adherence to executive styling, Orange acts as a creative spark without undermining the overall polished look. Using this tertiary color sparingly (similar to Rosewood’s ~10% or less) will add visual interest and guide attention to key points[[3]](https://artversion.com/blog/the-power-of-color-in-branding-a-deep-dive-into-corporate-color-palettes/#:~:text=A%20secondary%20palette%20introduces%20complementary,promotional%20materials%2C%20or%20seasonal%20campaigns). When used on text (e.g. a link or minor heading), ensure it’s reserved for hover states or isolated words so as not to impair readability or appear as an error (since orange is close to warning signage).

## Text Colors

Consistent, high-contrast text colors ensure readability on the light theme. We lean on **Rich Black (#011627)** as the foundation for typography:

* **Body Text:** Use Rich Black for all standard paragraph text and long-form content. This color is essentially a near-black with a hint of navy tone, providing excellent contrast on Baby Powder backgrounds while being slightly softer than pure black (adding a modern touch). Rich Black conveys seriousness and precision, aligning with a trustworthy executive voice[[2]](https://artversion.com/blog/the-power-of-color-in-branding-a-deep-dive-into-corporate-color-palettes/#:~:text=%E2%80%A2%20Red%3A%20Evokes%20passion%2C%20urgency%2C,such%20as%20retail%20and%20entertainment). It should be the default for body copy to maximize legibility (contrast ratio against #FDFFFC is well above WCAG AA standards).
* **Headings:** Headings (h1, h2, etc.) are primarily in Rich Black as well, to maintain consistency and formality. However, the **largest headings or hero text** (such as the app title or section titles) may incorporate MIT Rosewood to echo the brand identity. For example, the homepage hero title or the “CORTEX” logo text can be in Rosewood to create a strong brand impression. In general content, stick to Rich Black or a very dark neutral for headers to ensure a clean look – reserve Rosewood for either the logo or occasional highlight in headings, not every title, to avoid overuse. All headings should be clearly distinguishable by size/weight; color is used subtly (the deep red accent in a heading should be an exception rather than the rule, reinforcing brand only where appropriate).
* **Muted / Secondary Text:** For less prominent text – such as meta info, captions, placeholders, or disabled labels – use a **neutral gray**. A good choice is a medium gray like #8B959E (a desaturated gray from the palette)[[6]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L60-L62). This “silver gray” provides sufficient contrast to be legible but clearly indicates a subdued tone (about 60% brightness). Use this for secondary info (e.g. timestamps, footnotes) and for disabled text on controls. Muted text should typically be around this mid-gray level so it’s perceived as disabled or secondary, not grabbing attention away from primary content. Ensure the contrast for muted text on white is still >= 4.5:1 for accessibility (the chosen #8B959E meets this on white). For placeholder text inside inputs, this same gray or a slightly lighter variant can be used.
* **Link Text:** For hyperlinks and actionable text within paragraphs, use the **Pine Green (#007561)** as the default link color. Pine Green stands out from body text without being as stark as a bright blue or as alarming as red, fitting the professional tone. It provides an immediate cue that the text is clickable while harmonizing with the palette. Underline links for clarity (especially on hover or in body copy) to ensure they are recognizable. On hover or focus, you can deepen the Pine Green slightly (e.g. a 10% darker shade) or add an underline if not always underlined, to give a clear affordance. Alternatively, **Orange Peel** could be used as a hover state for links (a brief flash of orange underline or text) to draw attention on interaction – but use this carefully, as orange is high-contrast. Generally, Pine Green link text on the white background is sufficiently distinct and should remain the standard. Avoid using Rosewood for regular links, since red underlined text can be mistaken for error indicators and would overuse the brand color.
* **Inverted Text (on Dark Elements):** Although this guide is primarily for the light theme, note that on any darker backgrounds (e.g. a dark-colored badge or dark chart segment), use **Baby Powder (#FDFFFC) or pure white** for text to maintain contrast. For instance, if a badge uses Rosewood or Pine Green as a fill, the text or icon on it should be white (or Baby Powder) for readability. The palette’s near-white serves as the high-contrast text color against any dark fills (Rosewood text on Rosewood background is not legible, so use white text on brand-colored buttons, etc.).

## Background Colors

A clean, minimal background scheme is crucial for an executive look. **Baby Powder (#FDFFFC)** — a soft, almost-pure white — is the **base background** for pages and the UI. It keeps the interface open and airy, with ample whitespace. Use Baby Powder (or pure white #FFFFFF interchangeably, as the difference is negligible) for the main page background and any large content areas. This neutral canvas makes content easy to read and gives maximum contrast to text and data.

For **elevated surfaces** such as cards, modals, or panels that sit on the base background, use **white or a very light neutral**. Two approaches are common:

* Keep panels also white (#FFFFFF) and differentiate them with subtle **borders or shadows**. This approach aligns with a minimalist aesthetic: for example, a card can be pure white with a thin light-gray border (or a slight drop shadow) to distinguish it from the page background (Baby Powder). Given Baby Powder is slightly off-white, a pure white card will already have a faint distinction. A 1px border in a light gray (e.g. #DDE1E6)[[7]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L56-L62) can further delineate panels without drawing attention.
* Alternatively, use a **tint of gray** for panels to contrast the white page. A color like #F2F4F8 (a very light gray with a hint of blue) works well[[7]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L56-L62). This would make cards and secondary background sections a soft gray, standing out against the pure white base. For instance, form sections or sidebars could use #F2F4F8 as their background, giving a gentle contrast while preserving a clean look. (This gray is subtle enough to maintain high contrast with text and aligns with modern design neutrals.)

**Form fields and inputs** generally should have a white (#FFFFFF) background (matching the surrounding card or page), to keep them clean and integrate with the design. Users expect text inputs and textareas to be white or very light in a light theme. If needed, you can use the slight gray (#F2F4F8) background inside inputs for a “filled” style, but it’s often cleaner to use white and a border. In either case, **ensure the background of inputs contrasts with the page** (e.g. if the page is white, an input might need a border or shadow to be visible).

**Hover and active states** for backgrounds: When interactive elements (like menu items or list rows) are hovered, use an **ultra-light tint** overlay. For example, a semi-transparent Rich Black at 3%–5% opacity can create a light gray hover effect (rgba(0,0,0,0.03) for hover, slightly darker rgba(0,0,0,0.08) for active)[[8]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L15-L18). This produces a gentle elevation effect (often called Elevation-1 and Elevation-2 in design tokens) that is consistent with a subtle, non-distracting UI. Avoid using bright colors on hover backgrounds (no bright blue or the like); the idea is to give feedback without changing the color scheme of the page drastically.

## Button Colors

Buttons use the core palette to denote their type and priority. There are four main button styles to consider: **Primary (brand)**, **Secondary**, **Destructive**, and **Disabled**. Each has normal and hover states defined for consistency. All buttons should have **clear focus indicators** as well (e.g., an outline or shadow) using accent colors for accessibility.

* **Primary Button (Action)**: The primary buttons (for the main CTAs like “Submit”, “Save”, etc.) use **MIT Rosewood (#750014)** as the background fill to reinforce brand authority. The text on primary buttons should be **white** (Baby Powder) for contrast. This combination – Rosewood background with white text – ensures the button stands out prominently against the light interface. For example, a “Start Assessment” button would be Rosewood, drawing the eye immediately. On **hover**, slightly alter the Rosewood shade to provide feedback: you can go a bit brighter or darker. One approach is to slightly **lighten** the Rosewood on hover (e.g. by 5-10% in brightness) to create a subtle lift effect, since Rosewood is very dark at baseline. Alternatively, increasing saturation can make it appear more vivid on hover. The change should be noticeable but not jarring – avoid large shifts in hue. On **active click** or focus, you might invert the text color temporarily (white text remains, but add a darker outline or use a slightly darker shade of Rosewood) to indicate depression. Also, include a focus outline (for keyboard users) – for instance, a 2px outline in a contrasting color like Orange Peel or a bright neutral – around the button when focused, since Rosewood is dark and an outline will ensure visibility.
* **Secondary Button (Secondary Action)**: Secondary buttons represent less prominent actions. There are a couple of stylistic options for these:
* **Outlined style:** Use a white or neutral background with a Rosewood border and Rosewood text. For instance, a secondary button would have a 1px border of Rosewood and its label text in Rosewood, on a white background. This ties it to the brand without the heavy fill. On hover, the background can fill with Rosewood at a very light tint (e.g. 10% opacity Rosewood) or simply a hover effect where the border thickens slightly and background remains white with a subtle shadow. This style keeps secondary actions visually less dominant than primary (since it’s mostly white), while still identifiable via the colored text/border.
* **Alternative accent fill:** Another approach is using **Pine Green as the fill** for secondary buttons (with white text). This would create a two-color button hierarchy: primary actions in Rosewood, secondary actions in green. Pine Green is sufficiently deep to work as a button background and provides a complementary alternative. If you choose this, ensure the usage is consistent (e.g. all form secondary buttons are green). Hover for a Pine Green button would be a slightly lighter Pine Green or a bit more saturated shade. The Pine Green fill style makes the secondary button more noticeable than an outline, so use it only if you want secondary actions to still carry visual weight (for example, a “Download Report” button might be green if primary “Submit” is red).

Regardless of style, secondary buttons should **never outshine primary**. They should generally not use Orange or any brighter color as a fill, to maintain the visual hierarchy. Keep their look cleaner or quieter. On focus, apply a visible outline (e.g. focus ring in Pine Green or Rosewood) to meet accessibility. On disabled state, secondary buttons follow the disabled styling (see below).

* **Destructive Button (Danger Action):** Destructive actions (like “Delete”, “Remove User”) should be clearly marked, usually with a **red tone**, to warn the user. Given our palette, MIT Rosewood can serve as the red for destructive actions (its deep blood-red is on brand). You can use the same style as the primary button – Rosewood fill with white text – for destructive buttons, especially if the primary actions elsewhere are not red (for example, if primary actions in a particular UI are green or neutral, then a red destructive stands out). If the primary button style in the same context is also Rosewood, consider differentiating the destructive button by styling it as an **outline in Rosewood or using a different icon** to avoid confusion. In many cases, a brighter red is used for warnings, but since we are limiting to the given palette, Rosewood is our go-to red. Ensure the label of a destructive button is very clear (e.g. “Delete”) and perhaps include a warning icon. On hover, you might **darken** the Rosewood (since it’s already dark, a slight increase in brightness might not be visible – instead, darkening or adding a subtle red shadow can imply intensity). If possible, you could introduce a slightly brighter variant of Rosewood (e.g. a true red like #E55353) for destructive hover to catch attention – but if sticking strictly to palette, work within Rosewood’s range (maybe add Orange Peel as a small accent icon alongside text to emphasize caution). The key is the destructive button should feel a bit alarming compared to others. Always pair it with white text and consider a **hover/focus outline in orange** to reinforce the warning nature. (If additional colors were allowed, one could use a bright red [[9]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L63-L65), but within this palette Rosewood suffices.)
* **Disabled Button:** Disabled buttons (whether primary or secondary) should appear “off” and non-interactive. Use a **muted background and border** – for example, a light gray background like #F2F4F8 with a #DDE1E6 border[[7]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L56-L62), and any text/icon in a mid-gray such as #8B959E[[6]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L60-L62). This greyed-out appearance signals the button is not active. For a disabled primary-style button, instead of Rosewood fill, it would be the light gray fill; for a disabled secondary (outline) button, the border would switch from Rosewood to a gray and the text from colored to gray. Ensure there is sufficient contrast between the disabled text and disabled background (even though it’s low priority, it should still be legible if someone tries to read it – aim for at least ~3:1 contrast since it’s not meant to be prominent). Typically, disabled states have no hover effect (the cursor might show as not-allowed and no color change). If you do show a hover, it should not look like an enabled hover – perhaps just maintaining the same style or a very slight change in shade of gray. In code, these grays can be tied into the neutral palette variables for consistency.

## Chart and Data Visualization Colors

For charts (e.g., radar plots, bar graphs, line charts in the assessment results), we recommend a set of **series colors** derived from the palette that are visually distinct yet harmonious. Given the executive audience, charts should be clear and not overly gaudy. Ensure **accessible combinations** – each data series color must be distinguishable from others and remain visible against the light background, even for color-blind viewers. Here’s a suggested sequence of colors for multiple series:

1. **Pine Green** – #007561: as the first series color. It’s a strong, cool color that is easily distinguishable and aligns with positive connotations (growth/progress). It will be visible on a white background and in contrast to the warmer colors used for other series.
2. **Orange Peel** – #FF9F1C: second series. The bright orange provides a sharp contrast to the green and is very eye-catching. It’s great for highlighting a particular metric. Be mindful that on a white background, orange has medium contrast (use sufficiently thick lines or larger markers).
3. **MIT Rosewood** – #750014: third series. The deep red provides a darker tone, distinguishing it from both green and orange. Use Rosewood for a series that you want to tie to the brand or to indicate a benchmark. Because Rosewood is dark, it will show up well as a line or bar; however, if placed adjacent to dark text or axis lines, make sure there’s enough separation. (Consider using Rosewood for a target line or an average, since it’s bold but not neon-bright.)
4. **Rich Black** – #011627: fourth series. Although usually for text, Rich Black can serve as a data color if needed, especially if other colors are exhausted. A dark navy/black line or bar will stand out with maximum contrast (useful for baseline or reference series). Alternatively, a **gray** could be used here for a subtle series that shouldn’t dominate – for instance, a comparative baseline could be a gray line at #8B959E.
5. **Extended Accent** – for a fifth or more series, you can introduce a **variation of Pine Green or Orange** for differentiation. For example, a lighter **teal** or blue-green that is in family with Pine Green, or a **golden amber** that is close to Orange Peel but distinct. Since our fixed palette has only 5 core colors, you may create an extra series color by mixing them: e.g., a **desaturated orange** (mix Orange Peel with some neutral to get a tan), or a **brightened green** (a lighter green tint). The key is to ensure it’s distinct from the others. In practice, you might also use different stroke patterns or marker shapes to differentiate series, aiding those with color vision deficiencies.

For all chart colors, ensure **sufficient contrast against the Baby Powder background**. The above choices (green, orange, maroon, black) all have strong contrast on white. However, note that combining **red and green** in the same chart can be problematic for red–green colorblind users[[10]](https://artversion.com/blog/the-power-of-color-in-branding-a-deep-dive-into-corporate-color-palettes/#:~:text=While%20color%20doesn%E2%80%99t%20evoke%20senses,consider%20how%20their%20colors%20make). To address this, if Rosewood and Pine Green are used simultaneously, differentiate by using distinct marker shapes or dashed vs. solid lines in addition to color. Orange generally remains visible to most users even with color blindness, but always pair colors with clear legends and labels.

**Auxiliary chart elements:** Grid lines, axes, and labels should use neutral colors (e.g., light gray grid lines #DDE1E6, and Rich Black or dark gray text for axes). This keeps the focus on the data series colors. Interactive elements like hover highlights can use the accent colors (e.g., hovering over a data point might highlight it with a halo in Rosewood or Orange). Use transparency for filled areas (like area charts or radar polygons) to keep them light – for instance, Pine Green with 50% opacity fill, so overlapping data can still be seen. Overall, charts should adhere to the palette but can use lighter tints of these colors where needed for layering.

## Form Inputs and Borders

Forms should feel clean and easy to use, with clear affordances using our color palette:

* **Input Background & Text:** As noted, use **white (#FFFFFF or #FDFFFC)** as the input field background for text fields, dropdowns, textareas, etc. This matches the overall light theme and ensures the input is perceived as empty/neutral when not filled. The text inside inputs should be **Rich Black** for filled input text (same as body text, ensuring high readability for what the user has typed). For placeholder text, use the muted gray (#8B959E) so that it’s visible but clearly lighter than actual inputted text, indicating that it’s a placeholder.
* **Borders and Dividers:** Use a **light gray** for input borders, fieldset lines, and other dividers. The palette’s Light Gray 2 (#DDE1E6) is ideal[[7]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L56-L62) – it’s a subtle gray that is visible on white but not too high-contrast or distracting. All inputs (and components like card containers or sections) can use this as the default border color. It gives a polished, understated look. For example, a text input could have a 1px border in #DDE1E6 and a slightly rounded corner radius (e.g. 4px or 8px) for a modern feel. Similarly, horizontal rule lines or table cell dividers can use this gray. This neutral outline ensures structure without drawing attention.
* **Focus and Interactive States:** It’s important that focused form fields (when a user clicks or tabs into an input) are clearly highlighted. Using a color from our accents here improves usability. We recommend a **focus ring or border highlight in Pine Green or Orange Peel**. Pine Green is a great choice for focus outline: for instance, on focus, change the input border to Pine Green (#007561) or add a 2px shadow of that color. This adds a hint of brand personality and is easily visible. Orange could also be used (some design systems use orange/yellow for focus to stand out), but consider consistency – Pine Green reads as more calm and “active focus” without implying an error, whereas bright Orange might be misread as a warning. Choose one approach and apply it uniformly: e.g., **focus ring in Pine Green** for all interactive components (inputs, buttons, toggles) to indicate selection. This ring can be in addition to the element’s border (e.g. an outline offset). Make sure the contrast of the focus indicator is sufficient against surrounding colors; Pine Green on a white page is very noticeable. This follows accessibility best practices (visible focus state).
* **Hover states:** For input-like components (e.g. a text field that can be hovered in read-only mode or a select dropdown before opening), you can give a subtle hover effect by slightly darkening the border or background. Perhaps use the very light gray hover (rgba(0,0,0,0.03) overlay) like on other elements to indicate hover. This is optional for inputs, but for things like a **button or clickable list item**, definitely provide a hover highlight as described in the Background section (using the --elevate-1 overlay approach[[8]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L15-L18)).
* **Validation States:** When an input has an error (invalid data) or a success (valid data) state, incorporate the **status colors** (see next section) for the border or underline of the field. For example, if a form field is invalid, you might turn its border to Rosewood or a similar red to signal error, and show an error message beneath in that color. If a field is successfully validated (optional, usually success state is less commonly indicated), you could outline it in Pine Green. However, keep these for actual validation feedback, not for focus (don’t confuse focus vs. error by both using the same color – typically use different styles or shades).

In summary, form inputs should largely be neutral with subtle color cues for interaction, ensuring they integrate into the overall design without calling undue attention until needed.

## Success, Warning, and Error States (Semantic Colors)

Semantic state colors communicate feedback to the user (e.g., form validation, notifications, status badges). We map these to our palette as closely as possible:

* **Success:** Use **Pine Green (#007561)** as the primary success color. For success messages (like “Data saved successfully” or positive status indicators), incorporate Pine Green in the iconography (e.g. a checkmark icon or border) and perhaps in the header text. The background of a success alert or toast should be a **light tint of green** – for example, Pine Green at ~15% opacity over white, yielding a mint green tint. This could be around #E6F4F1 (a pale green) as a background, with a darker green border (Pine Green or slightly darker) to reinforce it. The text within a success banner can be either the standard body color (Rich Black) or Pine Green if you want the text itself to carry the green tone. Typically, use Rich Black for the message text (for maximum readability on a light green background) and reserve Pine Green for the title or icon. For instance, a success alert could have a Pine Green check icon, a title “Success” in Pine Green, and then black body text. This ensures readability and keeps the green usage controlled. Pine Green is naturally a calming, affirmative color, so it fits the success role well.
* **Warning:** Use **Orange Peel (#FF9F1C)** for warning or caution messages. Orange is attention-getting and signals a need for caution without the outright negative connotation of red. In a warning banner (e.g. “Password will expire soon” or “Are you sure?” prompts), use an **Orange Peel icon** (perhaps a warning triangle or info icon) and possibly an orange-tinted title text. The background should be a **light amber/orange tint** – Orange Peel at low opacity over white. For example, something like #FFF4E5 (a very pale orange) would work well as a background, with a border in Orange Peel. The text of the warning message itself can remain Rich Black (as black on pale orange is very legible), while the label or title “Warning” could be in the Orange Peel color for emphasis. This way, the user’s eye is drawn to the icon and title in orange, but the detailed message is easy to read. Ensure that Orange on white has enough contrast for any text – Orange Peel as text is borderline on white (it’s fairly saturated and dark so it should meet large-text contrast, but for body size text, it’s around 4.5:1 which is just acceptable). It’s safer to use orange for short text like a heading and keep the body text dark.
* **Error:** For error and danger states, we use **MIT Rosewood (#750014)** as the closest thing to a “red alert” color. Rosewood is a dark crimson that aligns with error, though it’s less bright than a typical error red. In error messages (e.g. “Failed to save” or form validation errors), use Rosewood for the icon (a warning circle or cross icon) and for any key text like “Error:” labels. The background of an error alert should be a **light red/pink tint**. Since Rosewood is very dark, mix it with a lot of white to create a pale rose background. For instance, #FDEDEE could serve (just an example of a very light rosy pink) – essentially Rosewood at ~10-15% opacity on white. Pair that with a border in Rosewood to clearly outline the error box. Text inside should primarily be Rich Black for readability, but critical keywords or the title can be in Rosewood. Because Rosewood is also the brand color, be mindful of context: if an error message appears, the use of Rosewood there is purely for semantic meaning, which is fine, but ensure it’s not confused with interactive elements. The depth of Rosewood actually makes it good for error text because it’s distinct and highly visible on a light pink background. If greater emphasis is needed (for example, a delete confirmation dialog icon), you might consider using a brighter red accent (not in the base palette, but something like #FF5A5F) just for the icon to indicate serious action[[9]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L63-L65) – however, this is optional. The palette’s red (Rosewood) should suffice for most cases. Always ensure error text is accessible: Rosewood text on white passes contrast easily (since it’s very dark). For error **form outline** (highlighting a specific field in error), use Rosewood for the border and perhaps a light pink fill inside the field (or just the border with an icon). Also, error states often accompany helper text in a smaller font – make that text Rosewood as well so the user can immediately tie it to an error.

*(For completeness, you could also define an* *“Info”* *state color for neutral informational messages. We might use a soft blue or teal for info if it were in the palette. Since it’s not explicitly in our five colors, either Pine Green can double as “info” or Orange in a lighter usage can serve. If needed, one might use a* *pale Pine Green* *background with Pine Green icon for a generic info alert. But typically, one of the above will cover most needs, as “info” can be styled similarly to success or warning depending on context.)*

## Neutral and Gray Palette

Neutral tones are the backbone of this design, providing the **60%** backdrop that allows accent colors to shine[[11]](https://venngage.com/blog/brand-colors/#:~:text=marketing%20collateral,would%20work). We define a set of grays/neutrals for use in backgrounds, text, and UI chrome (borders, dividers, etc.):

* **Base White / “Baby Powder”** – **#FDFFFC:** This is essentially our white, used for the main page background and large surfaces. It’s ever-so-slightly off pure white to give a softer feel. Functionally, it can be treated as interchangeable with white (#FFFFFF) – it keeps the interface bright, clean, and uncluttered. All content sits on this base. Use it for backgrounds of pages, modals, cards (if not using a gray), and anywhere a clean start is needed.
* **Gray 100** – **#F2F4F8:** A very light gray with a hint of cool tone[[7]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L56-L62). This serves as an alternate background for cards, side panels, or UI elements that need a slight elevation from pure white. For example, use #F2F4F8 for a sidebar background or even as the background of input fields if a slight contrast from the page is desired. It’s also useful for things like table header rows or odd/even row striping in tables (to differentiate rows subtly). This gray is so light that text (even gray text) is still quite readable on it, but prefer using dark text for best contrast.
* **Gray 200** – **#DDE1E6:** A light neutral gray[[7]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L56-L62) ideal for **borders, lines, and dividers**. This color is visible on a white background without being too bold. Use it for element outlines (buttons, cards, inputs), divider lines in menus or between sections, and as the color for subtle graphical elements like icon outlines or disabled toggles. It can also function as a background for things like progress bars or sliders (the “track” of a slider can be this gray, with the filled portion in an accent color). Essentially, whenever you need a light gray that’s not dominant, #DDE1E6 is a good choice.
* **Gray 300/400** – *Intermediate grays:* While not explicitly given by hex, you might interpolate a mid-gray between the provided ones. For text that is less prominent than body text but more visible than disabled, a **Gray 500** is useful. In our palette, **Silver Gray (#8B959E)** serves this role[[6]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L60-L62). This is roughly in the middle of the gray spectrum – about 45-50% lightness. We use #8B959E for **muted text**, icons, placeholder text, and disabled controls. It’s dark enough to read on white but clearly softer than Rich Black. You can also use similar mid-grays (like #A2A9B0 if a slightly lighter version is needed, or #6b7280 as a darker option) as needed for things like iconography or inactive component outlines. The key is these mid-tones should never compete with primary text – they are supporting actors in the UI.
* **Dark Gray / Rich Black** – **#011627:** This is effectively our **“Gray 900”** (a near-black) and is the default for primary text and high-emphasis elements. Rich Black is used anywhere you need maximum contrast on light backgrounds: body text, headings, icons on light backgrounds, etc. It can also be used for heavy lines or fills if absolutely needed (e.g., a very important icon or chart line), but generally we keep it for text and essential UI elements (like maybe the app header text or logo outline). Its slight blue undertone differentiates it from a flat black, giving a modern feel. This color anchors the design in professionalism and should appear wherever clarity and readability are paramount.
* **Transparency & Overlays:** In addition to solid grays, remember that using black or white with transparency is a practical way to achieve intermediate shades. The design system uses overlays like rgba(0,0,0,0.03) for hovers[[8]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L15-L18) or rgba(0,0,0,0.1) for subtle shadows or outlines (--button-outline at 10% black, for example[[12]](https://github.com/mithorizon7/Cortex3/blob/e389b799884509a99098233ad5b800d536b5e29c/client/src/index.css#L7-L15)). Similarly, white at low opacity on a dark element can soften it. So not every shade needs a static hex value – we often rely on these alpha overlays for states and shadows. This keeps consistency (all shadows, for instance, might just be black at various opacities rather than new colors).

By using this neutral palette heavily (the majority of backgrounds, a large portion of text, and all basic structure are in whites and grays), we ensure the interface remains **uncluttered and professional**[[3]](https://artversion.com/blog/the-power-of-color-in-branding-a-deep-dive-into-corporate-color-palettes/#:~:text=A%20secondary%20palette%20introduces%20complementary,promotional%20materials%2C%20or%20seasonal%20campaigns). Neutrals provide the calming backdrop that lets the brand accents (Rosewood, Pine Green, Orange) appear in controlled, purposeful spots – exactly what we need for an executive audience who values precision over flash.

## SCSS Variables / Design Tokens

Below is a set of SCSS variables (and their HEX values) capturing the above color system. These can be integrated into a React project’s SCSS or Tailwind configuration. They are organized by role for clarity:

/\* \*\*Core Brand Colors\*\* \*/  
$color-primary: #750014; // MIT Rosewood – primary brand color (sparingly used for main accents)  
$color-secondary: #007561; // Pine Green – secondary accent color for links, secondary buttons, etc.  
$color-tertiary: #FF9F1C; // Orange Peel – tertiary accent for warnings, highlights  
  
/\* \*\*Neutral Colors\*\* \*/  
$color-base: #FDFFFC; // Baby Powder – base page background (off-white)  
$color-black: #011627; // Rich Black – primary text and highest contrast neutral  
$color-gray-100: #F2F4F8; // Light gray for panel backgrounds, UI surfaces[7]  
$color-gray-200: #DDE1E6; // Light gray for borders, dividers, disabled backgrounds[7]  
$color-gray-500: #8B959E; // Medium gray (muted text, placeholder, disabled text)[6]  
$color-gray-900: #011627; // (Alias to Rich Black, for consistency in a gray scale)  
  
/\* \*\*Text Colors\*\* \*/  
$text-color: $color-black; // Body and main text color (Rich Black)  
$heading-color: $color-black; // Headings (default). Could use $color-primary for special headings.  
$text-muted: $color-gray-500; // Muted/secondary text color  
$text-link: $color-secondary; // Link text (Pine Green)  
$text-link-hover: darken($color-secondary, 10%); // Hover state for links (a bit darker green)  
$text-inverse: #FDFFFC; // Inverted text on dark backgrounds (use base white)  
  
/\* \*\*Background Colors\*\* \*/  
$bg-base: $color-base; // Base page background (off-white)  
$bg-panel: #FFFFFF; // Panel/card background (pure white) – alternate to bg-base for elevation  
$bg-panel-alt: $color-gray-100; // Panel/card background alternate (light gray)  
$bg-hover: rgba(0, 0, 0, 0.03); // Hover overlay for list items, etc. (3% black)[8]  
$bg-active: rgba(0, 0, 0, 0.08); // Active/selected overlay (8% black)  
  
/\* \*\*Border Colors\*\* \*/  
$border-color: $color-gray-200; // Default border (input borders, card outlines)[7]  
$border-muted: $color-gray-100; // Subtle borders (e.g., between table rows, or very low contrast separators)  
$focus-ring: $color-secondary; // Focus outline (Pine Green) for focus states on inputs/buttons  
$focus-ring-alt: $color-tertiary; // Alternate focus or highlight (Orange) if needed for contrast  
  
/\* \*\*Button Colors\*\* \*/  
$btn-primary-bg: $color-primary; // Primary button background (Rosewood)  
$btn-primary-text: #FDFFFC; // Primary button text (white)  
$btn-primary-hover-bg: lighten($color-primary, 5%); // Hover state for primary button (slightly lighter Rosewood)  
$btn-secondary-text: $color-primary; // Secondary button text (Rosewood) for outlined style  
$btn-secondary-border: $color-primary; // Secondary button border color (Rosewood)  
$btn-secondary-bg: #FFFFFF; // Secondary button background (white by default)  
$btn-secondary-hover-bg: rgba(117, 0, 20, 0.1); // Hover for secondary: Rosewood at 10% opacity as background  
$btn-alt-bg: $color-secondary; // Alternate secondary button background (Pine Green) – use white text if used  
$btn-alt-text: #FDFFFC; // Alternate secondary button text (white on Pine Green)  
$btn-destructive-bg: $color-primary; // Destructive button background (also Rosewood in this palette)  
$btn-destructive-text: #FDFFFC; // Destructive button text (white)  
$btn-destructive-hover-bg: darken($color-primary, 10%); // Hover for destructive (even darker Rosewood)  
$btn-disabled-bg: $color-gray-100; // Disabled button background (light gray)  
$btn-disabled-text: $color-gray-500; // Disabled button text (gray)  
$btn-disabled-border: $color-gray-200; // Disabled button border (light gray)  
  
/\* \*\*Form & Input\*\* \*/  
$input-bg: #FFFFFF; // Input background (white)  
$input-text: $color-black; // Input text (black)  
$input-placeholder: $color-gray-500; // Input placeholder text (muted gray)  
$input-border: $color-gray-200; // Input border default (light gray)  
$input-border-focus: $color-secondary; // Input border on focus (Pine Green highlight)  
$input-border-error: $color-primary; // Input border on error (Rosewood)  
$input-bg-error: #FCE8E8; // Input background error state (light rosy pink, Rosewood tint)  
$input-border-disabled: $color-gray-100; // Input border when disabled (very light gray)  
$input-bg-disabled: $color-gray-100; // Input background disabled (light gray)  
  
/\* \*\*Status Colors\*\* \*/  
$success-bg: #E6F4F1; // Success background (light green tint)  
$success-border: $color-secondary; // Success border (Pine Green)  
$success-text: $color-black; // Success text (Rich Black, for readability on light green)  
$success-icon: $color-secondary; // Success icon color (Pine Green)  
$warning-bg: #FFF4E5; // Warning background (pale orange/amber)  
$warning-border: $color-tertiary; // Warning border (Orange Peel)  
$warning-text: $color-black; // Warning text (black on light orange)  
$warning-icon: $color-tertiary; // Warning icon color (Orange Peel)  
$error-bg: #FDEBEC; // Error background (pale rose, Rosewood tint)  
$error-border: $color-primary; // Error border (Rosewood)  
$error-text: $color-black; // Error text (black, or use Rosewood for headings)  
$error-icon: $color-primary; // Error icon color (Rosewood)  
  
/\* \*\*Chart Series\*\* \*/  
$chart-series-1: $color-secondary; // Series 1 – Pine Green  
$chart-series-2: $color-tertiary; // Series 2 – Orange Peel  
$chart-series-3: $color-primary; // Series 3 – Rosewood  
$chart-series-4: $color-black; // Series 4 – Rich Black (or alternate neutral)  
$chart-series-5: lighten($color-secondary, 25%); // Series 5 – lighter variant of Pine Green (as an example)

*Note:* These variables can be converted into CSS custom properties (--variable) if preferred, or injected into a Tailwind theme config. The comments explain each token’s usage. By using these variables, it will be easier to maintain consistency and to adapt the theme (for example, to a future dark mode) by swapping out values centrally. The choices made here ensure the interface feels **modern, precise, and trustworthy**, with color used strategically rather than decoratively[[3]](https://artversion.com/blog/the-power-of-color-in-branding-a-deep-dive-into-corporate-color-palettes/#:~:text=A%20secondary%20palette%20introduces%20complementary,promotional%20materials%2C%20or%20seasonal%20campaigns). The end result is a polished color scheme ready for development, suitable for an executive audience and robust enough for a complex application like the CORTEX AI Maturity Assessment.

## Addendum — Neutral “Info” Blue (for non-urgent informational UI)

**Purpose.** Provide a calm, non-warning visual treatment for informational content (FYI banners, helper panels, empty states), distinct from Success/Warning/Error. Optimized for the light theme and consistent with Rich Black’s cool undertone.

### A. Tokens to add

**SCSS design tokens**

/\* Info (neutral) – add to Status tokens block \*/

$info-bg: #E9F3FF; // baby blue background (calm FYI)

$info-border: #BFD8FF; // subtle border that frames the panel

$info-accent: #0C63D6; // icon/heading/link color within info UI

$info-text: $color-black; // body copy in info UI (Rich Black)

/\* Optional scale (for compact chips/badges/lines) \*/

$info-100: #D9ECFF; // slightly deeper bg for small surfaces

$info-600: #165DAA; // stronger accent where extra contrast needed

**(If you expose CSS variables)**

:root{

--info-bg: #E9F3FF;

--info-border: #BFD8FF;

--info-accent: #0C63D6;

--info-text: #011627; /\* Rich Black \*/

/\* Optional \*/

--info-100: #D9ECFF;

--info-600: #165DAA;

}

### B. Component patterns

1. **Info Banner / Alert (non-urgent)**

* **BG:** #E9F3FF
* **Border (1px):** #BFD8FF
* **Icon & Heading:** #0C63D6
* **Body Text:** Rich Black #011627
* **Links in body:** #0C63D6 (underline on hover)

.info-banner {

background: $info-bg;

border: 1px solid $info-border;

color: $info-text;

.info-icon,

.info-title { color: $info-accent; }

a { color: $info-accent; text-decoration: underline; }

a:hover { text-decoration-thickness: 2px; }

}

1. **Empty State / Helper Panel**

* Use **$info-100** for the card background if space is tight; otherwise **$info-bg**.
* Keep illustrations monochrome or with **Pine Green** accents to avoid confusion with Warning/Success.

1. **Inline Form Help**

* Place helper text below fields using **$info-accent** for the small “info” icon and **$info-text** for the copy.
* **Do not** change the field’s border color (reserve border color changes for validation states already defined).

1. **Tooltip (informational)**

* Light tooltip: white background, border #BFD8FF, title or icon in #0C63D6.

### C. Accessibility checks

* **Contrast:**
  + #0C63D6 on #E9F3FF ≈ **4.97:1** (meets AA for normal text).
  + Rich Black #011627 on #E9F3FF ≈ **16+:1** (AAA).
* **Focus:** Keep global focus indication in **Pine Green** as specified; the info color is content styling, not focus styling.
* **Icon + text:** Always pair the blue with an info icon to avoid color‑only meaning.

### D. Do / Don’t (semantics)

* **Do** use Info blue for FYI, guidance, onboarding tips, and non-urgent status.
* **Don’t** use Info blue for warnings (use **Orange Peel**) or errors (use **Rosewood**).
* **Don’t** mix more than one semantic color inside a single banner.

### E. Where it integrates in the doc

* **Add the tokens** under your “Status Colors” / variables block.
* **Add this section** immediately after existing Success/Warning/Error guidance so designers/devs see all semantic states together.

CORTEX Light Theme Color Style …