

Color Usage & Perception

Research

Color Theory

It takes only 90 seconds for people to make a subconscious judgment about a product and between 62% and 90% of that assessment is based on color alone.

-Research provided by Colorcom

Red – danger, passion, excitement, energy

Pink – feminine, sentimental, romantic, exciting

Orange – fresh, youthful, creative, adventurous

Yellow – optimistic, cheerful, playful, happy

Green – natural, vitality, prestige, wealth

Blue – communicative, trustworthy, calming, depressed

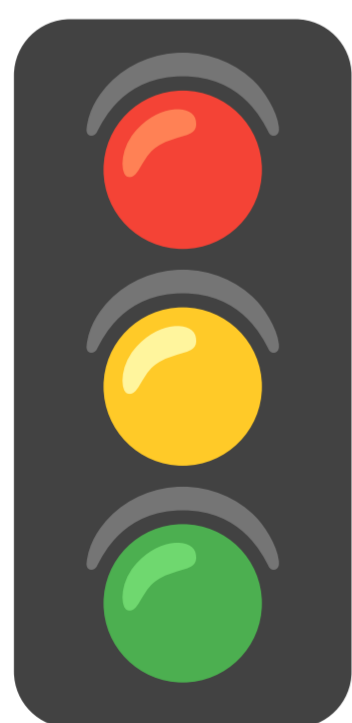
Purple – royalty, majesty, spiritual, mysterious

Brown – organic, wholesome, simple, honest

White – purity, simplicity, innocence, minimalism

Black – sophisticated, formal, luxurious, sorrowful

Multicolor – United, open, diversity



Traffic Lights of UX

- Red
 - Warnings and Importance
 - Actionable
 - Error Messages
- Yellow/Orange
 - Transient Warnings
- Green
 - Encouragement
 - CTA's utilize green to try and encourage
 - Similar calming attributes of blue
 - Indication of safety and success
 - Actionable

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Emotional Impact

Color Meanings & Symbolism

- The tone of a product can be dictated by using colors as primary or secondary shades
 - Ex: Blue as an accent color along with universal shades (black, grey, and white)
 - Ex: Blue as a primary color to give off a modern, minimalistic design
 - Also very dependent on hue, saturation etc.

Red Excitement Strength Love Energy	Orange Confidence Success Bravery Sociability	Yellow Creativity Happiness Warmth Cheer	Green Nature Healing Freshness Quality	Blue Trust Peace Loyalty Competence
Pink Compassion Sincerity Sophistication Sweet	Purple Royalty Luxury Spirituality Ambition	Brown Dependable Rugged Trustworthy Simple	Black Formality Dramatic Sophistication Security	White Clean Simplicity Innocence Honest

Color Preferences

- Age Preferences
- Gender Differences
- Cultural Differences
 - Different cultures perceive colors differently
 - White can be seen as clean, but in the Japanese culture white is viewed to be associated with death

Impact of Color on Business

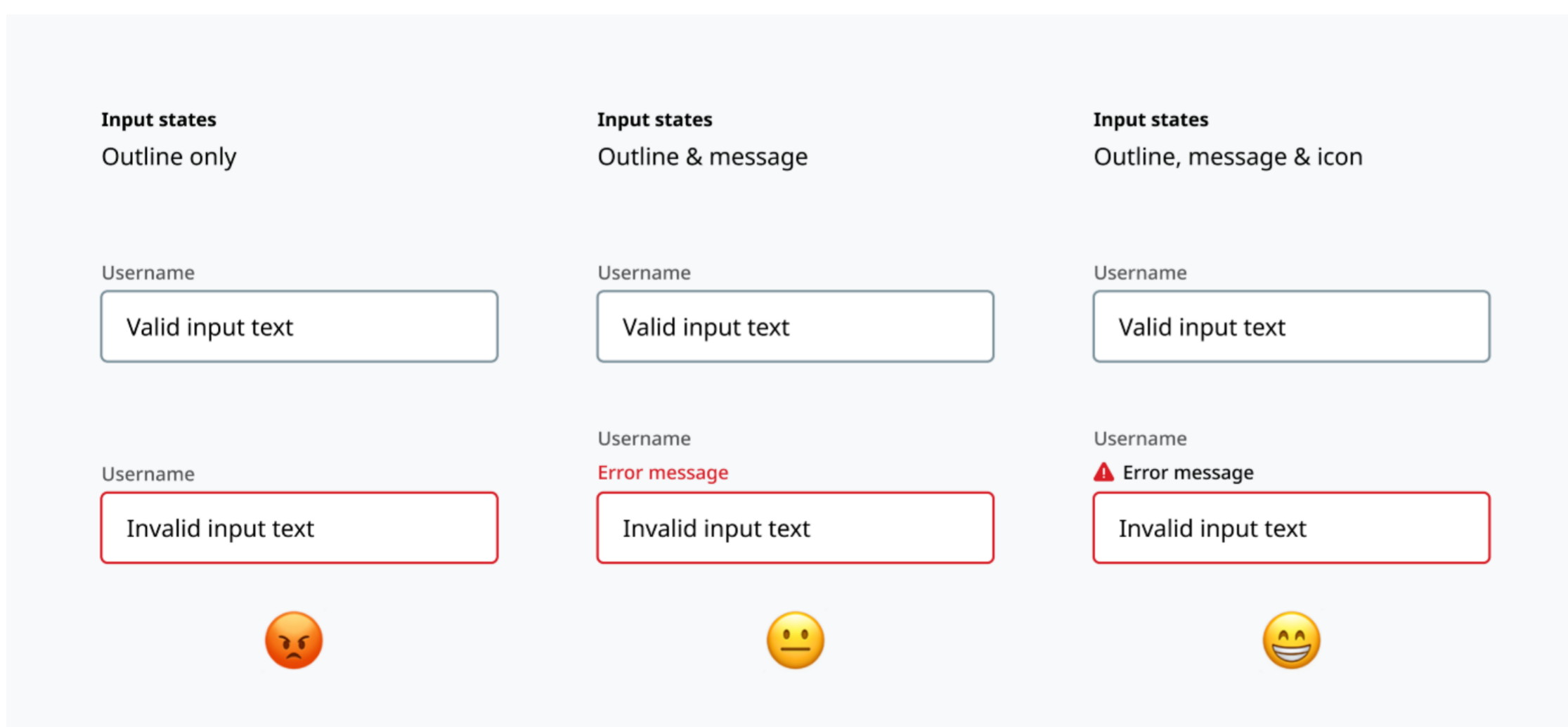
- Color on boosting conversion rates
 - Hubspot and their A/B testing prediction of a green button drawing in more users, but in reality, a red button proved to increase conversion rates

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Accessibility in Color

- Color Universal Design (CUD) is a design system to help ensure graphics are readable by people with various types of color vision
 - Core Principles
 - Choose a balanced color scheme that can be easily identified by people with all types of color vision, in consideration with the actual lighting conditions and usage environment.
 - Combine colors with different shapes, positions, line types and coloring patterns
 - Clearly state color names where users are expected to use color names in communication.
 - Color Blindness Tools
 - Palleton: Choose a color palette using techniques like monochrome adjacent colors, triad, tetrad and also simulate them side by side
 - Vischeck: Just upload your image, choose the condition and run the test.
 - <http://www.etre.com/tools/colourblindsimulator/>
- Focus on contrast
- Don't solely rely on color for states, adding icons or states helps users recognize where they are in the user flow
- <https://uxdesign.cc/design-system-accessibility-color-26834083a3a2>
- Avoid vibrant color combinations
- Use alternative visual clues for states, interactive elements and to show hierarchy



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Gestalt Theory in Design

- Definition: We perceive things better as a whole rather than the sum of its parts
- It is guided by 5 principles
 - Proximity
 - The closer objects are, assume that users think they are related
 - Easier to read and understand when the items are grouped together in necessary situations
 - Similarity
 - Components can be grouped together if they are **visually similar**
 - can apply to color, typography, and icons
 - Visual nomenclature can help identify items that belong to similar or different categories while maintaining a consistent patterns across experiences.
 - Continuation
 - Continuity happens when the eye is guided to move from one object to another.
 - Components containing tabs or dropdown selections with a partial option within view provides an affordance that there are additional options or interactions.
 - Closure
 - Individuals perceive objects such as shapes, letters, pictures, etc., as being whole when they are not complete. Specifically, when parts of a whole picture are missing, our perception fills in the visual gap.
 - Some example are loading states or completion meters
 - Figure/Ground
 - Refers to our ability to visually separate elements on different planes of focus. There are three ways to effectively execute this, of these through layering, contrast, and information hierarchy.
 - Material Design

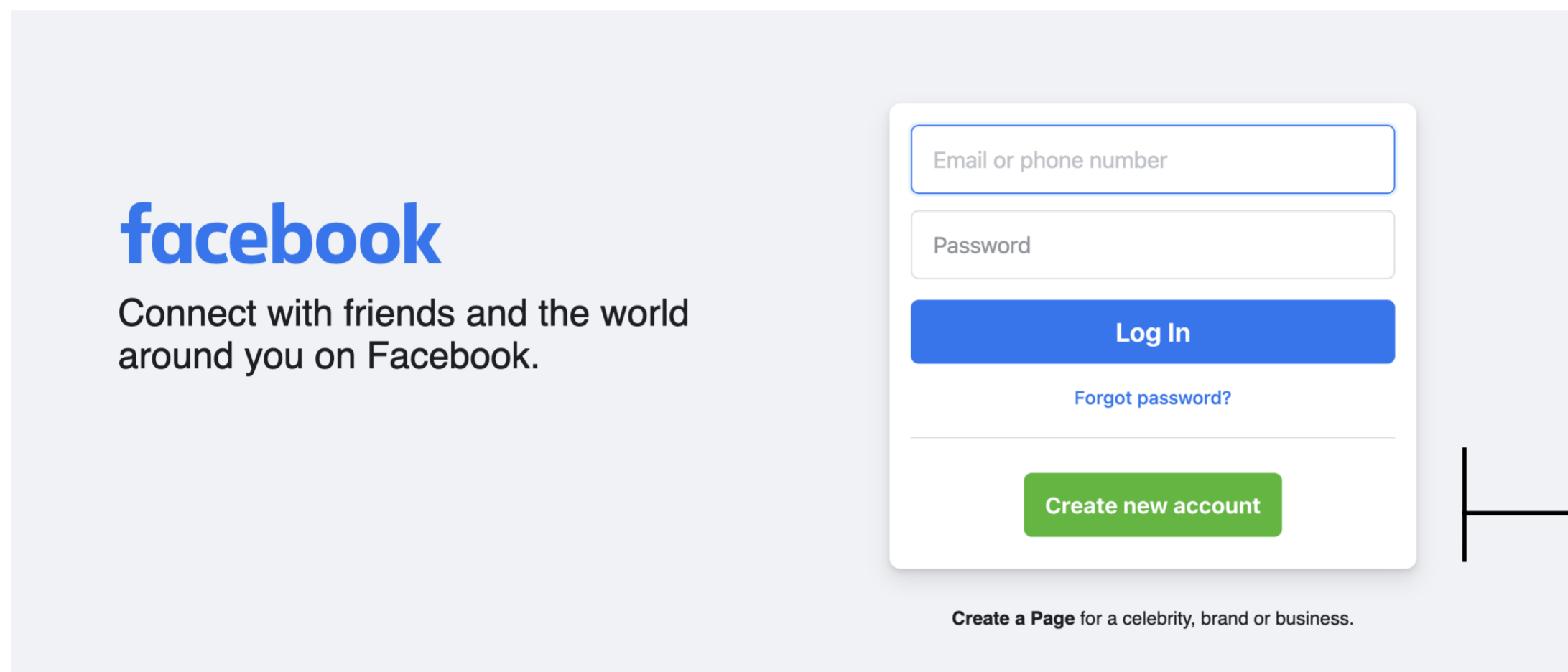
Color in CTAs

- Rules for CTAs
 - Standout
 - Consistent
 - Keep it clean
 - attempting to keep the cta the only color around its environment
 - Have a secondary plan
 - Keep it sticky....
 - Test the button
 - Colors
 - choosing complementary colors for contrast

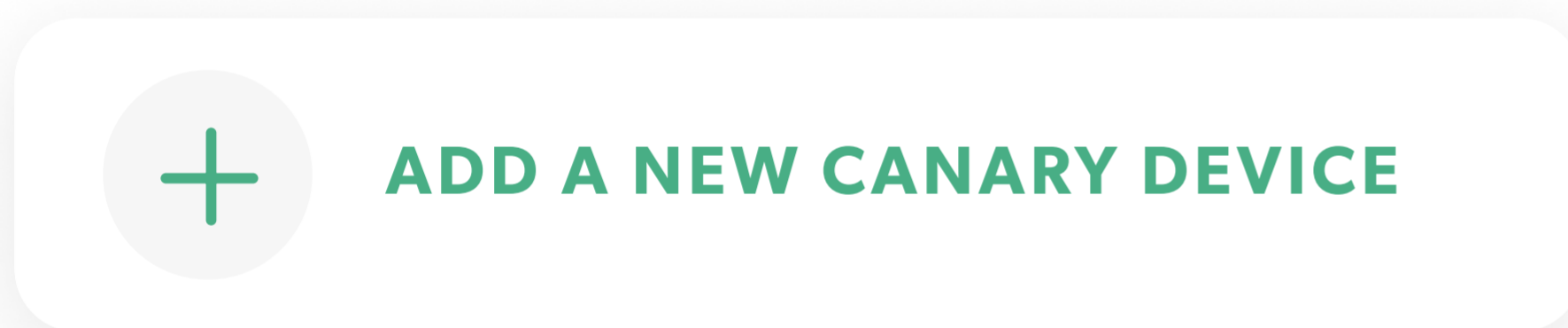
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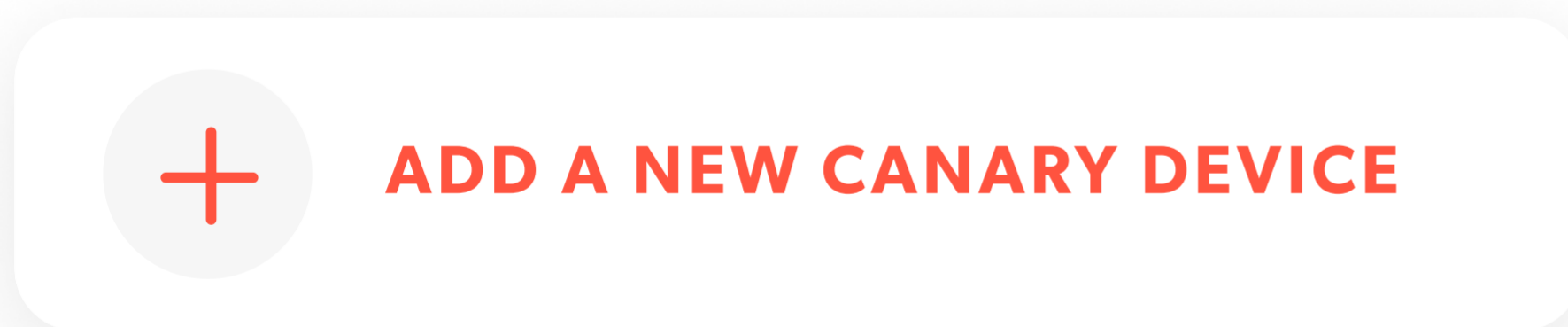
Examples of Green CTAs



Green is commonly used as a secondary CTA color for buttons



Encourages users to press the icon since it is an actionable color



Indicates an emergency or warning, emotion inducing CTA



Follows Branding, but doesn't give the user an actionable choice

Iconography

Research

Icons

Rules & Tips

- Consistency of...
 - Rounded corners in icons
 - Thickness of lines
 - When building icons, using grids can help accuracy of size and shape down to the pixel
- Detailisation
 - The smaller the icons, the more simple they should be (less details and fill-ins)
 - if icon is highly detailed, then lay off on thickness
- Only use color to indicate different states of usage on icons
 - Keep them consistent otherwise
- Use integers for size (no: 1.12)

Colors in Icons

Shades of one color can indicate different states

- Looking at real world references for cues
- HSB color system (Hue, Saturation, Brightness)
-

Nielsen and Norman Heuristic

- Common thread among icons is maintaining consistency
- Research Principles
 - Visibility of System Status
 - Match between system and the real world
 - User control and freedom
 - Consistency and standards
 - Error Prevention
 - Recognition rather than recall
 - Flexibility and efficiency of use
 - Aesthetic and minimalistic design
 - Help users recognize, diagnose, and recover from errors
 - Help and documentation