

# webOS Design System Documentation

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A comprehensive design system for loomOS based on the classic Palm/HP webOS aesthetic, featuring a minimalist neutral palette, glassmorphic effects, and clean typography.

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## Overview

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The webOS Design System provides a unified, single source of truth for all design decisions in loomOS. It consolidates previously scattered design tokens and establishes clear naming conventions and hierarchies.

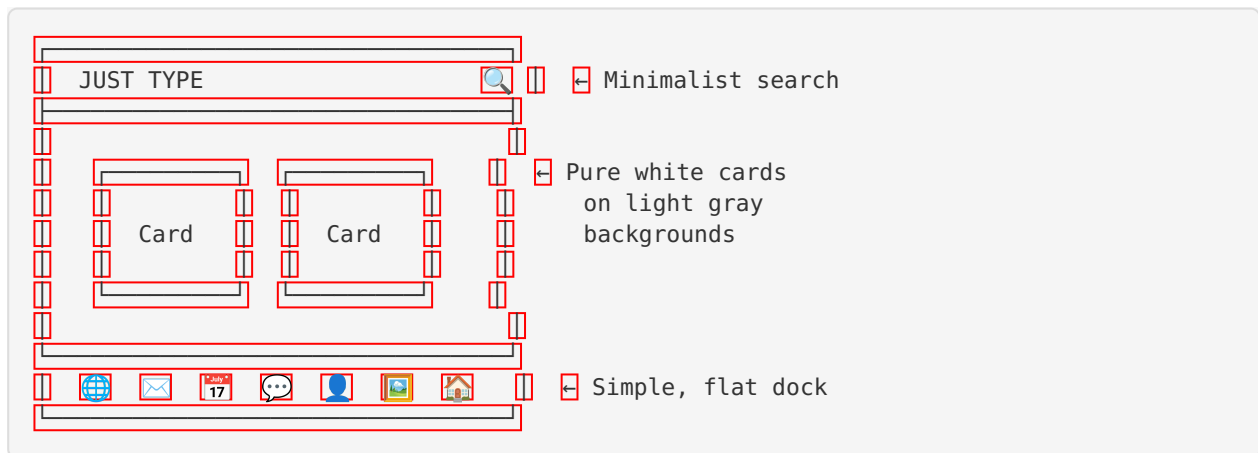
## Key Features

- ✓ **Single Source of Truth:** All design tokens in one consolidated file
  - ✓ **Neutral Palette:** Pure grays with no blue tints (following Palm webOS)
  - ✓ **CSS Variables:** Runtime theming and dark mode support
  - ✓ **Tailwind Integration:** Seamless utility class generation
  - ✓ **Component Tokens:** Pre-configured styling for common UI elements
  - ✓ **Accessible:** WCAG 2.1 AA compliant color contrasts
  - ✓ **Responsive:** Mobile-first with glassmorphic effects
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## Design Philosophy

### Palm webOS Aesthetic

The design system is inspired by the original Palm/HP webOS interface:



### Core Principles

1. **Minimalism:** Clean, uncluttered interface with maximum content focus
2. **Neutrality:** Pure neutral grays - no color bias or blue tints
3. **Clarity:** Light typography (Helvetica Neue) with excellent readability
4. **Subtlety:** Gentle shadows and glassmorphic effects
5. **Consistency:** Predictable patterns and behaviors

### Color Philosophy

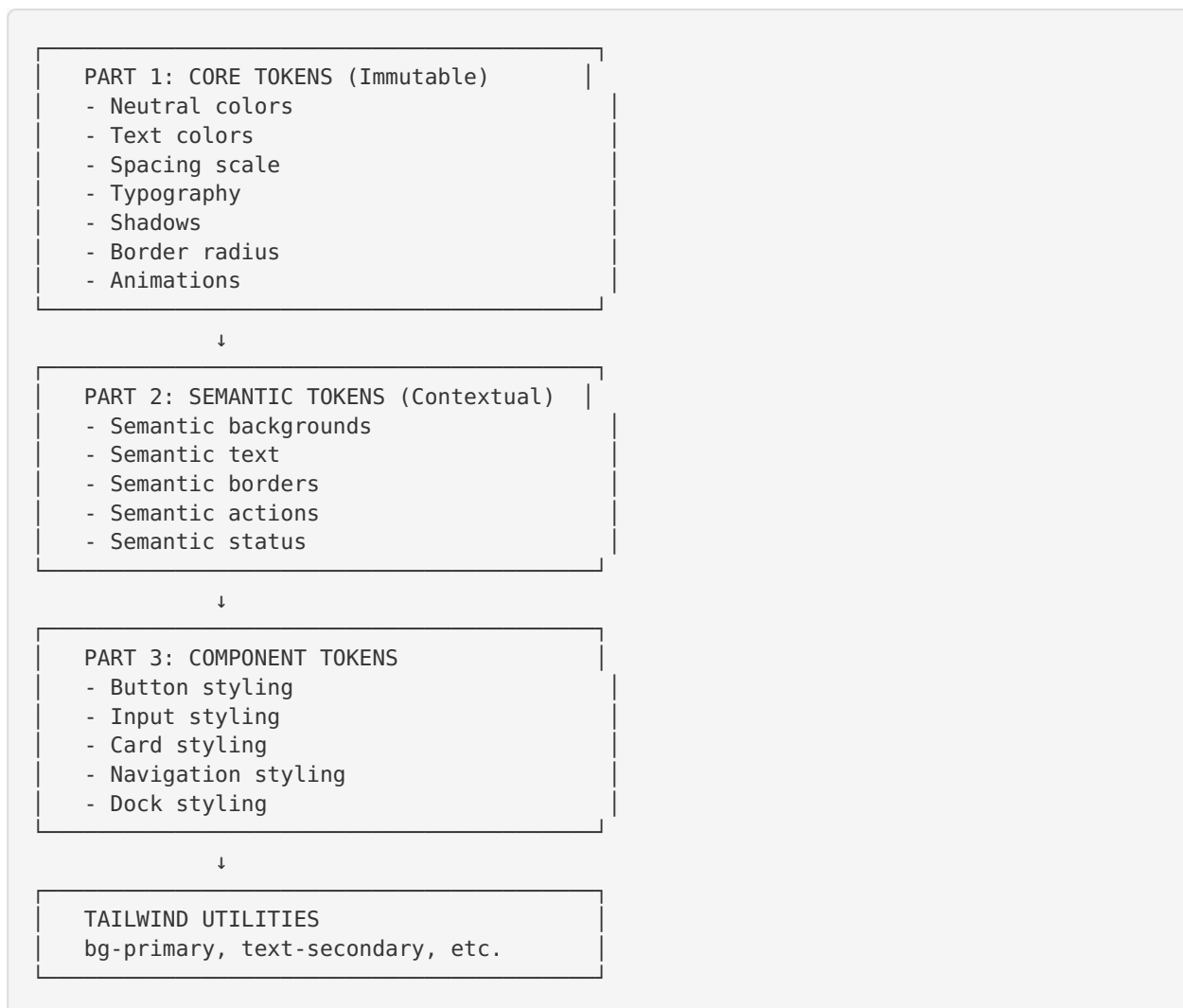
- **Backgrounds:** Light neutral grays (#e8e8e8, #f5f5f5)
- **Surfaces:** Pure white (#ffffff) cards with subtle shadows
- **Text:** Pure black (#000000) for maximum contrast
- **Accents:** Minimal color usage - blue for links only (#4a90e2)
- **Glass:** Translucent overlays with backdrop blur

## Architecture

### File Structure

```
loomOS/
├── styles/
│   └── webos-design-system.css    # ★ Single source of truth
├── tailwind.config.ts           # Tailwind configuration
├── app/
│   └── globals.css               # Global styles + design system import
└── docs/
    └── DESIGN_SYSTEM.md         # This documentation
```

## Token Hierarchy



## Design Tokens

### What are Design Tokens?

Design tokens are named entities that store visual design attributes. They're the atomic design decisions of your design system.

#### Example:

```
/* Instead of: */  
background-color: #e8e8e8;  
  
/* Use: */  
background-color: var(--bg-primary);
```

### Benefits

1. **Consistency:** Same value everywhere
2. **Maintainability:** Change once, update everywhere
3. **Theming:** Easy light/dark mode switching

- 4. **Documentation:** Self-documenting code
- 5. **Collaboration:** Shared language between design and development

## Color System

### Neutral Palette

Pure neutral grays with **NO blue tints** (following Palm webOS aesthetic).

Token	Value	Usage	Example
--neutral-50	#fafafa	Ultra light surfaces	Hover states
--neutral-100	#f5f5f5	Light surfaces	Secondary back-grounds
--neutral-200	#eeeeee	Secondary back-grounds	Panel backgrounds
--neutral-300	#e8e8e8	<b>Primary back-ground</b>	Main app background
--neutral-400	#e0e0e0	Borders, dividers	Default borders
--neutral-500	#d4d4d4	Medium borders	Emphasized borders
--neutral-600	#b0b0b0	Strong borders	Strong dividers
--neutral-700	#999999	Tertiary text	Hints, labels
--neutral-800	#666666	Secondary text	Captions
--neutral-900	#333333	Primary text	Body text
--neutral-950	#1a1a1a	Dark chrome	Headers, toolbars

### Background Colors

```
--bg-primary:    #e8e8e8;    /* Main app background */
--bg-secondary:  #eeeeee;    /* Secondary areas */
--bg-tertiary:   #f5f5f5;    /* Tertiary areas */
--bg-surface:    #ffffff;    /* Cards, panels (pure white) */
--bg-elevated:   #ffffff;    /* Elevated surfaces */
--bg-hover:      #fafafa;    /* Hover states */
--bg-active:     #f5f5f5;    /* Active states */
```

## Text Colors

```
--text-primary:    #000000; /* Primary text (pure black) */
--text-secondary:  #666666; /* Secondary text, labels */
--text-tertiary:   #999999; /* Hints, placeholders */
--text-disabled:   #cccccc; /* Disabled state */
--text-inverse:    #ffffff; /* Text on dark backgrounds */
```

## Accent Colors

**Minimal usage** - only for critical interactions.

```
/* Primary Accent (webOS Blue) */
--accent-blue:      #4a90e2; /* Links, selections */
--accent-blue-light: #6ba3e8; /* Light variant */
--accent-blue-dark:  #3a7bc8; /* Dark variant */
--accent-blue-subtle: rgba(74, 144, 226, 0.08); /* Subtle background */
```

## Status Colors

```
/* Success */
--status-success:    #5cb85c;
--status-success-subtle: rgba(92, 184, 92, 0.08);

/* Error */
--status-error:       #d9534f;
--status-error-subtle: rgba(217, 83, 79, 0.08);

/* Warning */
--status-warning:     #f0ad4e;
--status-warning-subtle: rgba(240, 173, 78, 0.08);

/* Info */
--status-info:        #4a90e2;
--status-info-subtle: rgba(74, 144, 226, 0.08);
```

## Glass Effects

For overlays, modals, and floating elements.

```
/* Glass Backgrounds */
--glass-white-95: rgba(255, 255, 255, 0.95); /* Near-opaque */
--glass-white-80: rgba(255, 255, 255, 0.80); /* Standard glass */
--glass-white-60: rgba(255, 255, 255, 0.60); /* Lighter glass */

--glass-black-80: rgba(0, 0, 0, 0.80); /* Dark overlays */
--glass-black-40: rgba(0, 0, 0, 0.40); /* Modal backdrops */

/* Backdrop Blur */
--blur-sm: 8px; /* Subtle blur */
--blur-md: 12px; /* Standard blur */
--blur-lg: 20px; /* Strong blur */
--blur-xl: 32px; /* Extra strong blur */
```

## Dark Mode

All colors automatically invert in dark mode:

```
@media (prefers-color-scheme: dark) {
  :root {
    --bg-primary:    #1a1a1a; /* Dark background */
    --bg-surface:    #2a2a2a; /* Dark surface */
    --text-primary:  #ffffff; /* Light text */
    /* ... etc */
  }
}
```

## Typography

### Font Families

```
--font-sans:    'Helvetica Neue', 'Helvetica', Arial, sans-serif;
--font-serif:   Georgia, Cambria, 'Times New Roman', serif;
--font-mono:    'SF Mono', Monaco, Consolas, monospace;
--font-display: var(--font-sans); /* Use Helvetica Neue for display */
```

### Font Sizes

Token	Size	Usage
--text-2xs	10px	Tiny labels
--text-xs	11px	Small labels, fine print
--text-sm	13px	Secondary text
--text-base	14px	<b>Base body text</b>
--text-md	16px	Emphasized body
--text-lg	18px	Small headings
--text-xl	20px	Headings
--text-2xl	24px	Large headings
--text-3xl	30px	Display text
--text-4xl	36px	Hero text
--text-5xl	48px	Large display
--text-6xl	60px	Extra large display

### Font Weights

**Prefer light weights** for elegance:

Token	Weight	Usage
--font-thin	100	Rarely used
--font-extralight	200	Large headings
--font-light	300	<b>Most text (default)</b>
--font-normal	400	Emphasis only
--font-medium	500	Strong emphasis
--font-semibold	600	Rare - critical UI only
--font-bold	700	Avoid

## Line Heights

```

--leading-none: 1; /* Tight headings */
--leading-tight: 1.25; /* Headings */
--leading-snug: 1.375; /* Comfortable headings */
--leading-normal: 1.5; /* Body text */
--leading-relaxed: 1.625; /* Spacious body */
--leading-loose: 2; /* Very spacious */

```

## Letter Spacing

```

--tracking-tighter: -0.05em; /* Tight display text */
--tracking-tight: -0.025em; /* Slightly tight */
--tracking-normal: 0em; /* Default */
--tracking-wide: 0.025em; /* Labels */
--tracking-wider: 0.05em; /* Uppercase labels */
--tracking-widest: 0.1em; /* "JUST TYPE" style */

```

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# Spacing

## Spacing Scale (4px grid)

Token	Size	Usage
--space-0	0px	None
--space-1	4px	Tiny gaps
--space-2	8px	Small gaps
--space-3	12px	Medium gaps
--space-4	16px	Base spacing
--space-6	24px	Large gaps
--space-8	32px	Extra large gaps
--space-12	48px	Section spacing
--space-16	64px	Large section spacing
--space-24	96px	Hero spacing

## Semantic Aliases

```
--space-xs: 4px; /* Extra small */
--space-sm: 8px; /* Small */
--space-md: 12px; /* Medium */
--space-base: 16px; /* Base (default) */
--space-lg: 24px; /* Large */
--space-xl: 32px; /* Extra large */
--space-2xl: 48px; /* 2x extra large */
--space-3xl: 64px; /* 3x extra large */
--space-4xl: 96px; /* 4x extra large */
```

# Components

## Buttons

```
/* Button Tokens */
--button-height: 48px;
--button-padding-x: 16px;
--button-radius: 8px;
--button-font-size: 14px;
--button-font-weight: 400;
```

Example:



```
// Primary Button
<button className="h-12 px-4 bg-accent-blue text-white rounded-md
                hover:bg-accent-blue-dark transition-fast">
    Click Me
</button>

// Secondary Button
<button className="h-12 px-4 bg-surface text-primary rounded-md
                border border-light hover:bg-hover transition-fast">
    Cancel
</button>
```

## Cards

```
/* Card Tokens */
--card-bg: #ffffff;
--card-border: #e0e0e0;
--card-radius: 12px;
--card-shadow: 0 2px 8px rgba(0, 0, 0, 0.08);
--card-padding: 16px;
```

### Example:

```
<div className="bg-surface rounded-lg shadow-card p-4
                border border-lightest">
  <h3 className="text-lg font-light mb-2">Card Title</h3>
  <p className="text-sm text-secondary">Card content goes here.</p>
</div>
```

## Inputs

```
/* Input Tokens */
--input-height: 48px;
--input-padding-x: 12px;
--input-radius: 8px;
--input-bg: #ffffff;
--input-border: #e0e0e0;
--input-border-focus: #4a90e2;
```

### Example:

```
<input
  type="text"
  placeholder="Enter text..."
  className="h-12 px-3 bg-surface rounded-md border border-light
            focus:border-focus focus:shadow-focus
            text-base text-primary placeholder:text-tertiary
            transition-fast"
/>
```

## Navigation/Dock

```
/* Dock Tokens */
--dock-bg: rgba(0, 0, 0, 0.80);
--dock-radius: 32px;
--dock-padding: 12px;
--dock-shadow: 0 -10px 40px rgba(0, 0, 0, 0.15);
--dock-icon-size: 56px;
--dock-backdrop-blur: 20px;
```

### Example:

```
<nav className="fixed bottom-6 left-1/2 -translate-x-1/2
  bg-glass-black-80 backdrop-blur-lg
  rounded-4xl shadow-dock px-3 py-3
  flex items-center gap-3">
  {/* Dock icons */}
</nav>
```

## Modals

```
/* Modal Tokens */
--modal-bg: #ffffff;
--modal-radius: 24px;
--modal-shadow: 0 20px 40px rgba(0, 0, 0, 0.30);
--modal-padding: 24px;
--modal-backdrop: rgba(0, 0, 0, 0.5);
--modal-backdrop-blur: 8px;
```

### Example:

```
{/* Backdrop */}
<div className="fixed inset-0 bg-black/50 backdrop-blur-sm z-[600]" />

{/* Modal */}
<div className="fixed inset-0 z-[700] flex items-center justify-center p-4">
  <div className="bg-surface rounded-3xl shadow-modal p-6
    max-w-lg w-full">
    <h2 className="text-2xl font-light mb-4">Modal Title</h2>
    <p className="text-base text-secondary">Modal content...</p>
  </div>
</div>
```

## Tailwind Integration

### How It Works

1. **CSS Variables defined** in `/styles/webos-design-system.css`
2. **Tailwind config** maps variables to utilities in `tailwind.config.ts`
3. **Utilities generated** - use in components

```
// ✓ Good: Use Tailwind utilities
<div className="bg-primary text-primary p-4 rounded-lg shadow-card">

// ✗ Bad: Inline CSS variables
<div style={{ backgroundColor: 'var(--bg-primary)' }}>
```

## Common Utilities

### Backgrounds

```
className="bg-primary"      // #e8e8e8 - Main background
className="bg-surface"     // #ffffff - Cards
className="bg-hover"       // #fafafa - Hover state
```

### Text

```
className="text-primary"   // #000000 - Primary text
className="text-secondary" // #666666 - Secondary text
className="text-tertiary"  // #999999 - Hint text
```

### Borders

```
className="border border-light" // Default border
className="border-focus"        // Focus border
```

### Spacing

```
className="p-4"      // Padding: 16px
className="gap-lg"   // Gap: 24px
className="mt-xl"    // Margin-top: 32px
```

### Shadows

```
className="shadow-card" // Card shadow
className="shadow-lg"   // Large shadow
className="shadow-focus" // Focus shadow
```

### Typography

```
className="text-base font-light" // 14px, weight 300
className="text-xl font-normal"  // 20px, weight 400
```

## Usage Guidelines

### Do's ✓

1. Use **design tokens** instead of hardcoded values
 

```
``tsx
```

```
// ✓ Good
className="bg-primary text-primary"
```

```
// ✗ Bad
style={{ backgroundColor: '#e8e8e8', color: '#000000' }}
...

```

1. **Use semantic names** for clarity

```
```tsx
// ✓ Good
className="bg-surface shadow-card"
```

```
// ✗ Bad
className="bg-white shadow-md"
...

```

1. **Follow the spacing scale** (4px grid)

```
```tsx
// ✓ Good
className="p-4 gap-lg" // 16px, 24px
```

```
// ✗ Bad
className="p-[17px] gap-[23px]"
...

```

1. **Prefer light fonts** for elegance

```
```tsx
// ✓ Good
className="font-light"
```


```
// ✗ Bad
className="font-bold"
...

```

1. **Use minimal color** - neutrals first

```
```tsx
// ✓ Good
```



//  Bad - too much color



...

## Don'ts ❌

1.

**Don't use arbitrary values** without reason

```

    tsx
    // ❌ Bad
    className="p- [13px] text-
    [15.5px]"
  
```

2.

**Don't mix color systems**

```

    ````tsx

    // ❌ Bad - mixing Tailwind's blue with design tokens

    className="bg-blue-500 text-primary"
  
```

```

    // ✅ Good

    className="bg-accent-blue text-white"

    ...
  
```

1. **Don't create custom colors** without adding to design system

```

    ````tsx

    // ❌ Bad

    style={{ color: '#ff6b9d' }}

    // ✅ Good - add to design system first

    -custom-pink: #ff6b9d;

    ...
  
```

1. **Don't ignore dark mode**

```

    ````tsx

    // ❌ Bad
  
```