

# NEOX Infinity App - Design System Specification

## Complete Visual Language & Component Library

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## 1. Overview

### 1.1 Purpose

This design system serves as the single source of truth for all visual and interaction design decisions in the NEOX Infinity App. Every component, color, spacing value, and animation is defined here to ensure consistency across all modules.

### 1.2 Design Philosophy

- Clean & Modern:** Minimalist interface with focus on content
- Professional:** Enterprise-grade aesthetics suitable for corporate environments
- Accessible:** WCAG 2.1 AA compliant throughout
- Responsive:** Mobile-first approach, scales elegantly to desktop
- Consistent:** Reusable patterns reduce cognitive load

### 1.3 Technology Stack

- Framework:** React 18+
- Styling:** Tailwind CSS 3.4+
- Components:** shadcn/ui (Radix UI primitives)
- Icons:** Lucide React
- Animations:** Framer Motion
- Charts:** Recharts

## 2. Brand Identity

### 2.1 Logo Specifications

#### Primary Logo

- Format:** SVG (vector)
- Dimensions:** 180px × 48px (standard)
- Clear Space:** Minimum 16px on all sides
- Minimum Size:** 120px width (maintain aspect ratio)
- File:** logo-primary.svg

#### Logo Variations

logo-primary.svg	# Full color (default)
logo-white.svg	# White version (dark backgrounds)
logo-black.svg	# Black version (light backgrounds)
logo-icon.svg	# Icon only (48px × 48px)
logo-horizontal.svg	# Horizontal lockup
logo-stacked.svg	# Stacked version

## Logo Usage Rules

- Never stretch or distort
- Never rotate
- Never apply effects (shadows, gradients, etc.)
- Never place on busy backgrounds without contrast
- Always maintain clear space

## 2.2 Brand Colors

```
/* Primary Brand */
--brand-primary: #0066FF;      /* NEOX Blue */
--brand-secondary: #00D4AA;    /* NEOX Teal */
--brand-accent: #FF6B35;       /* NEOX Orange */

/* Brand Gradients */
--brand-gradient-1: linear-gradient(135deg, #0066FF 0%, #00D4AA 100%);
--brand-gradient-2: linear-gradient(135deg, #667EEA 0%, #764BA2 100%);
```

# 3. Color System

## 3.1 Color Palette Structure

Our color system uses a scale from 50 (lightest) to 950 (darkest) for each color family.

## 3.2 Primary Colors (Blue)

```
/* Primary Blue Scale */
--primary-50: #FFF6FF;
--primary-100: #DBEAFE;
--primary-200: #BFDDBF;
--primary-300: #93C5FD;
--primary-400: #60A5FA;
--primary-500: #3B82F6; /* Default primary */
--primary-600: #2563EB; /* Hover state */
--primary-700: #1D4ED8; /* Active state */
--primary-800: #1E40AF;
--primary-900: #1E3A8A;
--primary-950: #172554;

/* RGB Values (for opacity) */
--primary-rgb: 59, 130, 246;

/* Usage Examples */
background-color: var(--primary-500);
background-color: rgb(var(--primary-rgb) / 0.1); /* 10% opacity */
```

### When to use Primary:

- Primary action buttons (Save, Submit, Create)
- Active navigation items
- Selected states
- Links
- Focus indicators
- Primary CTAs

## 3.3 Secondary Colors (Gray/Neutral)

```
/* Gray/Neutral Scale */
--gray-50: #F9FAFB;
--gray-100: #F3F4F6;
--gray-200: #E5E7EB;
--gray-300: #D1D5DB;
--gray-400: #9CA3AF;
--gray-500: #6B7280; /* Default text secondary */
--gray-600: #4B5563; /* Default text primary */
--gray-700: #374151;
--gray-800: #1F2937;
--gray-900: #111827;
--gray-950: #030712;

/* RGB Values */
--gray-rgb: 107, 114, 128;
```

#### When to use Gray:

- Text (600 for primary, 500 for secondary)
- Borders (200, 300)
- Backgrounds (50, 100)
- Disabled states (300, 400)
- Subtle UI elements

### 3.4 Success Colors (Green)

```
/* Success Green Scale */
--success-50: #F0FDF4;
--success-100: #DCFCE7;
--success-200: #BBF7D0;
--success-300: #86EFAC;
--success-400: #4ADE80;
--success-500: #22C55E; /* Default success */
--success-600: #16A34A; /* Hover */
--success-700: #15803D;
--success-800: #166534;
--success-900: #14532D;
--success-950: #052E16;

/* RGB Values */
--success-rgb: 34, 197, 94;
```

#### When to use Success:

- Success messages
- Positive status indicators
- Completion states
- Approval actions
- Active/online status

### 3.5 Warning Colors (Yellow/Amber)

```
/* Warning Amber Scale */
--warning-50: #FFFBEb;
--warning-100: #FEF3C7;
--warning-200: #FDE68A;
--warning-300: #FCD34D;
--warning-400: #FBBF24;
--warning-500: #F59E0B; /* Default warning */
--warning-600: #D97706; /* Hover */
--warning-700: #B45309;
--warning-800: #92400E;
--warning-900: #78350F;
--warning-950: #451A03;

/* RGB Values */
--warning-rgb: 245, 158, 11;
```

#### When to use Warning:

- Warning messages
- Caution alerts
- Pending/in-progress states
- Non-critical issues
- Important notices

### 3.6 Error/Danger Colors (Red)

```
/* Error Red Scale */
--error-50: #FEF2F2;
--error-100: #FEE2E2;
--error-200: #FECACA;
--error-300: #FCA5A5;
--error-400: #F87171;
--error-500: #EF4444; /* Default error */
--error-600: #DC2626; /* Hover */
--error-700: #B91C1C;
--error-800: #991B1B;
--error-900: #7F1D1D;
--error-950: #450A0A;

/* RGB Values */
--error-rgb: 239, 68, 68;
```

#### When to use Error:

- Error messages
- Destructive actions (Delete, Remove)
- Validation errors
- Critical alerts
- Failed states
- Offline/inactive status

### 3.7 Info Colors (Cyan/Blue)

```

/* Info Cyan Scale */
--info-50: #ECFEFF;
--info-100: #CFFAFE;
--info-200: #A5F3FC;
--info-300: #67E8F9;
--info-400: #22D3EE;
--info-500: #06B6D4; /* Default info */
--info-600: #0891B2; /* Hover */
--info-700: #0E7490;
--info-800: #155E75;
--info-900: #164E63;
--info-950: #083344;

/* RGB Values */
--info-rgb: 6, 182, 212;

```

#### When to use Info:

- Informational messages
- Tips and hints
- Neutral status
- Tooltips
- Helper text

### 3.8 Semantic Color Mappings

```

/* Text Colors */
--text-primary: var(--gray-900); /* Main content */
--text-secondary: var(--gray-600); /* Supporting text */
--text-tertiary: var(--gray-500); /* Subtle text */
--text-disabled: var(--gray-400); /* Disabled text */
--text-inverse: #FFFFFF; /* Text on dark backgrounds */
--text-link: var(--primary-600); /* Links */
--text-link-hover: var(--primary-700); /* Links hover */

/* Background Colors */
--bg-primary: #FFFFFF; /* Main background */
--bg-secondary: var(--gray-50); /* Secondary background */
--bg-tertiary: var(--gray-100); /* Tertiary background */
--bg-inverse: var(--gray-900); /* Dark background */
--bg-overlay: rgba(0, 0, 0, 0.5); /* Modal overlays */

/* Border Colors */
--border-primary: var(--gray-200); /* Default borders */
--border-secondary: var(--gray-300); /* Stronger borders */
--border-focus: var(--primary-500); /* Focus borders */
--border-error: var(--error-500); /* Error borders */

/* Interactive States */
--state-hover: var(--gray-50); /* Hover background */
--state-active: var(--gray-100); /* Active/pressed background */
--state-focus: var(--primary-100); /* Focus background */
--state-disabled: var(--gray-100); /* Disabled background */

```

### 3.9 Color Usage Guidelines

#### Contrast Requirements

- **Normal text (< 18px):** Minimum 4.5:1 contrast ratio
- **Large text (≥ 18px or bold ≥ 14px):** Minimum 3:1 contrast ratio
- **UI components:** Minimum 3:1 contrast ratio
- **Focus indicators:** Minimum 3:1 contrast ratio

#### Color Combinations (Tested & Approved)

##### Text on Backgrounds:

▣ gray-900 on white	(Contrast: 16.1:1)
▣ gray-600 on white	(Contrast: 7.0:1)
▣ primary-600 on white	(Contrast: 5.5:1)
▣ white on primary-600	(Contrast: 5.5:1)
▣ white on gray-900	(Contrast: 16.1:1)
▣ white on success-600	(Contrast: 4.8:1)
▣ white on error-600	(Contrast: 5.9:1)
▣ gray-400 on white	(Contrast: 2.9:1) - Only for decorative
▣ warning-400 on white	(Contrast: 2.2:1) - Use warning-600

## Color Application Examples

### Buttons:

```
// Primary Button
className="bg-primary-600 hover:bg-primary-700 active:bg-primary-800
          text-white disabled:bg-gray-300"

// Secondary Button
className="bg-white hover:bg-gray-50 active:bg-gray-100
          border border-gray-300 text-gray-700"

// Destructive Button
className="bg-error-600 hover:bg-error-700 active:bg-error-800
          text-white"
```

### Status Badges:

```
// Success
className="bg-success-100 text-success-800 border border-success-200"

// Warning
className="bg-warning-100 text-warning-800 border border-warning-200"

// Error
className="bg-error-100 text-error-800 border border-error-200"

// Info
className="bg-info-100 text-info-800 border border-info-200"
```

## 4. Typography

### 4.1 Font Families

```
/* Primary Font (Sans-serif) */
--font-sans: 'Inter', -apple-system, BlinkMacSystemFont, 'Segoe UI',
            'Roboto', 'Oxygen', 'Ubuntu', 'Cantarell', 'Fira Sans',
            'Droid Sans', 'Helvetica Neue', sans-serif;

/* Monospace Font (Code) */
--font-mono: 'Fira Code', 'SF Mono', 'Monaco', 'Inconsolata',
            'Roboto Mono', 'Courier New', monospace;

/* Display Font (Optional - for marketing pages) */
--font-display: 'Inter', var(--font-sans);
```

### Font Loading:

```
<!-- In index.html -->
<link rel="preconnect" href="https://fonts.googleapis.com">
<link rel="preconnect" href="https://fonts.gstatic.com" crossorigin>
<link href="https://fonts.googleapis.com/css2?family=Inter:wght@300;400;500;600;700;800;900&display=swap" rel="stylesheet">
```

## 4.2 Font Sizes

```
/* Font Size Scale */
--text-xs: 0.75rem;      /* 12px */
--text-sm: 0.875rem;     /* 14px */
--text-base: 1rem;       /* 16px - body default */
--text-lg: 1.125rem;     /* 18px */
--text-xl: 1.25rem;      /* 20px */
--text-2xl: 1.5rem;      /* 24px */
--text-3xl: 1.875rem;    /* 30px */
--text-4xl: 2.25rem;     /* 36px */
--text-5xl: 3rem;        /* 48px */
--text-6xl: 3.75rem;     /* 60px */
--text-7xl: 4.5rem;      /* 72px */
```

## 4.3 Font Weights

```
/* Font Weight Scale */
--font-light: 300;
--font-normal: 400;      /* Body text default */
--font-medium: 500;      /* UI elements default */
--font-semibold: 600;    /* Headings default */
--font-bold: 700;        /* Emphasis */
--font-extrabold: 800;   /* Display headings */
--font-black: 900;      /* Heavy emphasis */
```

## 4.4 Line Heights

```
/* Line Height Scale */
--leading-none: 1;       /* 100% */
--leading-tight: 1.25;   /* 125% - headings */
--leading-snug: 1.375;   /* 137.5% */
--leading-normal: 1.5;   /* 150% - body text */
--leading-relaxed: 1.625; /* 162.5% */
--leading-loose: 2;      /* 200% */
```

## 4.5 Letter Spacing

```
/* Letter Spacing Scale */
--tracking-tighter: -0.05em;
--tracking-tight: -0.025em;
--tracking-normal: 0;      /* Default */
--tracking-wide: 0.025em;  /* All caps */
--tracking-wider: 0.05em;
--tracking-widest: 0.1em;
```

## 4.6 Typography Styles

### Headings

```
/* H1 - Page Title */
.heading-1 {
  font-size: var(--text-4xl);      /* 36px */
  font-weight: var(--font-bold);    /* 700 */
  line-height: var(--leading-tight); /* 1.25 */
  letter-spacing: -0.025em;
  color: var(--gray-900);
}

/* H2 - Section Title */
.heading-2 {
  font-size: var(--text-3xl);      /* 30px */
  font-weight: var(--font-bold);    /* 700 */
  line-height: var(--leading-tight);
  letter-spacing: -0.025em;
  color: var(--gray-900);
}

/* H3 - Subsection Title */
.heading-3 {
  font-size: var(--text-2xl);      /* 24px */
  font-weight: var(--font-semibold); /* 600 */
  line-height: var(--leading-tight);
  color: var(--gray-900);
}

/* H4 - Card Title */
.heading-4 {
  font-size: var(--text-xl);       /* 20px */
  font-weight: var(--font-semibold); /* 600 */
  line-height: var(--leading-snug);
  color: var(--gray-900);
}

/* H5 - Component Title */
.heading-5 {
  font-size: var(--text-lg);       /* 18px */
  font-weight: var(--font-semibold); /* 600 */
  line-height: var(--leading-snug);
  color: var(--gray-900);
}

/* H6 - Small Title */
.heading-6 {
  font-size: var(--text-base);     /* 16px */
  font-weight: var(--font-semibold); /* 600 */
  line-height: var(--leading-normal);
  color: var(--gray-900);
}
```

## Body Text



```
/* Body Large */
.body-large {
  font-size: var(--text-lg);          /* 18px */
  font-weight: var(--font-normal); /* 400 */
  line-height: var(--leading-relaxed); /* 1.625 */
  color: var(--gray-700);
}

/* Body Regular (Default) */
.body {
  font-size: var(--text-base);        /* 16px */
  font-weight: var(--font-normal); /* 400 */
  line-height: var(--leading-normal); /* 1.5 */
  color: var(--gray-700);
}

/* Body Small */
.body-small {
  font-size: var(--text-sm);          /* 14px */
  font-weight: var(--font-normal); /* 400 */
  line-height: var(--leading-normal);
  color: var(--gray-600);
}

/* Caption */
.caption {
  font-size: var(--text-xs);          /* 12px */
  font-weight: var(--font-normal); /* 400 */
  line-height: var(--leading-normal);
  color: var(--gray-500);
}
```

## UI Text

```
/* Button Text */
.button-text {
  font-size: var(--text-sm);          /* 14px */
  font-weight: var(--font-medium); /* 500 */
  line-height: var(--leading-tight);
  letter-spacing: 0.01em;
}

/* Label */
.label {
  font-size: var(--text-sm);          /* 14px */
  font-weight: var(--font-medium); /* 500 */
  line-height: var(--leading-normal);
  color: var(--gray-700);
}

/* Input Text */
.input-text {
  font-size: var(--text-sm);          /* 14px */
  font-weight: var(--font-normal); /* 400 */
  line-height: var(--leading-normal);
  color: var(--gray-900);
}

/* Helper Text */
.helper-text {
  font-size: var(--text-xs);          /* 12px */
  font-weight: var(--font-normal); /* 400 */
  line-height: var(--leading-normal);
  color: var(--gray-500);
}

/* Error Text */
.error-text {
  font-size: var(--text-xs);          /* 12px */
  font-weight: var(--font-normal); /* 400 */
  line-height: var(--leading-normal);
  color: var(--error-600);
}
```

## Special Text

```

/* Overline */
.overline {
  font-size: var(--text-xs);          /* 12px */
  font-weight: var(--font-semibold); /* 600 */
  line-height: var(--leading-normal);
  letter-spacing: var(--tracking-wider); /* 0.05em */
  text-transform: uppercase;
  color: var(--gray-500);
}

/* Code Inline */
.code-inline {
  font-family: var(--font-mono);
  font-size: 0.875em;           /* 87.5% of parent */
  padding: 0.125rem 0.375rem;
  background-color: var(--gray-100);
  border: 1px solid var(--gray-200);
  border-radius: 0.25rem;
  color: var(--gray-800);
}

/* Code Block */
.code-block {
  font-family: var(--font-mono);
  font-size: var(--text-sm);      /* 14px */
  line-height: var(--leading-relaxed);
  padding: 1rem;
  background-color: var(--gray-900);
  border-radius: 0.5rem;
  color: var(--gray-100);
  overflow-x: auto;
}

/* Link */
.link {
  font-weight: var(--font-medium); /* 500 */
  color: var(--primary-600);
  text-decoration: underline;
  text-decoration-color: transparent;
  transition: all 0.2s ease;
}

.link:hover {
  color: var(--primary-700);
  text-decoration-color: currentColor;
}

.link:active {
  color: var(--primary-800);
}

```

## 4.7 Responsive Typography

```

/* Mobile (< 640px) */
@media (max-width: 639px) {
  .heading-1 { font-size: var(--text-3xl); } /* 30px */
  .heading-2 { font-size: var(--text-2xl); } /* 24px */
  .heading-3 { font-size: var(--text-xl); } /* 20px */
  .heading-4 { font-size: var(--text-lg); } /* 18px */
  .heading-5 { font-size: var(--text-base); } /* 16px */
}

/* Tablet (640px - 1023px) */
@media (min-width: 640px) and (max-width: 1023px) {
  .heading-1 { font-size: var(--text-4xl); } /* 36px */
  .heading-2 { font-size: var(--text-3xl); } /* 30px */
}

/* Desktop (≥ 1024px) */
@media (min-width: 1024px) {
  .heading-1 { font-size: var(--text-5xl); } /* 48px */
  .heading-2 { font-size: var(--text-4xl); } /* 36px */
}

```

## 5. Spacing System

### 5.1 Base Unit

Our spacing system uses a **4px base unit** for consistent rhythm.

```

/* Spacing Scale (multiples of 4px) */
--space-0: 0; /* 0px */
--space-1: 0.25rem; /* 4px */
--space-2: 0.5rem; /* 8px */
--space-3: 0.75rem; /* 12px */
--space-4: 1rem; /* 16px */
--space-5: 1.25rem; /* 20px */
--space-6: 1.5rem; /* 24px */
--space-8: 2rem; /* 32px */
--space-10: 2.5rem; /* 40px */
--space-12: 3rem; /* 48px */
--space-16: 4rem; /* 64px */
--space-20: 5rem; /* 80px */
--space-24: 6rem; /* 96px */
--space-32: 8rem; /* 128px */
--space-40: 10rem; /* 160px */
--space-48: 12rem; /* 192px */
--space-56: 14rem; /* 224px */
--space-64: 16rem; /* 256px */

```

### 5.2 Spacing Usage Guidelines

#### Component Spacing

```

/* Padding Inside Components */
--padding-xs: var(--space-2);      /* 8px */
--padding-sm: var(--space-3);      /* 12px */
--padding-md: var(--space-4);      /* 16px */
--padding-lg: var(--space-6);      /* 24px */
--padding-xl: var(--space-8);      /* 32px */

/* Gaps Between Elements */
--gap-xs: var(--space-2);          /* 8px */
--gap-sm: var(--space-3);          /* 12px */
--gap-md: var(--space-4);          /* 16px */
--gap-lg: var(--space-6);          /* 24px */
--gap-xl: var(--space-8);          /* 32px */

/* Margins Between Sections */
--margin-xs: var(--space-4);        /* 16px */
--margin-sm: var(--space-6);        /* 24px */
--margin-md: var(--space-8);        /* 32px */
--margin-lg: var(--space-12);       /* 48px */
--margin-xl: var(--space-16);       /* 64px */

```

## Common Patterns

```

// Button padding
className="px-4 py-2"           // Medium button (16px horizontal, 8px vertical)
className="px-3 py-1.5"         // Small button (12px horizontal, 6px vertical)
className="px-6 py-3"           // Large button (24px horizontal, 12px vertical)

// Card padding
className="p-6"                 // Standard card (24px all sides)
className="p-4"                 // Compact card (16px all sides)
className="p-8"                 // Spacious card (32px all sides)

// Section spacing
className="space-y-6"           // Stack elements with 24px gap
className="space-y-4"           // Stack elements with 16px gap
className="gap-4"               // Grid/flex gap 16px

// Container padding
className="px-4 py-6"           // Mobile container
className="px-6 py-8 md:px-8"   // Responsive container

```

## 6. Layout & Grid

### 6.1 Container Widths

```
/* Container Max Widths */
--container-sm: 640px;
--container-md: 768px;
--container-lg: 1024px;
--container-xl: 1280px;
--container-2xl: 1536px;

/* Standard Container */
.container {
  width: 100%;
  margin-left: auto;
  margin-right: auto;
  padding-left: 1rem; /* 16px */
  padding-right: 1rem; /* 16px */
}

@media (min-width: 640px) {
  .container {
    max-width: 640px;
    padding-left: 1.5rem; /* 24px */
    padding-right: 1.5rem; /* 24px */
  }
}

@media (min-width: 768px) {
  .container { max-width: 768px; }
}

@media (min-width: 1024px) {
  .container {
    max-width: 1024px;
    padding-left: 2rem; /* 32px */
    padding-right: 2rem; /* 32px */
  }
}

@media (min-width: 1280px) {
  .container { max-width: 1280px; }
}

@media (min-width: 1536px) {
  .container { max-width: 1536px; }
}
```

## 6.2 Grid System

```

/* 12-Column Grid */
.grid-12 {
  display: grid;
  grid-template-columns: repeat(12, 1fr);
  gap: 1.5rem; /* 24px */
}

/* Common Column Spans */
.col-span-1 { grid-column: span 1 / span 1; }
.col-span-2 { grid-column: span 2 / span 2; }
.col-span-3 { grid-column: span 3 / span 3; }
.col-span-4 { grid-column: span 4 / span 4; }
.col-span-6 { grid-column: span 6 / span 6; }
.col-span-8 { grid-column: span 8 / span 8; }
.col-span-12 { grid-column: span 12 / span 12; }

/* Responsive Grid Example */
.responsive-grid {
  display: grid;
  grid-template-columns: 1fr; /* Mobile: 1 column */
  gap: 1rem;
}

@media (min-width: 640px) {
  .responsive-grid {
    grid-template-columns: repeat(2, 1fr); /* Tablet: 2 columns */
    gap: 1.5rem;
  }
}

@media (min-width: 1024px) {
  .responsive-grid {
    grid-template-columns: repeat(3, 1fr); /* Desktop: 3 columns */
    gap: 2rem;
  }
}

```

## 6.3 Layout Patterns

### App Shell Layout

```
/**
 * Main app layout with sidebar
 *
 * Structure:
 *
 * |-----|
 * |       Top Navigation       |
 * |-----|
 * |       |                   |
 * | Sidebar | Main Content    |
 * | 240px   | (Flexible)     |
 * |       |                   |
 * |-----|
 */

<div className="flex h-screen bg-gray-50">
  {/ * Sidebar */}
  <aside className="w-60 bg-white border-r border-gray-200">
    {/ * Sidebar content */}
  </aside>

  {/ * Main Content */}
  <div className="flex-1 flex flex-col overflow-hidden">
    {/ * Top Nav */}
    <header className="h-16 bg-white border-b border-gray-200">
      {/ * Header content */}
    </header>

    {/ * Page Content */}
    <main className="flex-1 overflow-y-auto p-6">
      {/ * Page content */}
    </main>
  </div>
</div>
```

Page Layout

```
/**
 * Standard page layout
 */

<div className="space-y-6">
  {/ * Page Header */}
  <div className="flex items-center justify-between">
    <div>
      <h1 className="text-3xl font-bold text-gray-900">Page Title</h1>
      <p className="mt-1 text-sm text-gray-500">Page description</p>
    </div>
    <button className="btn-primary">Primary Action</button>
  </div>

  {/ * Page Content */}
  <div className="bg-white rounded-lg border border-gray-200 p-6">
    {/ * Main content */}
  </div>
</div>
```

7. Elevation & Shadows

7.1 Shadow Scale



```

/* Shadow Definitions */
--shadow-xs: 0 1px 2px 0 rgb(0 0 0 / 0.05);
--shadow-sm: 0 1px 3px 0 rgb(0 0 0 / 0.1),
              0 1px 2px -1px rgb(0 0 0 / 0.1);
--shadow-md: 0 4px 6px -1px rgb(0 0 0 / 0.1),
              0 2px 4px -2px rgb(0 0 0 / 0.1);
--shadow-lg: 0 10px 15px -3px rgb(0 0 0 / 0.1),
              0 4px 6px -4px rgb(0 0 0 / 0.1);
--shadow-xl: 0 20px 25px -5px rgb(0 0 0 / 0.1),
              0 8px 10px -6px rgb(0 0 0 / 0.1);
--shadow-2xl: 0 25px 50px -12px rgb(0 0 0 / 0.25);
--shadow-inner: inset 0 2px 4px 0 rgb(0 0 0 / 0.05);
--shadow-none: 0 0 #0000;

```

## 7.2 Shadow Usage

```

/* Elevation Levels */

/* Level 0 - No elevation */
.elevation-0 {
  box-shadow: var(--shadow-none);
}

/* Level 1 - Subtle (hover states, cards) */
.elevation-1 {
  box-shadow: var(--shadow-sm);
}

/* Level 2 - Medium (dropdowns, popovers) */
.elevation-2 {
  box-shadow: var(--shadow-md);
}

/* Level 3 - High (modals, dialogs) */
.elevation-3 {
  box-shadow: var(--shadow-lg);
}

/* Level 4 - Very High (notifications, alerts) */
.elevation-4 {
  box-shadow: var(--shadow-xl);
}

/* Level 5 - Highest (full-screen overlays) */
.elevation-5 {
  box-shadow: var(--shadow-2xl);
}

```

## 7.3 Component Elevation Examples

```
// Card
className="shadow-sm hover:shadow-md transition-shadow"

// Dropdown
className="shadow-lg border border-gray-200"

// Modal
className="shadow-2xl"

// Tooltip
className="shadow-md"

// Floating Action Button
className="shadow-xl hover:shadow-2xl"
```

---

## 8. Border Radius

### 8.1 Border Radius Scale

```
/* Border Radius Values */
--radius-none: 0;
--radius-sm: 0.125rem; /* 2px */
--radius-md: 0.375rem; /* 6px - default */
--radius-lg: 0.5rem; /* 8px */
--radius-xl: 0.75rem; /* 12px */
--radius-2xl: 1rem; /* 16px */
--radius-3xl: 1.5rem; /* 24px */
--radius-full: 9999px; /* Fully rounded (pills, circles) */
```

### 8.2 Component Border Radius

```
// Buttons
className="rounded-md" /* 6px (default)

// Cards
className="rounded-lg" /* 8px

// Modals
className="rounded-xl" /* 12px

// Input Fields
className="rounded-md" /* 6px

// Badges/Pills
className="rounded-full" /* Fully rounded

// Avatar (circle)
className="rounded-full" /* Fully rounded

// Avatar (square with soft corners)
className="rounded-lg" /* 8px

// Large cards/panels
className="rounded-2xl" /* 16px
```

---

## 9. Animations & Transitions

## 9.1 Timing Functions

```
/* Easing Curves */
--ease-linear: linear;
--ease-in: cubic-bezier(0.4, 0, 1, 1);
--ease-out: cubic-bezier(0, 0, 0.2, 1);
--ease-in-out: cubic-bezier(0.4, 0, 0.2, 1);

/* Custom Easings */
--ease-smooth: cubic-bezier(0.4, 0.0, 0.2, 1);
--ease-bounce: cubic-bezier(0.68, -0.55, 0.265, 1.55);
--ease-swift: cubic-bezier(0.55, 0, 0.1, 1);
```

## 9.2 Duration Scale

```
/* Animation Durations */
--duration-fast: 150ms;
--duration-normal: 200ms;
--duration-slow: 300ms;
--duration-slower: 500ms;
```

## 9.3 Standard Transitions

```
/* Common Transitions */
--transition-all: all 200ms cubic-bezier(0.4, 0, 0.2, 1);
--transition-colors: color, background-color, border-color 200ms ease;
--transition-opacity: opacity 200ms ease;
--transition-transform: transform 200ms cubic-bezier(0.4, 0, 0.2, 1);
--transition-shadow: box-shadow 200ms ease;
```

## 9.4 Animation Examples

### Fade In/Out

```
@keyframes fadeIn {
  from {
    opacity: 0;
  }
  to {
    opacity: 1;
  }
}

.fade-in {
  animation: fadeIn 200ms ease-out;
}

@keyframes fadeOut {
  from {
    opacity: 1;
  }
  to {
    opacity: 0;
  }
}

.fade-out {
  animation: fadeOut 200ms ease-in;
}
```

### Slide In/Out

```

@keyframes slideInFromRight {
  from {
    transform: translateX(100%);
    opacity: 0;
  }
  to {
    transform: translateX(0);
    opacity: 1;
  }
}

.slide-in-right {
  animation: slideInFromRight 300ms cubic-bezier(0.4, 0, 0.2, 1);
}

@keyframes slideInFromBottom {
  from {
    transform: translateY(100%);
    opacity: 0;
  }
  to {
    transform: translateY(0);
    opacity: 1;
  }
}

.slide-in-bottom {
  animation: slideInFromBottom 300ms cubic-bezier(0.4, 0, 0.2, 1);
}

```

## Scale (Zoom)

```

@keyframes scaleIn {
  from {
    transform: scale(0.95);
    opacity: 0;
  }
  to {
    transform: scale(1);
    opacity: 1;
  }
}

.scale-in {
  animation: scaleIn 200ms cubic-bezier(0.4, 0, 0.2, 1);
}

```

## Pulse (Loading indicator)

```

@keyframes pulse {
  0%, 100% {
    opacity: 1;
  }
  50% {
    opacity: 0.5;
  }
}

.pulse {
  animation: pulse 2s cubic-bezier(0.4, 0, 0.6, 1) infinite;
}

```

## Spin (Loading spinner)

```
@keyframes spin {  
  from {  
    transform: rotate(0deg);  
  }  
  to {  
    transform: rotate(360deg);  
  }  
}  
  
.spin {  
  animation: spin 1s linear infinite;  
}
```

## Skeleton Loading

```
@keyframes shimmer {  
  0% {  
    background-position: -1000px 0;  
  }  
  100% {  
    background-position: 1000px 0;  
  }  
}  
  
.skeleton {  
  background: linear-gradient(  
    90deg,  
    var(--gray-200) 0%,  
    var(--gray-100) 20%,  
    var(--gray-200) 40%,  
    var(--gray-200) 100%  
  );  
  background-size: 1000px 100%;  
  animation: shimmer 1.5s linear infinite;  
}
```

## 9.5 Interaction States

```
/* Button Hover */
.btn {
  transition: all 200ms ease;
}

.btn:hover {
  transform: translateY(-1px);
  box-shadow: var(--shadow-md);
}

.btn:active {
  transform: translateY(0);
  box-shadow: var(--shadow-sm);
}

/* Card Hover */
.card-interactive {
  transition: all 200ms ease;
}

.card-interactive:hover {
  box-shadow: var(--shadow-lg);
  transform: translateY(-2px);
}

/* Link Hover */
.link {
  transition: color 150ms ease;
  text-decoration-color: transparent;
  transition: text-decoration-color 200ms ease;
}

.link:hover {
  text-decoration-color: currentColor;
}
```

---

## 10. Iconography

### 10.1 Icon Library

We use **Lucide React** as our primary icon library.

```
npm install lucide-react
```

### 10.2 Icon Sizes

```

// Extra Small (12px)
<Icon size={12} />

// Small (16px) - Default
<Icon size={16} />

// Medium (20px)
<Icon size={20} />

// Large (24px)
<Icon size={24} />

// Extra Large (32px)
<Icon size={32} />

// Responsive
<Icon className="w-4 h-4 md:w-5 md:h-5" />

```

### 10.3 Icon Usage Guidelines

```

import {
  User,
  Settings,
  Search,
  Bell,
  ChevronDown
} from 'lucide-react';

// With text (button)
<button className="flex items-center gap-2">
  <Search size={16} />
  <span>Search</span>
</button>

// Icon only (icon button)
<button className="p-2 hover:bg-gray-100 rounded-md">
  <Settings size={20} />
</button>

// In input (left icon)
<div className="relative">
  <Search className="absolute left-3 top-1/2 -translate-y-1/2 text-gray-400" size={16} />
  <input className="pl-10 ..." />
</div>

// Status icon (colored)
<CheckCircle className="text-success-600" size={20} />
<XCircle className="text-error-600" size={20} />
<AlertCircle className="text-warning-600" size={20} />
<Info className="text-info-600" size={20} />

```

### 10.4 Common Icons

```

// Navigation
Home, LayoutDashboard, Users, Building, Car, Calendar,
Package, Bell, Settings, HelpCircle, LogOut

// Actions
Plus, Edit, Trash2, Download, Upload, Save, X, Check,
Search, Filter, RefreshCw, MoreVertical, MoreHorizontal

// Status
CheckCircle, XCircle, AlertCircle, AlertTriangle, Info,
Clock, Loader

// Arrows & Chevrons
ChevronUp, ChevronDown, ChevronLeft, ChevronRight,
ArrowUp, ArrowDown, ArrowLeft, ArrowRight

// Files & Media
File, FileText, Image, Video, Paperclip, Download, Upload

// Communication
Mail, MessageSquare, Phone, Video, Send

// User & Account
User, Users, UserPlus, UserMinus, Lock, Key, Shield

// Interface
Menu, X, Search, Eye, EyeOff, Copy, ExternalLink,
Maximize, Minimize

```

## 11. Component Library

### 11.1 Button Component

#### Button Variants

```

/**
 * Primary Button (Default)
 * Use for main actions
 */
<button className="
  px-4 py-2
  bg-primary-600 hover:bg-primary-700 active:bg-primary-800
  text-white font-medium text-sm
  rounded-md
  shadow-sm hover:shadow-md
  transition-all duration-200
  disabled:opacity-50 disabled:cursor-not-allowed
  focus:outline-none focus:ring-2 focus:ring-primary-500 focus:ring-offset-2
">
  Primary Button
</button>

/**
 * Secondary Button
 * Use for secondary actions
 */
<button className="
  px-4 py-2
  bg-white hover:bg-gray-50 active:bg-gray-100
  text-gray-700 font-medium text-sm
  border border-gray-300
  rounded-md

```



```

    shadow-sm
    transition-all duration-200
    disabled:opacity-50 disabled:cursor-not-allowed
    focus:outline-none focus:ring-2 focus:ring-primary-500 focus:ring-offset-2
">
    Secondary Button
</button>

/**
 * Destructive Button
 * Use for dangerous/destructive actions (delete, remove)
 */
<button className="
    px-4 py-2
    bg-error-600 hover:bg-error-700 active:bg-error-800
    text-white font-medium text-sm
    rounded-md
    shadow-sm hover:shadow-md
    transition-all duration-200
    disabled:opacity-50 disabled:cursor-not-allowed
    focus:outline-none focus:ring-2 focus:ring-error-500 focus:ring-offset-2
">
    Delete
</button>

/**
 * Ghost Button
 * Use for tertiary actions
 */
<button className="
    px-4 py-2
    bg-transparent hover:bg-gray-100 active:bg-gray-200
    text-gray-700 font-medium text-sm
    rounded-md
    transition-all duration-200
    disabled:opacity-50 disabled:cursor-not-allowed
    focus:outline-none focus:ring-2 focus:ring-primary-500 focus:ring-offset-2
">
    Ghost Button
</button>

/**
 * Link Button
 * Use for navigation or subtle actions
 */
<button className="
    px-4 py-2
    text-primary-600 hover:text-primary-700 active:text-primary-800
    font-medium text-sm
    hover:underline
    transition-colors duration-200
    disabled:opacity-50 disabled:cursor-not-allowed
    focus:outline-none focus:ring-2 focus:ring-primary-500 focus:ring-offset-2
">
    Link Button
</button>

```

## Button Sizes

```
// Extra Small
<button className="px-2 py-1 text-xs">XS Button</button>

// Small
<button className="px-3 py-1.5 text-sm">Small Button</button>

// Medium (Default)
<button className="px-4 py-2 text-sm">Medium Button</button>

// Large
<button className="px-6 py-3 text-base">Large Button</button>

// Extra Large
<button className="px-8 py-4 text-lg">XL Button</button>
```

## Button with Icon

```
import { Plus, Download, Trash2 } from 'lucide-react';

// Icon Left
<button className="flex items-center gap-2 px-4 py-2 ...">
  <Plus size={16} />
  <span>Add New</span>
</button>

// Icon Right
<button className="flex items-center gap-2 px-4 py-2 ...">
  <span>Download</span>
  <Download size={16} />
</button>

// Icon Only (Square)
<button className="p-2 rounded-md ...">
  <Trash2 size={16} />
</button>

// Icon Only (Circular)
<button className="p-2 rounded-full ...">
  <Plus size={16} />
</button>
```

## Loading Button

```
import { Loader } from 'lucide-react';

<button disabled className="flex items-center gap-2 px-4 py-2 ... opacity-75 cursor-not-allowed">
  <Loader size={16} className="animate-spin" />
  <span>Loading...</span>
</button>
```

## 11.2 Input Component

### Text Input

```
/**
 * Standard Text Input
 */
<div className="space-y-1">
  <label className="block text-sm font-medium text-gray-700">
    Email Address
  </label>
  <input
```



```
</div>  
</div>
```

## Input Sizes

```
// Small  
<input className="px-2 py-1 text-xs ..." />  
  
// Medium (Default)  
<input className="px-3 py-2 text-sm ..." />  
  
// Large  
<input className="px-4 py-3 text-base ..." />
```

## 11.3 Select Component

```
/**  
 * Standard Select  
 */  
<div className="space-y-1">  
  <label className="block text-sm font-medium text-gray-700">  
    Country  
  </label>  
  <select className="  
    w-full px-3 py-2  
    text-sm text-gray-900  
    bg-white  
    border border-gray-300  
    rounded-md  
    focus:outline-none focus:ring-2 focus:ring-primary-500 focus:border-transparent  
    disabled:bg-gray-100 disabled:cursor-not-allowed  
    transition-colors duration-200  
  ">  
    <option value="">Select a country</option>  
    <option value="us">United States</option>  
    <option value="uk">United Kingdom</option>  
    <option value="ca">Canada</option>  
  </select>  
</div>
```

## 11.4 Checkbox Component

```

/**
 * Standard Checkbox
 */
<label className="flex items-center gap-2 cursor-pointer">
  <input
    type="checkbox"
    className="
      w-4 h-4
      text-primary-600
      bg-white
      border-gray-300
      rounded
      focus:ring-2 focus:ring-primary-500 focus:ring-offset-0
      disabled:opacity-50 disabled:cursor-not-allowed
    "
  />
  <span className="text-sm text-gray-700">
    I agree to the terms and conditions
  </span>
</label>

/**
 * Checkbox with Description
 */
<label className="flex items-start gap-3 cursor-pointer">
  <input type="checkbox" className="mt-0.5 w-4 h-4 ..." />
  <div>
    <div className="text-sm font-medium text-gray-900">
      Email Notifications
    </div>
    <div className="text-xs text-gray-500">
      Receive email updates about your account activity
    </div>
  </div>
</label>

```

## 11.5 Radio Component

```

/**
 * Radio Group
 */
<div className="space-y-3">
  <label className="block text-sm font-medium text-gray-700">
    Payment Method
  </label>

  <label className="flex items-center gap-2 cursor-pointer">
    <input
      type="radio"
      name="payment"
      value="card"
      className="
        w-4 h-4
        text-primary-600
        bg-white
        border-gray-300
        focus:ring-2 focus:ring-primary-500 focus:ring-offset-0
      "
    />
    <span className="text-sm text-gray-700">Credit Card</span>
  </label>

  <label className="flex items-center gap-2 cursor-pointer">
    <input type="radio" name="payment" value="paypal" className="..." />
    <span className="text-sm text-gray-700">PayPal</span>
  </label>

  <label className="flex items-center gap-2 cursor-pointer">
    <input type="radio" name="payment" value="bank" className="..." />
    <span className="text-sm text-gray-700">Bank Transfer</span>
  </label>
</div>

```

## 11.6 Switch/Toggle Component

```

/**
 * Toggle Switch
 */
<label className="flex items-center gap-3 cursor-pointer">
  <div className="relative">
    <input type="checkbox" className="sr-only peer" />
    <div className="
      w-11 h-6
      bg-gray-200
      peer-focus:outline-none peer-focus:ring-2 peer-focus:ring-primary-500 peer-focus:ring-offset-2
      rounded-full
      peer
      peer-checked:after:translate-x-full
      peer-checked:bg-primary-600
      after:content-['']
      after:absolute
      after:top-[2px]
      after:left-[2px]
      after:bg-white
      after:border-gray-300
      after:border
      after:rounded-full
      after:h-5
      after:w-5
      after:transition-all
    "></div>
  </div>
  <span className="text-sm text-gray-700">Enable notifications</span>
</label>

```

## 11.7 Card Component

```

/**
 * Basic Card
 */
<div className="
  bg-white
  border border-gray-200
  rounded-lg
  p-6
  shadow-sm
">
  <h3 className="text-lg font-semibold text-gray-900 mb-2">
    Card Title
  </h3>
  <p className="text-sm text-gray-600">
    Card content goes here...
  </p>
</div>

/**
 * Interactive Card (Hoverable)
 */
<div className="
  bg-white
  border border-gray-200
  rounded-lg
  p-6
  shadow-sm hover:shadow-md
  transition-all duration-200
  cursor-pointer
  hover:-translate-y-0.5
">
  {/* Card content */}
</div>

/**
 * Card with Header and Footer
 */
<div className="bg-white border border-gray-200 rounded-lg shadow-sm overflow-hidden">
  {/* Header */}
  <div className="px-6 py-4 border-b border-gray-200 bg-gray-50">
    <h3 className="text-lg font-semibold text-gray-900">Card Header</h3>
  </div>

  {/* Body */}
  <div className="px-6 py-4">
    <p className="text-sm text-gray-600">
      Card body content...
    </p>
  </div>

  {/* Footer */}
  <div className="px-6 py-3 border-t border-gray-200 bg-gray-50 flex justify-end gap-2">
    <button className="btn-secondary">Cancel</button>
    <button className="btn-primary">Save</button>
  </div>
</div>

```

## 11.8 Badge Component



```
/**
 * Status Badges
 */

// Success
<span className="
  inline-flex items-center gap-1
  px-2.5 py-0.5
  bg-success-100 text-success-800
  border border-success-200
  text-xs font-medium
  rounded-full
">
  <div className="w-1.5 h-1.5 bg-success-600 rounded-full"></div>
  Active
</span>

// Warning
<span className="
  inline-flex items-center gap-1
  px-2.5 py-0.5
  bg-warning-100 text-warning-800
  border border-warning-200
  text-xs font-medium
  rounded-full
">
  Pending
</span>

// Error
<span className="
  inline-flex items-center gap-1
  px-2.5 py-0.5
  bg-error-100 text-error-800
  border border-error-200
  text-xs font-medium
  rounded-full
">
  Inactive
</span>

// Info
<span className="
  inline-flex items-center gap-1
  px-2.5 py-0.5
  bg-info-100 text-info-800
  border border-info-200
  text-xs font-medium
  rounded-full
">
  Draft
</span>

// Neutral/Gray
<span className="
  inline-flex items-center
  px-2.5 py-0.5
  bg-gray-100 text-gray-800
  border border-gray-200
  text-xs font-medium
  rounded-full
">
  Default
</span>
```

## Badge Sizes

```
// Small
<span className="px-2 py-0.5 text-xs ...">Small</span>

// Medium (Default)
<span className="px-2.5 py-0.5 text-xs ...">Medium</span>

// Large
<span className="px-3 py-1 text-sm ...">Large</span>
```

## Badge with Icon

```
import { Check, X, AlertCircle } from 'lucide-react';

<span className="inline-flex items-center gap-1 px-2.5 py-0.5 ...">
  <Check size={12} />
  Verified
</span>
```

## 11.9 Alert/Toast Component

```
/**
 * Success Alert
 */
<div className="
  flex items-start gap-3
  p-4
  bg-success-50
  border border-success-200
  rounded-lg
">
  <CheckCircle className="text-success-600 flex-shrink-0" size={20} />
  <div className="flex-1">
    <h4 className="text-sm font-medium text-success-900">
      Success!
    </h4>
    <p className="mt-1 text-sm text-success-700">
      Your changes have been saved successfully.
    </p>
  </div>
  <button className="text-success-600 hover:text-success-700 flex-shrink-0">
    <X size={16} />
  </button>
</div>

/**
 * Error Alert
 */
<div className="
  flex items-start gap-3
  p-4
  bg-error-50
  border border-error-200
  rounded-lg
">
  <XCircle className="text-error-600 flex-shrink-0" size={20} />
  <div className="flex-1">
    <h4 className="text-sm font-medium text-error-900">
      Error
    </h4>
    <p className="mt-1 text-sm text-error-700">
      There was a problem processing your request.
    </p>
  </div>
  <button className="text-error-600 hover:text-error-700 flex-shrink-0">
    <X size={16} />
  </button>
</div>
```

```

    </p>
  </div>
</div>

/**
 * Warning Alert
 */
<div className="
  flex items-start gap-3
  p-4
  bg-warning-50
  border border-warning-200
  rounded-lg
">
  <AlertTriangle className="text-warning-600 flex-shrink-0" size={20} />
  <div className="flex-1">
    <h4 className="text-sm font-medium text-warning-900">
      Warning
    </h4>
    <p className="mt-1 text-sm text-warning-700">
      Your session will expire in 5 minutes.
    </p>
  </div>
</div>

/**
 * Info Alert
 */
<div className="
  flex items-start gap-3
  p-4
  bg-info-50
  border border-info-200
  rounded-lg
">
  <Info className="text-info-600 flex-shrink-0" size={20} />
  <div className="flex-1">
    <h4 className="text-sm font-medium text-info-900">
      Information
    </h4>
    <p className="mt-1 text-sm text-info-700">
      A new version of the app is available.
    </p>
  </div>
</div>

```

## 11.10 Modal/Dialog Component

```

/**
 * Modal Overlay + Dialog
 */
<div className="
  fixed inset-0 z-50
  flex items-center justify-center
  bg-black bg-opacity-50
  p-4
  animate-fadeIn
">
  <div className="
    w-full max-w-md
    bg-white
    rounded-xl
    shadow-2xl
    animate-scaleIn
">
    {/* Header */}
    <div className="flex items-center justify-between px-6 py-4 border-b border-gray-200">
      <h2 className="text-xl font-semibold text-gray-900">
        Modal Title
      </h2>
      <button className="text-gray-400 hover:text-gray-600">
        <X size={20} />
      </button>
    </div>

    {/* Body */}
    <div className="px-6 py-4">
      <p className="text-sm text-gray-600">
        Modal content goes here...
      </p>
    </div>

    {/* Footer */}
    <div className="flex justify-end gap-2 px-6 py-4 border-t border-gray-200 bg-gray-50">
      <button className="btn-secondary">Cancel</button>
      <button className="btn-primary">Confirm</button>
    </div>
  </div>
</div>

```

## 11.11 Dropdown Menu Component

```

/**
 * Dropdown Menu
 */
<div className="relative inline-block">
  {/* Trigger Button */}
  <button className="flex items-center gap-2 px-4 py-2 btn-secondary">
    <span>Options</span>
    <ChevronDown size={16} />
  </button>

  {/* Dropdown Panel */}
  <div className="
    absolute right-0 mt-2
    w-56
    bg-white
    border border-gray-200
    rounded-lg
    shadow-lg
    py-1
    z-10
  ">
    <a href="#" className="
      flex items-center gap-3
      px-4 py-2
      text-sm text-gray-700
      hover:bg-gray-50
      transition-colors
    ">
      <Edit size={16} />
      Edit
    </a>
    <a href="#" className="
      flex items-center gap-3
      px-4 py-2
      text-sm text-gray-700
      hover:bg-gray-50
    ">
      <Copy size={16} />
      Duplicate
    </a>
    <div className="border-t border-gray-200 my-1"></div>
    <a href="#" className="
      flex items-center gap-3
      px-4 py-2
      text-sm text-error-700
      hover:bg-error-50
    ">
      <Trash2 size={16} />
      Delete
    </a>
  </div>
</div>

```

## 11.12 Tooltip Component

```

/**
 * Tooltip
 */
<div className="relative group inline-block">
  {/* Trigger Element */}
  <button className="p-2 hover:bg-gray-100 rounded-md">
    <Info size={16} />
  </button>

  {/* Tooltip */}
  <div className="
    absolute bottom-full left-1/2 -translate-x-1/2 mb-2
    px-3 py-2
    bg-gray-900 text-white
    text-xs font-medium
    rounded-md
    shadow-md
    whitespace-nowrap
    opacity-0 group-hover:opacity-100
    pointer-events-none
    transition-opacity duration-200
  ">
    This is a tooltip
    {/* Arrow */}
    <div className="
      absolute top-full left-1/2 -translate-x-1/2
      w-0 h-0
      border-4 border-transparent
      border-t-gray-900
    "></div>
  </div>
</div>

```

## 11.13 Table Component

```

/**
 * Data Table
 */
<div className="overflow-x-auto">
  <table className="w-full border-collapse">
    <thead className="bg-gray-50 border-b border-gray-200">
      <tr>
        <th className="px-6 py-3 text-left text-xs font-medium text-gray-500 uppercase tracking-wider">
          Name
        </th>
        <th className="px-6 py-3 text-left text-xs font-medium text-gray-500 uppercase tracking-wider">
          Email
        </th>
        <th className="px-6 py-3 text-left text-xs font-medium text-gray-500 uppercase tracking-wider">
          Status
        </th>
        <th className="px-6 py-3 text-right text-xs font-medium text-gray-500 uppercase tracking-wider">
          Actions
        </th>
      </tr>
    </thead>
    <tbody className="bg-white divide-y divide-gray-200">
      <tr className="hover:bg-gray-50 transition-colors">
        <td className="px-6 py-4 whitespace-nowrap">
          <div className="text-sm font-medium text-gray-900">John Doe</div>
        </td>
        <td className="px-6 py-4 whitespace-nowrap">
          <div className="text-sm text-gray-600">john@example.com</div>
        </td>
        <td className="px-6 py-4 whitespace-nowrap">
          <span className="badge-success">Active</span>
        </td>
        <td className="px-6 py-4 whitespace-nowrap text-right text-sm font-medium">
          <button className="text-primary-600 hover:text-primary-700 mr-3">Edit</button>
          <button className="text-error-600 hover:text-error-700">Delete</button>
        </td>
      </tr>
    </tbody>
  </table>
</div>

```

## 11.14 Pagination Component

```

/**
 * Pagination
 */
<div className="flex items-center justify-between px-6 py-3 bg-white border-t border-gray-200">
  <div className="flex-1 flex justify-between sm:hidden">
    {/* Mobile */}
    <button className="btn-secondary">Previous</button>
    <button className="btn-secondary">Next</button>
  </div>
  <div className="hidden sm:flex sm:flex-1 sm:items-center sm:justify-between">
    <div>
      <p className="text-sm text-gray-700">
        Showing <span className="font-medium">1</span> to <span className="font-medium">10</span> of{' '}
        <span className="font-medium">97</span> results
      </p>
    </div>
    <nav className="flex items-center gap-1">
      <button className="p-2 rounded-md hover:bg-gray-100 disabled:opacity-50 disabled">
        <ChevronLeft size={16} />
      </button>
      <button className="px-3 py-1 bg-primary-600 text-white rounded-md text-sm">1</button>
      <button className="px-3 py-1 hover:bg-gray-100 rounded-md text-sm">2</button>
      <button className="px-3 py-1 hover:bg-gray-100 rounded-md text-sm">3</button>
      <span className="px-2 text-gray-500">...</span>
      <button className="px-3 py-1 hover:bg-gray-100 rounded-md text-sm">10</button>
      <button className="p-2 rounded-md hover:bg-gray-100">
        <ChevronRight size={16} />
      </button>
    </nav>
  </div>
</div>

```

## 11.15 Tabs Component



```

/**
 * Tabs
 */
<div className="w-full">
  {/* Tab List */}
  <div className="border-b border-gray-200">
    <nav className="flex gap-6">
      <button className="
        pb-3 px-1
        border-b-2 border-primary-600
        text-sm font-medium text-primary-600
      ">
        Overview
      </button>
      <button className="
        pb-3 px-1
        border-b-2 border-transparent
        text-sm font-medium text-gray-500
        hover:text-gray-700 hover:border-gray-300
        transition-colors
      ">
        Details
      </button>
      <button className="
        pb-3 px-1
        border-b-2 border-transparent
        text-sm font-medium text-gray-500
        hover:text-gray-700 hover:border-gray-300
      ">
        Settings
      </button>
    </nav>
  </div>

  {/* Tab Panel */}
  <div className="py-6">
    <p className="text-sm text-gray-600">
      Tab content goes here...
    </p>
  </div>
</div>

```

## 11.16 Avatar Component

```

/**
 * Avatar (with image)
 */


/**
 * Avatar (initials fallback)
 */
<div className="
  w-10 h-10
  flex items-center justify-center
  bg-primary-600 text-white
  text-sm font-medium
  rounded-full
">
  JD
</div>

/**
 * Avatar Sizes
 */
// XS (24px)
<div className="w-6 h-6 ... text-xs">JD</div>

// SM (32px)
<div className="w-8 h-8 ... text-xs">JD</div>

// MD (40px - default)
<div className="w-10 h-10 ... text-sm">JD</div>

// LG (48px)
<div className="w-12 h-12 ... text-base">JD</div>

// XL (64px)
<div className="w-16 h-16 ... text-lg">JD</div>

/**
 * Avatar with Status Indicator
 */
<div className="relative inline-block">
  
  <span className="absolute bottom-0 right-0 w-3 h-3 bg-success-500 border-2 border-white rounded-full"></span>
</div>

```

## 11.17 Breadcrumbs Component

```

/**
 * Breadcrumbs
 */
<nav className="flex items-center gap-2 text-sm">
  <a href="/" className="text-gray-500 hover:text-gray-700">
    Home
  </a>
  <ChevronRight size={14} className="text-gray-400" />
  <a href="/users" className="text-gray-500 hover:text-gray-700">
    Users
  </a>
  <ChevronRight size={14} className="text-gray-400" />
  <span className="text-gray-900 font-medium">
    John Doe
  </span>
</nav>

```

## 11.18 Progress Bar Component

```

/**
 * Progress Bar
 */
<div className="w-full">
  <div className="flex justify-between mb-1">
    <span className="text-sm font-medium text-gray-700">Progress</span>
    <span className="text-sm font-medium text-gray-700">75%</span>
  </div>
  <div className="w-full bg-gray-200 rounded-full h-2">
    <div className="bg-primary-600 h-2 rounded-full" style={{ width: '75%' }}></div>
  </div>
</div>

/**
 * Progress Bar Variants
 */
// Success
<div className="bg-success-600 h-2 rounded-full" style={{ width: '100%' }}></div>

// Warning
<div className="bg-warning-600 h-2 rounded-full" style={{ width: '60%' }}></div>

// Error
<div className="bg-error-600 h-2 rounded-full" style={{ width: '30%' }}></div>

/**
 * Progress Bar Sizes
 */
// Small
<div className="h-1 ..."></div>

// Medium (default)
<div className="h-2 ..."></div>

// Large
<div className="h-3 ..."></div>

```

## 11.19 Skeleton Loader Component

```

/**
 * Skeleton Text
 */
<div className="space-y-3 animate-pulse">
  <div className="h-4 bg-gray-200 rounded w-3/4"></div>
  <div className="h-4 bg-gray-200 rounded w-full"></div>
  <div className="h-4 bg-gray-200 rounded w-5/6"></div>
</div>

/**
 * Skeleton Card
 */
<div className="border border-gray-200 rounded-lg p-6 animate-pulse">
  <div className="flex items-center gap-4 mb-4">
    <div className="w-12 h-12 bg-gray-200 rounded-full"></div>
    <div className="flex-1 space-y-2">
      <div className="h-4 bg-gray-200 rounded w-1/4"></div>
      <div className="h-3 bg-gray-200 rounded w-1/3"></div>
    </div>
  </div>
  <div className="space-y-2">
    <div className="h-3 bg-gray-200 rounded"></div>
    <div className="h-3 bg-gray-200 rounded w-5/6"></div>
  </div>
</div>

```

## 11.20 Empty State Component

```

/**
 * Empty State
 */
<div className="flex flex-col items-center justify-center py-12 px-4 text-center">
  <div className="w-16 h-16 bg-gray-100 rounded-full flex items-center justify-center mb-4">
    <Inbox size={32} className="text-gray-400" />
  </div>
  <h3 className="text-lg font-semibold text-gray-900 mb-2">
    No items found
  </h3>
  <p className="text-sm text-gray-500 mb-6 max-w-sm">
    Get started by creating a new item. Click the button below to begin.
  </p>
  <button className="btn-primary">
    <Plus size={16} className="mr-2" />
    Create New Item
  </button>
</div>

```

## 12. Responsive Breakpoints

### 12.1 Breakpoint Definitions

```

/* Breakpoints (matching Tailwind defaults) */
--breakpoint-sm: 640px;    /* Mobile landscape, small tablets */
--breakpoint-md: 768px;    /* Tablets */
--breakpoint-lg: 1024px;   /* Small laptops */
--breakpoint-xl: 1280px;   /* Desktops */
--breakpoint-2xl: 1536px;  /* Large desktops */

/* Media Queries */
@media (min-width: 640px) { /* sm */ }
@media (min-width: 768px) { /* md */ }
@media (min-width: 1024px) { /* lg */ }
@media (min-width: 1280px) { /* xl */ }
@media (min-width: 1536px) { /* 2xl */ }

```

## 12.2 Responsive Utilities (Tailwind)

```

// Hidden on mobile, visible on desktop
<div className="hidden md:block">Desktop only</div>

// Visible on mobile, hidden on desktop
<div className="block md:hidden">Mobile only</div>

// Responsive padding
<div className="p-4 md:p-6 lg:p-8">Content</div>

// Responsive grid
<div className="grid grid-cols-1 md:grid-cols-2 lg:grid-cols-3 gap-4">
  { /* Items */ }
</div>

// Responsive text size
<h1 className="text-2xl md:text-3xl lg:text-4xl">Heading</h1>

// Responsive flexbox
<div className="flex flex-col md:flex-row gap-4">
  { /* Items */ }
</div>

```

## 12.3 Mobile-First Approach

Always start with mobile styles, then enhance for larger screens:

```

// ❌ Wrong (desktop-first)
<div className="w-64 md:w-full">

// ✅ Correct (mobile-first)
<div className="w-full md:w-64">

```

# 13. Accessibility

## 13.1 ARIA Labels

```
// Button with icon only
<button aria-label="Close dialog">
  <X size={16} />
</button>

// Link that opens in new tab
<a href="..." target="_blank" rel="noopener noreferrer" aria-label="Documentation (opens in new tab)">
  Docs
</a>

// Form inputs
<label htmlFor="email">Email</label>
<input id="email" type="email" aria-required="true" aria-invalid={hasError} />
{hasError && <div id="email-error" role="alert">Invalid email</div>}
```

## 13.2 Keyboard Navigation

```
// Ensure all interactive elements are keyboard accessible
<button onKeyDown={(e) => {
  if (e.key === 'Enter' || e.key === ' ') {
    handleClick();
  }
}}>
  Action
</button>

// Focus management
<div tabIndex={0} onFocus={handleFocus}>
  Focusable div
</div>
```

## 13.3 Screen Reader Support

```
// Skip to main content
<a href="#main-content" className="sr-only focus:not-sr-only">
  Skip to main content
</a>

// Hidden text for screen readers
<span className="sr-only">User logged in as</span>
<span>John Doe</span>

// Announce live changes
<div aria-live="polite" aria-atomic="true">
  {statusMessage}
</div>
```

## 13.4 Focus Indicators

All interactive elements must have visible focus indicators:

```
/* Default focus ring */
.focus-visible:focus {
  outline: 2px solid var(--primary-600);
  outline-offset: 2px;
}

/* Or use Tailwind */
className="focus:outline-none focus:ring-2 focus:ring-primary-500 focus:ring-offset-2"
```

## 14. Dark Mode

---

### 14.1 Dark Mode Colors

```
/* Dark Mode Palette */
@media (prefers-color-scheme: dark) {
  :root {
    --bg-primary: #111827;      /* gray-900 */
    --bg-secondary: #1F2937;    /* gray-800 */
    --bg-tertiary: #374151;     /* gray-700 */

    --text-primary: #F9FADF;     /* gray-50 */
    --text-secondary: #D1D5DB;   /* gray-300 */
    --text-tertiary: #9CA3AF;    /* gray-400 */

    --border-primary: #374151;   /* gray-700 */
    --border-secondary: #4B5563; /* gray-600 */
  }
}
```

### 14.2 Dark Mode Implementation (Tailwind)

```
// Enable dark mode in tailwind.config.js
module.exports = {
  darkMode: 'class', // or 'media'
  // ...
}

// Usage
<div className="bg-white dark:bg-gray-900 text-gray-900 dark:text-white">
  Content
</div>

<button className="bg-primary-600 hover:bg-primary-700 dark:bg-primary-500 dark:hover:bg-primary-600">
  Button
</button>
```

### 14.3 Dark Mode Toggle

```
/**
 * Dark Mode Toggle Component
 */
import { Sun, Moon } from 'lucide-react';

<button
  onClick={toggleDarkMode}
  className="p-2 rounded-md hover:bg-gray-100 dark:hover:bg-gray-800"
  aria-label="Toggle dark mode"
>
  {isDark ? <Sun size={20} /> : <Moon size={20} />}
</button>
```

---

## 15. Implementation Checklist

---

### For Developers:

- ☐ Install dependencies (Tailwind, Lucide React, Framer Motion, Recharts)
- ☐ Set up design tokens in CSS/Tailwind config
- ☐ Create base component library (Button, Input, Card, etc.)

- ☐ Implement color system and test contrast ratios
- ☐ Set up responsive breakpoints
- ☐ Add accessibility features (ARIA, keyboard nav, focus indicators)
- ☐ Implement dark mode support
- ☐ Create animation utilities
- ☐ Document component usage
- ☐ Set up Storybook (optional, for component showcase)

#### For Designers:

- ☐ Create Figma/Sketch component library matching this spec
- ☐ Design all screen layouts using design system
- ☐ Export design tokens
- ☐ Create interactive prototypes
- ☐ Conduct usability testing

---

## 16. Resources

### Documentation

- **Tailwind CSS:** <https://tailwindcss.com/docs>
- **shadcn/ui:** <https://ui.shadcn.com>
- **Lucide Icons:** <https://lucide.dev>
- **Radix UI:** <https://www.radix-ui.com>
- **Framer Motion:** <https://www.framer.com/motion>
- **Recharts:** <https://recharts.org>

### Tools

- **Contrast Checker:** <https://webaim.org/resources/contrastchecker/>
- **Color Palette Generator:** <https://coolors.co>
- **Accessibility Checker:** <https://wave.webaim.org>

---

### End of Design System Specification

*This design system is the foundation for all UI development in the NEOX Infinity App. All components, screens, and modules must adhere to these specifications.*