**06 Density Concept**

# **Density Concept**

**Date:** September 17, 2025  
**Version:** v1.0 - Extracted from combined density-size concept  
**Status:** To do

## **Overview**

This document outlines the **Density** system for component scaling, ensuring consistent layout breathing room and visual density control across different interface contexts.

## **Design goals**

### **\*\*Harmonious layout integration\*\***

* Page layouts work together consistently without visual conflicts
* Density relationships feel natural and intentional
* Proper visual hierarchy maintained across all density variants

### **\*\*Effortless user experience\*\***

* Consistent spacing patterns across different contexts
* Predictable density behavior reduces cognitive load
* Context-appropriate spacing for different user types

### **\*\*Accessible by design\*\***

* All density variants maintain usability standards
* Visual breathing room preserved across scales

### **\*\*Developer experience\*\***

* Components automatically coordinate without requiring manual spacing matching by developers
* Clear inheritance patterns reduce implementation complexity
* Consistent API across density system

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## **Density system (to do)**

### **\*\*Definition\*\***

* \*\*Triggers outer spacing\*\* (outside components, mostly atoms and molecules)
* \*\*Determines visual density\*\* of one page layout
* \*\*Does not trigger inset spacings\*\* of smaller components like badges, buttons, form fields

### **\*\*Implementation\*\***

* \*\*Figma\*\*: Variable collection with variable modes (x, y, z - todo)
* \*\*Tokens Studio\*\*: Theme group in .json files with themes (x, y, z - todo)

### **\*\*Scope\*\***

* Page-level visual density control
* Layout spacing between components
* Overall interface breathing room

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## **Spacing roles**

### **\*\*Density system spacing\*\***

* \*\*Spacing as tool\*\*: Controls outer gaps, margins, and layout breathing room
* \*\*Affects\*\*: Section spacing, card gaps, component margins
* \*\*Does not affect\*\*: Internal component padding or inset spacing

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## **Density and size interplay**

### **\*\*Coordinated combinations and design context matching\*\***

#### **\*\*Compact density + small size\*\***

* \*\*Use case\*\*: Frequently used apps for power user personas
* \*\*User type\*\*: Power users prioritizing information density
* \*\*Context\*\*: Data-heavy interfaces, administrative tools

#### **\*\*Medium density + medium size (default)\*\***

* \*\*Use case\*\*: Standard applications
* \*\*User type\*\*: Standard users requiring balanced approach
* \*\*Context\*\*: General purpose applications, dashboards

#### **\*\*Generous density + large size\*\***

* \*\*Use case\*\*: Simple flows, onboarding, simple dashboards, marketing websites
* \*\*User type\*\*: Users prioritizing clarity and ease of use
* \*\*Context\*\*: Marketing sites, onboarding flows, accessibility-focused interfaces

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## **Key principles**

### **\*\*Visual hierarchy maintenance\*\***

* Density relationships ensure proper layout hierarchy
* Larger spacing maintains visual separation
* Consistency across contexts and use cases
* Components work together consistently without visual conflicts

### **\*\*Designer and developer efficiency\*\***

* Single density collection reduces decision fatigue
* Unified naming convention across all layouts
* Automatic inheritance reduces manual spacing work
* Clear implementation patterns for development teams

### **\*\*User experience consistency\*\***

* Predictable spacing relationships across interface
* Context-appropriate density for different user types
* Consistent layout patterns across different contexts
* Maintained usability across all density variants

### **\*\*Accessibility First\*\***

* Visual breathing room maintained in coordinated components
* Content readability preserved in density modes
* Focus indicators properly spaced for context
* Universal design principles applied to all density variants

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## **Token examples**

### **\*\*Density token collection\*\***

|  |  |  |  |
| --- | --- | --- | --- |
| **Token Name** | **Compact** | **Medium** | **Generous** |
| `ob.density.layout.section.gap` | 16px | 24px | 32px |
| `ob.density.layout.card.gap` | 12px | 16px | 24px |
| `ob.density.component.margin` | 8px | 12px | 16px |
| `ob.density.list.item.padding` | 8px | 12px | 16px |

### **\*\*Combined token usage example\*\***

/\* Container sets density context \*/  
.form-section[data-density="compact"] {  
--density-context: compact;  
gap: var(--ob-density-layout-section-gap-compact);  
}

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\*This document focuses specifically on the density system for layout spacing and visual breathing room control.\*