

Design Vocabulary

Rosetta Stone

Cross-Platform Design Token Reference

Tailwind CSS • UnoCSS • SwiftUI • Jetpack Compose • React/CSS

| | |
|--------------|--------------------------|
| TW | Tailwind CSS |
| Uno | UnoCSS |
| Swift | SwiftUI / UIKit |
| Kt | Kotlin / Jetpack Compose |
| React | React / CSS-in-JS |
| CSS | Standard CSS |

A unified vocabulary for human-AI design communication

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1 Spacing & Sizing

1.1 Spacing Scale

The universal spacing scale based on a 4px base unit. Most frameworks use multiples of 4px for consistent rhythm.

| Value | Pixels | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|-------|--------|----------|----------|---------------|-----------------|----------------|
| 0 | 0px | p-0, m-0 | p-0, m-0 | .padding(0) | padding(0.dp) | padding: 0 |
| 0.5 | 2px | p-0.5 | p-0.5 | .padding(2) | padding(2.dp) | padding: 2px |
| 1 | 4px | p-1 | p-1 | .padding(4) | padding(4.dp) | padding: 4px |
| 1.5 | 6px | p-1.5 | p-1.5 | .padding(6) | padding(6.dp) | padding: 6px |
| 2 | 8px | p-2 | p-2 | .padding(8) | padding(8.dp) | padding: 8px |
| 3 | 12px | p-3 | p-3 | .padding(12) | padding(12.dp) | padding: 12px |
| 4 | 16px | p-4 | p-4 | .padding(16) | padding(16.dp) | padding: 1rem |
| 5 | 20px | p-5 | p-5 | .padding(20) | padding(20.dp) | padding: 20px |
| 6 | 24px | p-6 | p-6 | .padding(24) | padding(24.dp) | padding: 24px |
| 8 | 32px | p-8 | p-8 | .padding(32) | padding(32.dp) | padding: 32px |
| 10 | 40px | p-10 | p-10 | .padding(40) | padding(40.dp) | padding: 40px |
| 12 | 48px | p-12 | p-12 | .padding(48) | padding(48.dp) | padding: 48px |
| 16 | 64px | p-16 | p-16 | .padding(64) | padding(64.dp) | padding: 64px |
| 20 | 80px | p-20 | p-20 | .padding(80) | padding(80.dp) | padding: 80px |
| 24 | 96px | p-24 | p-24 | .padding(96) | padding(96.dp) | padding: 96px |
| 32 | 128px | p-32 | p-32 | .padding(128) | padding(128.dp) | padding: 128px |

1.2 Directional Spacing

| Direction | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|----------------|----------|--------|---------------------------|---------------------------|---------------------|
| All sides | p-4 | p-4 | .padding(16) | padding(16.dp) | padding: 16px |
| Horizontal (X) | px-4 | px-4 | .padding(.horizontal, 16) | padding(horizontal=16.dp) | padding: 0 16px |
| Vertical (Y) | py-4 | py-4 | .padding(.vertical, 16) | padding(vertical=16.dp) | padding: 16px 0 |
| Top | pt-4 | pt-4 | .padding(.top, 16) | padding(top=16.dp) | padding-top: 16px |
| Right | pr-4 | pr-4 | .padding(.trailing, 16) | padding(end=16.dp) | padding-right: 16px |

| | | | | | |
|-------------------|------|------|-------------------------|-----------------------|----------------------|
| Bottom | pb-4 | pb-4 | .padding(.bottom, 16) | padding(bottom=16.dp) | padding-bottom: 16px |
| Left | pl-4 | pl-4 | .padding(.leading, 16) | padding(start=16.dp) | padding-left: 16px |
| Start (LTR-aware) | ps-4 | ps-4 | .padding(.leading, 16) | padding(start=16.dp) | padding-inline-start |
| End (LTR-aware) | pe-4 | pe-4 | .padding(.trailing, 16) | padding(end=16.dp) | padding-inline-end |

1.3 Semantic Spacing Names

| Semantic Name | Value | Use Case | Description |
|---------------|-------|----------------------|-----------------------|
| none | 0px | No spacing | Zero margin/padding |
| hairline | 1px | Borders, dividers | Pixel-perfect details |
| micro / 3xs | 2px | Tight inline spacing | Icon-text gaps |
| tiny / 2xs | 4px | Compact elements | Dense UI, tags |
| small / xs | 8px | Related items | List item padding |
| compact / sm | 12px | Grouped content | Card internal spacing |
| base / md | 16px | Default spacing | Standard padding |
| medium / lg | 24px | Section spacing | Between components |
| large / xl | 32px | Major sections | Page sections |
| xlarge / 2xl | 48px | Hero spacing | Above-fold content |
| huge / 3xl | 64px | Page margins | Outer boundaries |
| massive / 4xl | 96px | Dramatic spacing | Landing pages |

2 Border Radius

2.1 Border Radius Scale

| Semantic | Pixels | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|----------------|--------|--------------|---------|-------------------------|---------------------------|-----------------------|
| none | 0px | rounded-none | rd-none | .cornerRadius(0) | RoundedCornerShape(0.dp) | border-radius: 0 |
| sharp | 2px | rounded-sm | rd-sm | .cornerRadius(2) | RoundedCornerShape(2.dp) | border-radius: 2px |
| subtle | 4px | rounded | rd | .cornerRadius(4) | RoundedCornerShape(4.dp) | border-radius: 4px |
| soft | 6px | rounded-md | rd-md | .cornerRadius(6) | RoundedCornerShape(6.dp) | border-radius: 6px |
| medium | 8px | rounded-lg | rd-lg | .cornerRadius(8) | RoundedCornerShape(8.dp) | border-radius: 8px |
| generous | 12px | rounded-xl | rd-xl | .cornerRadius(12) | RoundedCornerShape(12.dp) | border-radius: 12px |
| large | 16px | rounded-2xl | rd-2xl | .cornerRadius(16) | RoundedCornerShape(16.dp) | border-radius: 16px |
| extra-large | 24px | rounded-3xl | rd-3xl | .cornerRadius(24) | RoundedCornerShape(24.dp) | border-radius: 24px |
| pill / capsule | 9999px | rounded-full | rd-full | .clipShape(Capsule(80)) | RoundedCornerShape(50) | border-radius: 9999px |
| circle | 50% | rounded-full | rd-full | .clipShape(Circle) | CircleShape | border-radius: 50% |

2.2 Corner-Specific Radius

| Corner | Tailwind | UnoCSS | SwiftUI | Compose |
|--------------|---------------|----------|----------------------------------|--------------------------------------|
| Top-Left | rounded-tl-lg | rd-tl-lg | UnevenRoundedRectangle | RoundedCornerShape(topStart=8.dp) |
| Top-Right | rounded-tr-lg | rd-tr-lg | topLeading: 0, topTrailing: 8 | RoundedCornerShape(topEnd=8.dp) |
| Bottom-Right | rounded-br-lg | rd-br-lg | bottomTrailing: 8 | RoundedCornerShape(bottomEnd=8.dp) |
| Bottom-Left | rounded-bl-lg | rd-bl-lg | bottomLeading: 8 | RoundedCornerShape(bottomStart=8.dp) |
| Top (both) | rounded-t-lg | rd-t-lg | top corners only | topStart + topEnd |

| | | | | |
|---------------|--------------|---------|---------------------|-------------------------|
| Bottom (both) | rounded-b-lg | rd-b-lg | bottom corners only | bottomStart + bottomEnd |
| Left (both) | rounded-l-lg | rd-l-lg | leading corners | topStart + bottomStart |
| Right (both) | rounded-r-lg | rd-r-lg | trailing corners | topEnd + bottomEnd |

2.3 Visual Descriptions for AI Communication

| Term | Description | Use Case |
|------------------|--|--|
| sharp / squared | Completely square corners, no rounding | Data tables, code blocks, technical UI |
| slightly-rounded | Barely perceptible rounding (2-4px) | Buttons in dense UI, form inputs |
| softened | Noticeable but subtle (6-8px) | Cards, containers, modal dialogs |
| rounded | Clearly rounded (12-16px) | Friendly UI, cards, panels |
| very-rounded | Prominently rounded (20-24px) | Feature cards, hero sections |
| pill / capsule | Fully rounded ends on rectangles | Tags, badges, chips, buttons |
| circular | Perfect circle | Avatars, FABs, status indicators |
| squircle | Continuous curvature (iOS-style) | App icons, premium UI elements |

3 Typography

3.1 Font Size Scale

| Name | Size | Line | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|------|-------|-------|-----------|-----------|--------------|---------|------------------------|
| 2xs | 10px | 14px | text-2xs | text-2xs | .caption2 | 10.sp | font-size: 0.625rem |
| xs | 12px | 16px | text-xs | text-xs | .caption | 12.sp | font-size: 0.75rem |
| sm | 14px | 20px | text-sm | text-sm | .subheadline | 14.sp | font-size: 0.875rem |
| base | 16px | 24px | text-base | text-base | .body | 16.sp | font-size: 1rem |
| lg | 18px | 28px | text-lg | text-lg | .body | 18.sp | font-size: 1.125rem |
| xl | 20px | 28px | text-xl | text-xl | .title3 | 20.sp | font-size: 1.25rem |
| 2xl | 24px | 32px | text-2xl | text-2xl | .title2 | 24.sp | font-size: 1.5rem |
| 3xl | 30px | 36px | text-3xl | text-3xl | .title | 30.sp | font-size: 1.875rem |
| 4xl | 36px | 40px | text-4xl | text-4xl | .largeTitle | 36.sp | font-size: 2.25rem |
| 5xl | 48px | 48px | text-5xl | text-5xl | — | 48.sp | font-size: 3rem |
| 6xl | 60px | 60px | text-6xl | text-6xl | — | 60.sp | font-size: 3.75rem |
| 7xl | 72px | 72px | text-7xl | text-7xl | — | 72.sp | font-size: 4.5rem |
| 8xl | 96px | 96px | text-8xl | text-8xl | — | 96.sp | font-size: 6rem |
| 9xl | 128px | 128px | text-9xl | text-9xl | — | 128.sp | font-size: 8rem |

3.2 Font Weight

| Name | Value | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|------------|-------|-----------------|----------|-------------|-----------------------|------------------|
| thin | 100 | font-thin | font-100 | .ultraLight | FontWeight.Thin | font-weight: 100 |
| extralight | 200 | font-extralight | font-200 | .thin | FontWeight.ExtraLight | font-weight: 200 |
| light | 300 | font-light | font-300 | .light | FontWeight.Light | font-weight: 300 |
| normal | 400 | font-normal | font-400 | .regular | FontWeight.Normal | font-weight: 400 |
| medium | 500 | font-medium | font-500 | .medium | FontWeight.Medium | font-weight: 500 |
| semibold | 600 | font-semibold | font-600 | .semibold | FontWeight.SemiBold | font-weight: 600 |
| bold | 700 | font-bold | font-700 | .bold | FontWeight.Bold | font-weight: 700 |
| extrabold | 800 | font-extrabold | font-800 | .heavy | FontWeight.ExtraBold | font-weight: 800 |
| black | 900 | font-black | font-900 | .black | FontWeight.Black | font-weight: 900 |

3.3 Line Height / Leading

| Name | Multiplier | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|---------|------------|-----------------|-----------------|------------------|-----------------------|--------------------|
| none | 1.0 | leading-none | leading-none | .lineSpacing(0) | lineHeight = 1.0.em | line-height: 1 |
| tight | 1.25 | leading-tight | leading-tight | .lineSpacing(-4) | lineHeight = 1.25.em | line-height: 1.25 |
| snug | 1.375 | leading-snug | leading-snug | — | lineHeight = 1.375.em | line-height: 1.375 |
| normal | 1.5 | leading-normal | leading-normal | default | lineHeight = 1.5.em | line-height: 1.5 |
| relaxed | 1.625 | leading-relaxed | leading-relaxed | .lineSpacing(4) | lineHeight = 1.625.em | line-height: 1.625 |
| loose | 2.0 | leading-loose | leading-loose | .lineSpacing(8) | lineHeight = 2.0.em | line-height: 2 |

3.4 Letter Spacing / Tracking

| Name | Value | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|---------|----------|-----------------|-----------------|-------------------|-----------------------------|--------------------------|
| tighter | -0.05em | tracking-tight | tracking-tight | tracking(-0.05) | letterSpacing = (-0.05).em | letter-spacing: -0.05em |
| tight | -0.025em | tracking-tight | tracking-tight | .tracking(-0.025) | letterSpacing = (-0.025).em | letter-spacing: -0.025em |
| normal | 0 | tracking-normal | tracking-normal | default | letterSpacing = 0.sp | letter-spacing: 0 |
| wide | 0.025em | tracking-wide | tracking-wide | .tracking(0.025) | letterSpacing = 0.025.em | letter-spacing: 0.025em |
| wider | 0.05em | tracking-wider | tracking-wider | .tracking(0.05) | letterSpacing = 0.05.em | letter-spacing: 0.05em |
| widest | 0.1em | tracking-widest | tracking-widest | .tracking(0.1) | letterSpacing = 0.1.em | letter-spacing: 0.1em |

3.5 Text Alignment

| Alignment | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|-----------|--------------|--------------|-----------------------------------|-----------------------------------|---------------------|
| left | text-left | text-left | .multilineTextAlignment(Aligning) | text(Aligning) TextAlign.Start | text-align: left |
| center | text-center | text-center | .multilineTextAlign | textAlign = TextAlign.Center | text-align: center |
| right | text-right | text-right | .multilineTextAlignment(Aligning) | text(Aligning) TextAlign.End | text-align: right |
| justify | text-justify | text-justify | — | textAlign = TextAlign.Justify | text-align: justify |

4 Color System

4.1 Color Shade Scale

Standard shade notation from light (50) to dark (950).

| Shade | Description | Tailwind | UnoCSS | SwiftUI | Compose |
|-------|---------------------------|----------|----------|--------------------------------------|----------------------------|
| 50 | Lightest tint, near white | blue-50 | blue-50 | <code>Color.blue.opacity(0.1)</code> | <code>Color.Blue50</code> |
| 100 | Very light tint | blue-100 | blue-100 | custom | <code>Color.Blue100</code> |
| 200 | Light tint | blue-200 | blue-200 | custom | <code>Color.Blue200</code> |
| 300 | Medium-light | blue-300 | blue-300 | custom | <code>Color.Blue300</code> |
| 400 | Medium | blue-400 | blue-400 | custom | <code>Color.Blue400</code> |
| 500 | Base color (default) | blue-500 | blue-500 | <code>Color.blue</code> | <code>Color.Blue500</code> |
| 600 | Medium-dark | blue-600 | blue-600 | custom | <code>Color.Blue600</code> |
| 700 | Dark | blue-700 | blue-700 | custom | <code>Color.Blue700</code> |
| 800 | Very dark | blue-800 | blue-800 | custom | <code>Color.Blue800</code> |
| 900 | Near black | blue-900 | blue-900 | custom | <code>Color.Blue900</code> |
| 950 | Darkest shade | blue-950 | blue-950 | custom | <code>Color.Blue950</code> |

4.2 Semantic Color Names

| Semantic | Purpose | Tailwind | UnoCSS | SwiftUI | Compose |
|----------------|-------------------------|-------------------|-------------|--------------------------------|---|
| primary | Main brand/action color | custom / blue-600 | c-primary | <code>Color.accentColor</code> | <code>MaterialTheme.colors.primary</code> |
| secondary | Supporting actions | custom | c-secondary | <code>Color.secondary</code> | <code>MaterialTheme.colors.secondary</code> |
| accent | Highlights, emphasis | custom | c-accent | <code>Color.accentColor</code> | <code>MaterialTheme.colors.secondary</code> |
| success | Positive feedback | green-500 | c-success | <code>Color.green</code> | <code>Color.Green</code> |
| warning | Caution states | yellow-500 | c-warning | <code>Color.yellow</code> | <code>Color.Yellow</code> |
| error / danger | Errors, destructive | red-500 | c-error | <code>Color.red</code> | <code>MaterialTheme.colors.error</code> |
| info | Informational | blue-500 | c-info | <code>Color.blue</code> | <code>Color.Blue</code> |
| muted | De-emphasized | gray-400 | c-muted | <code>Color.secondary</code> | <code>Color.Gray</code> |

4.3 Neutral / Gray Scale Names

| Name | Description | Tailwind | UnoCSS | SwiftUI | CSS |
|------|-------------|----------|--------|---------|-----|
|------|-------------|----------|--------|---------|-----|

| | | | | | |
|------------|---------------------|----------|---------|-----------------------------------|---------|
| white | Pure white | white | white | Color.white | #FFFFFF |
| background | Page background | gray-50 | bg | Color(.systemBackground) | #F9F9FB |
| surface | Card/component bg | white | surface | Color(.secondarySystemBackground) | #FFFFFF |
| border | Dividers, borders | gray-200 | border | Color.separator | #E5E7EB |
| muted | Disabled, secondary | gray-400 | muted | Color.secondary | #9CA3AF |
| foreground | Primary text | gray-900 | fg | Color.primary | #111827 |
| black | Pure black | black | black | Color.black | #000000 |

5 Shadows & Elevation

5.1 Shadow Scale

| Name | Elevation | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|---------|-----------|--------------|--------------|---------------------|------------------|------------------|
| none | 0dp | shadow-none | shadow-none | no shadow | elevation(0.dp) | box-shadow: none |
| xs / sm | 1-2dp | shadow-sm | shadow-sm | .shadow(radius: 1) | elevation(1.dp) | 0 1px 2px |
| default | 2-4dp | shadow | shadow | .shadow(radius: 3) | elevation(2.dp) | 0 1px 3px |
| md | 4-6dp | shadow-md | shadow-md | .shadow(radius: 5) | elevation(4.dp) | 0 4px 6px |
| lg | 6-10dp | shadow-lg | shadow-lg | .shadow(radius: 8) | elevation(6.dp) | 0 10px 15px |
| xl | 12-16dp | shadow-xl | shadow-xl | .shadow(radius: 12) | elevation(8.dp) | 0 20px 25px |
| 2xl | 20-24dp | shadow-2xl | shadow-2xl | .shadow(radius: 20) | elevation(12.dp) | 0 25px 50px |
| inner | inset | shadow-inner | shadow-inner | custom | custom | inset 0 2px 4px |

5.2 Material Design Elevation

| dp | Use Case | Components |
|----|-------------------|--|
| 0 | Flat surface | Background, disabled elements |
| 1 | Raised surface | Cards at rest, search bar |
| 2 | Slightly raised | Contained buttons, cards |
| 3 | Medium elevation | Refresh indicator, search bar (scrolled) |
| 4 | Higher surface | App bar, FAB at rest |
| 6 | Prominent surface | FAB (pressed), snackbar, bottom sheet |
| 8 | High surface | Bottom navigation, menu, side sheet |
| 12 | Modal surface | Floating action button (hovered) |
| 16 | Higher modal | Navigation drawer, modal side sheet |
| 24 | Highest surface | Dialog, picker |

6 Opacity

| Name | Value | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|----------------|-------|-------------|--------|----------------|---------------|---------------|
| transparent | 0% | opacity-0 | op-0 | .opacity(0) | alpha = 0f | opacity: 0 |
| barely visible | 5% | opacity-5 | op-5 | .opacity(0.05) | alpha = 0.05f | opacity: 0.05 |
| ghost | 10% | opacity-10 | op-10 | .opacity(0.1) | alpha = 0.1f | opacity: 0.1 |
| faint | 20% | opacity-20 | op-20 | .opacity(0.2) | alpha = 0.2f | opacity: 0.2 |
| light | 25% | opacity-25 | op-25 | .opacity(0.25) | alpha = 0.25f | opacity: 0.25 |
| medium-light | 30% | opacity-30 | op-30 | .opacity(0.3) | alpha = 0.3f | opacity: 0.3 |
| medium | 50% | opacity-50 | op-50 | .opacity(0.5) | alpha = 0.5f | opacity: 0.5 |
| medium-heavy | 70% | opacity-70 | op-70 | .opacity(0.7) | alpha = 0.7f | opacity: 0.7 |
| heavy | 75% | opacity-75 | op-75 | .opacity(0.75) | alpha = 0.75f | opacity: 0.75 |
| subtle | 90% | opacity-90 | op-90 | .opacity(0.9) | alpha = 0.9f | opacity: 0.9 |
| nearly-opaque | 95% | opacity-95 | op-95 | .opacity(0.95) | alpha = 0.95f | opacity: 0.95 |
| opaque | 100% | opacity-100 | op-100 | .opacity(1) | alpha = 1f | opacity: 1 |

7 Borders

7.1 Border Width

| Name | Width | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|----------|-------|----------|--------|-------------------|--------------|--------------|
| none | 0px | border-0 | b-0 | no border | border(0.dp) | border: none |
| hairline | 1px | border | b-1 | .border(width: 1) | border(1.dp) | border: 1px |
| thin | 2px | border-2 | b-2 | .border(width: 2) | border(2.dp) | border: 2px |
| medium | 4px | border-4 | b-4 | .border(width: 4) | border(4.dp) | border: 4px |
| thick | 8px | border-8 | b-8 | .border(width: 8) | border(8.dp) | border: 8px |

7.2 Border Style

| Style | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|--------|---------------|----------|---------------------------|---------------------------|--------|
| solid | border-solid | b-solid | default | SolidColor | solid |
| dashed | border-dashed | b-dashed | StrokeStyle(dash: [5, 3]) | PathEffect.dashPathEffect | dashed |
| dotted | border-dotted | b-dotted | StrokeStyle(dash: [2, 2]) | PathEffect.dashPathEffect | dotted |
| double | border-double | b-double | custom | custom | double |
| none | border-none | b-none | no stroke | no border | none |

8 Layout

8.1 Display / Layout Mode

| Mode | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|--------------|--------------|--------------|---------------------|--------------------|--------------------------|
| block | block | block | implicit | Column | display: block |
| inline | inline | inline | — | — | display: inline |
| inline-block | inline-block | inline-block | — | — | display: inline-block |
| flex | flex | flex | HStack/VStack | Row/Column | display: flex |
| inline-flex | inline-flex | inline-flex | — | — | display: inline-flex |
| grid | grid | grid | LazyVGrid/LazyHGrid | LazyVerticalGrid | display: grid |
| hidden | hidden | hidden | .hidden() | Modifier.alpha(Of) | display: none |

8.2 Flex Direction

| Direction | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|----------------|------------------|------------------|---------------|-----------------|-----------------------------------|
| row | flex-row | flex-row | HStack | Row | flex-direction: row |
| row-reverse | flex-row-reverse | flex-row-reverse | HStack + flip | Row + rtl | flex-direction: row-reverse |
| column | flex-col | flex-col | VStack | Column | flex-direction: column |
| column-reverse | flex-col-reverse | flex-col-reverse | VStack + flip | Column reversed | flex-direction: column-reverse |

8.3 Positioning

| Position | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|----------|----------|--------|---------|---------|-----|
|----------|----------|--------|---------|---------|-----|

| | | | | | |
|----------|-----------------|-----------------|-------------|--------------------|-----------------------|
| static | static | static | default | default | position: static |
| relative | relative | relative | .offset() | Modifier.offset() | position: relative |
| absolute | absolute | absolute | .position() | Box with alignment | position: absolute |
| fixed | fixed | fixed | — | — | position: fixed |
| sticky | sticky | sticky | .sticky() | stickyHeader | position: sticky |

9 Alignment & Distribution

9.1 Justify Content (Main Axis)

| Value | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|---------------|-----------------|-----------------|--------------------|--------------------------|-----------------------------------|
| start | justify-start | justify-start | implicit / leading | Arrangement.Start | justify-content: flex-start |
| center | justify-center | justify-center | Spacer() around | Arrangement.Center | justify-content: center |
| end | justify-end | justify-end | trailing | Arrangement.End | justify-content: flex-end |
| space-between | justify-between | justify-between | Spacer() between | Arrangement.SpaceBetween | justify-content: space-between |
| space-around | justify-around | justify-around | custom | Arrangement.SpaceAround | justify-content: space-around |
| space-evenly | justify-evenly | justify-evenly | custom | Arrangement.SpaceEvenly | justify-content: space-evenly |

9.2 Align Items (Cross Axis)

| Value | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|----------|----------------|----------------|----------------------------------|----------------------------|----------------------------|
| start | items-start | items-start | alignment: .top | Alignment.Top | align-items: flex-start |
| center | items-center | items-center | alignment: .center | Alignment.CenterVertically | align-items: center |
| end | items-end | items-end | alignment: .bottom | Alignment.Bottom | align-items: flex-end |
| stretch | items-stretch | items-stretch | .frame(maxHeight: .infinity) | Modifier.fillMaxHeight | align-items: stretch |
| baseline | items-baseline | items-baseline | alignment: .firstTextBaseline | — | align-items: baseline |

9.3 Gap / Spacing Between

| Size | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|------|----------|--------|---------|---------|-----|
|------|----------|--------|---------|---------|-----|

| | | | | | |
|------|-------|-------|-------------|-----------------|-----------|
| 0 | gap-0 | gap-0 | spacing: 0 | spacedBy(0.dp) | gap: 0 |
| 4px | gap-1 | gap-1 | spacing: 4 | spacedBy(4.dp) | gap: 4px |
| 8px | gap-2 | gap-2 | spacing: 8 | spacedBy(8.dp) | gap: 8px |
| 16px | gap-4 | gap-4 | spacing: 16 | spacedBy(16.dp) | gap: 16px |
| 24px | gap-6 | gap-6 | spacing: 24 | spacedBy(24.dp) | gap: 24px |
| 32px | gap-8 | gap-8 | spacing: 32 | spacedBy(32.dp) | gap: 32px |

10 Animation & Motion

10.1 Duration

| Name | ms | Tailwind | UnoCSS | Swift UI | Compose | CSS |
|----------|------|---------------|---------------|--|---------|--------|
| instant | 0 | duration-0 | duration-0 | — | 0 | 0ms |
| fastest | 75 | duration-75 | duration-75 | <code>.animation(.linear(0.075))</code> | 75 | 75ms |
| fast | 150 | duration-150 | duration-150 | <code>.animation(.linear(0.15))</code> | 150 | 150ms |
| normal | 200 | duration-200 | duration-200 | <code>.animation(.default)</code> | 200 | 200ms |
| moderate | 300 | duration-300 | duration-300 | <code>.animation(.easeInOut(0.3))</code> | 300 | 300ms |
| slow | 500 | duration-500 | duration-500 | <code>.animation(.easeInOut(0.5))</code> | 500 | 500ms |
| slower | 700 | duration-700 | duration-700 | <code>.animation(.easeInOut(0.7))</code> | 700 | 700ms |
| slowest | 1000 | duration-1000 | duration-1000 | <code>.animation(.easeInOut(1))</code> | 1000 | 1000ms |

10.2 Easing / Timing Functions

| Name | Tailwind | UnoCSS | Swift UI | Compose | CSS |
|-------------|--------------------------|--------------------------|-------------------------|------------------------------------|--|
| linear | <code>ease-linear</code> | <code>ease-linear</code> | <code>.linear</code> | <code>LinearEasing</code> | <code>linear</code> |
| ease | <code>ease</code> | <code>ease</code> | <code>.easeInOut</code> | <code>FastOutSlowInEasing</code> | <code>ease</code> |
| ease-in | <code>ease-in</code> | <code>ease-in</code> | <code>.easeIn</code> | <code>LinearOutSlowInEasing</code> | <code>ease-in</code> |
| ease-out | <code>ease-out</code> | <code>ease-out</code> | <code>.easeOut</code> | <code>FastOutLinearInEasing</code> | <code>ease-out</code> |
| ease-in-out | <code>ease-in-out</code> | <code>ease-in-out</code> | <code>.easeInOut</code> | <code>FastOutSlowInEasing</code> | <code>ease-in-out</code> |
| spring | — | — | <code>.spring()</code> | <code>Spring</code> | <code>cubic-bezier</code> <code>custom</code> |
| bounce | — | — | <code>.bouncy</code> | <code>BounceInterpolator</code> | <code>cubic-bezier</code> <code>custom</code> |

11 Visual Effects

11.1 Blur

| Name | Radius | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|---------|--------|-----------|-----------|-------------------|-------------|------------|
| none | 0 | blur-none | blur-none | .blur(radius: 0) | — | blur(0) |
| sm | 4px | blur-sm | blur-sm | .blur(radius: 4) | blur(4.dp) | blur(4px) |
| default | 8px | blur | blur | .blur(radius: 8) | blur(8.dp) | blur(8px) |
| md | 12px | blur-md | blur-md | .blur(radius: 12) | blur(12.dp) | blur(12px) |
| lg | 16px | blur-lg | blur-lg | .blur(radius: 16) | blur(16.dp) | blur(16px) |
| xl | 24px | blur-xl | blur-xl | .blur(radius: 24) | blur(24.dp) | blur(24px) |
| 2xl | 40px | blur-2xl | blur-2xl | .blur(radius: 40) | blur(40.dp) | blur(40px) |
| 3xl | 64px | blur-3xl | blur-3xl | .blur(radius: 64) | blur(64.dp) | blur(64px) |

11.2 Blend Modes

| Mode | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|-------------|-----------------------|-------------------|-------------------------|----------------------|-----------------------------|
| normal | mix-blend-normal | blend-normal | .blendMode(.normal) | BlendMode.SrcOver | mix-blend-mode: normal |
| multiply | mix-blend-multiply | blend-multiply | .blendMode(.multiply) | BlendMode.Multiply | mix-blend-mode: multiply |
| screen | mix-blend-screen | blend-screen | .blendMode(.screen) | BlendMode.Screen | mix-blend-mode: screen |
| overlay | mix-blend-overlay | blend-overlay | .blendMode(.overlay) | BlendMode.Overlay | mix-blend-mode: overlay |
| darken | mix-blend-darken | blend-darken | .blendMode(.darken) | BlendMode.Darken | mix-blend-mode: darken |
| lighten | mix-blend-lighten | blend-lighten | .blendMode(.lighten) | BlendMode.Lighten | mix-blend-mode: lighten |
| color-dodge | mix-blend-color-dodge | blend-color-dodge | .blendMode(.colorDodge) | BlendMode.ColorDodge | mix-blend-mode: color-dodge |

| | | | | | |
|------------|----------------------|------------------|-------------------------|----------------------|----------------------------|
| color-burn | mix-blend-color-burn | blend-color-burn | .blendMode(.colorBurn) | BlendMode.ColorBurn | mix-blend-mode: color-burn |
| hard-light | mix-blend-hard-light | blend-hard-light | .blendMode(.hardLight) | BlendMode.Hardlight | mix-blend-mode: hard-light |
| soft-light | mix-blend-soft-light | blend-soft-light | .blendMode(.softLight) | BlendMode.Softlight | mix-blend-mode: soft-light |
| difference | mix-blend-difference | blend-difference | .blendMode(.difference) | BlendMode.Difference | mix-blend-mode: difference |
| exclusion | mix-blend-exclusion | blend-exclusion | .blendMode(.exclusion) | BlendMode.Exclusion | mix-blend-mode: exclusion |

12 Responsive Breakpoints

| Name | Width | Tailwind | UnoCSS | SwiftUI | CSS Media Query |
|------|--------|-------------------|-------------------|-----------------------|---|
| xs | 320px | — | <code>xs:</code> | — | <code>@media (min-width: 320px)</code> |
| sm | 640px | <code>sm:</code> | <code>sm:</code> | <code>.compact</code> | <code>@media (min-width: 640px)</code> |
| md | 768px | <code>md:</code> | <code>md:</code> | — | <code>@media (min-width: 768px)</code> |
| lg | 1024px | <code>lg:</code> | <code>lg:</code> | <code>.regular</code> | <code>@media (min-width: 1024px)</code> |
| xl | 1280px | <code>xl:</code> | <code>xl:</code> | — | <code>@media (min-width: 1280px)</code> |
| 2xl | 1536px | <code>2xl:</code> | <code>2xl:</code> | — | <code>@media (min-width: 1536px)</code> |

12.1 Device Categories

| Category | Width Range | Description | Examples |
|------------|-------------|------------------------------|--------------------------------|
| mobile-sm | 320-374px | Small phones | iPhone SE, older Androids |
| mobile | 375-424px | Standard phones | iPhone 12/13/14, Pixel |
| mobile-lg | 425-639px | Large phones, small phablets | iPhone Plus/Max, Galaxy Note |
| tablet-sm | 640-767px | Small tablets, portrait | iPad Mini portrait |
| tablet | 768-1023px | Tablets | iPad portrait, Android tablets |
| laptop | 1024-1279px | Small laptops | MacBook Air, 13" laptops |
| desktop | 1280-1535px | Standard desktop | 1080p monitors |
| desktop-lg | 1536px+ | Large screens | 1440p, 4K monitors |

13 Interaction States

| State | Tailwind | UnoCSS | SwiftUI | Compose | CSS |
|---------------------|----------------|----------------|------------------------------------|-----------------------|------------------------|
| hover | hover: | hover: | .onHover {} | Modifier.hoverable() | :hover |
| focus | focus: | focus: | .focused() | Modifier.focusable() | :focus |
| focus-visible | focus-visible: | focus-visible: | — | — | :focus-visible |
| focus-within | focus-within: | focus-within: | — | — | :focus-within |
| active / pressed | active: | active: | .pressAction {} | Interaction.Pressed | :active |
| disabled | disabled: | disabled: | .disabled(true) | enabled = false | :disabled |
| selected | aria-selected: | — | .selected | selected = true | [aria-selected="true"] |
| checked | checked: | checked: | isOn | checked = true | :checked |
| invalid | invalid: | invalid: | — | isError = true | :invalid |
| required | required: | required: | — | — | :required |
| placeholder | placeholder: | placeholder: | .prompt {} | placeholder | ::placeholder |
| loading | custom | custom | .redacted(reason: .placeholder) | CircularProgressIndic | custom |
| dragging | custom | custom | .onDrag {} | Modifier.draggable() | custom |

14 Semantic Size Names

Universal semantic names for component sizing across all frameworks.

| Name | Use Case | Typical Dimensions |
|------|--------------------|---|
| 2xs | Micro elements | 16-20px height, tiny icons, indicator dots |
| xs | Extra small | 24-28px height, small badges, compact buttons |
| sm | Small | 32-36px height, secondary buttons, small inputs |
| md | Medium (default) | 40-44px height, standard buttons and inputs |
| lg | Large | 48-52px height, primary CTAs, prominent inputs |
| xl | Extra large | 56-64px height, hero buttons, large touch targets |
| 2xl | Double extra large | 72-80px height, feature cards, large avatars |
| 3xl | Triple extra large | 96px+ height, hero elements, full-width banners |

15 Quick Reference Card

AI-Human Communication Guidelines

When describing design changes, use these conventions:

- **Spacing:** Use semantic names (**sm**, **md**, **lg**) or explicit values (“16px”, “1rem”)
- **Border radius:** Describe intent (“pill-shaped”, “softened corners”) or use scale (**rounded-lg**)
- **Colors:** Use semantic names (**primary**, **muted**) or specific shades (**blue-600**)
- **Typography:** Reference scale levels (**text-lg**, **font-semibold**) or descriptive terms (“headline”, “body text”)
- **Layout:** Use flexbox/grid terminology (“centered”, “space-between”, “2-column grid”)
- **Effects:** Describe elevation (“subtle shadow”, “elevated card”) or blur level (“frosted glass”)

Examples of clear communication:

- “Increase padding from **sm** (8px) to **md** (16px)”
- “Soften corners from **rounded-none** to **rounded-lg** (8px)”
- “Add **shadow-md** elevation for card depth”
- “Use **space-between** to push items to edges”
- “Apply **opacity-50** for disabled state”

*This vocabulary enables precise, unambiguous design communication
between humans and AI across all major UI frameworks.*
