

Design for Android

Material Design Guidelines

- Layout
- Style
- Animation
- Components
- Patterns
- Usability

Slides based on “Android Design”
<https://developer.android.com/design/>

Layout

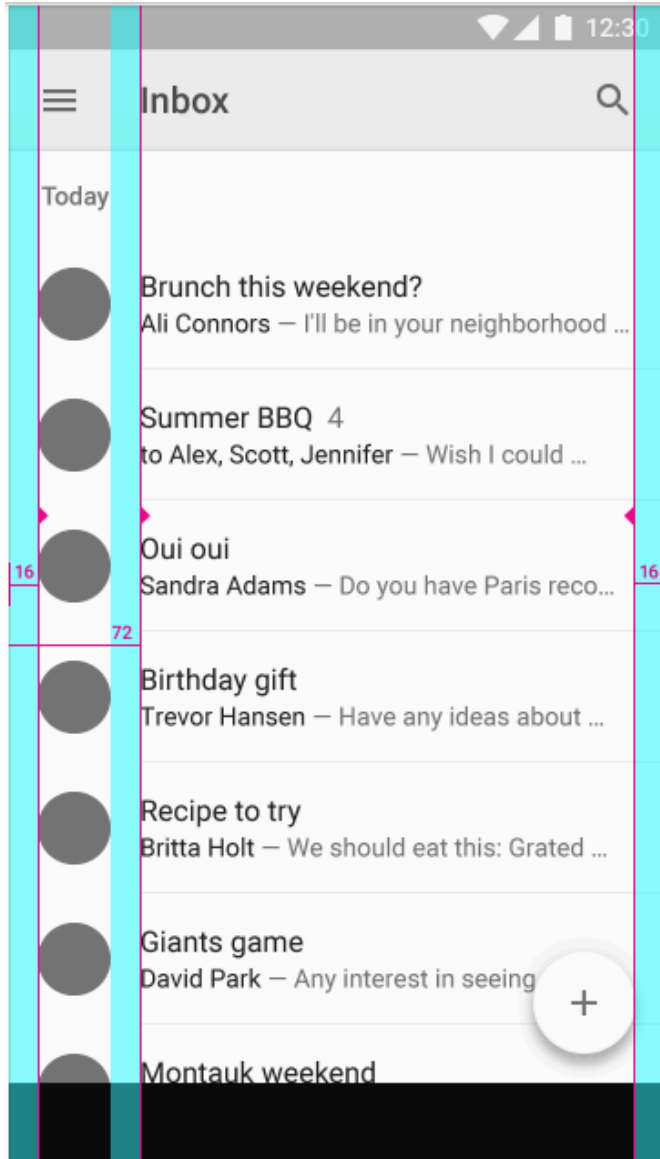
- Guided by print-based elements:

```
graph LR; A["- Typography  
- Grids  
- Space  
- Scale  
- Color  
- Imagery"] --> B["Hierarchy  
Meaning  
Focus"]
```

– Typography
– Grids
– Space
– Scale
– Color
– Imagery

Hierarchy
Meaning
Focus

List - Keylines and Margins

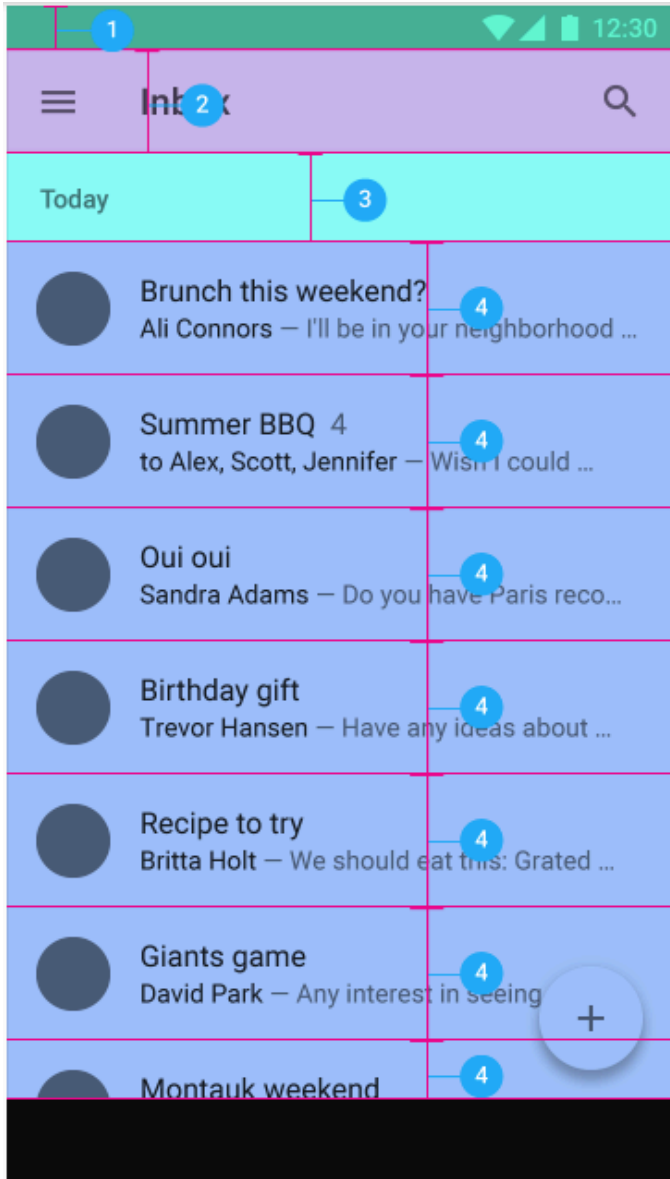


Screen edge left and right margins: 16dp

Content associated with an icon or avatar left margin: 72dp

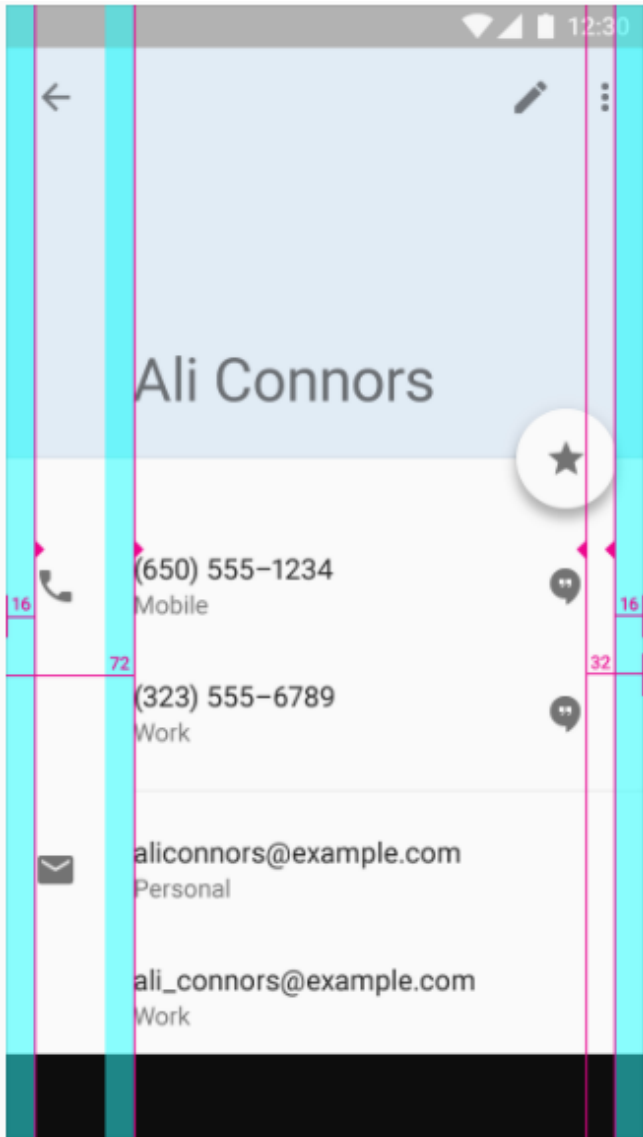
Horizontal margins on mobile: 16dp

List - Vertical Spacing



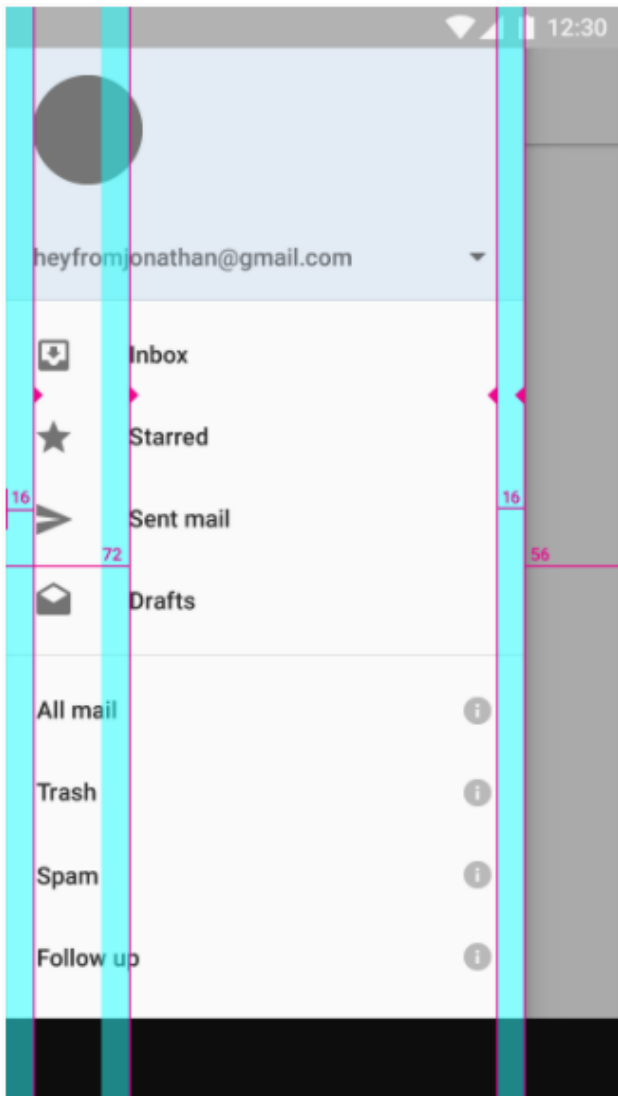
- (1) Status bar: 24dp
- (2) Toolbar: 56dp
- (3) Subtitle: 48dp
- (4) List item: 72dp

Detail – Keylines and Margins



Screen edge left and right margins: 16dp
Content left margin from screen edge: 72dp

Navigation Drawer – Keylines & Margins

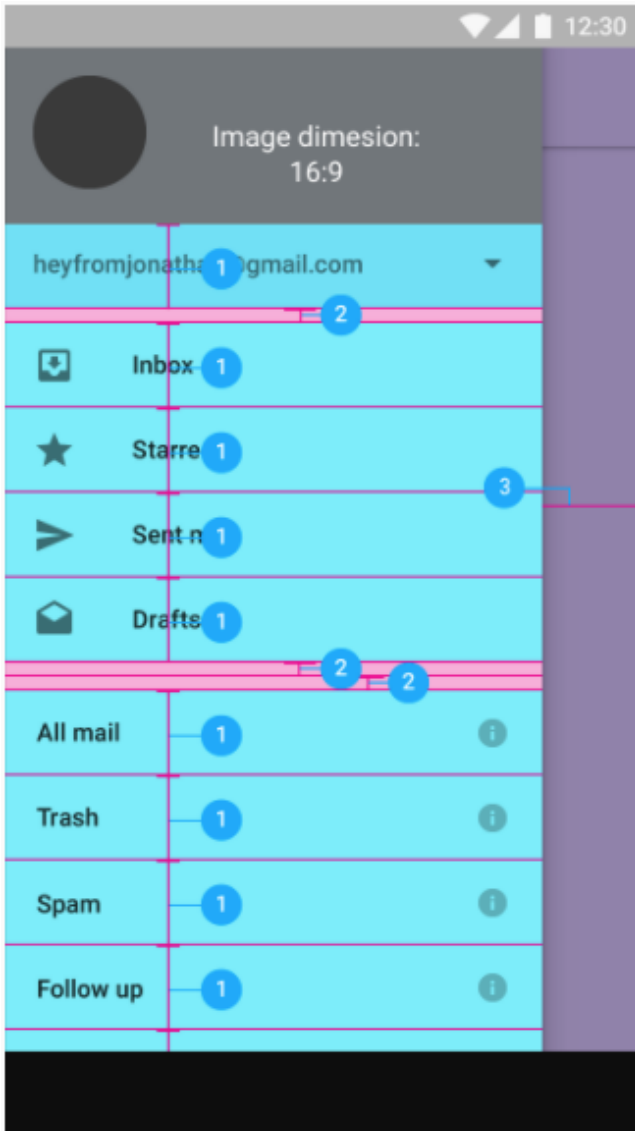


Screen edge left and right margins: 16dp

Content associated with an icon or avatar left margin: 72dp

Side nav width: The screen width minus the height of the action bar. Here, the width is 56dp from the right screen edge.

Navigation Drawer – Vertical Lines

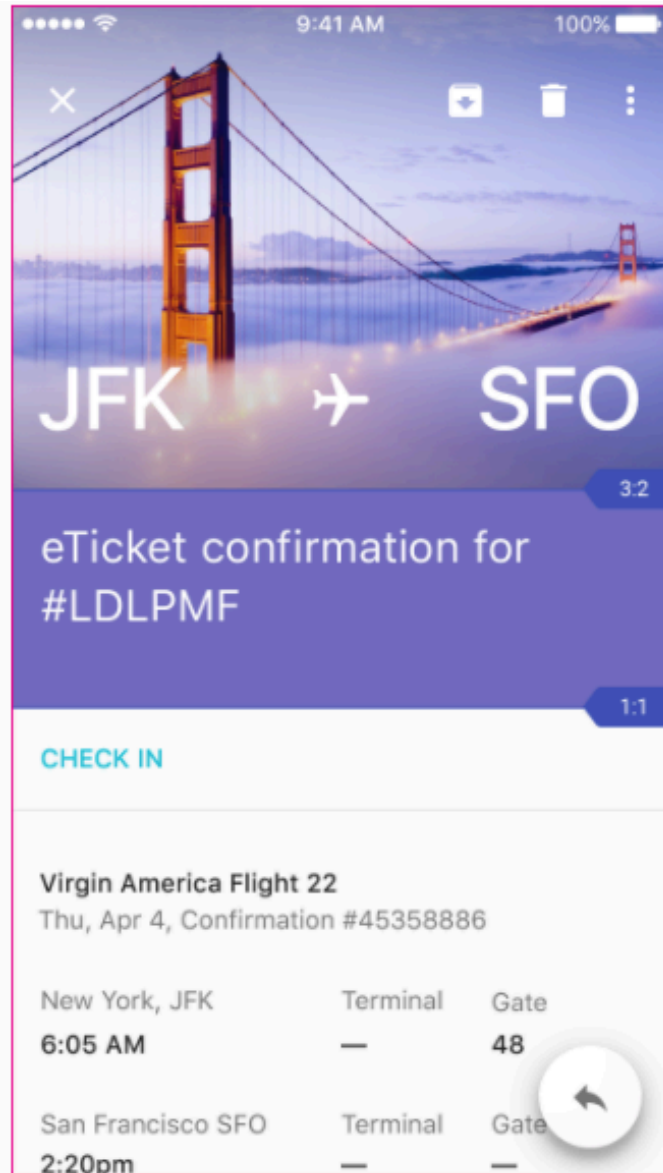
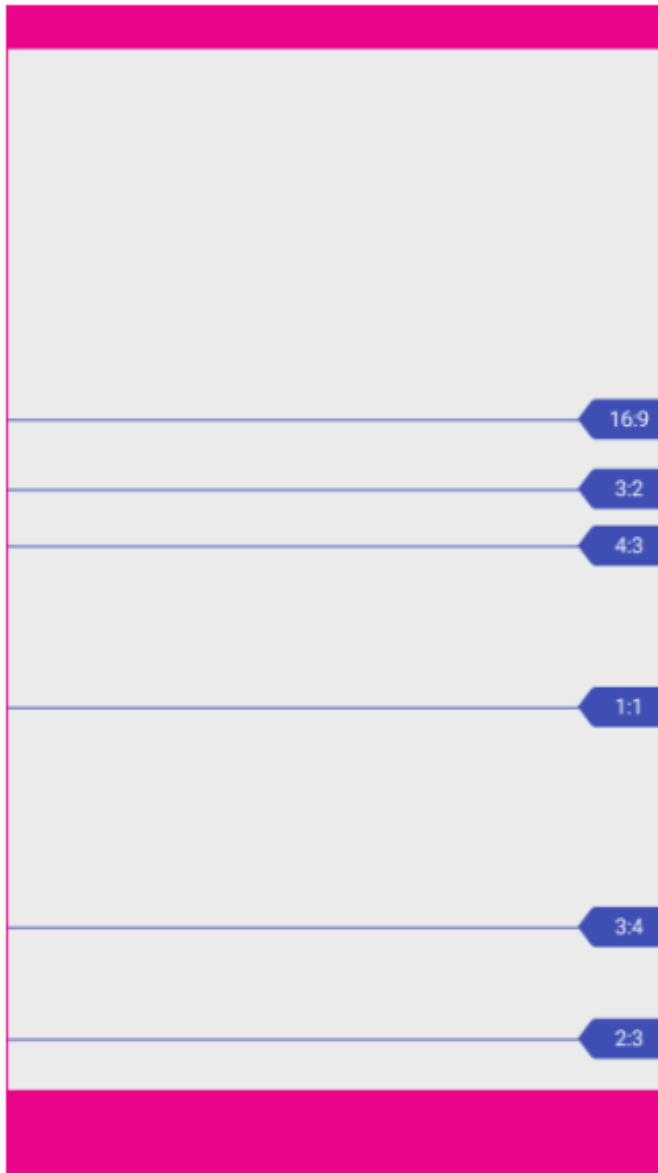


Account menu and list items: 48dp
Space between content areas: 8dp
Navigation right margin: 56dp

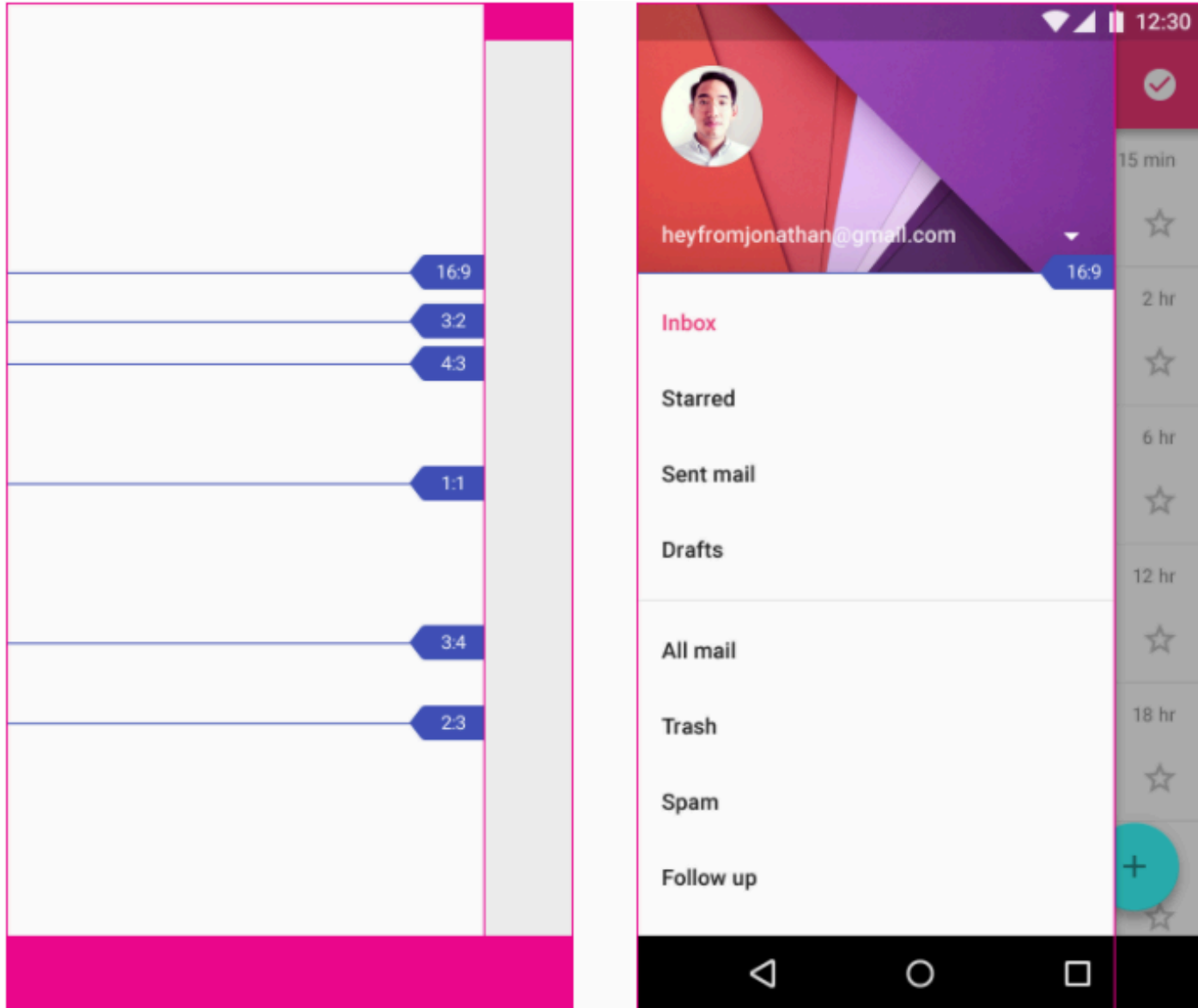
Ratio Keyline

- The proportion of an element's width to its height (called the aspect ratio) applies to both UI elements and screen size. It is written as width:height.

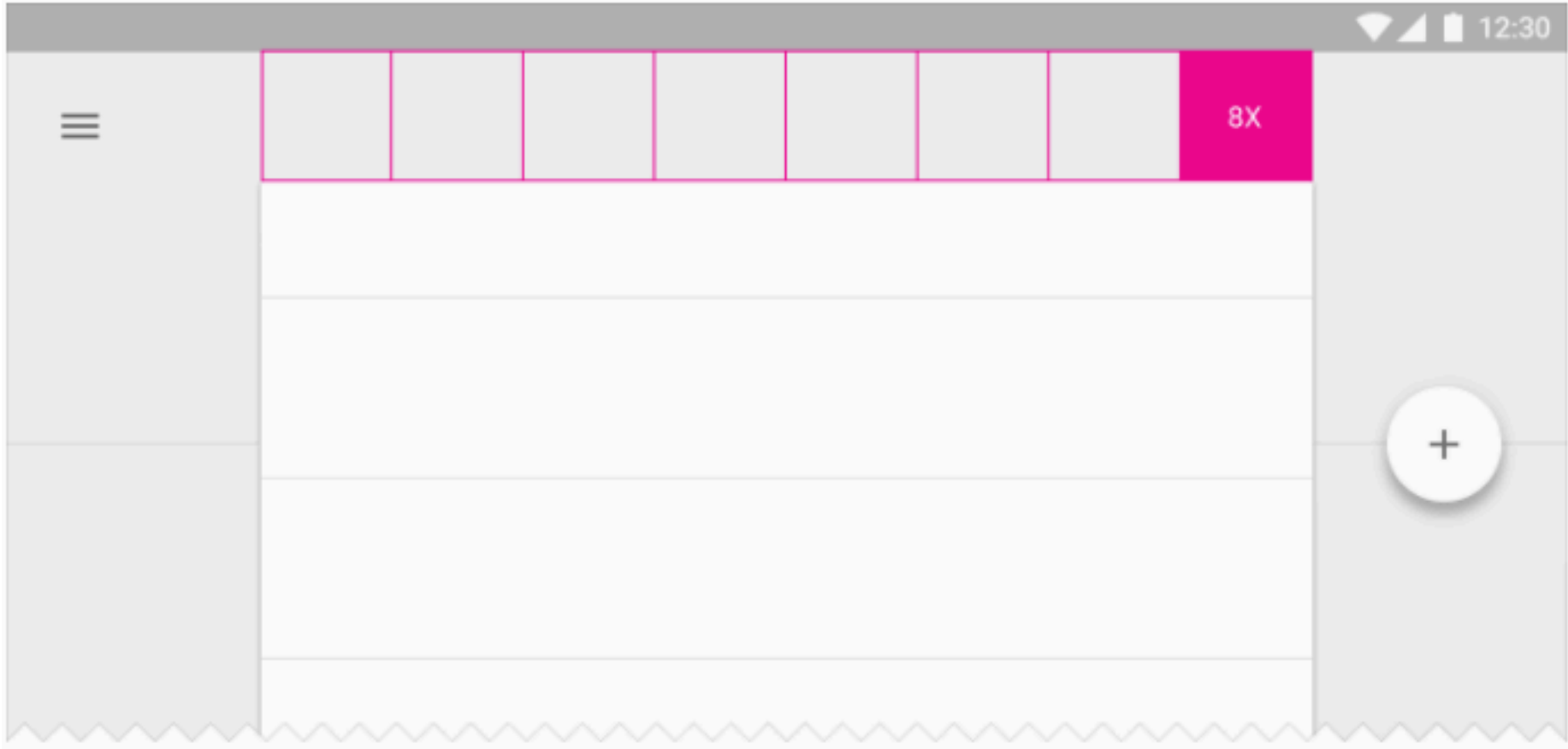
Ratio Keylines



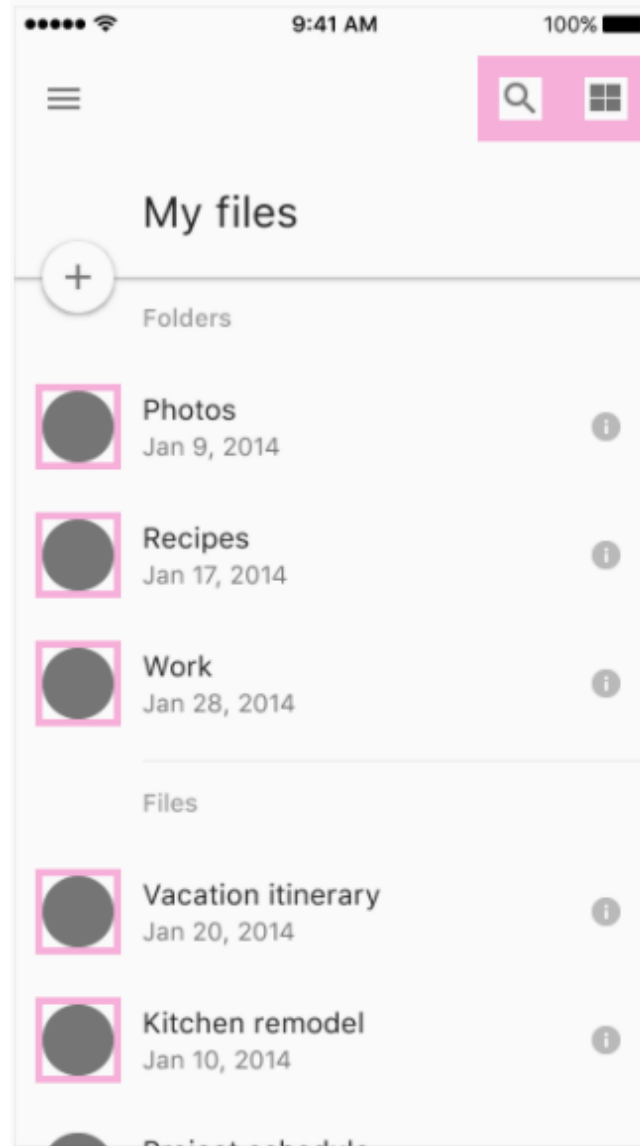
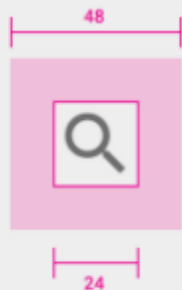
Ratio Keylines



Sizing by Increments

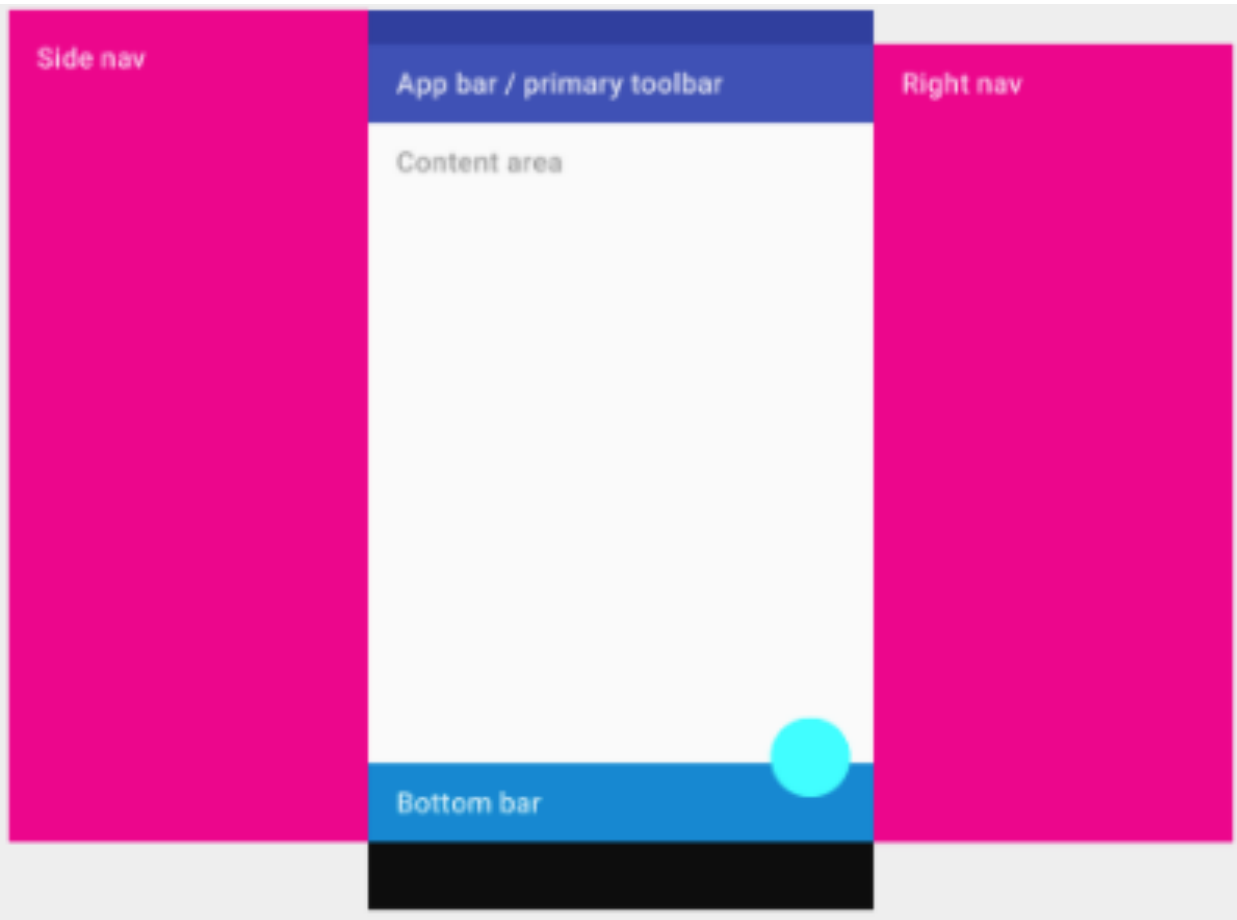


Touch Target Size



To ensure balanced information density and usability, touch targets should be at least 48 x 48 dp. In most cases, there should be 8dp or more space between them.

Structure



This structure includes a permanent app bar and floating action button. An optional bottom bar can be added for additional functionality or action overflow. Side nav menus overlay all other structural elements.

UI Regions



Horizontal Divider

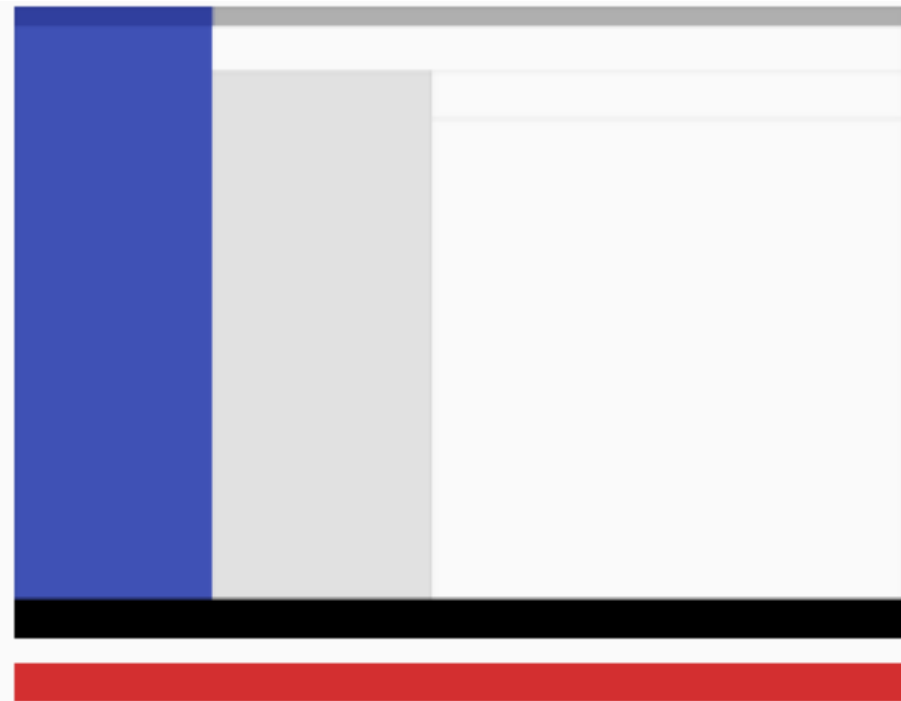


Vertical Divider

UI Regions



Do.
Use whitespace.



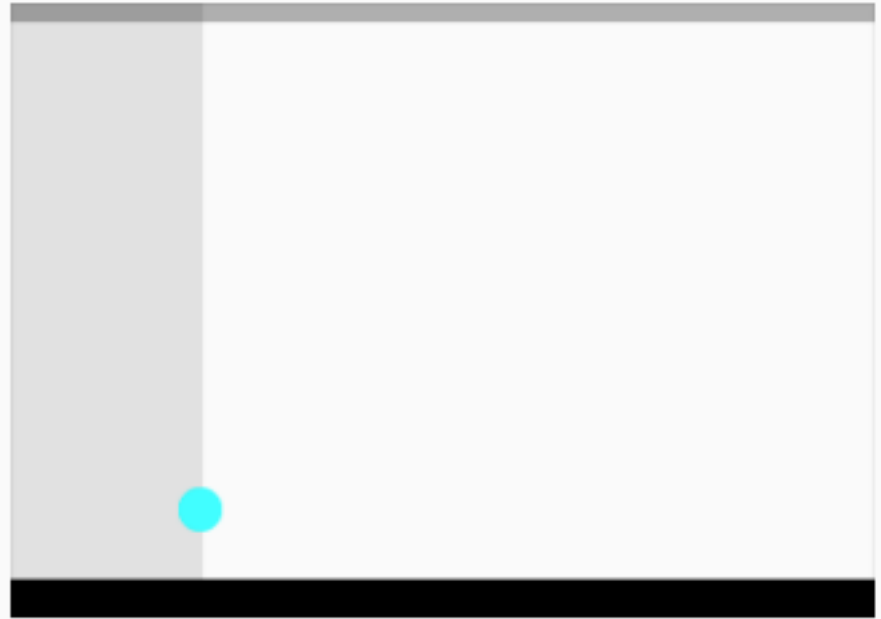
Don't.
Avoid creating too many regions.

Avoid slicing up the interface into too many regions which can cause L shapes. Instead, use whitespace to delineate secondary areas.

UI Regions

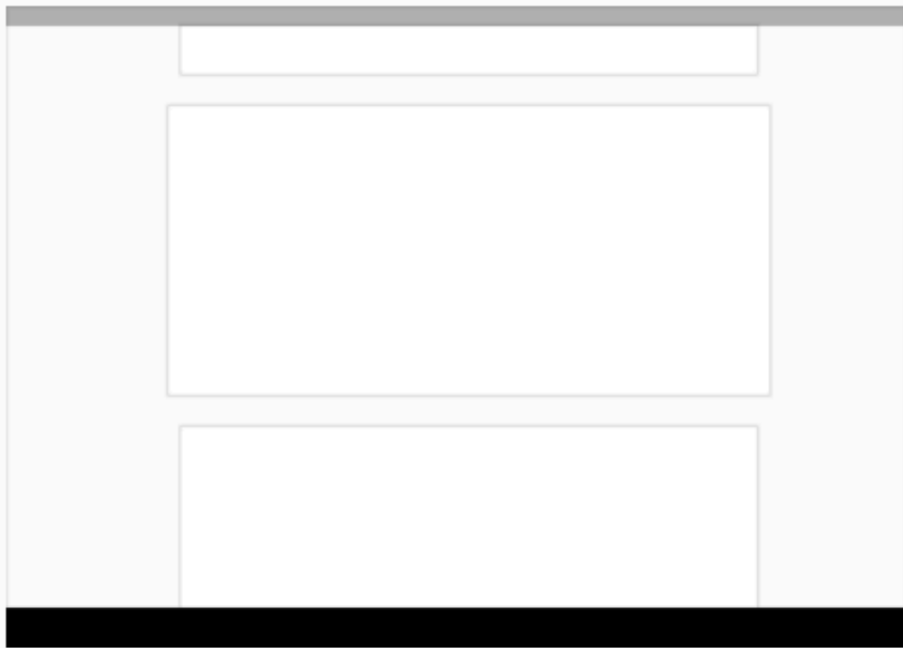


Card Breaking an Edge

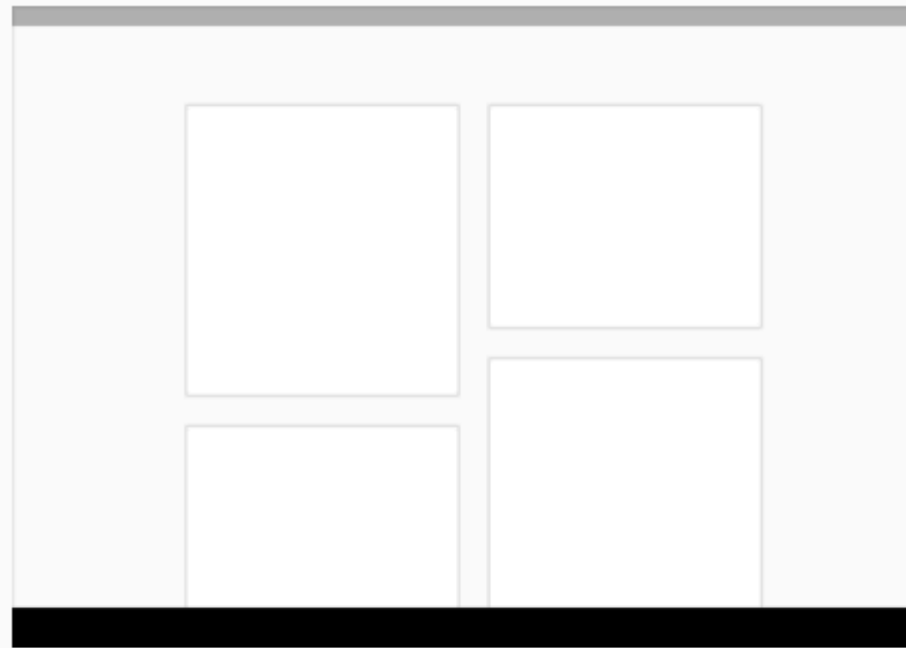


Floating Action Button Breaking an Edge

UI Regions



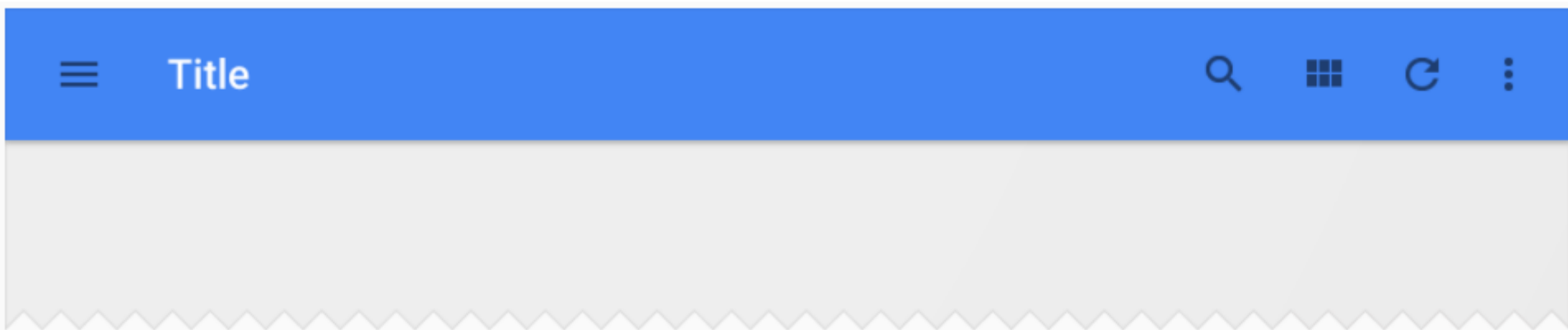
Cards



Cards

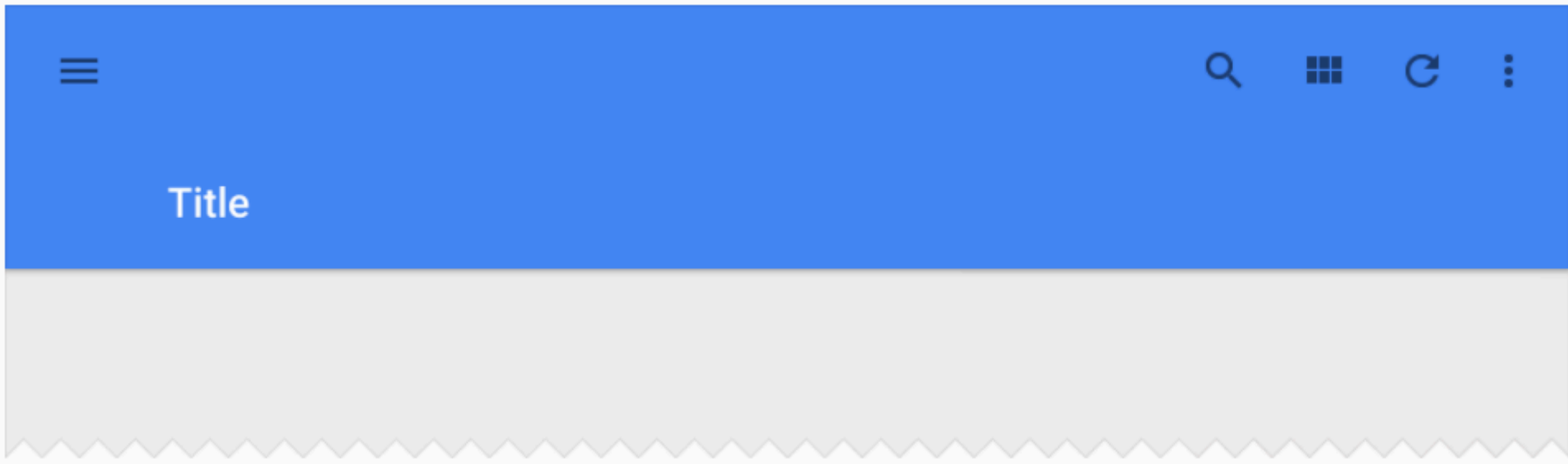
Use cards to organize content when specific behaviors are needed or if groupings of information need more separation than what whitespace or dividers can provide.

Toolbars



Full-width, default height app bar

Toolbars



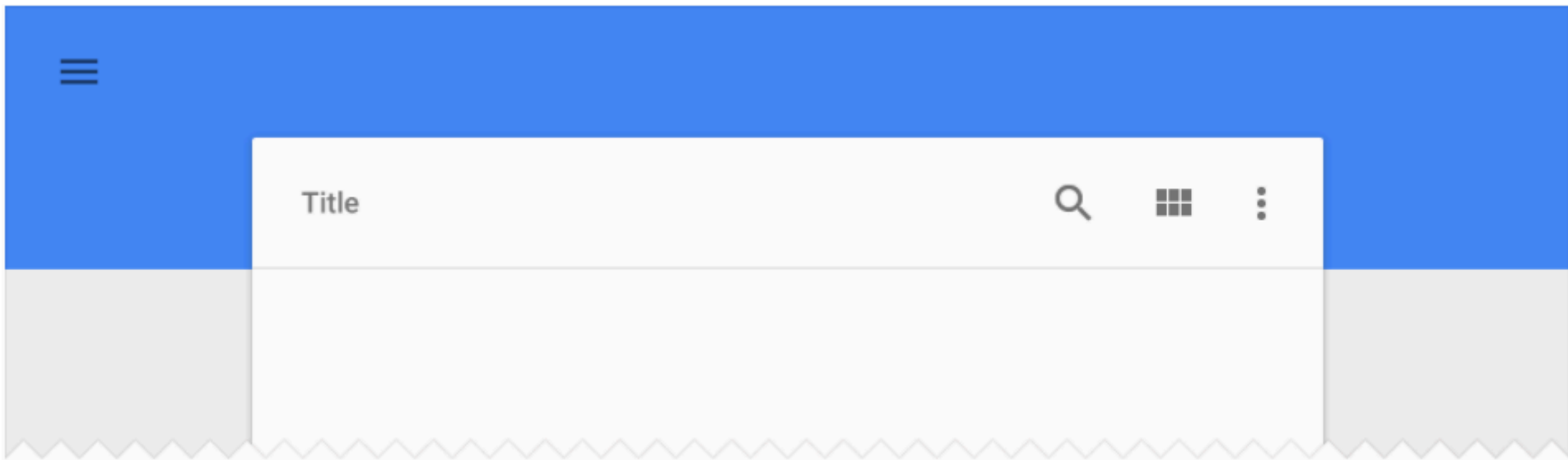
Full-width, extended height app bar

Toolbars



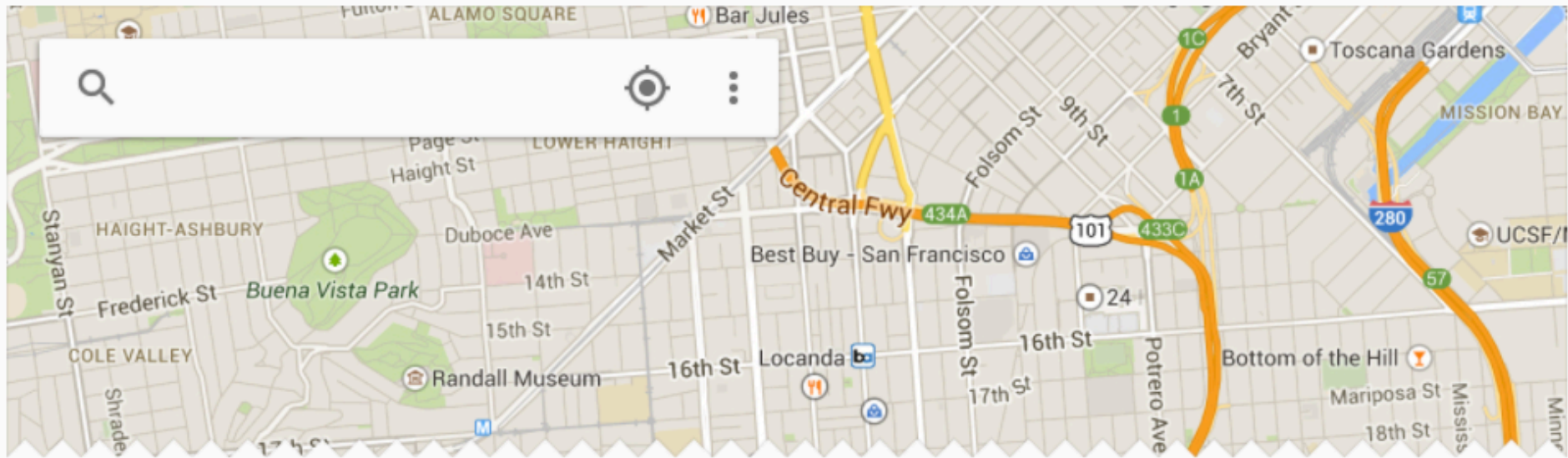
Column-width toolbars at multiple levels of hierarchy

Toolbars



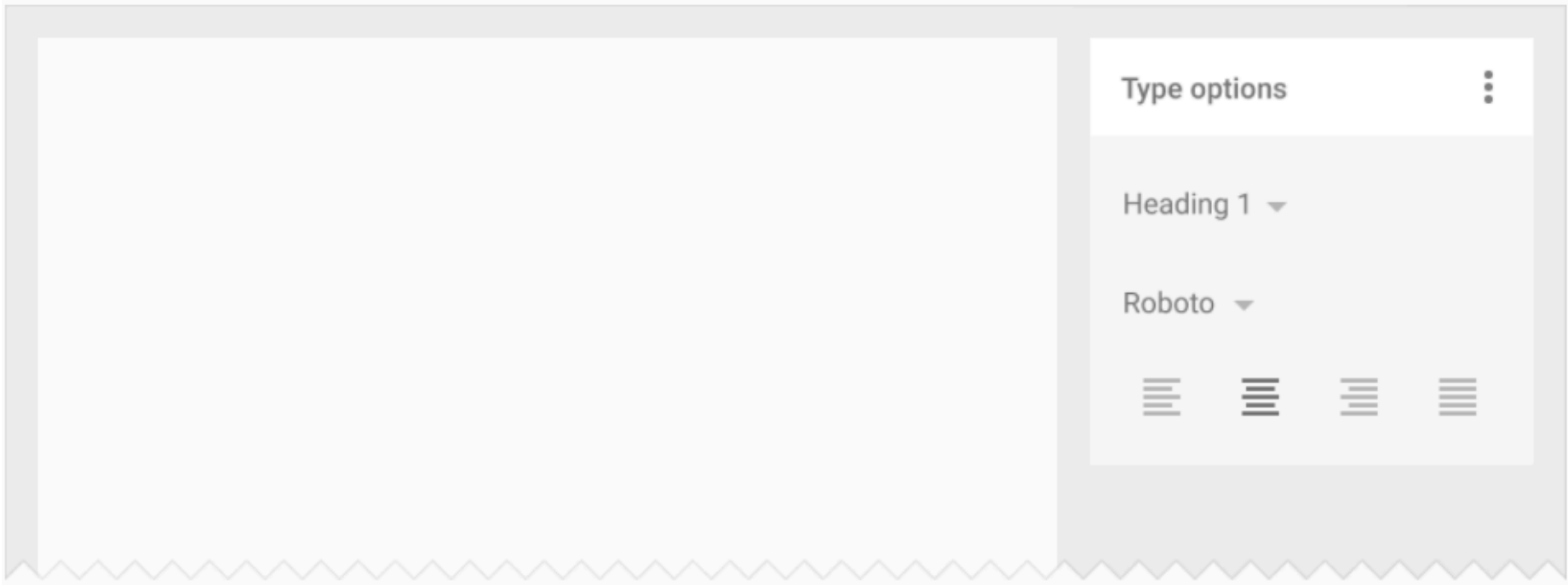
Flexible toolbar and card toolbar

Toolbars



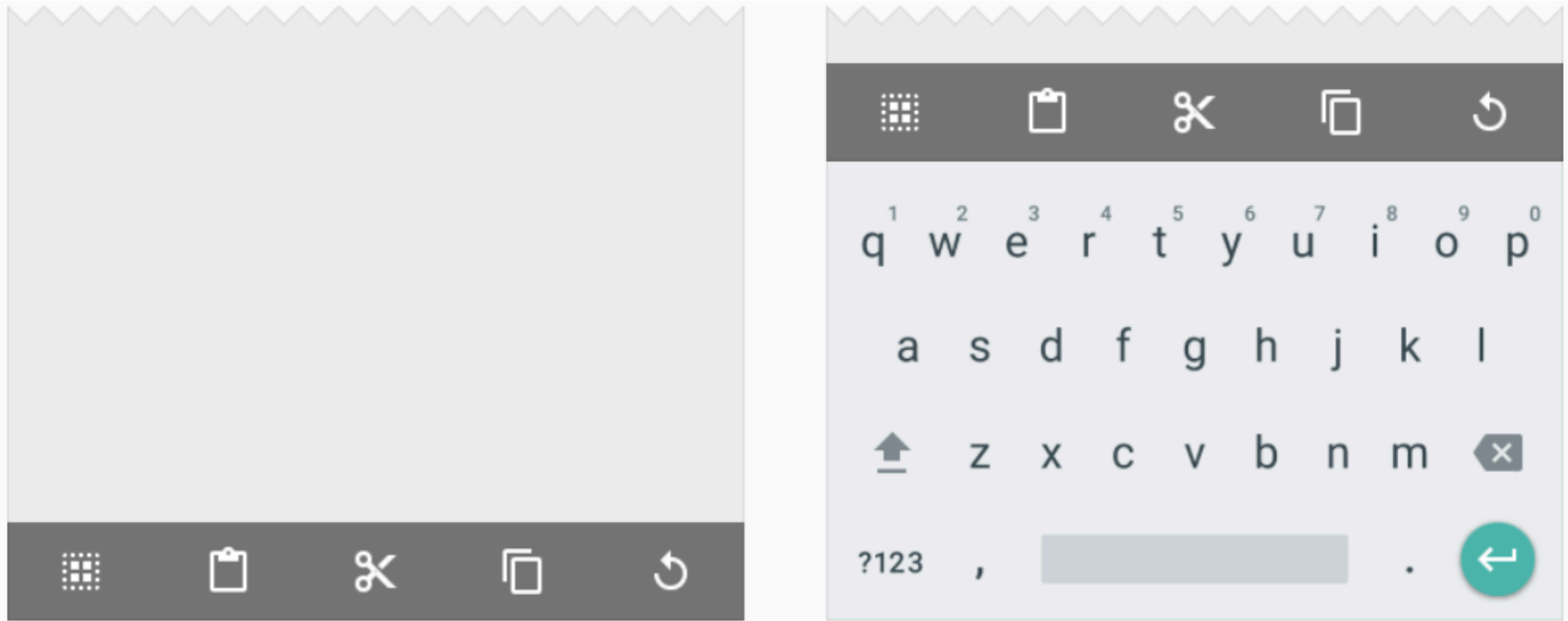
Floating toolbar

Toolbars



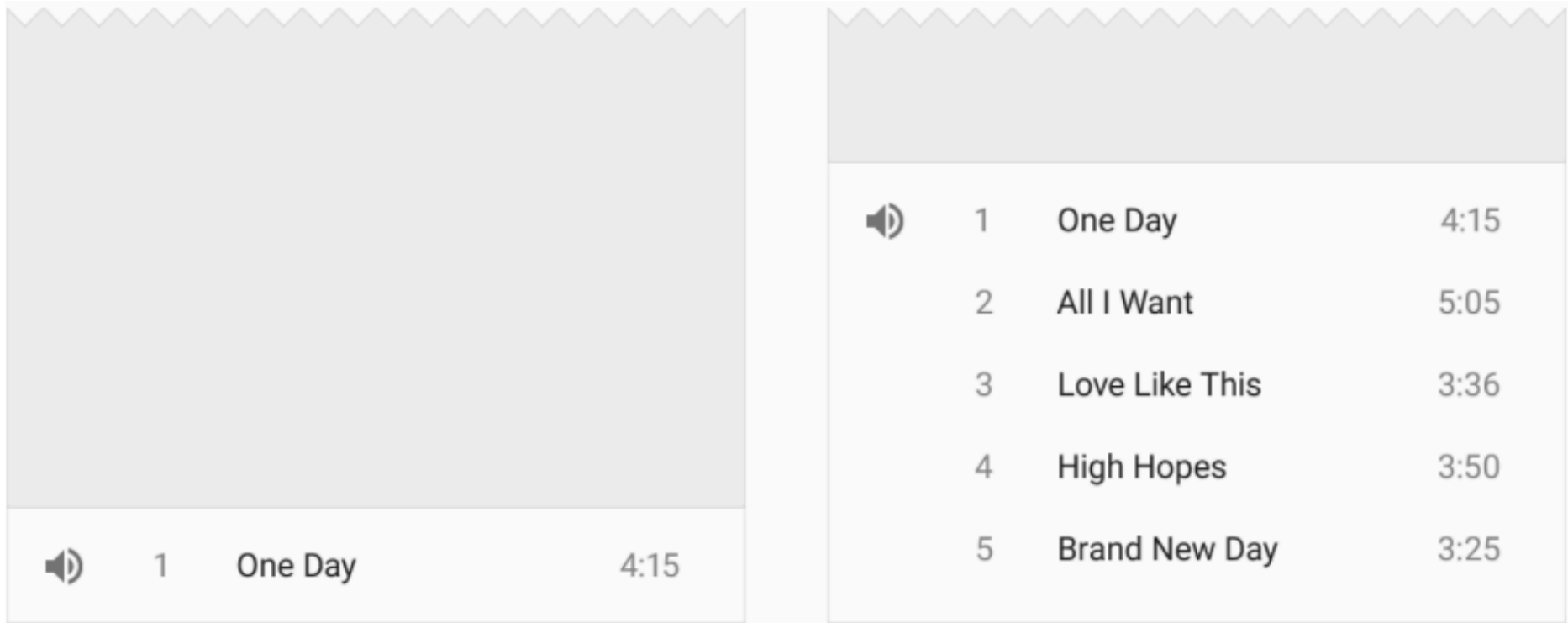
Detached Toolbar Palette

Toolbars



Bottom toolbar that launches to a shelf and clings to the top of the keyboard or other bottom component

Toolbars



Bottom toolbar shelf

App bar

- Special kind of toolbar that's used for branding, navigation, search, and actions.
- The nav icon at the left side of the app bar can be:
 - A control to open a navigation drawer
 - An up arrow for navigating upward through your app's hierarchy
 - Omitted entirely if no navigation is required from this screen

App bar

- The title in the app bar reflects the current page. It can be an app title, page title, or a page filter.
- Icons on the right side of the app bar are app-related actions. The menu icon opens the overflow menu, which contains secondary actions and menu items like help, settings, and feedback.

App bar

Hiding the app bar:

```
ActionBar actionBar = getSupportActionBar();
if (actionBar != null) {
    // hides title
    actionBar.setDisplayShowTitleEnabled(false);

    // hides action bar
    actionBar.hide();
}
```

App bar

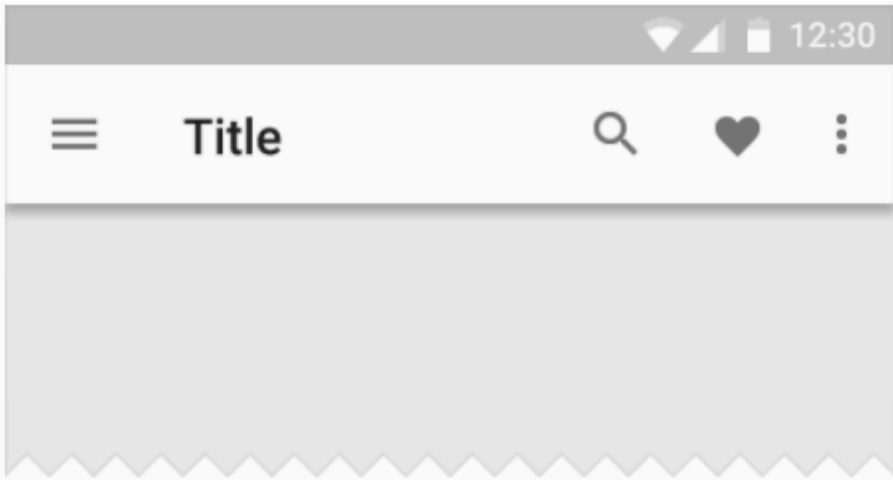


App bar structure

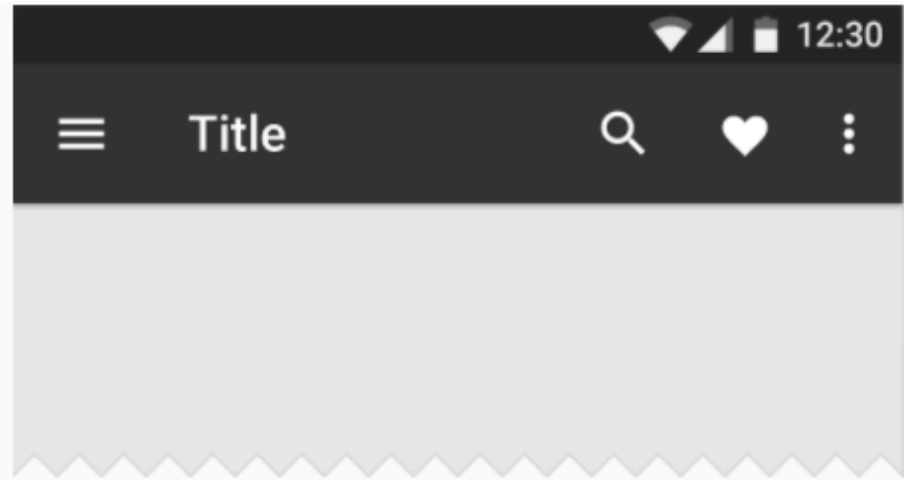
On the left: Nav icon, title, and filter icon

On the right: Action and menu icons

App bar

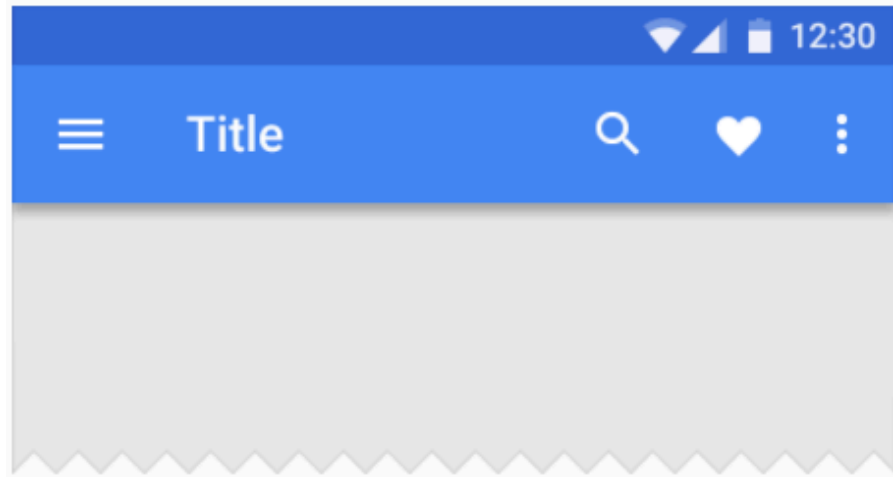


Light

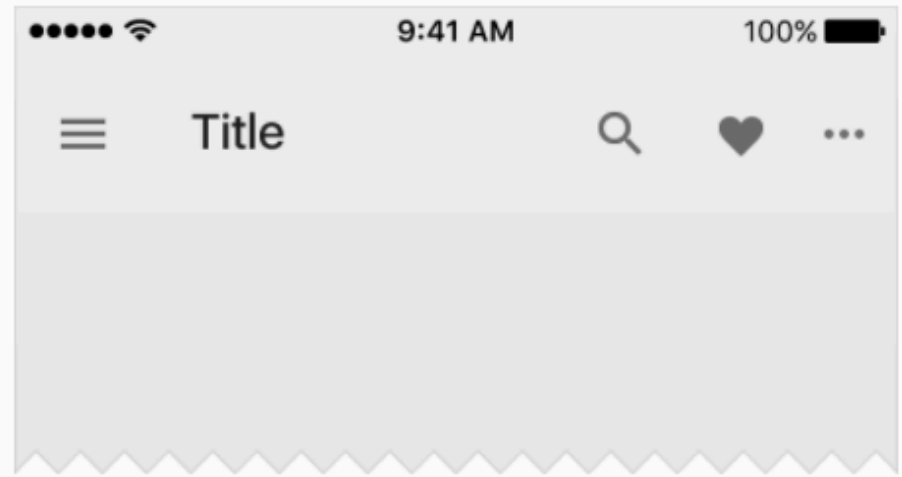


Dark

App bar



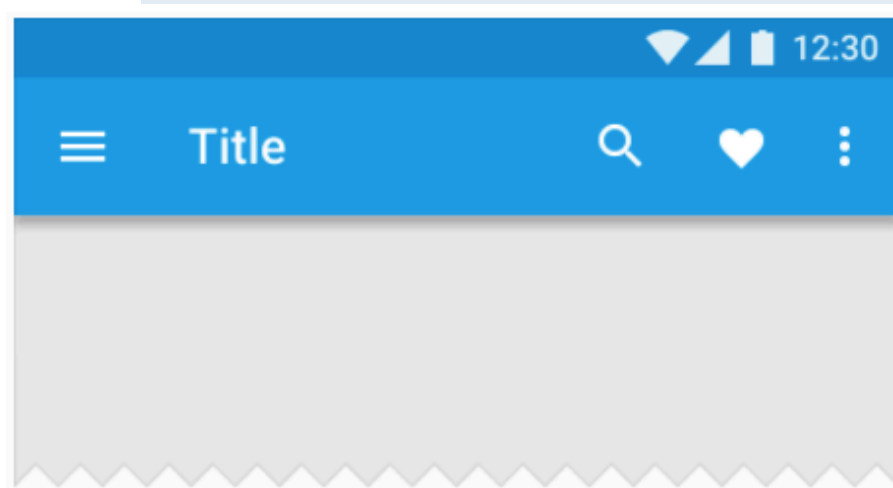
Colored



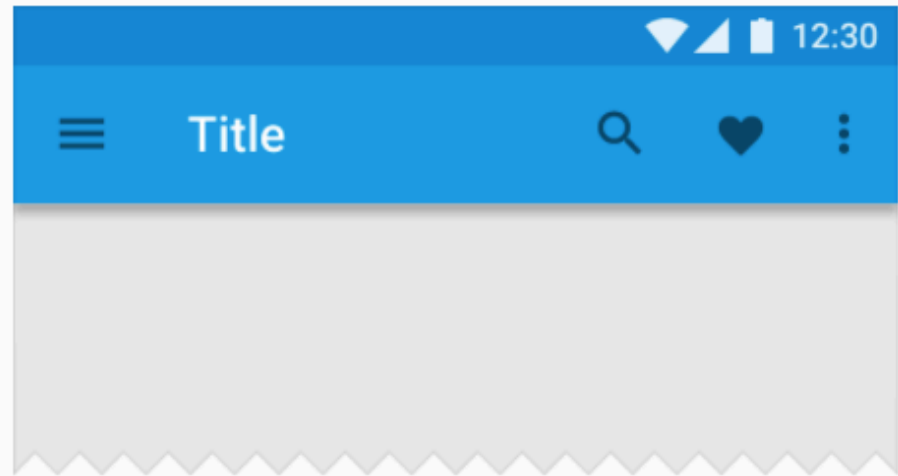
Transparent

App bar

The title can have a distinct color from the icons if increased visual hierarchy is needed. Distinct title colors work best on backgrounds with enough contrast for both white and black glyphs.



Single Color (default)



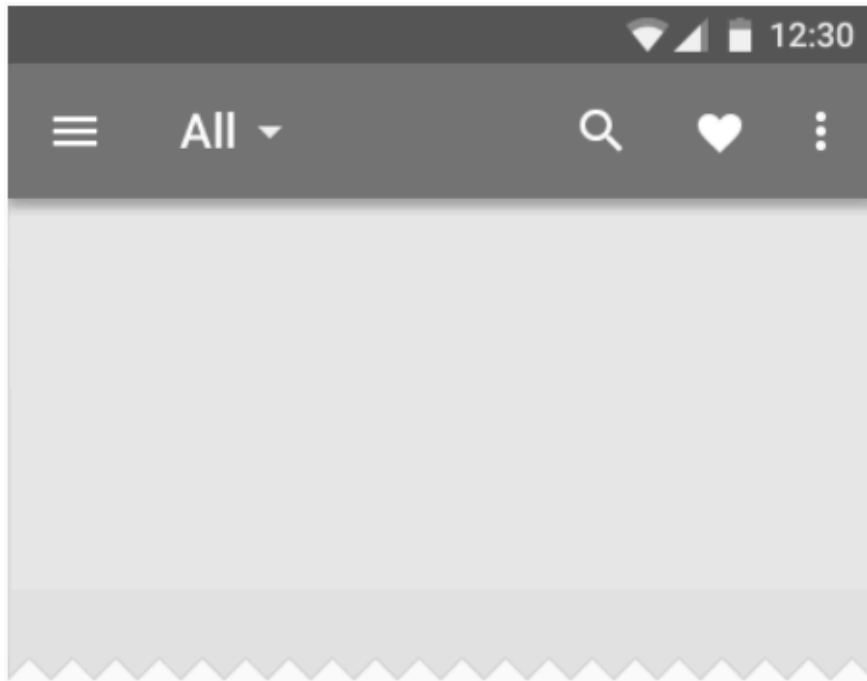
Distinct Title Color

App bar

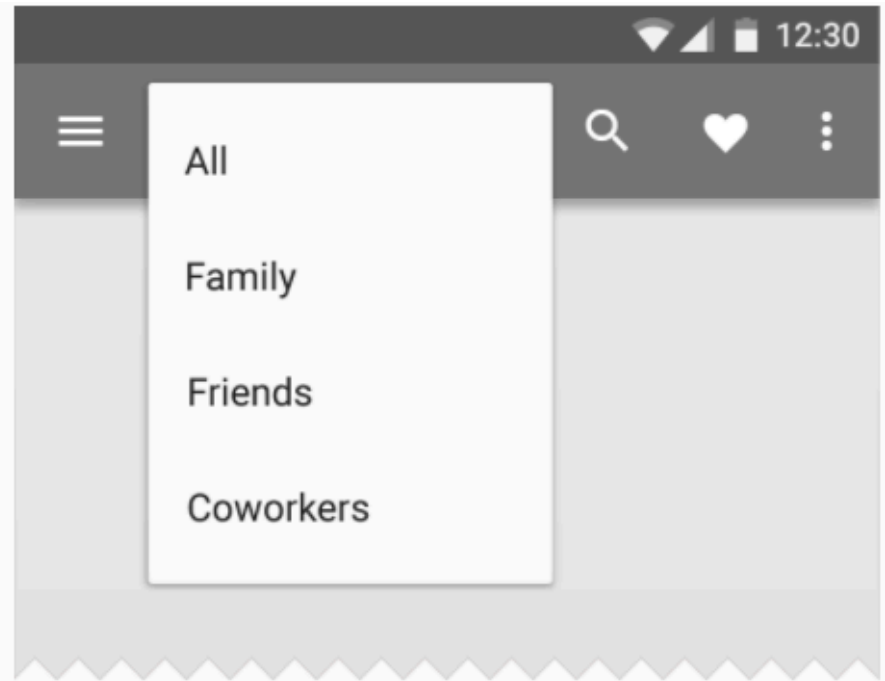
- More info regarding app bar in [Layout Guidelines](#)

Menu

A menu is a temporary sheet of paper that always overlaps the app bar, rather than behaving as an extension of the app bar.



Example of an app bar



Example of menu in an app bar