



Designing for Mobile Phones

Principles of Design



ISN'T **H**OW CAN
YOU

Many years ago, I came across a sign on the ground that said, "Design is life". At the time, I just thought it was a cool sign for a designer. Just like how a sign that said "Soccer is life" would be cool for a soccer player or how a "Rock is life" would be cool for a hiker. But as I thought about it more, the phrase meant so much more. Design really is life. Everyone is affected by design. We design to solve problems to make our lives easier. It's in our hands, in our pockets, in our homes, in the world around us. We trust design with our lives. Good design is invisible and expected to just work. Design is a ninja, sneaking around the world, making your life awesome! So give it up for design! Good design is life and it makes the world go around. But sometimes, design is bad and is very ouchie! Let's clean up design everywhere and make everyone aware of these design crimes so they won't be committed ever again!



Designing for Apple Devices





Platform Characteristics

Display is paramount, irrespective of its size

- Display is the heart of the user experience
- For viewing beautiful text, graphics, and media
- To physically interact with the multi-touch screen to drive their experience
- 44 x 44 points is the comfortable minimum size of a tappable UI element
- People are aware of the quality of app artwork
- Display encourages people to forget about the device and to focus on their content or task



Platform Characteristics

Device Orientation

- Mobile devices may be rotated at any time for a variety of reasons
- Apps are expected to maintain its focus on the primary functionality
- User expectations:
- iPhone & iPod Touch: Home screen is in portrait only; apps expected in same orientation
- iPad: Home screen is in all orientations



Platform Characteristics

Gestures, not clicks!

Gesture	Action
Tap	To press or select a control or item (analogous to a single mouse click).
Drag	To scroll or pan (that is, move side to side). To drag an element.
Flick	To scroll or pan quickly.
Swipe	With one finger, to reveal the Delete button in a table-view row, the hidden view in a split view (iPad only), or the Notification Center (from the top edge of the screen). With four fingers, to switch between apps on iPad.
Double tap	To zoom in and center a block of content or an image. To zoom out (if already zoomed in).
Pinch	Pinch open to zoom in. Pinch close to zoom out.
Touch and hold	In editable or selectable text, to display a magnified view for cursor positioning.
Shake	To initiate an undo or redo action.

Platform Characteristics

One app at a time

- Only one app is visible in foreground at a time
- Previous app transitions to background and its user interface goes away
- Apps enter into suspended state
- Apps instantly resume running when user returns to suspended app
- Some apps might continue running in background





Platform Characteristics

Preferences Are Available in Settings

- People set certain preferences for an iOS app in the built-in Settings app.
- They must switch away from the current app when they want to access those preferences in Settings.
- Preferences in the Settings app are of the “set once and rarely change” type



Platform Characteristics

Onscreen User Help is minimal

- Mobile users have neither the time nor the desire to read through a lot of help content before they can benefit from an app.
- Moreover, help content takes up valuable space to store and display.
- Mobile devices and the built-in apps are intuitive and easy to use, so people don't need onscreen help content to tell them how to use the device or the apps.
- This experience leads people to expect all iOS apps to be similarly easy to use.



Platform Characteristics

Most iOS Apps Have a Single Window

- Mobile app has a single window unless it supports external display
- An app's window fills the device's main screen and provides an empty surface that hosts one or more views in which you present your content.
- Window in a mobile app is different from a window in a computer app
- An app window has no visible components (such as a title bar or a close button) and it can't be moved to a new location on the device display
- Users experience a mobile app as a collection of screens through which they navigate



Platform characteristics

Types of software

- There are two types of software that you can develop for iOS devices:
 - Native apps & Web apps
- A **native app** is an app you develop using the SDK to run natively on the devices. These apps resemble the built-in apps on the devices in that they reside on the device itself and take advantage of features of the OS environment. People install native apps on their devices and use them just as they use built-in apps, such as Photos, Calendar, and Mail.
- **Web content** is hosted by a website that people visit using their devices. There are three types of web content:
 - Web Pages
 - Compatible web pages
 - Optimized web pages

Platform Characteristics

Safari on iOS

- Use of cookies is supported
- Does not support Flash, Java (including Java applets) or third party plugins within web content
- Most gestures are interpreted as targeting the device, not the content
- Allows web apps to run in full screen mode





Human Interface Principles



Human Interface Principles

Aesthetic Integrity

- Not a measure of how beautiful an app is.
- It's a measure of how well the appearance of the app integrates with its function
- Will differ in case of apps that enable productive tasks and those that encourage immersive tasks



Human Interface Principles

Consistency

- App must take advantage of the standards and paradigms people are comfortable with
- Is the app consistent with OS standards?
- Does it use system-provided controls, views, and icons correctly?
- Does it incorporate device features in a reliable way?
- Is the app consistent within itself?
- Does text use uniform terminology and style?
- Do the same icons always mean the same thing?
- Can people predict what will happen when they perform the same action in different places?
- Do custom UI elements look and behave the same throughout the app?
- Within reason, is the app consistent with its earlier versions?
- Have the terms and meanings remained the same?
- Are the fundamental concepts essentially unchanged?



Human Interface Principles

Direct Manipulation

- Direct manipulation of onscreen objects instead of separate controls
- People can experience direct manipulation when they:
 - Rotate or otherwise move the device to affect onscreen objects
 - Use gestures to manipulate onscreen objects
 - Can see that their actions have immediate, visible results



Human Interface Principles

Feedback

- Feedback acknowledges people's actions and assures them that processing is occurring
- People expect immediate feedback when they operate a control, and they appreciate status updates during lengthy operations
- Use subtle animations
- Sounds may also help, but shouldn't be the primary or sole feedback mechanism
- Vibration?



Human Interface Principles

Metaphors

- Virtual objects and actions in an app should be metaphors for objects and actions in the real world
- Common metaphors in apps include:
 - Tapping Music playback controls
 - Dragging, flicking, or swiping objects in a game
 - Sliding On/Off switches
 - Flicking through pages of photos
 - Spinning picker wheels to make choice



Human Interface Principles

User Control

- People, not apps, should initiate and control actions.
- Although an app can suggest a course of action or warn about dangerous consequences, it's usually a mistake for the app to take decision-making away from the user.
- Users feel more in control of an app when behaviors and controls are familiar and predictable
- People expect to have ample opportunity to cancel an operation before it begins, and they expect to get a chance to confirm their intention to perform a potentially destructive action
- Finally, people expect to be able to gracefully stop an operation that's underway

User Experience Guidelines



User Experience Guidelines

Focus on the Primary Task

- Analyze what's needed in each screen





User Experience Guidelines

Elevate the content that people care about

- Minimize the number and prominence of controls to decrease their weight in the UI.
- Consider subtly customizing controls so that they integrate with your app's graphical style.
- Consider fading controls after people have stopped interacting with them for a little while, and redisplaying them when people tap the screen



User Experience Guidelines

Think Top Down

- The top of the screen is most visible to people, because they tend to interact with the device by holding the device in the following ways:
 - In their nondominant hand—or laying it on a surface—and gesturing with a finger of the dominant hand
 - In one hand, and gesturing with the thumb of the same hand
 - Between their hands, and gesturing with both thumbs
- **Put the most frequently used (usually higher level) information near the top, where it is most visible and easy to reach.**
- As the user scans the screen from top to bottom, the information displayed should progress from general to specific and from high level to low level.



User Experience Guidelines

Give People a logical path to follow

- Make the path through the information you present logical and easy for users to predict
- In most cases, give users only one path to a screen

User Experience Guidelines

Make Usage Easy and Obvious

- Make the main function of your app immediately apparent.
- Be consistent with the usage paradigms of the built-in apps.



User Experience Guidelines

Use User-Centric Terminology

- In all your text-based communication with users, use terminology you're sure they understand.
- Take care to be accurate when describing dates





User Experience Guidelines

Minimize the Effort Required for User Input

- Balance a request for user input with what you offer users in return
- Make it easy for users to make choices.
- Get information from iOS, when appropriate



User Experience Guidelines

Downplay File-Handling Operations

- As much as possible, allow people to manage documents without opening iTunes on their computer
- If your app allows people to create and edit documents, it's appropriate to provide a document picker
 - highly graphical
 - Allows people to make the fewest possible gestures to do what they want
 - Includes a new document function



User Experience Guidelines

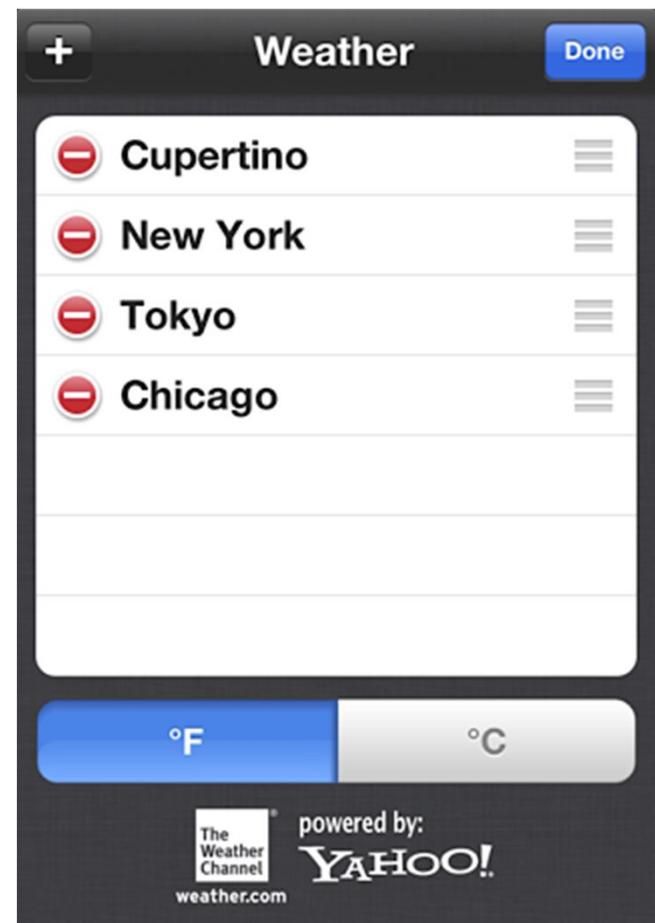
Enable Collaboration and Connectedness

- When appropriate, make it easy for people to interact with others and share things like their location, opinions, and high scores
- Think of ways to allow more than one person to use your app on the same device

User Experience Guidelines

De-emphasize Settings

- Avoid including settings in your app if you can.
- Let users set the behavior they want by using configuration options in your app.
- Offer configuration options in the main UI or—in iPhone apps—on the back of a view





User Experience Guidelines

Brand Appropriately

- Incorporate a brand's colors or images in a refined, unobtrusive way
- Avoid taking space away from the content people care about
- Use an app icon that balances eye-appeal with brand recognition



User Experience Guidelines

Make Search Quick and Rewarding

- Build indexes of your data so that you are always prepared for search
- Live-filter local data so that you can display results more quickly
- When possible, also filter remote data while users type.
- Display a search bar above a list or the index in a list
- Use a tab for search only in special circumstances
- If necessary, display placeholder content right away and partial results as they become available.
- Consider providing a scope bar if the data sorts naturally into different categories.



User Experience Guidelines

Entice and Inform with a Well-Written Description

- Be sure to correct all spelling, grammatical, and punctuation errors.
- Keep all-capital words to a minimum
- Consider describing specific bug fixes



User Experience Guidelines

Be Succinct

- Think like a newspaper editor, and strive to convey information in a condensed, headline style
- Give controls short labels, or use well-understood symbols

User Experience Guidelines

Use UI Elements Consistently

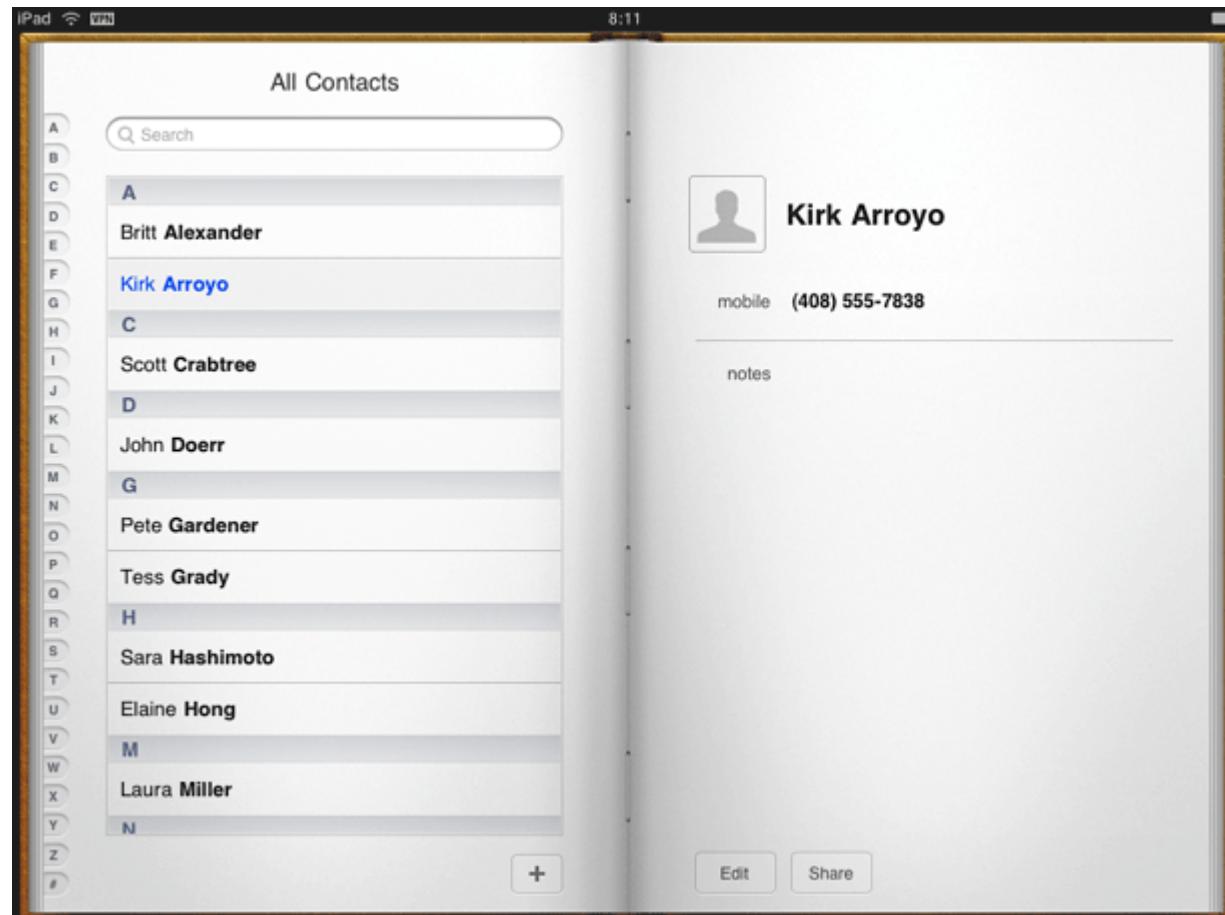
- Follow the recommended usages for standard user interface elements
- For an app that enables an immersive task—such as a game—it's reasonable to create completely custom controls
- Avoid radically changing the appearance of a control that performs a standard action
- To avoid confusing people, never use the standard buttons and icons to mean something else



User Experience Guidelines

Consider Adding Physicality and Realism

- When appropriate, add a realistic, physical dimension to your app



User Experience Guidelines

Consider Adding Physicality and Realism

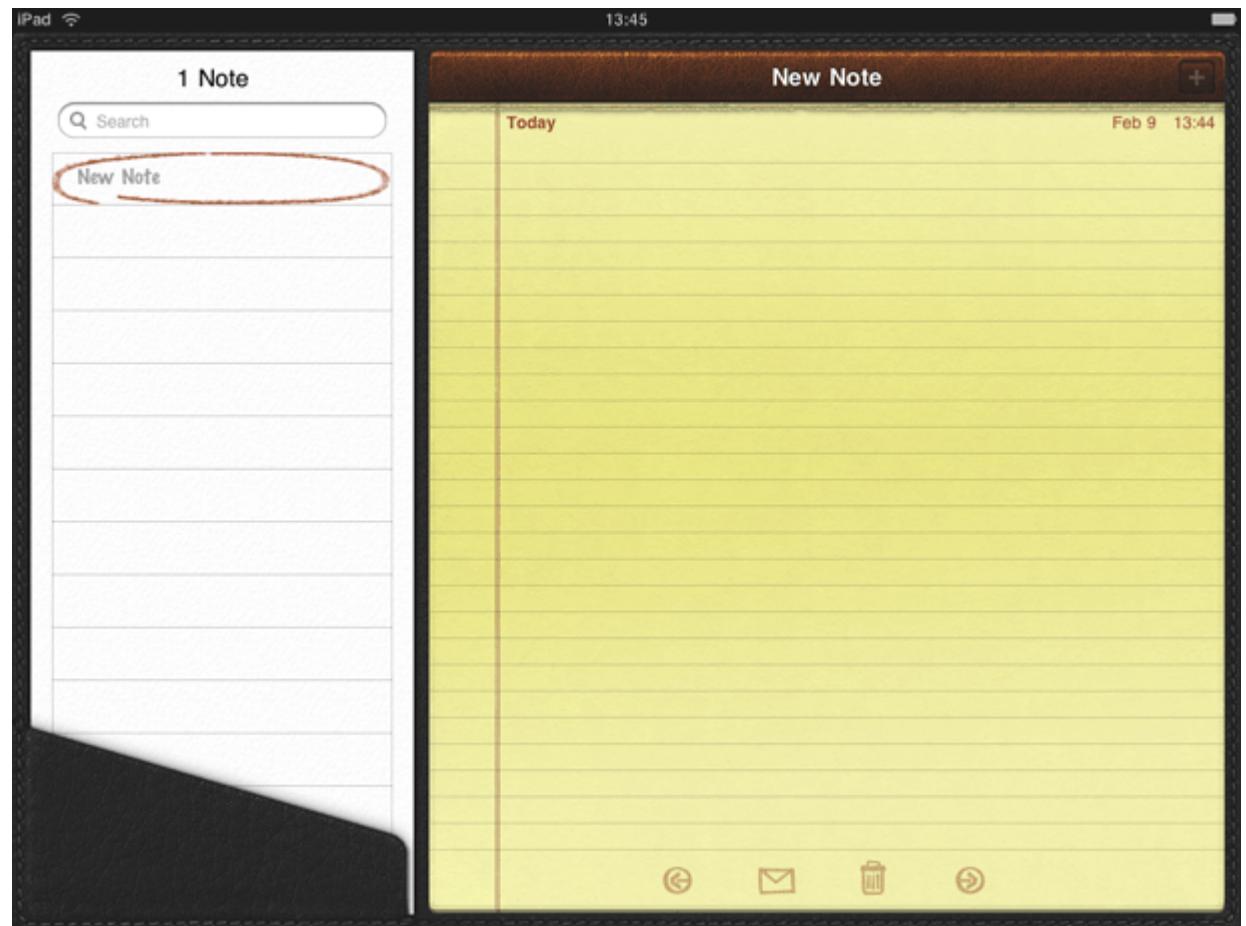
- Think of the objects and scenes you design as opportunities to communicate with users and to express the essence of your app.
- Use appropriate animation to further enhance realism in your app.



User Experience Guidelines

Delight People with Stunning Graphics

- Consider replicating the look of high-quality or precious materials
- Create high-resolution artwork
- Spend the time to design a beautiful, memorable app icon
- Remove hard-coded values that identify screen dimensions.





User Experience Guidelines

Handle Orientation Changes

- In all orientations, maintain focus on the primary content.
- Think twice before preventing your app from running in all orientations
 - Launch your app in your supported orientation, regardless of the current device orientation
 - Avoid displaying a UI element that tells people to rotate the device.
 - Support both variants of an orientation
- If your app interprets changes in device orientation as user input, you can handle rotation in app-specific ways.
- Take advantage of the one-step change in orientation to perform smoother, often faster rotations
- Pay attention to accelerometer values
- On iPhone, anticipate users' needs when you respond to a change in device orientation
- On iPad, strive to satisfy users' expectations by being able to run in all orientations.

User Experience Guidelines

Make Targets Fingertip-Size

- Give tappable elements in your app a target area of about 44 x 44 points.





User Experience Guidelines

Use Subtle Animation to Communicate

- Subtle and appropriate animation can:
 - Communicate status
 - Provide useful feedback
 - Enhance the sense of direct manipulation
 - Help people visualize the results of their actions
- Add animation cautiously, especially in apps that do not provide an immersive experience
- Make animation consistent with built-in apps when appropriate.
- Use animation consistently throughout your app



User Experience Guidelines

Support Gestures Appropriately

- Avoid associating different actions with the standard gestures users know.
- Use complex gestures as shortcuts to expedite a task, not as the only way to perform a task.
- In general, avoid defining new gestures
- For iPad, consider using multifinger gestures.



User Experience Guidelines

Ask People to Save Only When Necessary

- People should have confidence that their work is always preserved unless they explicitly cancel or delete it.
- For iPad, save information that people enter in a popover (unless they cancel their work), because they might dismiss the popover without meaning to



User Experience Guidelines

Make Modal Tasks Occasional and Simple

- Keep modal tasks fairly short and narrowly focused
- Always provide an obvious and safe way to exit a modal task
- If the task requires a hierarchy of modal views, make sure your users understand what happens if they tap a Done button in a view that's below the top level



User Experience Guidelines

Start Instantly

- Display a launch image that closely resembles the first screen of the app
- Avoid displaying an About window or a splash screen
- On iPhone, specify the appropriate status bar style.
- Launch in the appropriate default orientation.
- Avoid asking people to supply setup information.
 - Focus your solution on the needs of 80 percent of your users
 - Get as much information as possible from other sources
 - If you must ask for setup information, prompt people to enter it within your app
- Delay a login requirement for as long as possible
- When your app restarts, restore its state so that users can continue what they were doing



User Experience Guidelines

Always Be Prepared to Stop

- Save user data as soon as possible and as often as reasonable
- Save the current state when stopping



User Experience Guidelines

Don't Quit Programmatically

- Display an attractive screen that describes the problem and suggests a correction.
- If only some of your app's features are unavailable, display either a screen or an alert when people use the feature.



User Experience Guidelines

License Agreement or Disclaimer

- If possible, avoid requiring users to indicate their agreement to your EULA when they first start your app.
- If possible, provide a disclaimer within your app description or EULA.



User Experience Guidelines

Enhance Interactivity

- Resist the temptation to add features that are not directly related to the main task



User Experience Guidelines

Reduce Full-Screen Transitions

- Closely associate visual transitions with the content that's changing.

User Experience Guidelines

Restrain Your Information Hierarchy

- In general, focus the main screen on the primary content
- Use a navigation bar in the right pane of a split view to allow people to drill down into a top-level category that is persistently displayed in the left pane.



User Experience Guidelines

Restrain Your Information Hierarchy

- Use a navigation bar in the left pane of a split view to allow people to drill down through a fairly shallow hierarchy.



User Experience Guidelines

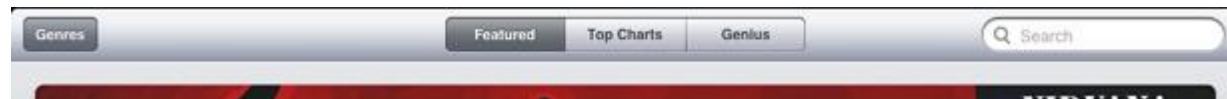
Restrain Your Information Hierarchy

- Use a popover to enable actions or provide tools that affect onscreen objects

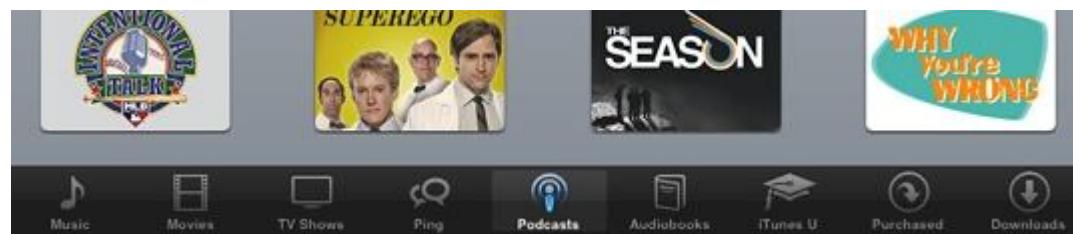


User Experience Guidelines

- Use a segmented control in a toolbar to display different perspectives on the content or different information categories.



- Use a tab bar to display different information categories or, less often, different app modes..





User Experience Guidelines

Consider Using Popovers for Some Modal Tasks

- Does the task require more than one type of input? If so, use a popover.
- Does the task require people to drill down through a hierarchy of views? If so, use a popover.
- Might people want to do something in the main view before they finish the task? If so, use a non-modal popover.
- Is the task fairly in-depth and does it represent one of the app's main functions? If so, you might want to use a modal view.
- Is the task performed only once or very infrequently, as with a setup task? If so, consider using a modal view.

User Experience Guidelines

Migrate Toolbar Content to the Top

- If your iPhone app has a toolbar, consider moving it to the top of the screen instead of leaving it at the bottom



The screenshot shows an iPhone inbox interface. At the top, there is a navigation bar with the text "Mailboxes" and "Inbox (7)" followed by an "Edit" button. To the right of the navigation bar is a progress indicator showing "3 of 14". Below the navigation bar is a search bar labeled "Search Inbox". The main content area displays a list of 7 messages:

- Kent H** Yesterday
Can't make the meeting today
Just got a call from Sarah's school...I've got to go pick her up early today. Can we reschedu...
- Maria G** Yesterday
Reminder: Office party this Saturday
Bring the family for some fun, games, and BBQ in the park! Don't forget to bring a dessert to...
- Maria G** Yesterday
Pix from our zoo trip
The kids already want to go back! The panda was the big favorite.
- John Appleseed** 2/12/10
Perfect weather...
...for the succulents! Check this out: Sent from my iPad
- John Appleseed** 2/9/10
Gardening update
I can feel the beginnings of spring in the air and I've spent some happy hours planning th...
- Donna** 2/9/10
Exercise info
Here's the info on that new exercise program I've been following. It sure has worked for...
- Sandra** 2/9/10
New pix
I finally got my trip pictures posted. Check 'em out! What did we do before photo sharing?....
- Nathan** 2/9/10
How about lunch?
Looks like I'll be free for lunch today after all. How does that great Mexican place sound?...
- Kari** 2/9/10
Can't make the meeting today
Just got a call from Rachael's school...she's sick and needs to come home. Can we meet...
- Lon** 2/9/10
Hope you feel better soon!
I'm sorry to hear you're sick. We really missed you at the meeting yesterday. I'll reschedule...
- Britt** 2/9/10
Having another BBQ
It's that time of year again! Hope the weather holds. Please bring a salad to share with abo...
- Jennifer** 2/9/10

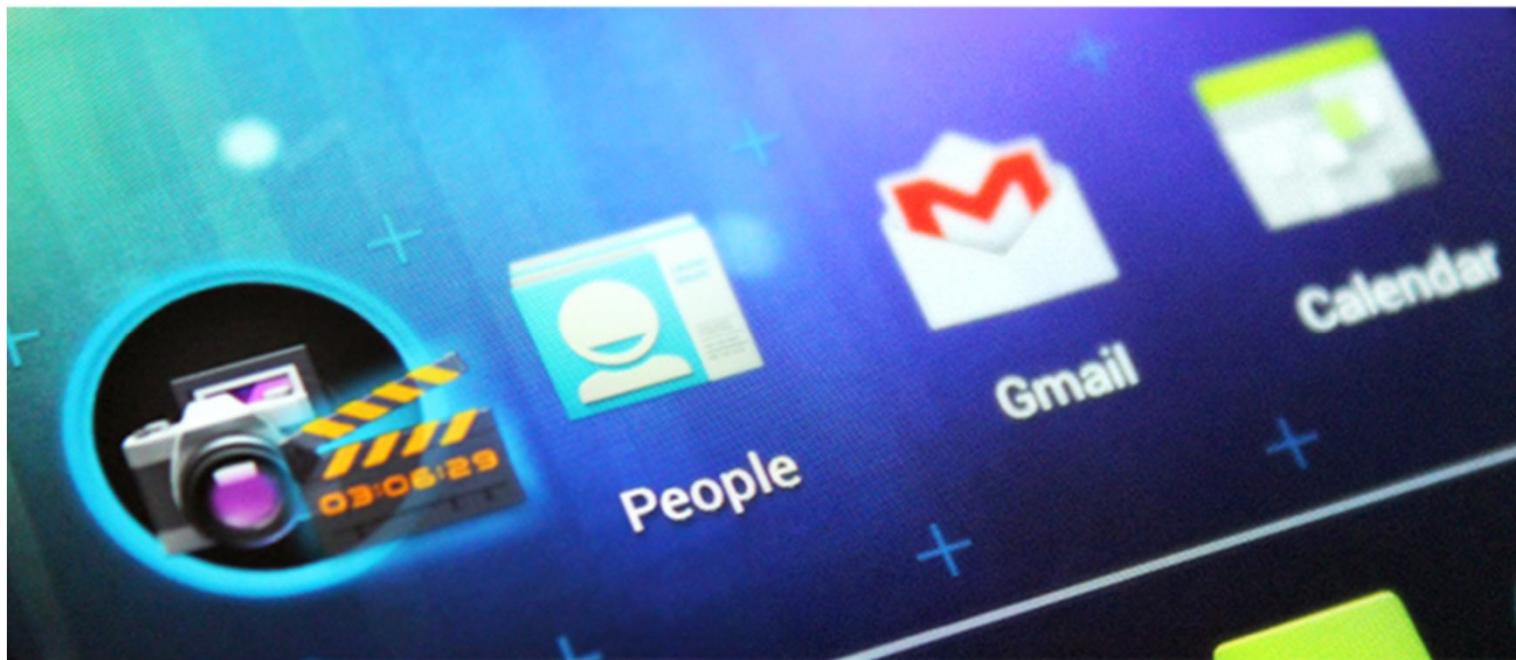
At the bottom of the inbox screen, there is a refresh icon and the text "Updated 10/4/11 9:25 AM".



Designing for Android



Creative Vision & Design Principles





Creative Vision

Enchant me

- Beauty is more than skin deep. Android apps are sleek and aesthetically pleasing on multiple levels.
- Transitions are fast and clear; layout and typography are crisp and meaningful.
- App icons are works of art in their own right. Just like a well-made tool, your app should strive to combine beauty, simplicity and purpose to create a magical experience that is effortless and powerful.



Creative Vision

Simplify my life

- Android apps make life easier and are easy to understand.
- When people use your app for the first time, they should intuitively grasp the most important features.
- The design work doesn't stop at the first use, though.
- Android apps remove ongoing chores like file management and syncing.
- Simple tasks never require complex procedures, and complex tasks are tailored to the human hand and mind.
- People of all ages and cultures feel firmly in control, and are never overwhelmed by too many choices or irrelevant flash.



Creative Vision

Make me amazing

- It's not enough to make an app that is easy to use.
- Android apps empower people to try new things and to use apps in inventive new ways.
- Android lets people combine applications into new workflows through multitasking, notifications, and sharing across apps.
- At the same time, your app should feel personal, giving people access to superb technology with clarity and grace.



Enchant me

Delight me in surprising ways

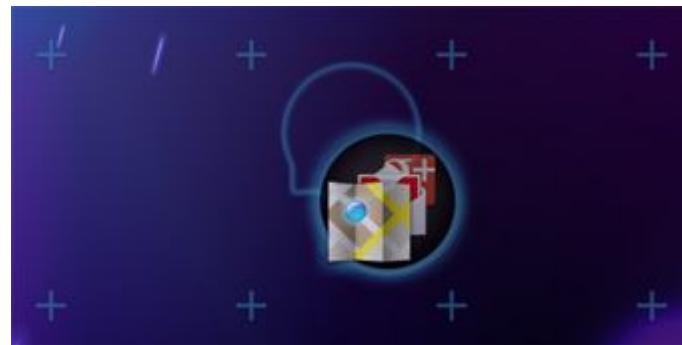
- A beautiful surface, a carefully-placed animation, or a well-timed sound effect is a joy to experience. Subtle effects contribute to a feeling of effortlessness and a sense that a powerful force is at hand.



Enchant me

Real objects are more fun than buttons and menus

- Allow people to directly touch and manipulate objects in your app. It reduces the cognitive effort needed to perform a task while making it more emotionally satisfying

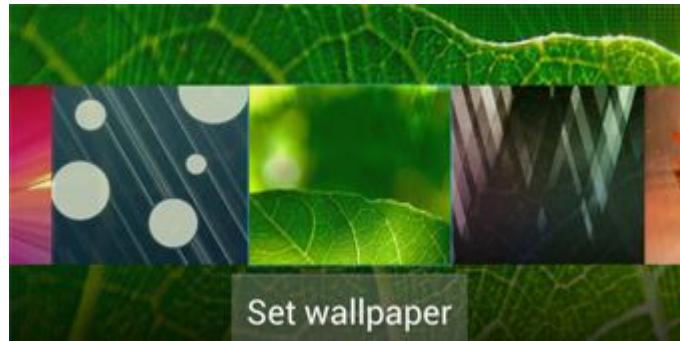




Enchant me

Let me make it mine

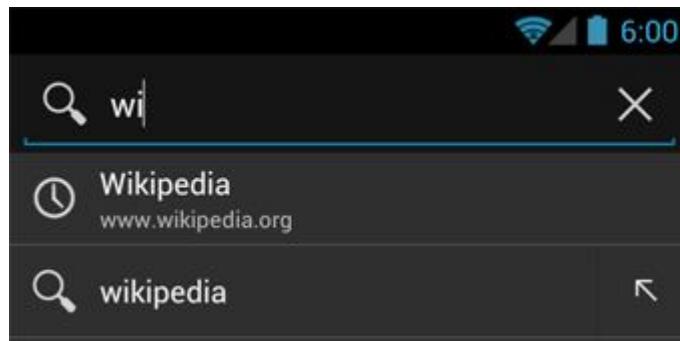
- People love to add personal touches because it helps them feel at home and in control. Provide sensible, beautiful defaults, but also consider fun, optional customizations that don't hinder primary tasks.



Enchant me

Get to know me

- Learn peoples' preferences over time. Rather than asking them to make the same choices over and over, place previous choices within easy reach

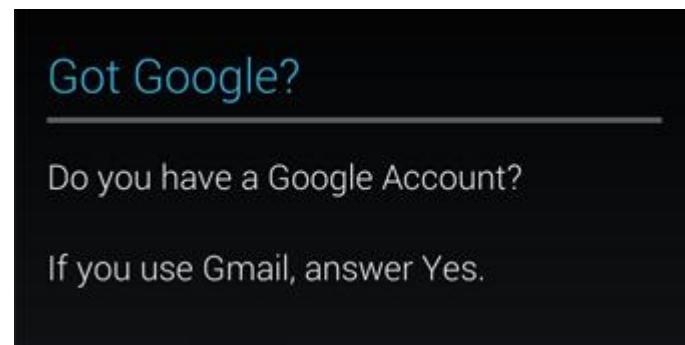




Simplify my life

Keep it brief

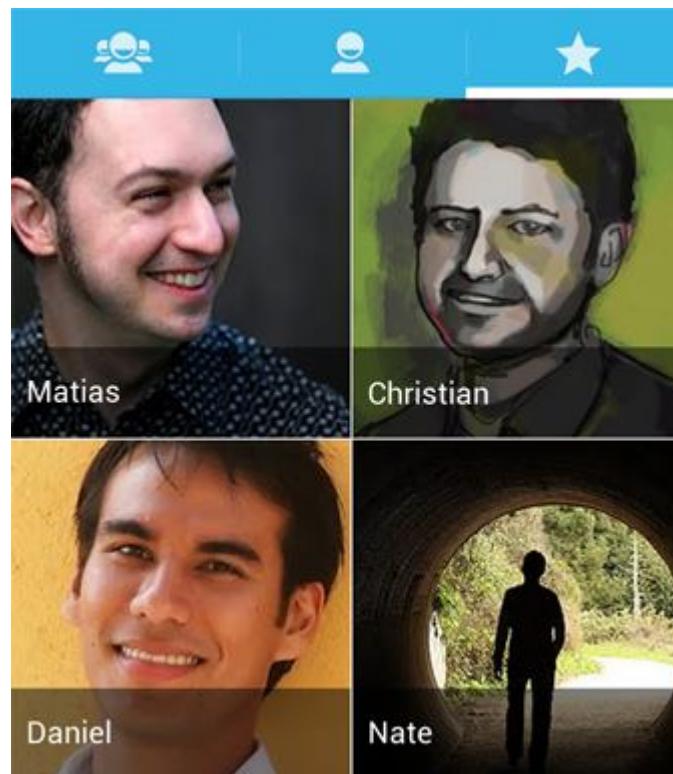
- Use short phrases with simple words. People are likely to skip sentences if they're long.



Simplify my life

Pictures are faster than words

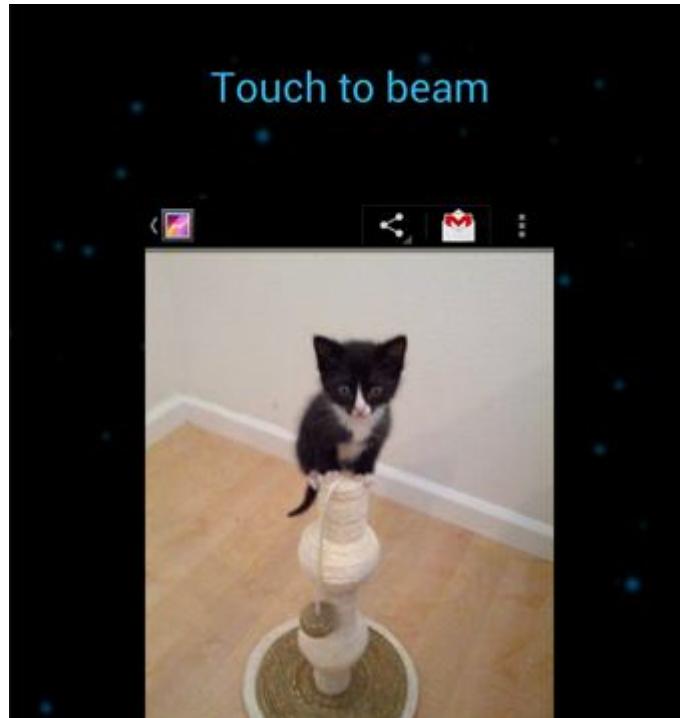
- Consider using pictures to explain ideas. They get people's attention and can be much more efficient than words



Simplify my life

Decide for me but let me have the final say

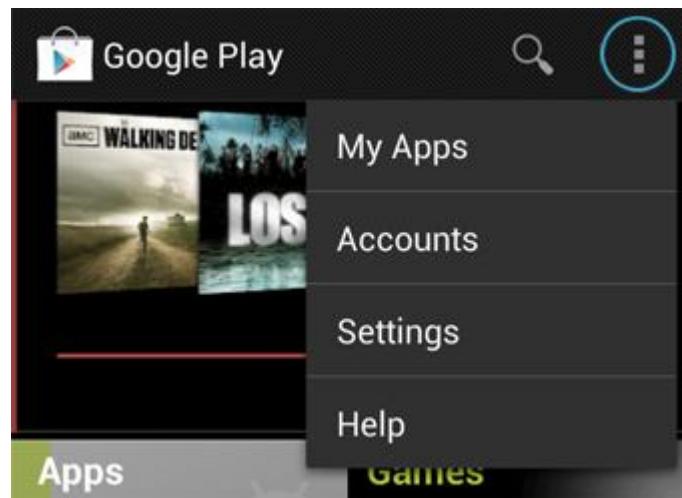
- Take your best guess and act rather than asking first. Too many choices and decisions make people unhappy. Just in case you get it wrong, allow for 'undo'.



Simplify my life

Only show what I need when I need it

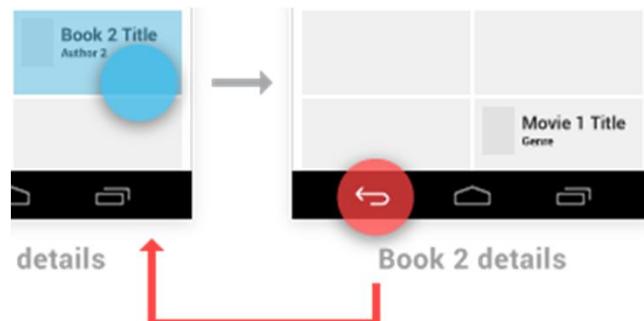
- People get overwhelmed when they see too much at once. Break tasks and information into small, digestible chunks. Hide options that aren't essential at the moment, and teach people as they go.



Simplify my life

I should always know where I am

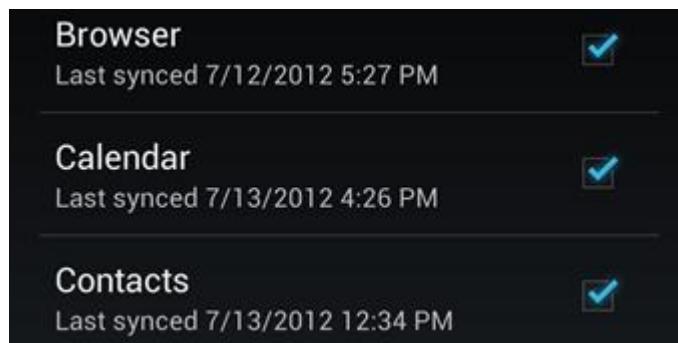
- Give people confidence that they know their way around. Make places in your app look distinct and use transitions to show relationships among screens. Provide feedback on tasks in progress.



Simplify my life

Never lose my stuff

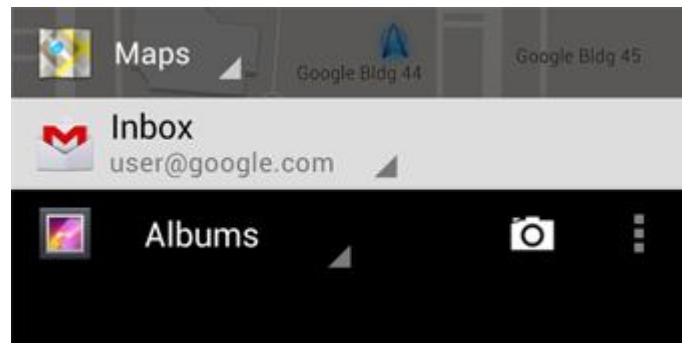
- Save what people took time to create and let them access it from anywhere. Remember settings, personal touches, and creations across phones, tablets, and computers. It makes upgrading the easiest thing in the world.



Simplify my life

If it looks the same, it should act the same

- Help people discern functional differences by making them visually distinct rather than subtle. Avoid modes, which are places that look similar but act differently on the same input.



Simplify my life

Only interrupt me if it's important

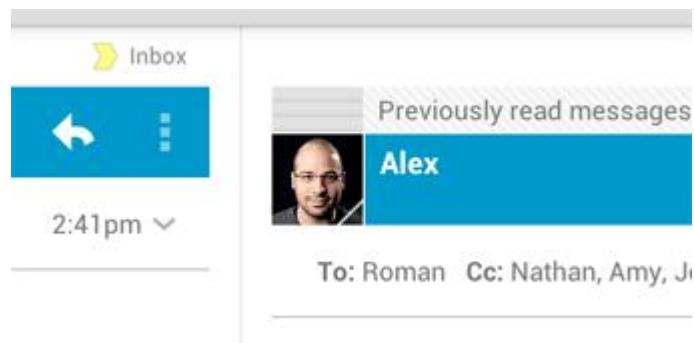
- Like a good personal assistant, shield people from unimportant minutiae. People want to stay focused, and unless it's critical and time-sensitive, an interruption can be taxing and frustrating.



Make me amazing

Give me tricks that work everywhere

- People feel great when they figure things out for themselves. Make your app easier to learn by leveraging visual patterns and muscle memory from other Android apps. For example, the swipe gesture may be a good navigational shortcut.





Make me amazing

It's not my fault

- Be gentle in how you prompt people to make corrections. They want to feel smart when they use your app. If something goes wrong, give clear recovery instructions but spare them the technical details. If you can fix it behind the scenes, even better.

Insert SIM card

Turn off your phone, remove the battery, and carefully insert your SIM card with the gold contact side down. The cut-off corner should end up furthest away from the battery.

Make me amazing

Sprinkle encouragement

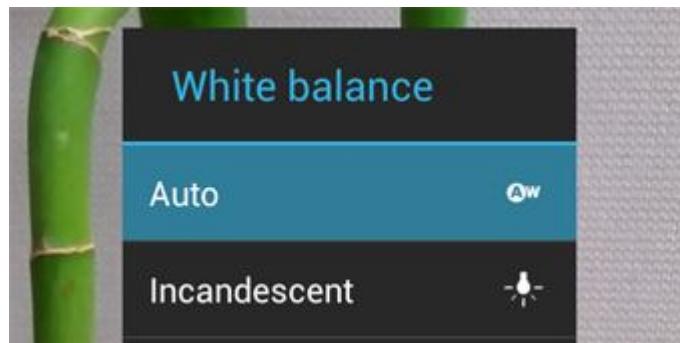
- Break complex tasks into smaller steps that can be easily accomplished. Give feedback on actions, even if it's just a subtle glow.



Make me amazing

Do the heavy lifting for me

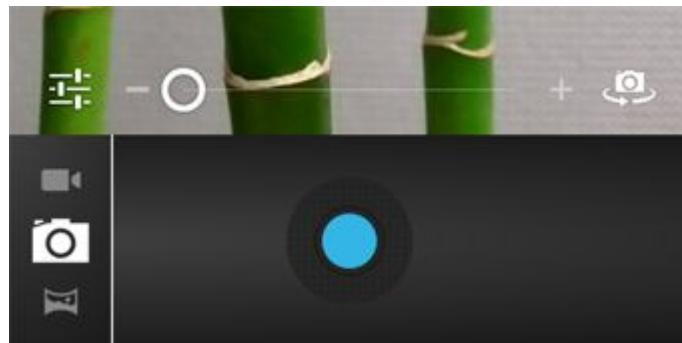
- Make novices feel like experts by enabling them to do things they never thought they could. For example, shortcuts that combine multiple photo effects can make amateur photographs look amazing in only a few steps



Make me amazing

Make important things fast

- Not all actions are equal. Decide what's most important in your app and make it easy to find and fast to use, like the shutter button in a camera, or the pause button in a music player.



UI Overview

Home screen

- Customizable
- Houses app shortcuts, folders and widgets
- Favorites Tray at the bottom always keeps your most important shortcuts and folders in view
- Access the entire collection of apps and widgets by touching the All Apps button at the center



UI Overview

All Apps screen

- Lets you browse the entire set of apps and widgets that are installed on your device
- Users can drag an app or widget icon from the All Apps screen and place it in any empty location on any Home Screen.



UI Overview

Recents Screen

- Recents provides an efficient way of switching between recently used applications.
- Provides a clear navigation path between multiple ongoing tasks
- Organized in reverse chronological order with the most recently app at the bottom
- Switch to an app by touching it
- Remove an item by swiping left or right

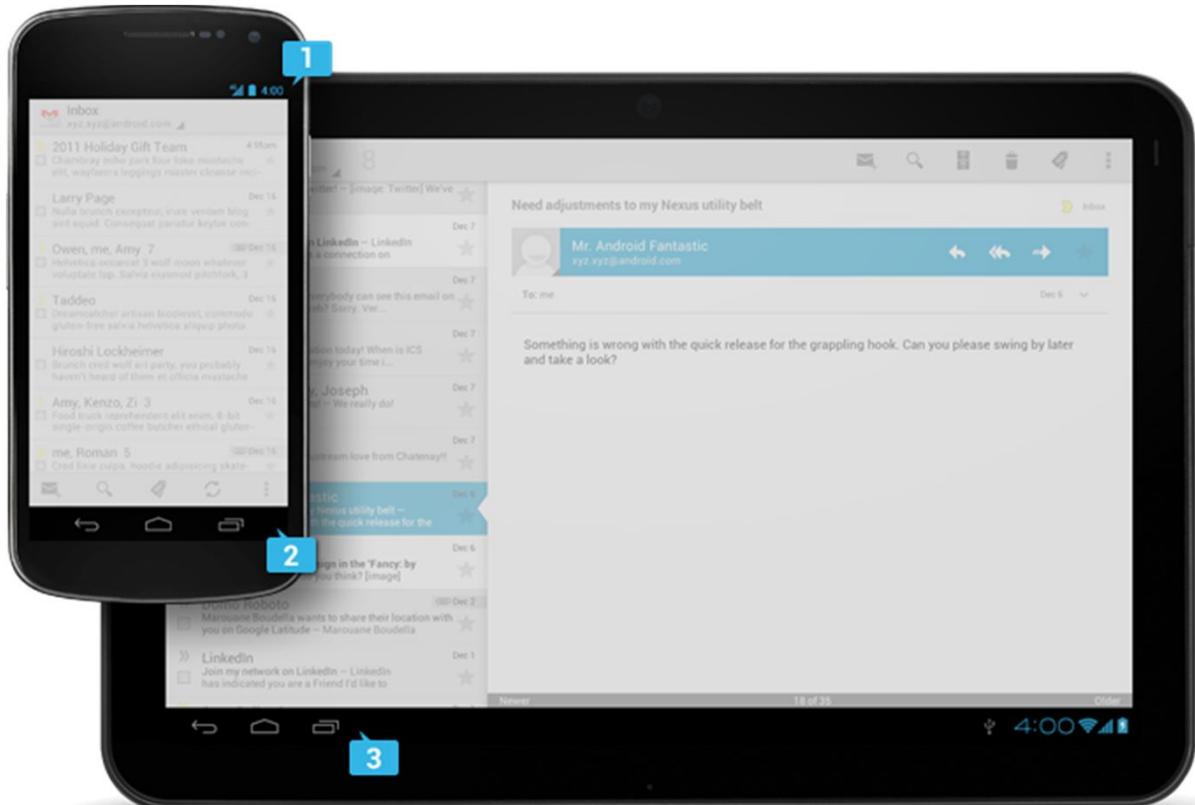


UI Overview

System Bars

- The system bars are screen areas dedicated to the display of notifications, communication of device status, and device navigation

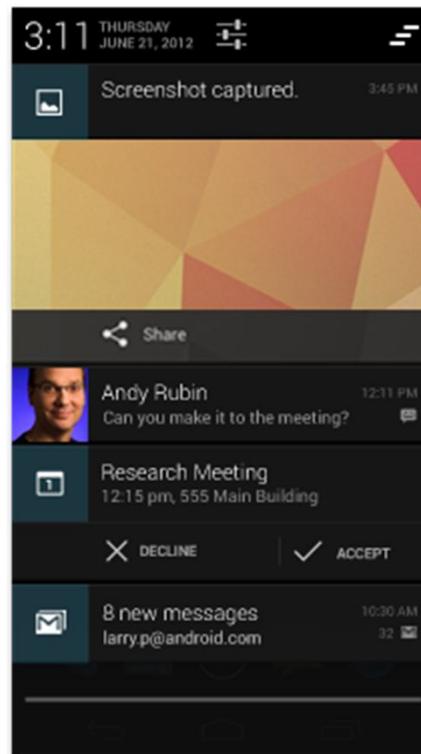
- 1. Status Bar
- 2. Navigation Bar
- 3. Combined Bar



UI Overview

Notifications

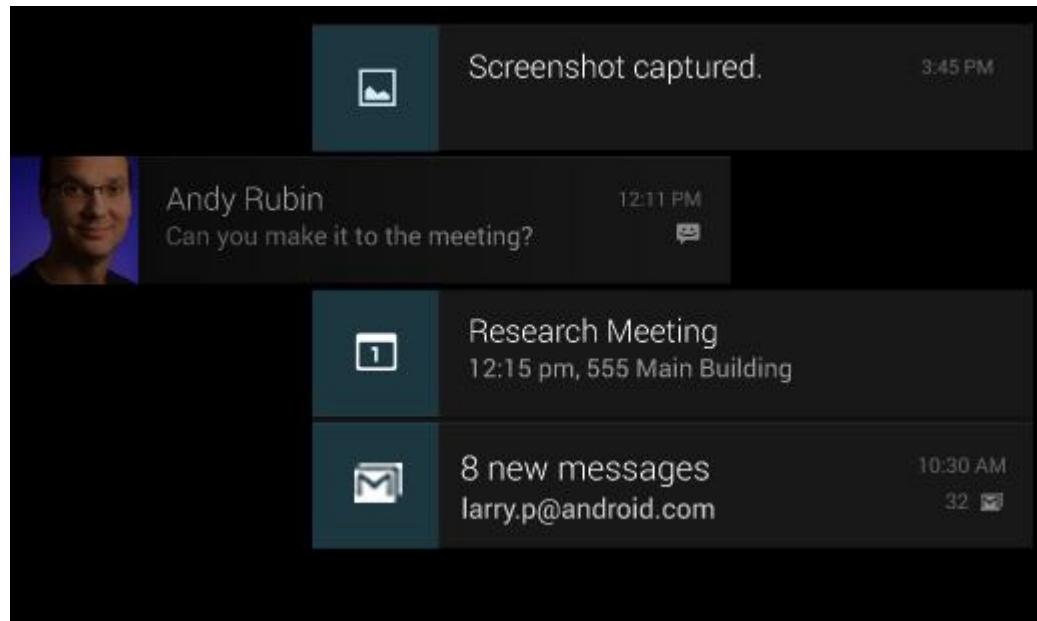
- Notifications are brief messages that users can access at any time from the status bar.
- They provide updates, reminders, or information that's important, but not critical enough to warrant interrupting the user.
- Open the notifications drawer by swiping down on the status bar.
- Touching a notification opens the associated app



UI Overview

Notifications

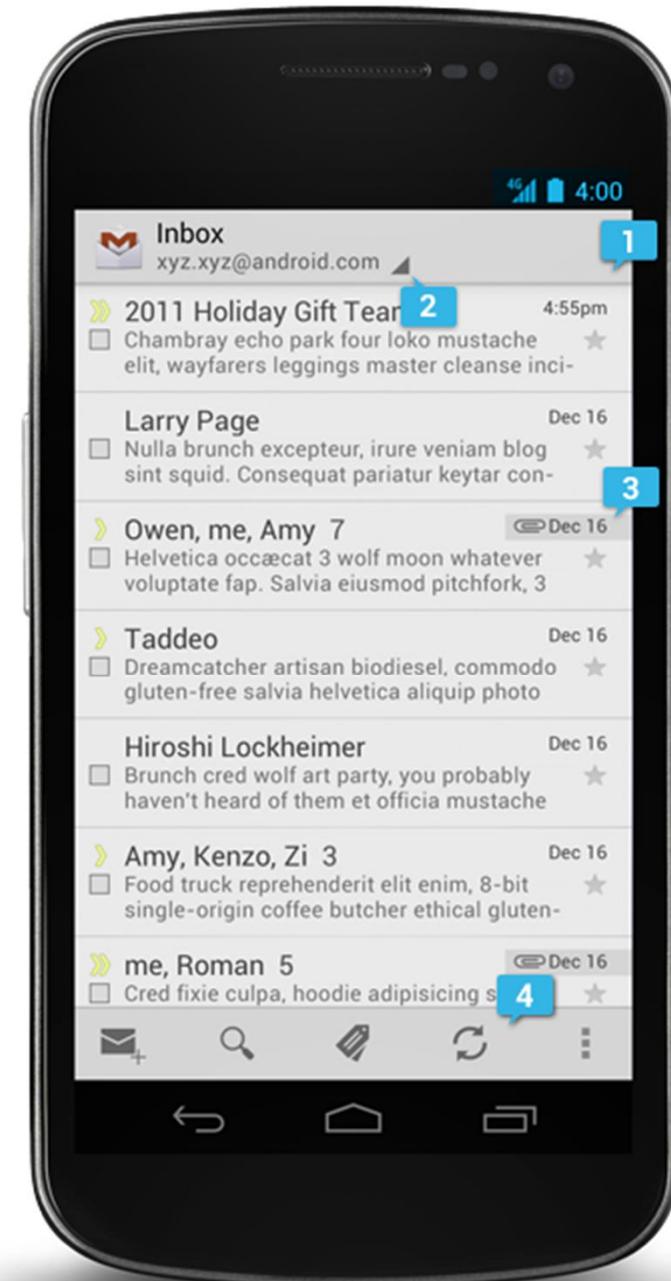
- Notifications can be expanded to uncover more details and relevant actions. When collapsed, notifications have a one-line title and a one-line message. The recommended layout for a notification includes two lines. If necessary, you can add a third line.
- Swiping a notification right or left removes it from the notification drawer.



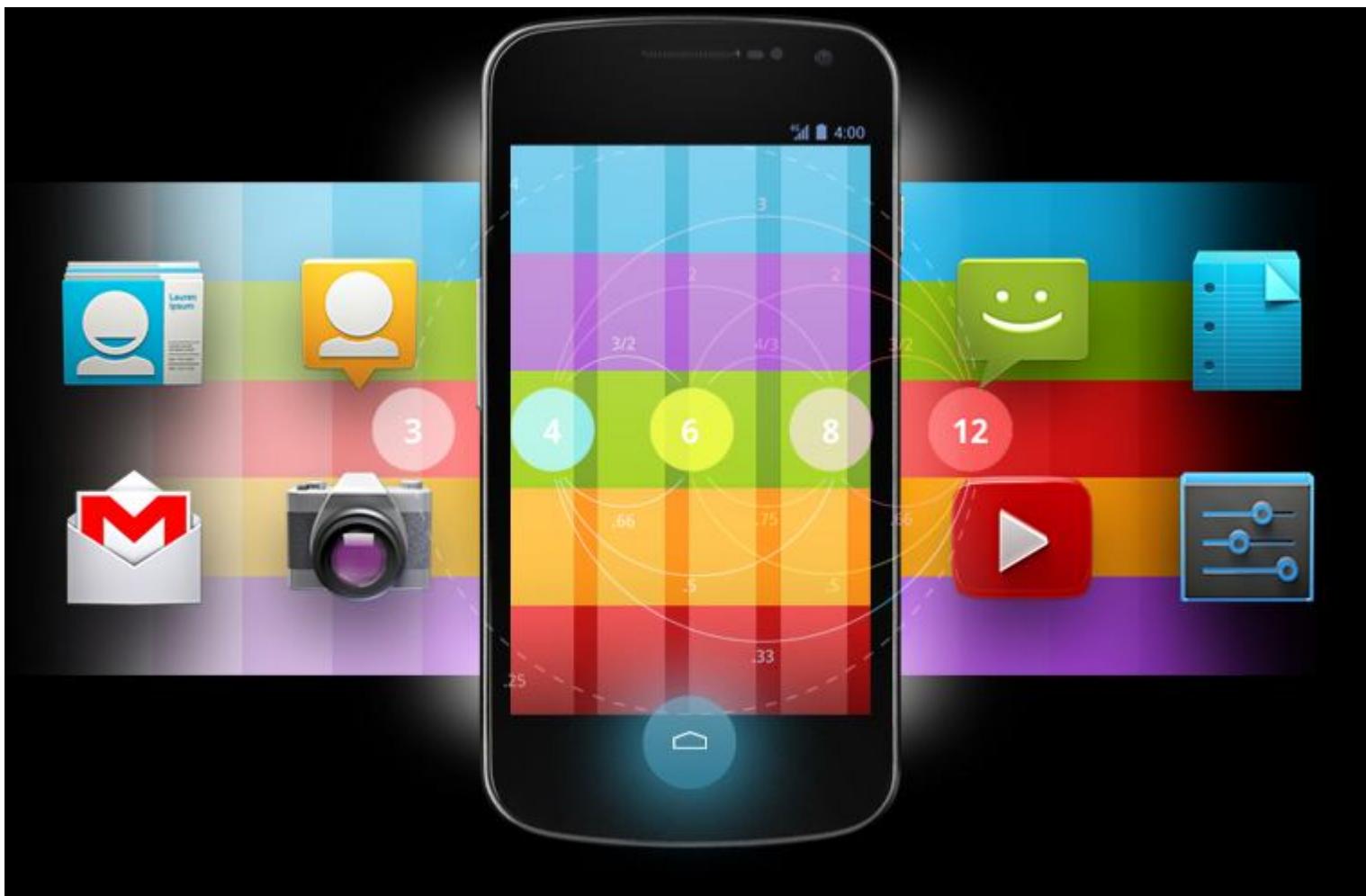
UI Overview

Common App UI

- 1. Main Action Bar
 - Command and control center
- 2. View Control
 - Switch between different views
- 3. Content Area
 - Space where content of app is displayed
- 4. Split Action Bar
 - To distribute actions across additional bars located below the main action bar or at the bottom of the screen



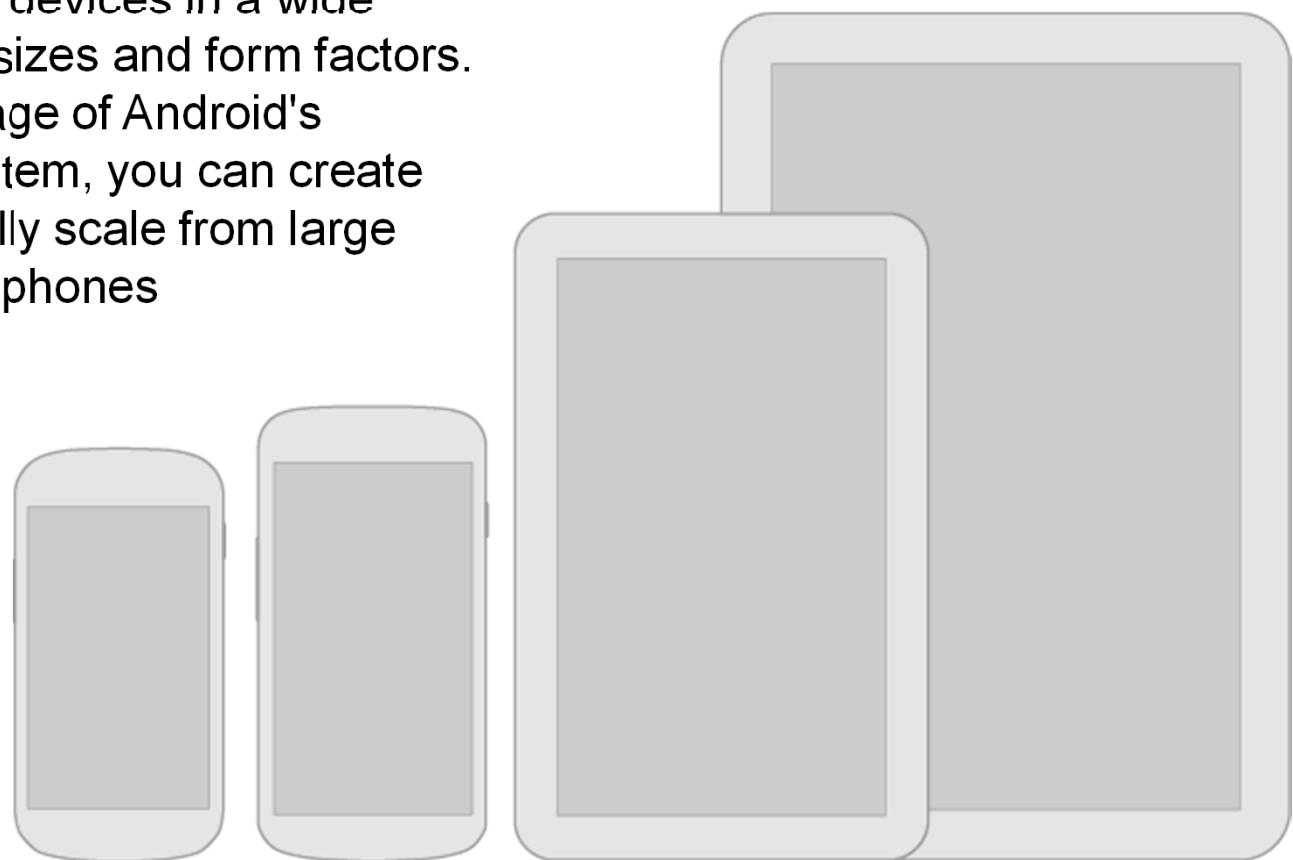
Style



Style

Devices and Displays

- Android powers millions of phones, tablets, and other devices in a wide variety of screen sizes and form factors.
- By taking advantage of Android's flexible layout system, you can create apps that gracefully scale from large tablets to smaller phones

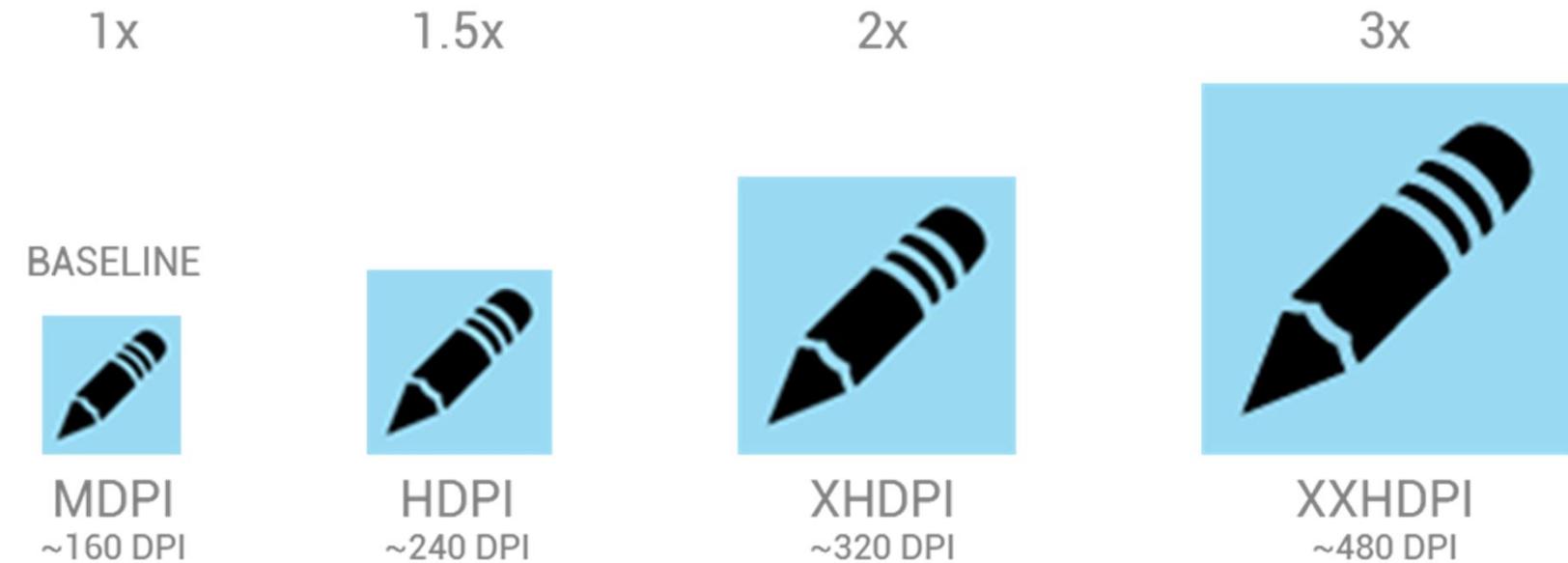




Style

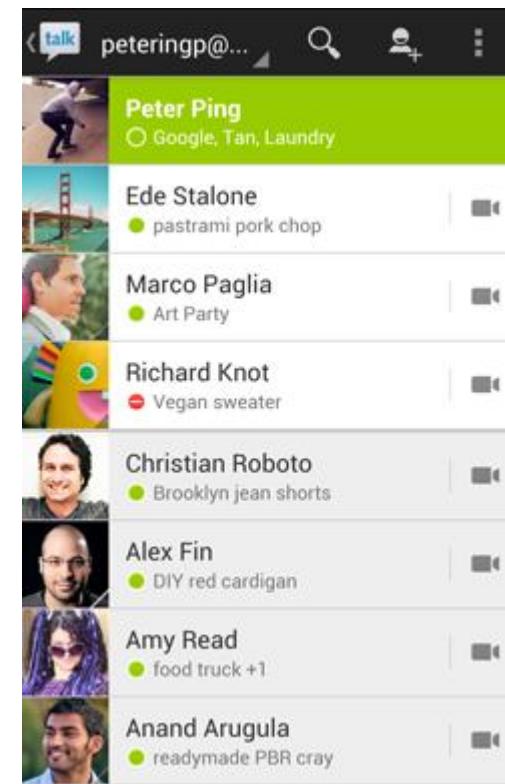
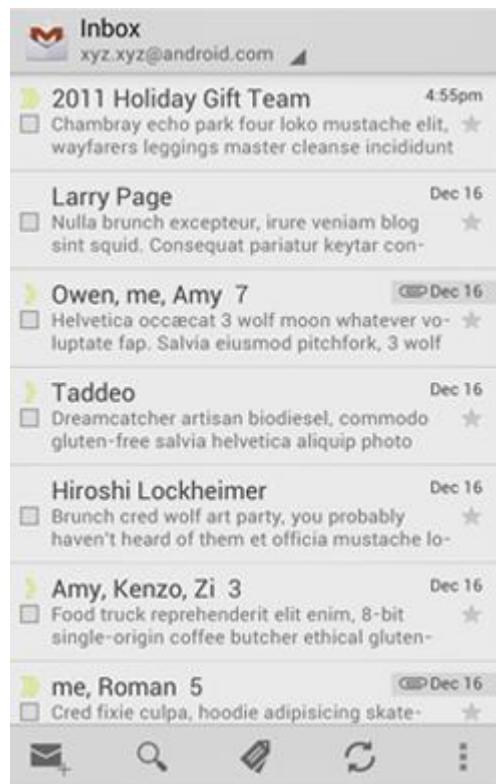
Devices and Displays

- Be flexible
- Optimize layouts
- Assets for all



Style

Themes





Touch Feedback

States

Normal	REMAINS STATIC
Pressed	ILLUMINATES WITH COLOR
Focused	DRAWS 50% OF THE PRESSED VALUE (OPTIONAL 2DP BORDER FILL AT PRESSED VALUE)
Disabled	DRAWS 30% OF THE NORMAL STATE
Disabled & focused	DRAWS 30% OF THE FOCUSED STATE

Touch Feedback

Communication

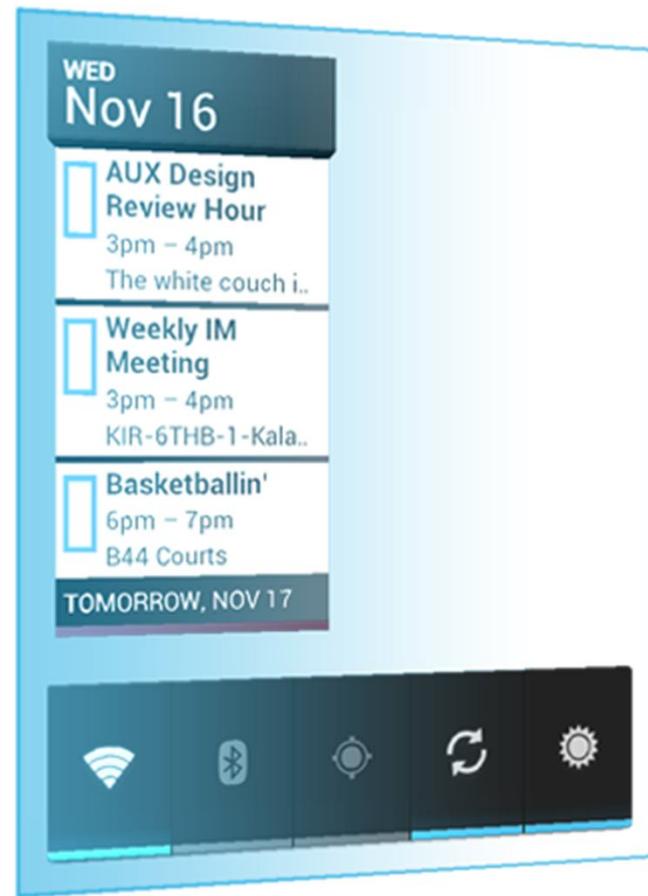
- When your objects react to more complex gestures, help users understand what the outcome of the operation will be.



Touch Feedback

Boundaries

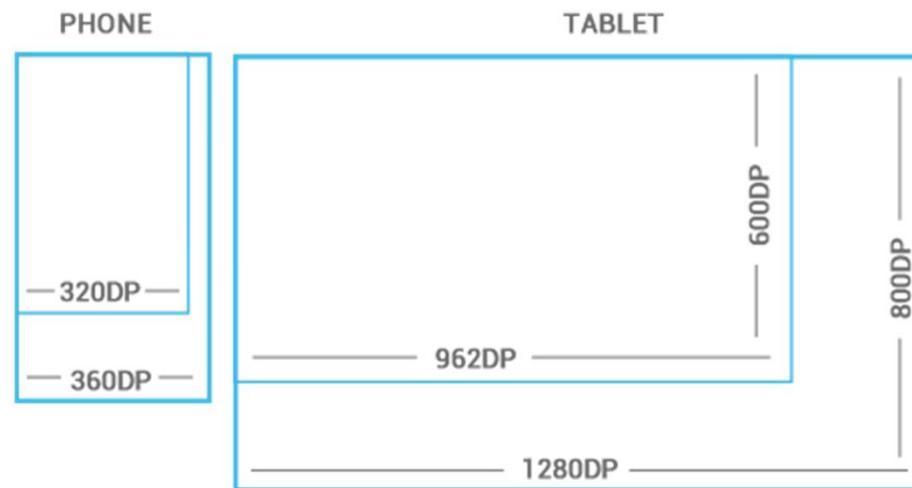
- When users try to scroll past the upper or lower limit of a scrollable area, communicate the boundary with a visual cue.



Metrics and Grids

Space considerations

- Devices vary not only in physical size, but also in screen density (DPI)
- The size buckets are handset (< 600dp) and tablet (>= 600dp).
- The density buckets are LDPI, MDPI, HDPI, XHDPI, and XXHDPI.
- Optimize your application's UI by designing alternative layouts and bitmap images



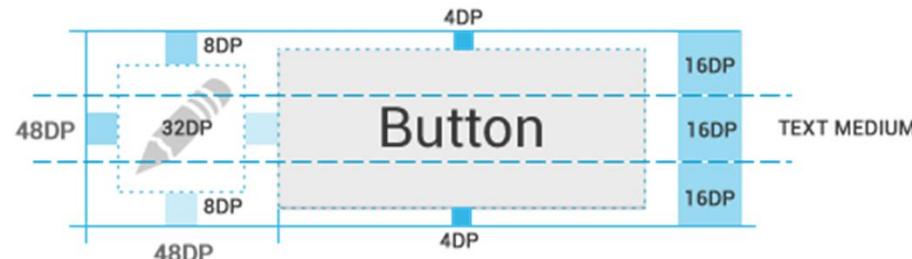
Metrics and Grids

48dp Rhythm

- Touchable UI components are generally laid out along 48dp units



- On average, 48dp translate to a physical size of about 9mm (with some variability). This is comfortably in the range of recommended target sizes (7-10 mm) for touchscreen objects and users will be able to reliably and accurately target them with their fingers.



- Spacing between each UI element is 8dp.



Typography

Typeface

- The Android design language relies on traditional typographic tools such as scale, space, rhythm, and alignment with an underlying grid.
- Ice Cream Sandwich introduced **Roboto**, created specifically for the requirements of UI and high-resolution screens.

Roboto
SUNGASSES
Self-driving robot ice cream truck
Fudgesicles only 25¢
ICE CREAM
Marshmallows & almonds
#9876543210
Music around the block
Summer heat rising up from the sidewalk



Typography

Default Type Colors

- The Android UI uses the following default color styles:`textColorPrimary` and `textColorSecondary`.
- For light themes use `textColorPrimaryInverse` and `textColorSecondaryInverse`.
- The framework text color styles also support variants for touch feedback states when used inside UI elements.

Text Color Primary Dark
Text Color Secondary Dark

Text Color Primary Light
Text Color Secondary Light



Typography

Typographic Scale

- Contrast in type sizes can go a long way to create ordered, understandable layouts. However, too many different sizes in the same UI can be messy.
- The Android framework uses the following limited set of type sizes:

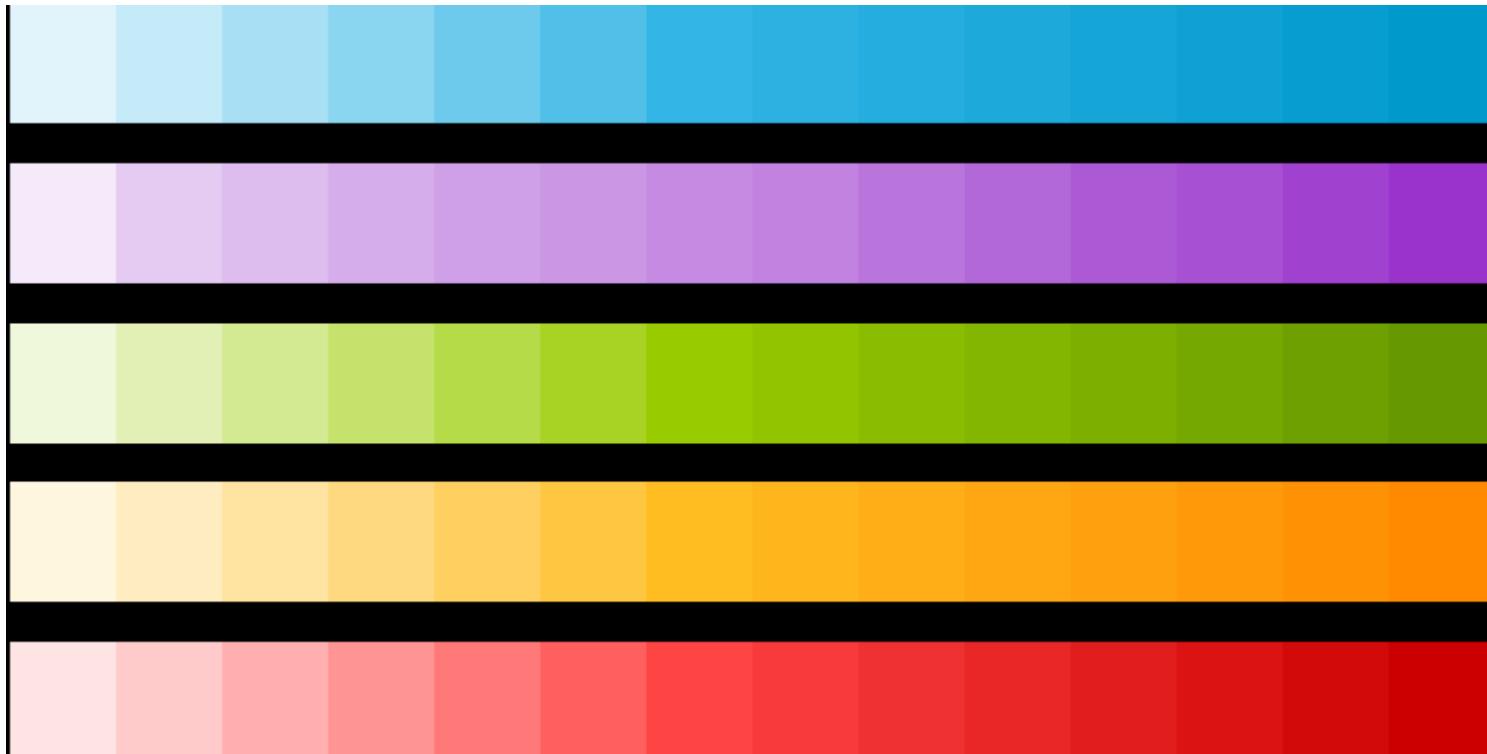
Text Size Micro	12sp
Text Size Small	14sp
Text Size Medium	18sp
Text Size Large	22sp



Color

Palette

- Use color primarily for emphasis. Choose colors that fit with your brand and provide good contrast between visual components



Style

Iconography

- An icon is a graphic that takes up a small portion of screen real estate and provides a quick, intuitive representation of an action, a status, or an app
- When you design icons for your app, it's important to keep in mind that your app may be installed on a variety of devices that offer a range of pixel densities



Iconography

Launcher



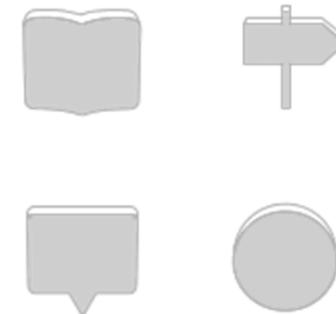
Sizes & scale

- 48x48 dp : for mobile device
- 512x512 pixels : for Google Play.



Proportions

- 48x48 dp, full asset.

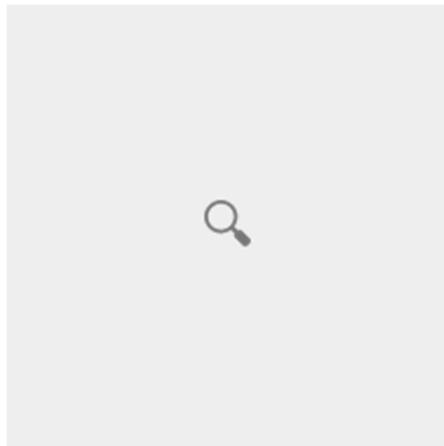


Style

- Use silhouette. 3-D, front view, with perspective

Iconography

Launcher



Sizes & scale

- Action bar icons for phones should be **32x32 dp**.



Proportions

Full asset, **32x32 dp**
Optical square, **24x24 dp**



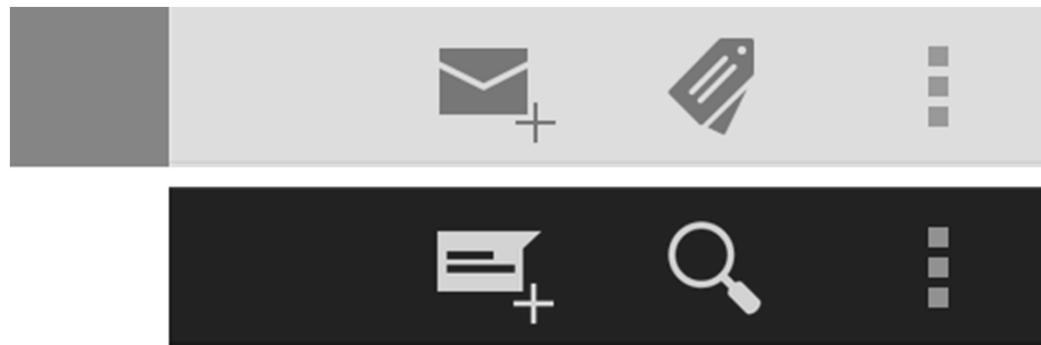
Style

- Pictographic, flat, not too detailed, with smooth curves or sharp shapes

Iconography

Colors

- Colors: #333333
Enabled: 60% opacity
Disabled: 30% opacity
- Colors: #FFFFFF
Enabled: 80% opacity
Disabled: 30% opacity





Designing for Windows Phone





Modern UI (Metro UI) design principles

- Clean, Light, Open, Fast
- Feels Fast and Responsive
- Focus on Primary Tasks
- Do a Lot with Very Little
- Fierce Reduction of unnecessary elements
- Delightful use of Whitespace
- Full Bleed Canvas
- Type is Beautiful, Not Just Legible
- Clear, Straightforward Information Design
- Uncompromising Sensitivity to Weight, Balance and Scale

Inspiration



- Windows Phone design was inspired by sources like Swiss-style print and packaging, simple way-finding graphics found in transportation hubs, and even in Microsoft's own software.



Design Principles

- Pride in craftsmanship
- More with Less
- Fast and Fluid
- Authentically digital
- Win as One

<http://developer.windowsphone.com/en-us/design/principles>

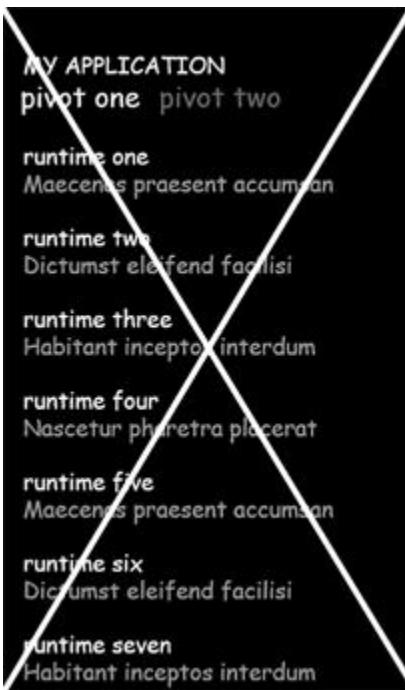
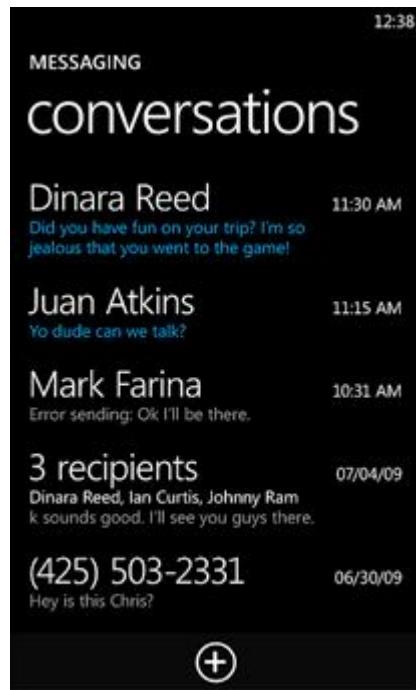
Design Principles

Pride in craftsmanship



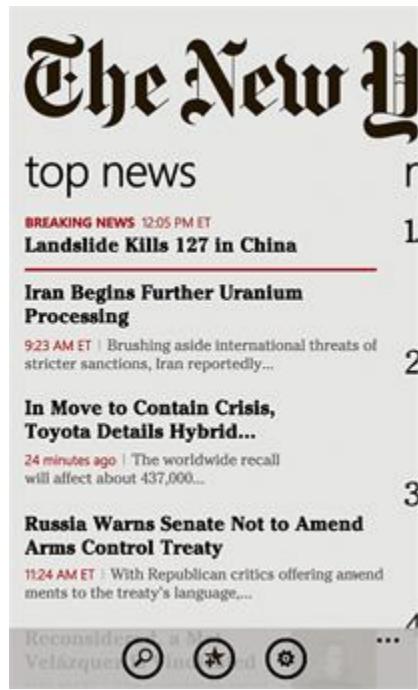
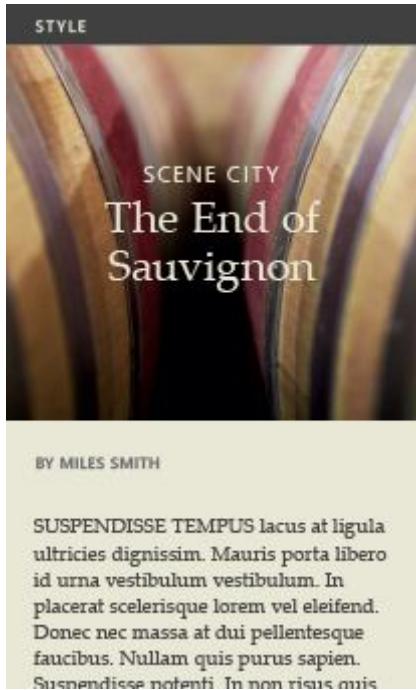
- Devote time and energy to small things that many will see often.
- Engineer the experience to be complete and polished at every stage.
- Attention to detail is an essential component to great app design — so much so that it must be worked into the process from the beginning.
- Get on the grid

Design Principles



- Use Hierarchy and Balance when designing the app
- Good sense of typography can create a sense of structure and rhythm in your app's interface

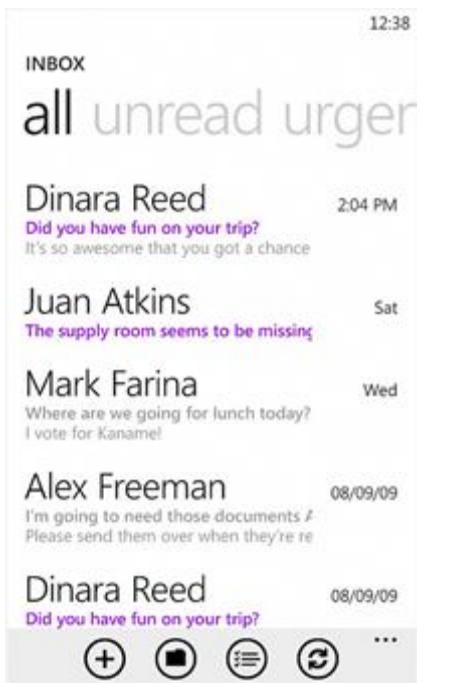
Design Principles



- Find the typography that best reflects your app's personality.

Design Principles

More with less



- By removing the chrome and taking advantage of font, scale, and color, sender names and titles are easier to read

Design Principles

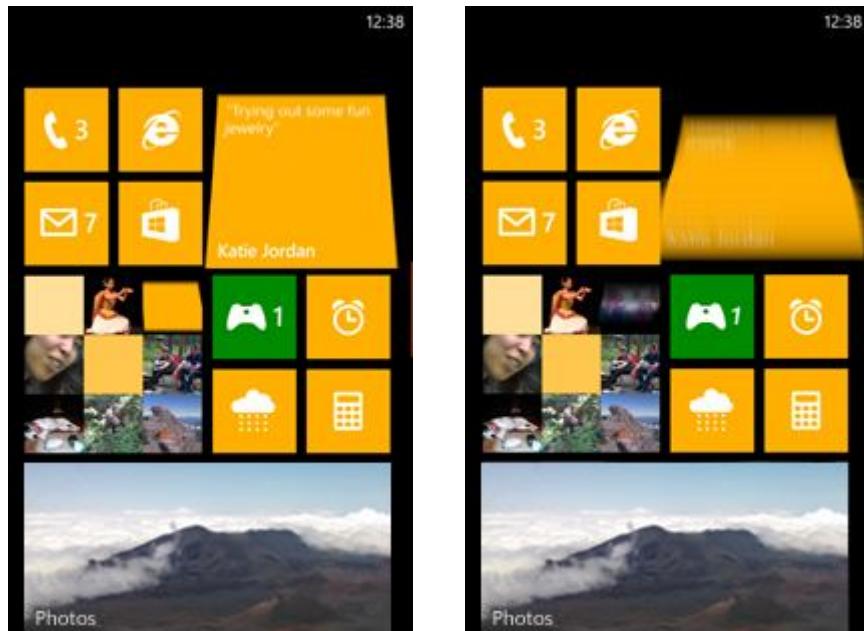
Let your content breathe



- Relevant commands and functionality are apparent and easy to interact with

Design Principles

Fast and Fluid



- Live tiles are responsive, alive and engaging

Design Principles

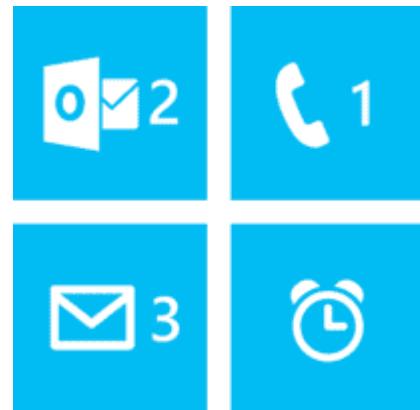
Motion



- Help people learn how your app's interface works

Design Principles

Authentically Digital



Inforgraphic design

- Infographic design vs Iconographic design
- Information delivery is the primary goal, not the wrapper around it.



Inconographic design

Design Principles

Win as One



- Consider how your app will work across form factors and user scenarios



Design Process

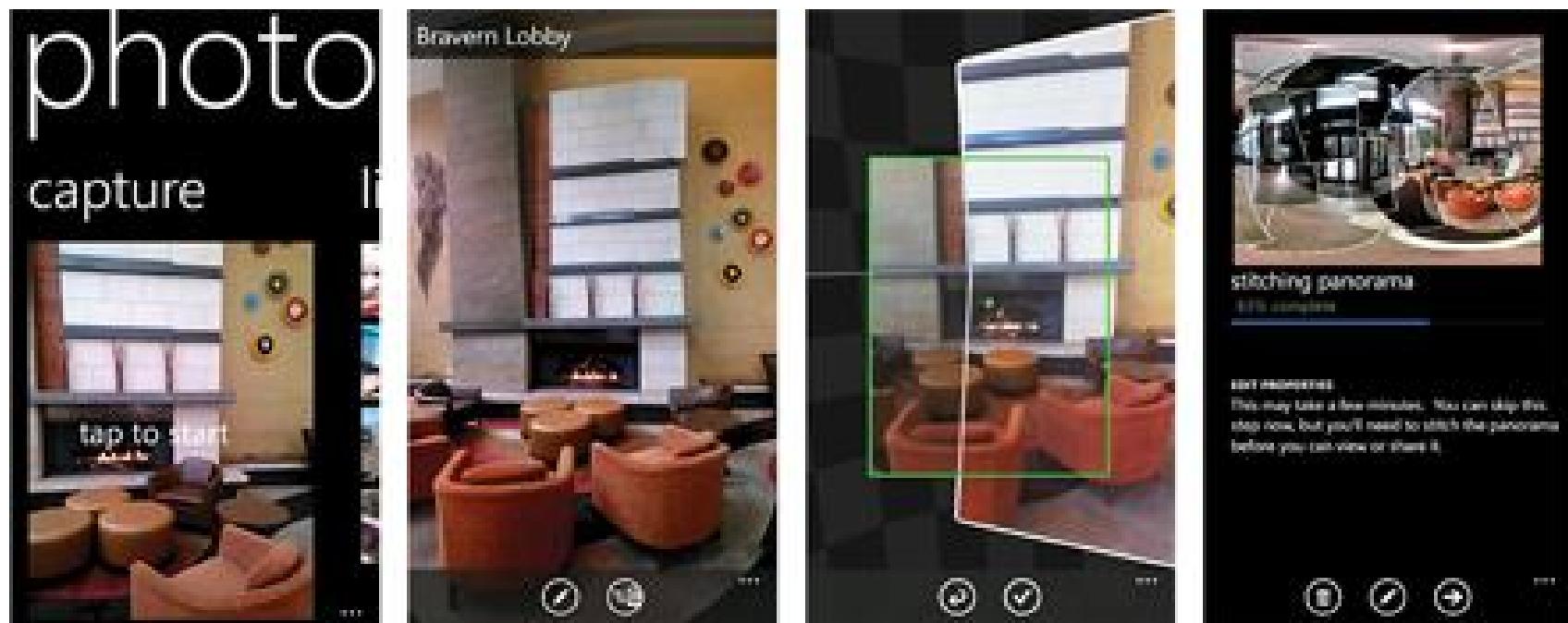
- Concept
- Structure
- Interaction
- Visual
- Prototype
- More info: <http://developer.windowsphone.com/en-us/design/process>

Design Principles



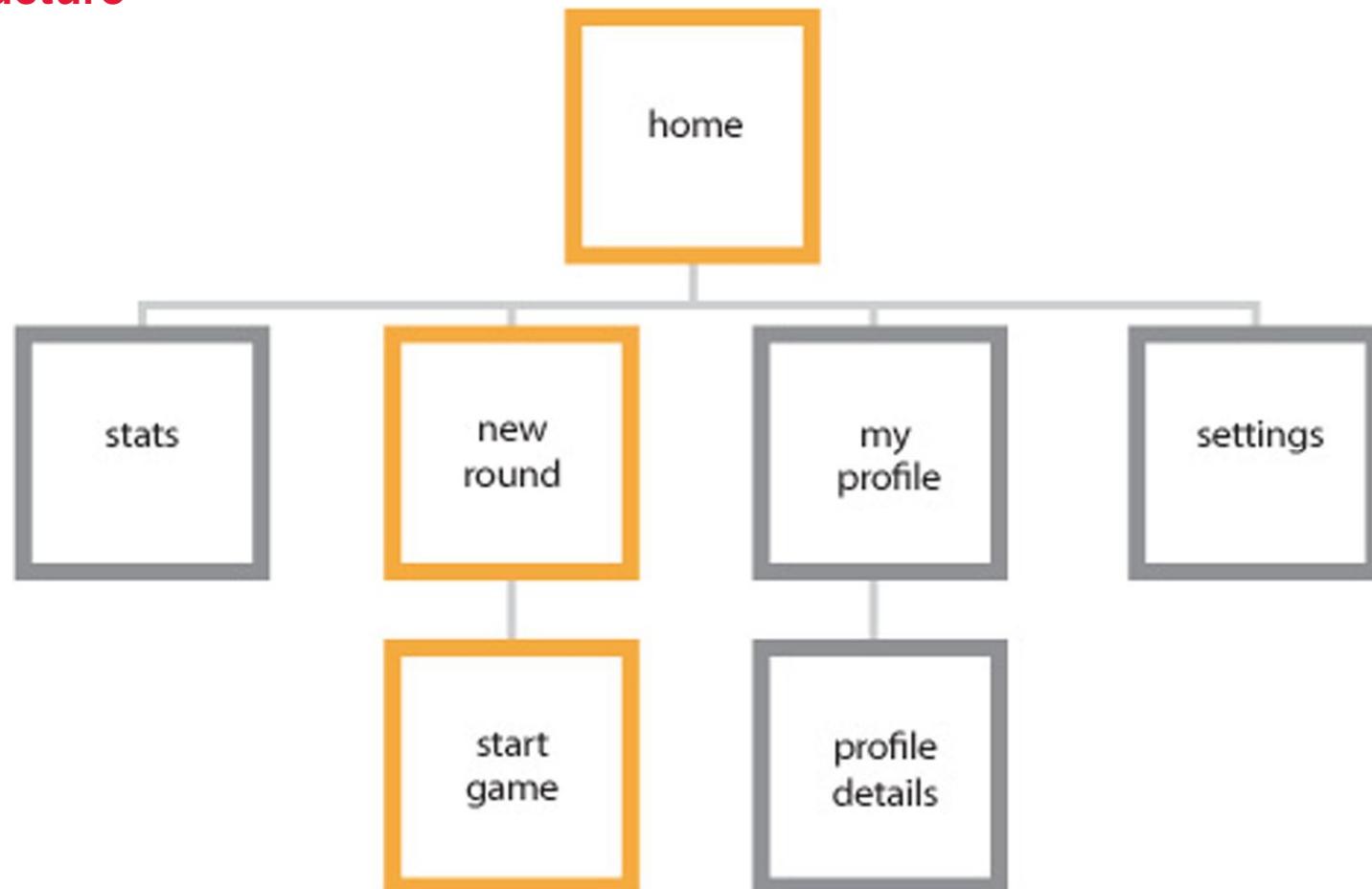
- Focus your app experience
- Start with a broad concept and list all the things that you want to help users do with your app
- Challenge yourself and trim down the list

Case study: Photosynth



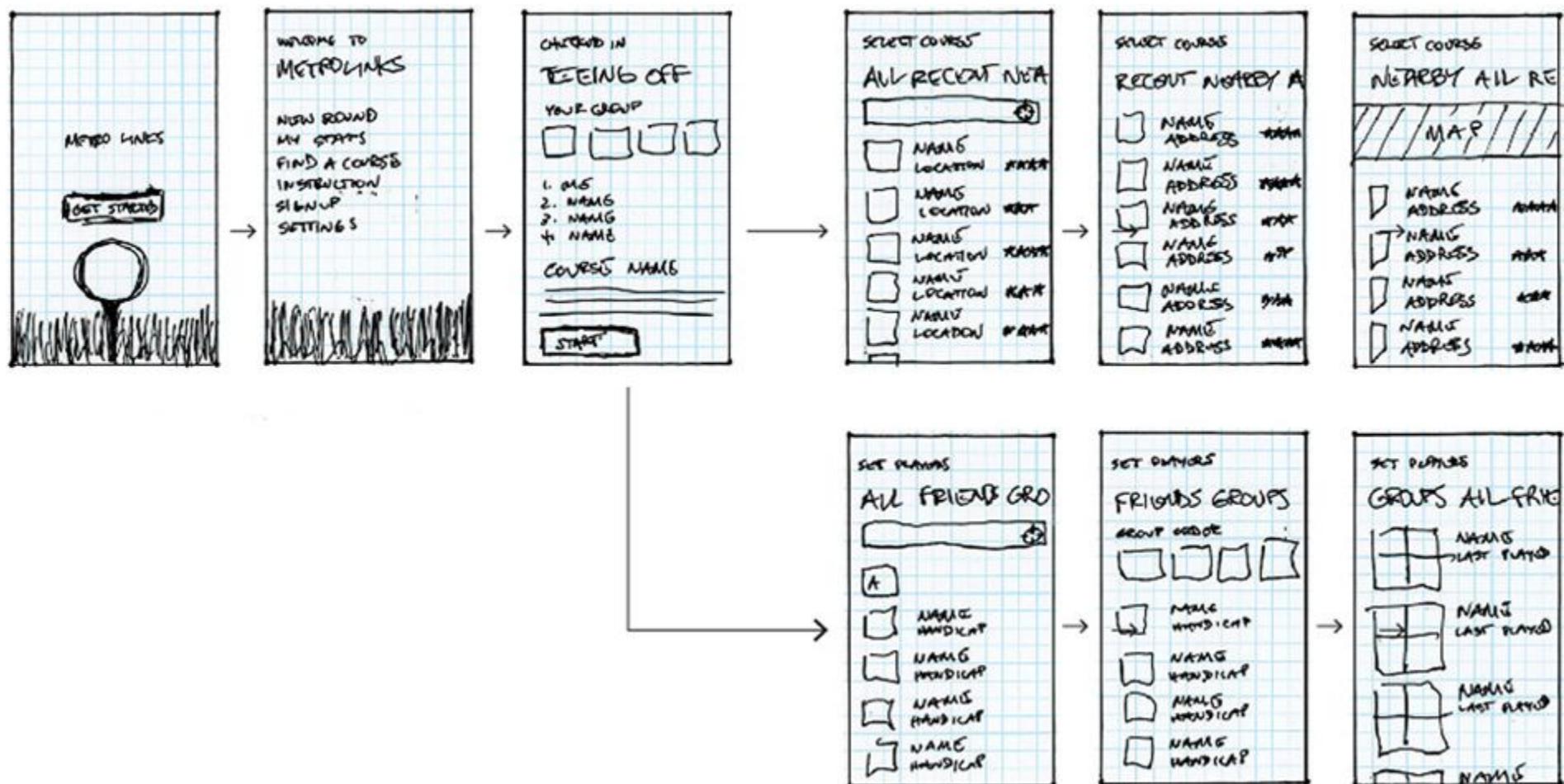
Design Principles

Structure



Design Principles

Interaction



Design Principles

Visual



Design Principles

Prototype





Design library for Windows Phone

- [http://msdn.microsoft.com/library/windowsphone/develop/fa00461b-abe1-41d1-be87-0b0fe3d3389d\(v=vs.105\).aspx](http://msdn.microsoft.com/library/windowsphone/develop/fa00461b-abe1-41d1-be87-0b0fe3d3389d(v=vs.105).aspx)



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