

UI/UX Principles in Mobile Apps Development

Material Design vs Human Interface Guidelines

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#WWDC19



What's New in iOS Design

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Material Design vs Human Interface Guidelines: A Comparison of UI/UX in Android & iOS

- UI/UX plays a crucial role in mobile app development.
- Material Design is Google's design standard for Android.
- Human Interface Guidelines (HIG) is Apple's design standard for iOS.
- The goal of this comparison is to understand the strengths and weaknesses of both approaches.

Definition and Design Philosophy

Material Design:

- Based on the "material metaphor" concept, which mimics real-world interactions using digital elements.
- Focuses on layering, depth, and responsive animations to enhance user experience.
- Encourages consistency across different screen sizes and devices.

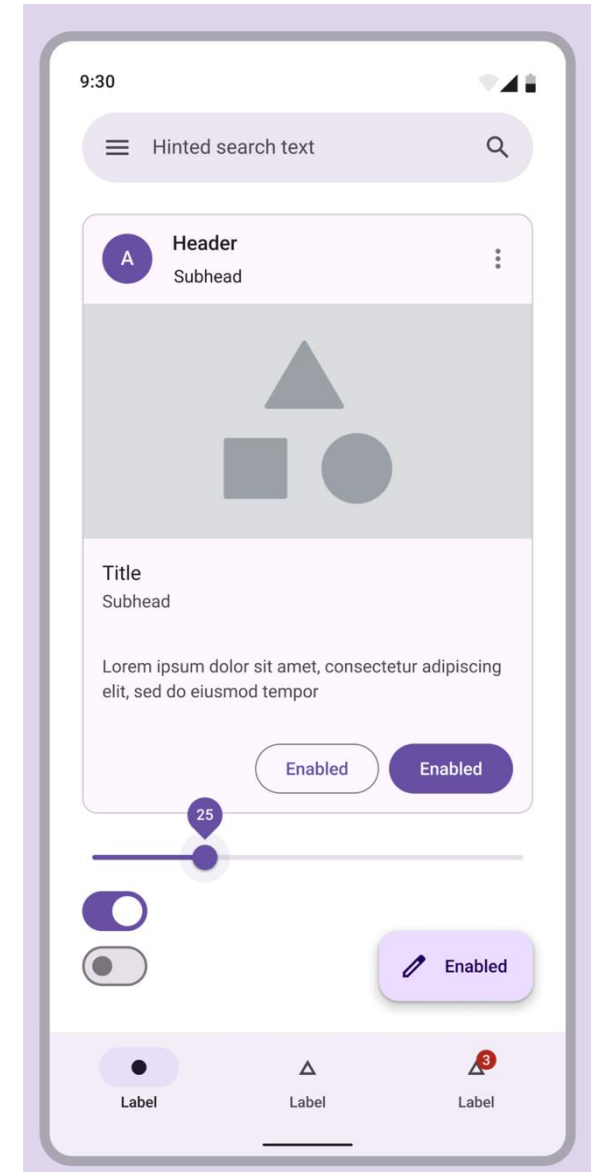
Human Interface Guidelines:

- Focuses on simplicity, balance, and consistency.
- Prioritizes simplicity, clarity, and deference to user content.
- Uses transparency and layering to create a sense of depth without unnecessary embellishments.
- Emphasizes user familiarity through consistent interface design.

Fundamental differences in design philosophy create unique user experiences for each platform.

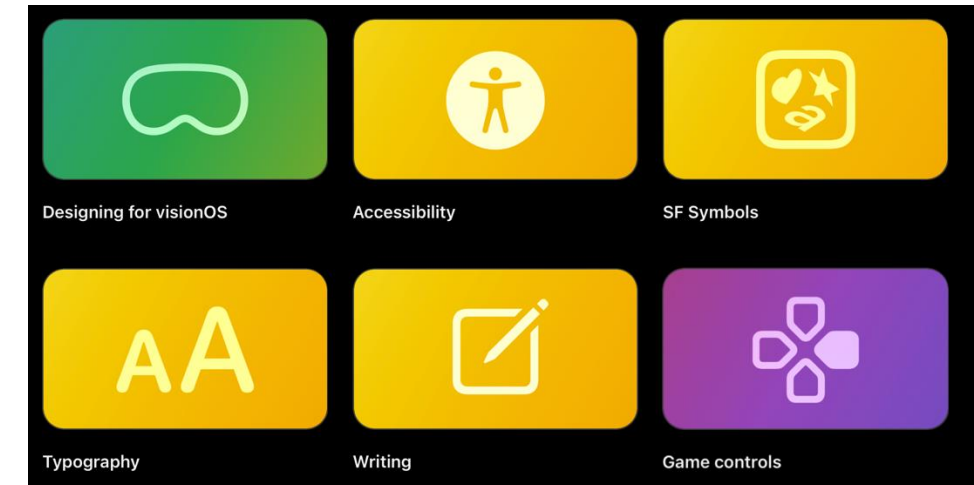
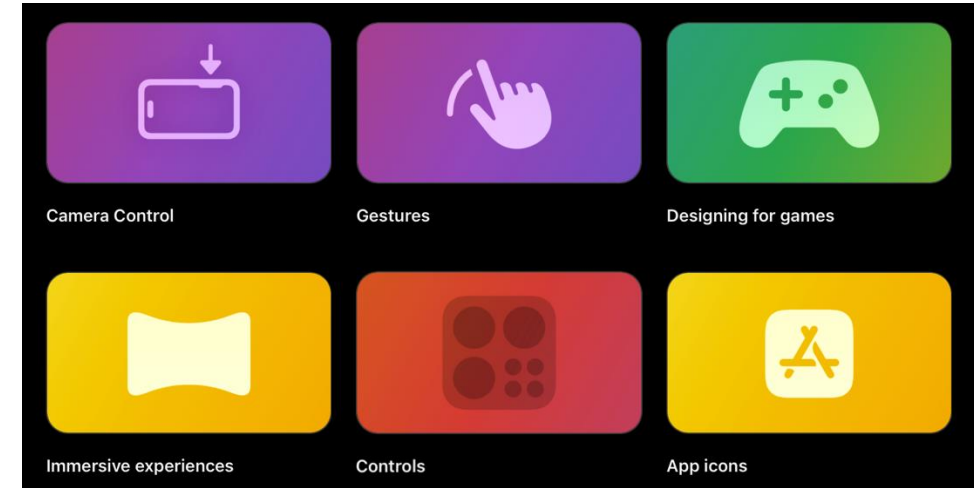
Core Principles of Material Design

- **Material as a Metaphor:** Uses digital surfaces with realistic shadows and movement.
- **Bold Graphics & Intentional Colors:** Encourages vibrant color palettes and strong contrasts.
- **Meaningful Motion:** Animation should support user understanding by providing visual cues.
- **Adaptive Design:** Optimized for different screen sizes and orientations.



Core Principles of Human Interface Guidelines (HIG)

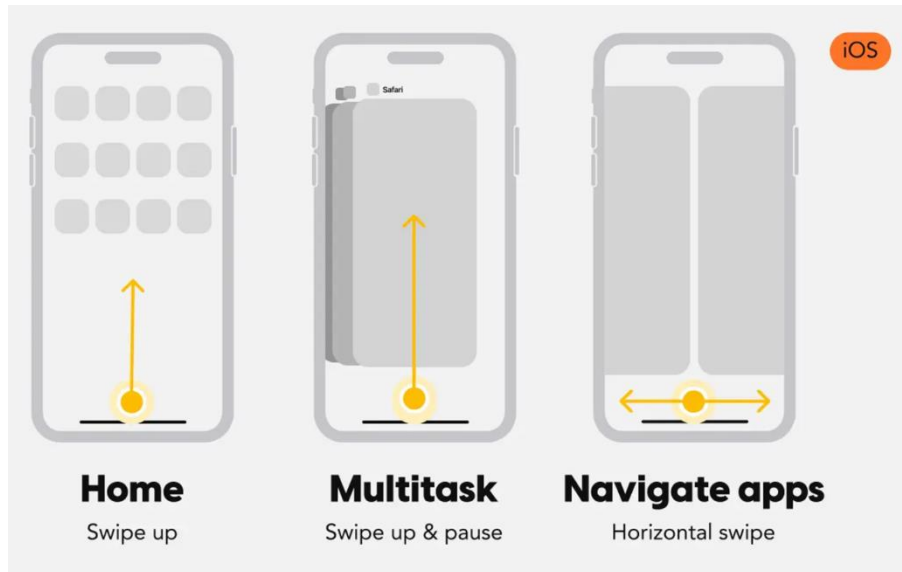
- **Clarity:** The interface should be legible and visually distinct.
- **Deference:** UI elements should support the content without overshadowing it.
- **Depth through Transparency:** Uses layering and blur effects to create hierarchy and separation.
- **Intuitive Navigation:** It relies on familiar interactions and smooth transitions.



Navigation Differences in Android & iOS

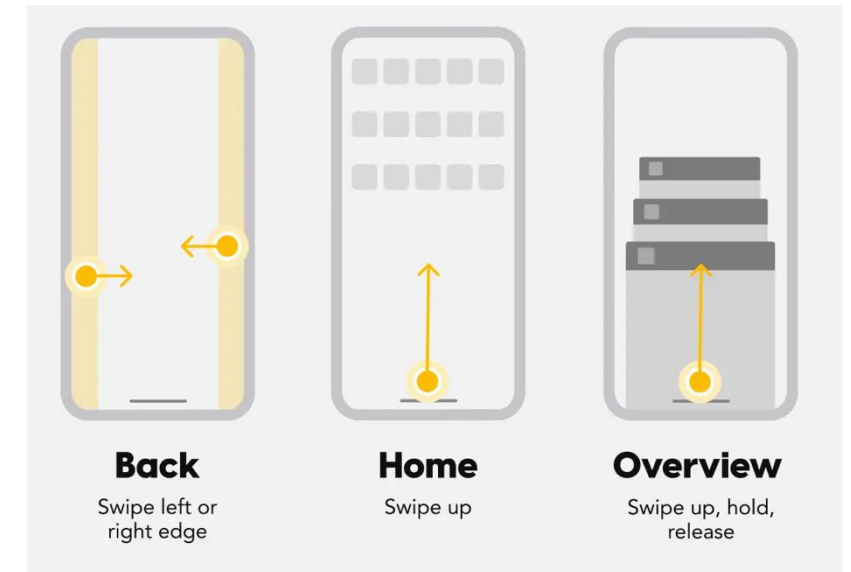
Material Design:

- **Navigation Drawer:** Side menu for quick access to app sections.
- **Top Tabs:** Tabs placed at the top of the screen for easy navigation.
- **Back Button:** Physical or on-screen button for backward navigation.



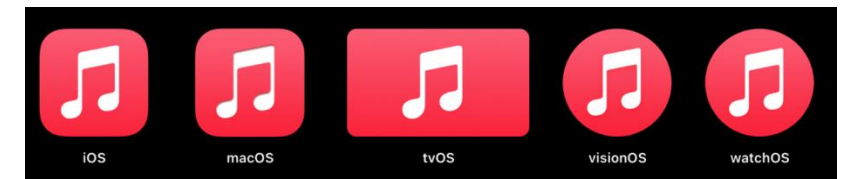
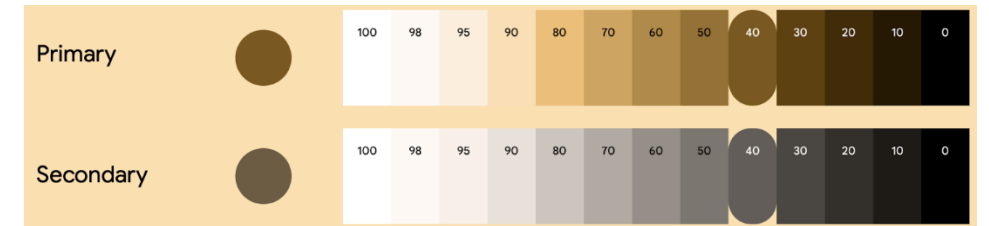
Human Interface Guidelines:







- **Bottom Navigation Bar:** Quick access to primary sections of the app.
- **Hierarchical Navigation:** The back button is in the top-left corner instead of a system-wide back button.
- **Swipe Gestures:** Swiping left or right for navigation within apps.



Visual Elements: Icons, Colors, and Animations

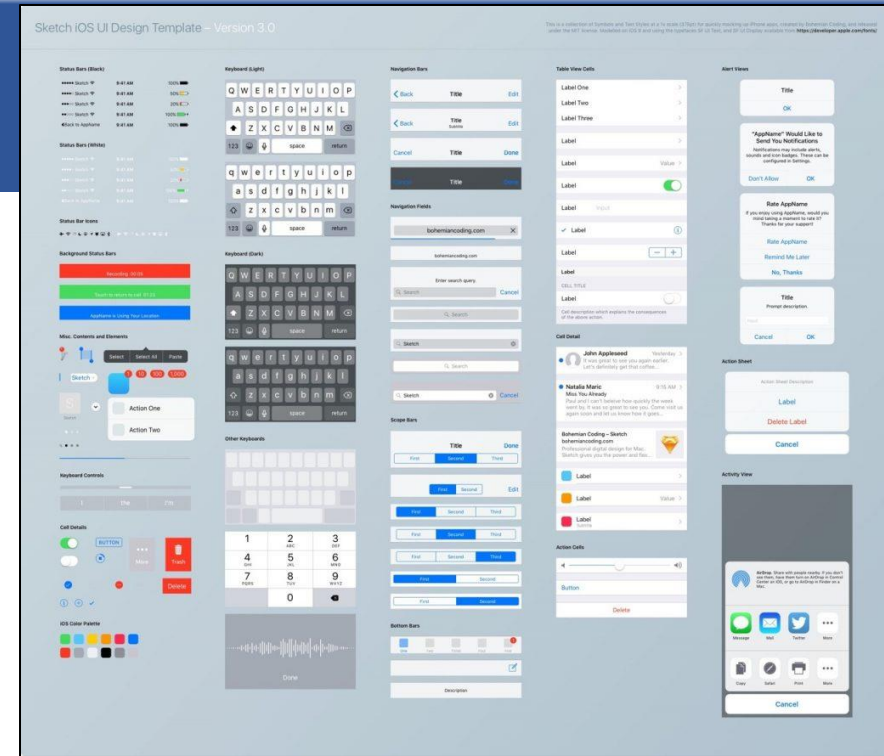
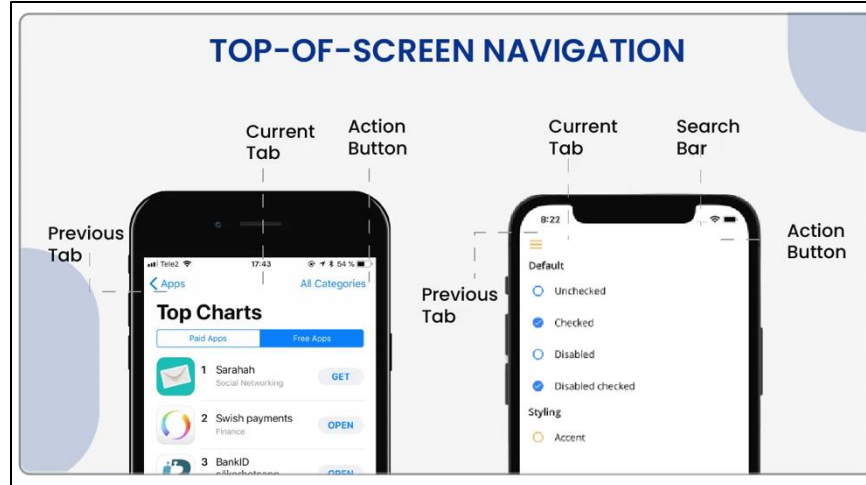
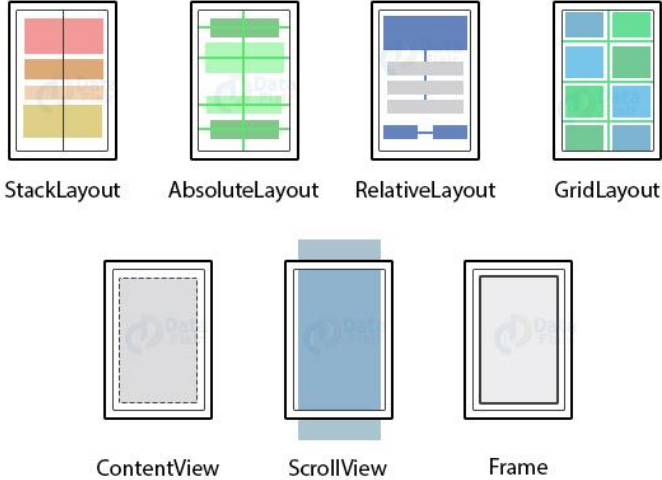
- Material Design:
 - **Colorful Icons:** Bright, detailed, and expressive icons.
 - **Shadows & Elevation:** Uses shadows to create depth and hierarchy.
 - **Explicit Animations:** Smooth transitions and meaningful movement
- Human Interface Guidelines:
 - **Flat & Monochromatic Icons:** Minimalistic and simple design.
 - **Transparency & Blur:** Subtle layering for depth without heavy shadows.
 - **Natural Animations:** Transitions are seamless and fluid.



Name	SwiftUI API	Default (Light)	Default (Dark)	Access (Light)
Red	red	 R 255 G 59 B 48	 R 255 G 69 B 58	
Orange	orange	 R 255 G 149 B 0	 R 255 G 159 B 10	

Layout

Types of Android Layouts



Human Interface Guidelines:

- **Alignment and Spacing:** Focuses on precise alignment and spacing to enhance readability and organization, preventing visual clutter.
- **Consistency:** Ensures that elements with similar functions maintain a uniform appearance, making navigation intuitive for users

Material Design:

- **Grid-Based Layout:** Uses a responsive grid system with columns, gutters, and margins to maintain structure and consistency.
- **Responsive Design:** It adapts seamlessly to various screen sizes and orientations, ensuring a consistent user experience across devices.

UI Components

Material Design:

- Buttons: Uses Text, Elevated, Filled, and Outlined buttons for various levels of emphasis.
- Cards: Encapsulates related information like images, text, and actions.
- Text Fields: Accepts user input with labels, helper text, and floating hints.
- Navigation Drawer: Hidden side menu for accessing app sections.

Human Interface Guidelines:

- Buttons: Includes System, Detail Disclosure, and Info buttons for various actions.
- Content Views: No direct equivalent to cards, but similar functions are achieved using Collection Views.
- Text Fields: Designed for user input with built-in auto-correction and search capabilities.
- Tab Bar: Persistent bottom navigation for switching between app sections.

Impact on User Experience (UX)

- Android offers more flexibility and customization.
- iOS provides a more consistent and structured experience.
- UI differences influence how users perceive and interact with apps.

Conclusion and Best Practices

- Developers must understand the design philosophy of both platforms.
- Cross-platform applications must consider these UI/UX differences.
- Follow official guidelines to design optimal applications for each platform.