Lesson 1: iOS Human Interface Guidelines, Part 1

INTRODUCTION

Apple has put together the iOS Human Interface Guidelines document to help developers create a solid app founded on Apple's design principles.

LESSON OBJECTIVES

By the end of this lesson, the student will be able to:

1. Describe the application definition statement and what is included in the statement.
2. Identify the ways that users hold their devices.
3. Explain why it is important to follow the HIG guidelines.
4. Discuss when to create custom controls.
5. Explain saving documents and the HIG preference for user generated content to be saved automatically.
6. Discuss why repurposing standard UI controls to new purposes is not recommended by the HIG.
7. Identify the standard meaning of a pinch, swipe, drag and tap.
8. Demonstrate how to add a tab with an icon and title that is associated with a scene to the tab bar.
9. Create an application that uses the Tab Bar template.

LEARNING SEQUENCE

Required Reading	Read the following: • Lesson 1: Human Interface Guidelines • iOS Human Interface Guidelines accessed through the Apple Developer website > iOS icon > iOS Human Interface Guidelines
Resources	Review the following: • Detect Shake Gesture on a Device • How to create a web app that looks like a iOS7 native app • Top 10 tips for naming your app • Design an iPad app UI in Photoshop
Assignments	Complete the following: 1. Practice Exercise—Tab It

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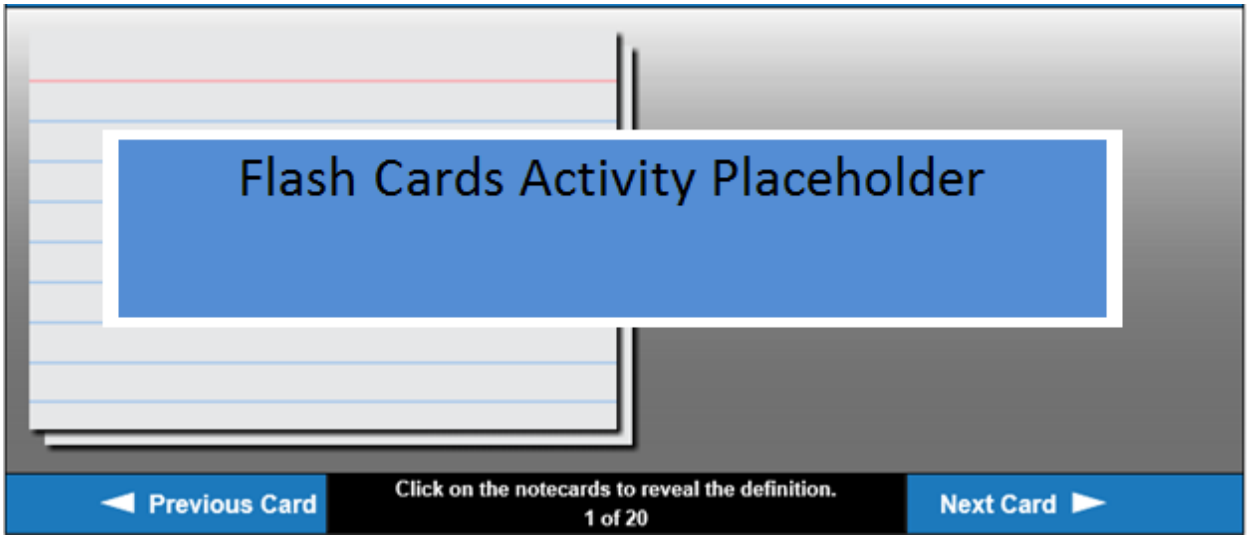
KEY TERMS

As you read your lesson, pay close attention to the key terms and phrases listed throughout the lesson. These terms and concepts are important to your understanding of the information provided in the lesson.



INSTRUCTION

An Overview

Access the Human Interface Guideline on the Apple Developer website.

1. Click the iOS icon.
2. Select iOS Human Interface Guidelines from the Featured Content.

This lesson and the next provide an overview of the Human Interface Guidelines document. Review the entire document. It includes examples and outlines best practices for iOS app development.

Platform Characteristics

There are a few unique characteristics to consider when developing an app for an iOS device. When dealing with the iOS platform, the visuals and the display are important. For example, a user will change the orientation of the device. Apps use gestures rather than clicks, so a developer is dealing with a touch interface rather than a mouse and a click interface. A user interacts with one app at a time and iOS apps have a single window unless there is a connection to an external display. On-screen help should be minimal. The app needs to be designed so that it is intuitive—a tutorial should not be required. Available preferences for an app should be linked into the Settings App.

Display Characteristics

The minimum recommended tap size is 44 by 44 points. The reason this recommendation is given in points instead of pixels is that in standard resolution, one pixel equals one point. In retina resolution, two pixels equal one point.

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There are different screen sizes and resolutions that a developer needs to deal with. The display is the important component in terms of design. Quality matters both in the design and the artwork used.

Orientation Changes

The expected starting orientation for the iPhone or iPod Touch is portrait which means that it is taller than it is wide. For the iPad, though, there is no expected starting orientation. Orientation needs to be part of the design. There are actually four orientations:

- Portrait
- Portrait upside-down
- Landscape left
- Landscape right

Gestures Rather than Clicks

Since iOS devices are capable of multi-touch interaction, a developer needs to be aware of the following gestures as shown in the table below:

Gesture	Meaning
Tap	Select
Drag	Moving an element
Flick	Scroll or pan, a quick motion
Swipe	One finger deletes; four fingers in the iPad switches between apps
Double tap	Zoom in/zoom out
Pinch	Zoom in/zoom out
Touch and hold	In text – add text or edit
Shake	Undo or redo

Read the tutorial, Detect Shake Gesture on a Device.

App Characteristics

Only one app is visible in the foreground at one time. Multiple apps may be running, but the user is only interacting with one app at a time. Apps cannot be tiled the way that programs can be on a computer.

A developer has a choice for setting app preferences. The preferred way is to use the Settings App to set user preferences rather than a preference setting within the app itself. The advantage of using the Settings App is that it provides a centralized point for users to go to for all settings.

Apps should be designed so that help is not necessary or it is minimal. An app should be designed with a specific focus, not designed to do everything in the world. A simple design will ensure that a special help module is not necessary.

Types of Software

Mobile devices can run:

1. iOS apps
2. Web content (through the Safari browser)

Web content is hosted on a website and visited with a browser like Safari. These different types of content include:

- Web apps which behave like iOS apps for a specific purpose. The difference is that there is no app installed on the iOS device.
- Optimized web pages specifically optimized for Safari Mobile and correctly scales content.
- Compatible web pages which do not take extra steps to optimize for Safari Mobile, but they are viewable on a mobile device.

Read the tutorial, How to create a web app that looks like a iOS7 native app (Part 1: Styling and Part 2: Behavior).

Human Interface Principles

Developers should keep the following in mind when designing an app:

1. Aesthetic Integrity: how well the appearance integrates into how well the app works.
2. Consistency: follows an iOS app design pattern and has internal consistency within the app.
3. Direct Manipulation: can interact with a device using recognized touches.
4. Feedback: lets users know that they have interacted with a part of the app.
5. Metaphors: use graphical images and gestures to create metaphors to make the app more intuitive for the user.
6. User Control: Users should be able to control what happens in the app.

Application Design Strategies

1. An Application Definition Statement is used to keep the design focused. Check back on the application definition statement as the app is being developed. This will ensure that the purpose of the app remains true to its concept.
    - List all of the features that a user may like.
    - Identify the audience.
2. Design the app for a device. This gives the developer an understanding of the iOS User Interface patterns.
    - Controls look interactive
    - Navigation is simple and clear
    - Has user feedback (keep it subtle; for example, when a user touches a button, the button changes color)

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If designing a Universal app, make sure that it will run correctly on both the iPhone and the iPad. If designing a web-based app, make the app look and behave like an iOS app and not a web page.

3. Customize for the task. For example, when designing custom controls or a custom interface, customize for that purpose. The goal of customizing is to make a task easier to understand or accomplish.
    - Be consistent with the theme of the app
    - Base the customization on content, not just to add to the theme
    - Test with users
4. Prototype and Iterate. Use the development cycle which includes the following:
    - Storyboard the app.
    - Prepare a diagram and flowchart the navigation and coding logic.
    - Create a prototype which can be tested, revised, and tested again.

User Experience Guidelines

The focus needs to be on the primary task and include content based on need. For example, the developer should hide or fade the User Interface controls if the user is not interacting with them. Customize controls so that they integrate into the app design, and keep the number of controls down to the minimum needed to make the app work.

Use a top-to-bottom (or top down) scheme. This means that the most often used controls or information should be at the top. Consider how a user holds the device. For example, some users may hold the device in the off-hand or on a surface and use one finger on the dominant hand for touches and gestures. Other users may hold the device in one hand and use the thumb on that hand for touch. Still other users prefer to use the device between both hands using both thumbs for interaction.

Other guidelines include:

- Keep the path through information clear and predictable.
- The main function of the app should be instantly apparent.
- Use understandable terminology.
- Minimize what the user has to do to add input. For example, offer choices rather than having the user enter information in a text field. Collecting information from the device is also another option.
- Document handling should work without requiring a connection to iTunes or to a computer.
- Apps should help people connect with each other.
- Be subtle on branding.
- Make searches easy. For example, building indexes ahead helps to prepare for a search. A developer can also live filter local data.
- Be consistent on the use of User Interface elements. Follow the recommended usage of interface elements. Do not radically change a control that performs a standard action. Never use standard buttons and icons for a purpose other than norm.
- Add physicality and realism to an app.

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- Use high-quality graphics.
- Handle orientation changes properly. For example, supporting a landscape orientation means that landscape should work on both Landscape Left and Landscape Right. Do not tell users to rotate the device.
- Make targets finger-tip size (44 x 44 points at a minimum).
- Keep animation subtle.
- Keep text information brief.
- Be consistent with standard gestures. Complex gestures should be an addition or a shortcut and not the only way to do a task. Avoid defining new gestures, and remember that the only iPad has the multi-finger gestures available.
- Ask for a save only when necessary, otherwise an autosave should be performed.

Post Development User Experience Guidelines

When the app has been developed and thoroughly tested, it is ready for the App Store and the distribution phase.

In the App Store description area, make sure that there are no spelling or grammar errors. Remember, this is the description that is going to appear in the store. Also, do not use all CAPS (this implies yelling). Let users know about bug fixes in the description area when the app has been fixed and updated.

Apps should start immediately, display a launch image, and launch in the default orientation for the device. Avoid splash screens or "About" views. Minimize setup information by having any setup embedded in the app. If a login is required, delay the login (if possible) to allow the user a chance to interact with the app. For example, a game app that is hosted online will require a login right off the bat.

If it is necessary to display a license agreement or disclaimer, it is better to take care of that in the App store rather than within the app itself.

Read Top 10 tips for naming your app.

Guidelines for the User Experience

Always be ready to shut down or go to the background. This is really the nature of an app that is developed for a mobile device. A user may have to switch to a different app or answer the phone. Save user data as often as is reasonable and save the current state when the app is closed or pushed to the background.

Do not quit programmatically. For example, if a problem is encountered, use a screen or message first, do not just shut down.

User Experience Guidelines for the iPad

Add more interactivity and features to the iPad version of the app. Users usually expect a little more out of an iPad version of an app due to the larger screen area.

Reduce full-screen transitions and use the iPad User Interface appropriately. Recall that the iPad User Interface includes Split View and Popover View. Also, the Toolbar content should be at the top. Usually on an iPhone, the Toolbar is at the bottom.

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Design an iPad app UI in Photoshop talks about creating and prototyping a basic user interface for the iPad.

SUMMARY

This lesson introduced the Apple Developer Human Interface Guidelines. Several sections were highlighted in the lesson, but it is recommended that a developer needs to read through the entire document.

ASSIGNMENTS

1. Practice Exercise – Tab It

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