

HACK UNIVERSITY

- () iOS

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- 0 iOS

LESSON ONE
DESIGNING THE IOS USER EXPERIENCE

COURSE OVERVIEW

WHO WE ARE

Brandon Jackson

- › Currently:
 - › Yale '13, Computer Science major
 - › Mobile developer at SeeClickFix
 - › Co-founder of GiftFlow
- › Previously: had free time

Daniel Tahara

- › Currently: Interviewing at Microsoft (w00t) / Yale '14
- › Previously: Yale Daily News App

WHY HACKYALE?

Good ideas + good developers = good tech companies

- Yale ⊃ many students with good ideas
- Yale ⊂ many students who can implement those ideas

H“But it’s not that probable that I’m going to make an awesome iPhone app in only a semester while I take a bunch of other classes and I double major and I try to set up a summer internship/job after college and I stress about my love life and I don’t call my friends from home enough and I worry about whether or not those ants in the corner of my common room are breeding!”

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COURSE GOALS

WHAT TO EXPECT

WHY THE IOS CLASS?

- You want to learn how to build a simple iPhone app.
- You want to learn what makes iOS apps different than web apps.
- You need an incentive to learn that really weird programming language that's popular right now.
- You're a master designer who wants another canvas on which to display that.

COURSE OUTCOMES

- A Practical Overview of iOS development
 - Not as theoretical / academic as a Yale CS class
 - Not as practical as a simple frontend web dev class... we will be covering too much material to do a demo of every important concept
- Preparing you with the tools to train yourself to do whatever you want

WARNING

Q = “what is a pointer?”

```
if(A != “a reference to a memory location”)
{
    return “brace yourself.”
}
else
{
    return “yay.”
}
```



WARNING

- This course assumes a background in programming.
- This course will move quickly through the nuts and bolts of Objective-C (in order to get to the juicy, UI filled center of iOS development).

COURSE GOALS

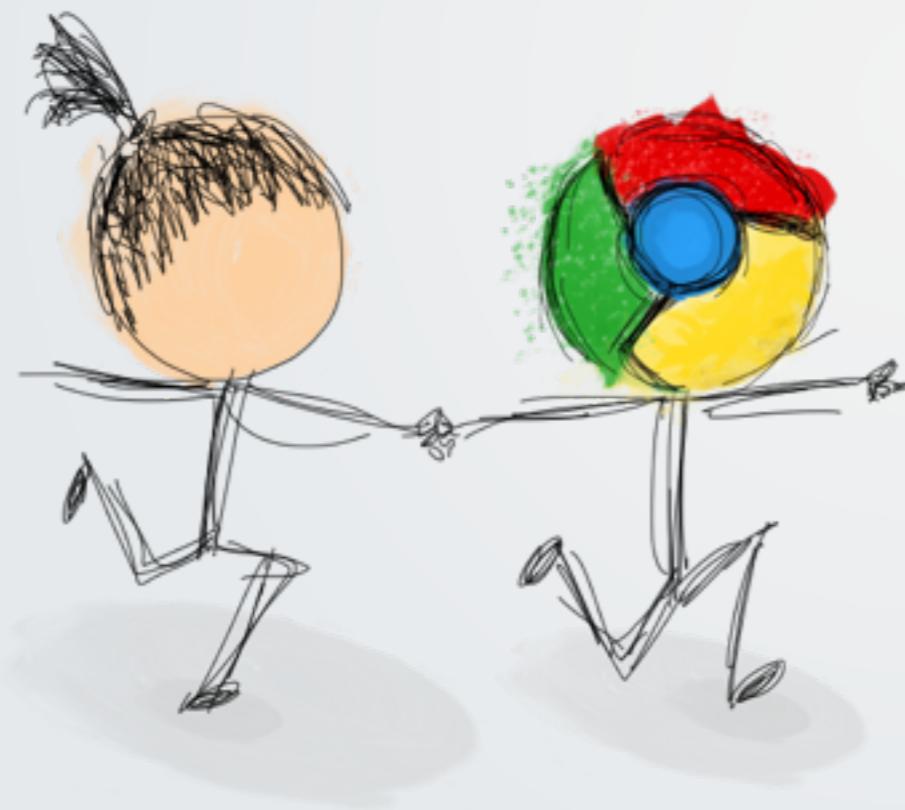
- Focus on processes and psychology of iOS development more than content
 - The idea is your responsibility
 - Learn by doing; learn by immersion. Lots of implementation, lots of coding.
 - Memorization as the emergent byproduct of experience
 - We can't make you successful developers
 - We can equip you with a kernel of knowledge and key resources with which to make yourselves successful developers



*“What do we do when
we encounter a
problem we can’t
immediately solve?”*



← GOOGLE IS YOUR FRIEND →



BUT WE ARE HERE
FOR YOU TOO!

THIS IS AN
INTERACTIVE CLASS.
PLEASE STOP US
WHENEVER YOU
HAVE A QUESTION.



“Lock s-foils into attack position...”

–Wedge Antilles

INTRO TO THE iOS PLATFORM

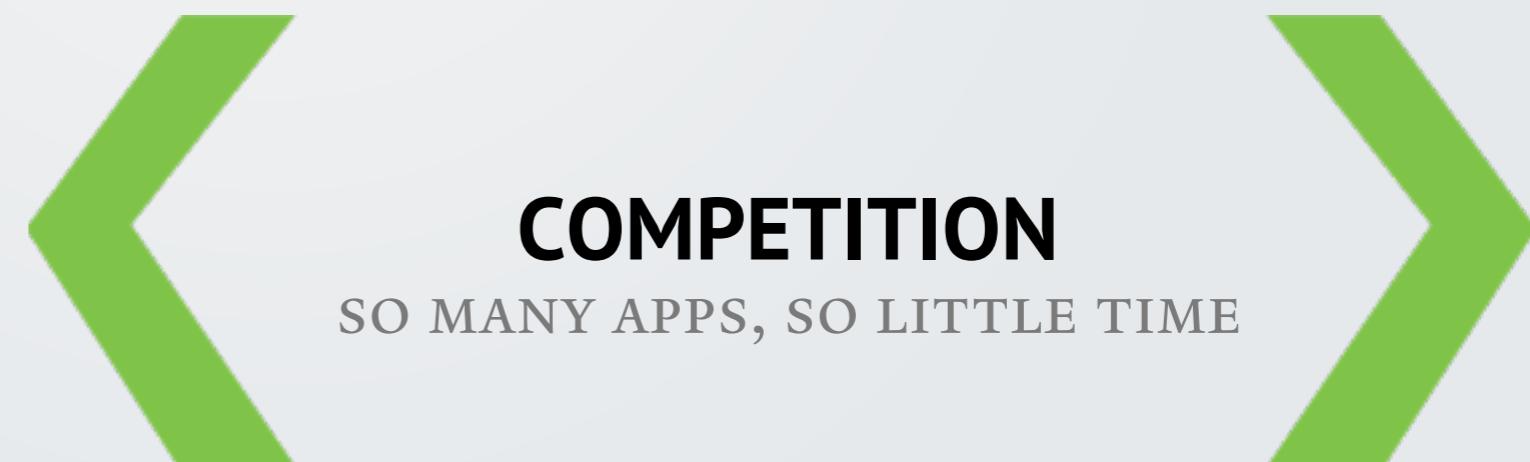
KEY IDEAS & PRINCIPLES





SIMPLIFY, SIMPLIFY, SIMPLIFY

FITTING BIG IDEAS ON TINY SCREENS



COMPETITION

SO MANY APPS, SO LITTLE TIME



USER EXPERIENCE FIRST



*“when technology delivers basic needs,
user experience dominates.”*

–Don Norman

WAIT... ISN'T THAT OBVIOUS?

Before our clients (and we) understood the value of user-centered design, we made design decisions based on just two things: what we thought was awesome and what the client wanted to see.

We built interaction based on what we thought worked – we designed for ourselves. The focus was on aesthetics and the brand, with little to no thought of how the people who would use the website would feel about it.

There was no science behind what we did. We did it because the results looked good, because they were creative (so we thought) and because that was what our clients wanted.”

–Jacob Gube



COMPETITION

HOW MANY APPS DO YOU HAVE
THAT YOU DON'T USE
REGULARLY?

ITS KINDA LIKE STORYTELLING

- Your app needs a clear story!
- When users open your app, they should immediately understand what they can do with it.
- It needs to introduce the narrative concisely when app is first opened
- The entire interface should be designed to make this narrative easy to execute

THE 80%

- ▶ “Focus your solution on the needs of 80 percent of your users. When you do this, the majority of users do not need to supply settings because your application is already set up to behave the way they expect. If there is functionality that only a handful of people might want, or that most people might want only once, leave it out.”

THE APP DESIGN PROCESS

FROM IDEA TO PRODUCT





STEP ONE

USE CASES



USE CASES

- What will the user be doing?
- Examples from FourSquare:
 - “User wants to check into a place.”
 - “User wants to find nearby places that are interesting.”
 - “User wants to check out their profile.”
 - “User wants to see what tips other people have left about a place.”

PATTERNS

- Don't be surprised if you start noticing patterns in your use cases
- Most apps are conglomerations of a handful of use cases.
- Abstract your app's use cases into more general ones!

EXAMPLE: FOURSQUARE

- ▶ Example: “User wants to check out their profile.” > “View details about an object.”
- ▶ Example: “User wants to see what tips other people have left about a place.” > “Browse through objects.”
- ▶ Example: “User wants to find nearby places that are interesting.” > “Search for object.”



STEP TWO

PROCESS WIREFRAMING

PROCESS WIREFRAMING

- After generating a list of really specific use cases, next turn each step of the process into a screen
- Connect these screens to each other
- Observe the meta-patterns that emerge: these will be your navigation structure



STEP THREE

UI WIREFRAMING

UI WIREFRAMING

- The final step of the design process is turning each screen into a sketch of the user interface
- Fun Tool: printable iOS sketch paper (see link on coursekit)

FOCUS ON THE PRIMARY TASK

- ▶ “Analyze what’s needed in each screen. As you decide what to display in each screen always ask yourself, Is this critical information or functionality users need right now? If your answer is no, decide whether the information or functionality might be critical in a different context, or if it’s not that important after all.” – iOS Human Interface Guidelines



BACKGROUND PROCESS

GET INSPIRED

RESEARCH AKA DOWNLOADING APPS

Since all iOS apps are built within the same constraints, similar patterns have emerged

Once you know what general user experience design patterns your app needs, go forth and download dozens of apps and see how they do it.

INSPIRING APPS

- Yelp
- FourSquare
- FlipBoard
- Airbnb
- Path
- Momento

UX GUIDELINES

METAPHOR



“The most appropriate metaphors suggest a usage or experience without enforcing the limitations of the real-world object or action on which they’re based. For example, people can fill software folders with much more content than would fit in a physical folder.”

–iOS Human Interface Guidelines

TAPPABLE

Controls should look tappable. iOS controls, such as buttons, pickers, and sliders, have contours and gradients that invite touches.

CLEAR STRUCTURE

App structure should be clean and easy to navigate. iOS provides the **navigation bar** for drilling down through hierarchical content, and the **tab bar** for displaying different peer groups of content or functionality.

CLEAR FEEDBACK

User feedback should be subtle, but clear. iOS apps often use precise, fluid animations to show the results of user actions. iOS apps can also use the activity indicator and the progress view to show status, and the alert to give users warnings or other critical information.

CONSISTENCY

Consistency in the interface allows people to transfer their knowledge and skills from one application to another. A consistent application is not a slavish copy of other applications. Rather, it is an application that takes advantage of the standards and paradigms people are comfortable with.

YOU SHOULD WANT TO TOUCH IT.

Retina display makes everything look life-like

Use gradients, tiny amounts of background noise and other techniques to make things look realistic

GESTURES

Use gestures for common tasks (deleting table rows, switching to next page in slideshow) but NEVER try to invent new ones

THE UI TOOLBOX



Table of Contents

- Introduction
 - ▶ Platform Characteristics
 - ▶ Human Interface Principles
 - ▶ App Design Strategies
 - ▶ Case Studies: Transitioning to iOS
 - ▶ User Experience Guidelines
 - ▶ iOS Technology Usage Guidelines
 - ▶ iOS UI Element Usage Guidelines
 - ▶ Custom Icon and Image Creation Guidelines
- Revision History

[Next](#)

Introduction

iOS Human Interface Guidelines describes the guidelines and principles that help you design a superlative user interface and user experience for your iOS app.





TOOLBOX ONE

NAVIGATION & WAYFINDING

NAVIGATION

- The Navigation Bar
 - 44px for a reason: the perfect tappable size
- Structure your app with Drill-Down Navigation in mind

HIGH-LEVEL STRUCTURE

- 2 patterns
 - Tabbed bar
 - Dashboard view



TOOLBOX TWO

TABLES & DATA

TABLES & DATA

- Displaying data is probably the most common task
- Tables are the way to do this
- iOS has two kinds of table views: normal and grouped



TOOLBOX THREE

USER INPUT

USER INPUT

- iOS has many specialized user input controls
- Read about each of them on the Human Interface Guidelines

NEXT TIME

- Objective-C
 - Intro to the Syntax
 - The iOS namespaces
 - Pointers & Memory Management
 - Project structure
- Some concrete exercises!



**...AND ONE
MORE THING!**

HOMEWORK DUE FRIDAY AT 5PM

- Time to practice what you've learned today!
 - 3 pages! (roughly)
 - Write a 0.5 - 1 page biography so we can get to know you
 - Pick Two Apps: One You Love and One that Sucks
 - Write a ~1 page design analysis of each app you picked
 - Details of assignment coming soon to CourseKit!
 - When you're finished, upload your work to CourseKit