ATLS 4120/5120: Mobile Application Development
Week 4: App Design

App Business

Why Build an app?

- New cutting-edge, creative idea
- Solve a problem better than current solutions
- Hired by a client
    - External app – ecommerce, marketing/brand extension
    - Internal app for employees – tool, training

App Definition

Common app types

- Productivity apps
    - Use and manipulate information
    - iWork
- Utility apps
    - Perform a specific task
    - Youtube, netflix
- Immersive apps
    - Focused on delivering visually rich content
    - games

Goal

- What's the goal of your app? What problem are you solving?
    - Come up with a description for your app that is clear, concise, and complete
- Apps should have 1 goal, not like a web site
    - How many apps does ESPN have?

User

- Who is your intended audience?
- Define your app
    - Features
    - Users
- Your goal and target audience should drive all the design decisions you make

Let's start with some fundamental design principles.

Essential Design Principles, Mike Stern, Apple Design Evangelism Manager, WWDC 2017 (59:55)
https://developer.apple.com/videos/play/wwdc2017/802/

Intro: what apps should provide

Core Design Principles

- Wayfinding
- Feedback
- Visibility
- Consistency
- Mental model
- Proximity
- Grouping
- Mapping

- Affordances
- Progressive Disclosure
- Symmetry

Much more detail provided in Apple's iOS Human Interface Guidelines
https://developer.apple.com/ios/human-interface-guidelines/

App Design

Understand platform conventions

- All apps should be easy to figure out and use
- Limit friction
  - Download, install, start instantly, no lengthy startup
  - Avoid requiring initial signup/login
  - Show content immediately
  - Love at First Launch, Vince Lane, Apple Designer, WWDC 2017 https://developer.apple.com/videos/play/wwdc2017/816/ (11 mins)
- Avoid unnecessary interruptions
- No keyboard or mouse, interaction is through taps and gestures
  - The comfortable minimum size of tappable UI elements is 44 x 44 points
- Scrolling is ok
- Be prepared to be interrupted
- Support common gestures
- There are over a million apps, you're trying to convince users to use yours!

Design for the device

- Use layout that makes sense for the device
  - iPad apps shouldn't just be bigger
- Integrate aesthetics with function
- Artwork and image should be useful and draw the user in
  - Adapt art to the screen size, high quality media is expected
  - No logos other than your app icon and possibly splash screen
- Handle different orientations
- Universal apps should have a consistent flow
- Understand and take into account platform differences

Content

- Provide only relevant, appropriate content that's useful to the immediate task
- Don't overshadow the content
- Avoid file handling and settings
- If in doubt, leave it out

Focus on the User

- Target apps to a specific user level
- Put the users in control
- Get them to the relevant information quickly
- Make sure that all user input is valuable
- Provide subtle but clear, immediate feedback
- Create a compelling user experience
  - User interaction consistency

Focus on the goal of your app and the problem you're trying to solve.

How do you build a user experience for your target user that achieves your goal?

App Design Process

- Research, brainstorm, gather requirements
- Define the goal, description, and audience
- Now you're ready to start the development process

App Development Process

The waterfall development method has been around since 1970 and treats the software development process as a single path through different phases where each phase is completed before the next starts.
Analysis – design – development – testing – deployment – maintenance
The advantage of the waterfall process is that each phase is well defined and forces the client and development team to spend time thinking thought the requirements and design up front.
The disadvantage is it creates a long development process where all requirements and design must be done up front and there's no opportunity to modify, improve, or fine-tune along the way.
This comes more from the hardware industry and is being used less in the software industry.

The agile development method takes an iterative approach where smaller chunks of the product are worked on in 2-4 week sprints after an initial high-level wireframe is agreed upon. Each sprint receives feedback and is reviewed by a cross-functional team, then priorities and tasks are set for the next sprint. This allows for client feedback, early user testing, and the ability to modify and fine-tune along the way if needed. Some form of the agile development process is most commonly used today for software development.
We'll be using a simplified version of the agile process for our projects as we don't have time for many iterations within one semester.

Project 1 milestones review Why prototype?
60 Second Prototyping, Guillaume Ardaud, Apple Designer, WWDC 2017
https://developer.apple.com/videos/play/wwdc2017/818/ (10:40)
make – show – learn (iterate)