

# CS357 Introduction to Mobile App Development

CS357

## Instructor Introduction

- First programming adventure into Android since 2008
- Built first Android App on HTC G1 Phone
- Created a special section of CS163 (Winter 2012)
  - Students learned the same topics of CS2
  - Programming Assignments tailored to Android Apps
- Collaborate with J. Englesma in MASL/ACI Projects
  - LakerMobile (iOS + Android)
  - Art@GVSU (iOS + Android)
  - Latest feature added to Art@GVSU: Augmented Reality of Selected Painting by Mathias Alten



## Student Introduction

- Name
- Major
- The most memorable activity in 2023
- Specific interest in Mobile Apps
- Apps or App Ideas You Dream to Build

## Course Web Site(s)

- Will use Bb mainly for:
  - sending announcements, and collecting assignments
  - Posting recorded lecture videos (from previous semesters)
- Other relevant information about the course will be posted on your instructor teaching web page: <https://dulimarta-teaching.netlify.app>

## Grading/Late Policy

- All assignments are **due at the beginning** of class/lab time
- Each student has a **4-day late quota** throughout the semester
  - a. University holidays count as 0 day
  - b. Late submissions before 11:59 pm on the due day deduct 0.5 days from quota
  - c. Sat/Sun deducts 0.5 days each.
  - d. Thereafter each day of late submissions deduct 1 day from quota
- When your quota goes to zero **no late submissions** will be accepted
- Bb assignment entries disappear 4 days after due-date
- No extra assignments will be provided per individual student requests. Use the extra credit opportunities provided in most assignments

## Topics

- Textbook
- Why Develop for Mobile?
- The Mobile Development Landscape
- iOS Development
- Android Development
- OS / Device Market share

## Text Book

Englesma & Dulimarta, *Mastering Mobile App Development* - 2nd Edition

- Teaches concepts embraced by iOS/Android and simultaneously call out fundamental differences
- Edition 1: 2016
  - Joint sabbatical project
  - Swift for iOS
  - Java for Android
- Edition 2: 2021
  - Swift for iOS
  - Kotlin for Android



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## Providing Feedback

- Give book feedback by submitting a new issue on GitHub
- <https://github.com/gvsucis/mobile-app-dev-book-2ndEdition>
- Contents
  - Typos
  - Inconsistencies
  - Areas that need correction, clarification
  - Code samples
  - ...

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# The Past Mobile Phones



Motorola DynaTac  
Prototype: 1973  
Production: 1983



1989: Motorola MicroTac



1997: Nokia Communicator  
(+ QWERTY keyboard)



1996: Motorola StarTac  
First Flip Phone



1999: Nokia 7110 (+ browser)

# The First iPhone (2007)



# The First Android Phone (HTC G1)



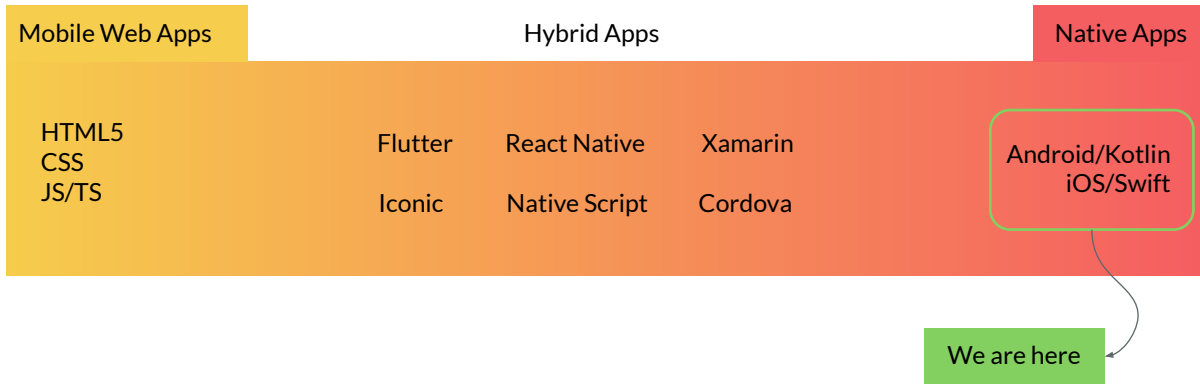
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# There's an App for That



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# Mobile App Development Landscape



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## Mobile Landscape: The Present

- Smartphone and data network ubiquity
- Application Ecosystems
  - Apple App Store
  - Google Play Store
- Cloud Integration
  - Services
  - Datastore
- Coexistence with web apps



## Mobile Landscape: The Future

- Use of hybrid frameworks
  - Flutter (Dart)
  - React Native (TypeScript)
  - Xamarin (C#)
  - Ionic (TypeScript)
  - NativeScript (TypeScript)
  - ...
- Integration with AI, AR



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## Why Develop for Mobile?

- Shortage of skilled mobile developers
- Mobile development is fun
  - App ecosystem gives instant gratification
  - Software developer self expression
- Huge potential users (mobile subscribers statistics)

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## iOS Development Requirements

- A Mac computer
- XCode
- Proficient in Swift
  - Also basic skills in Objective C and C
- To deploy to AppStore: \$99 annual developer fee



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## Android Development Requirements

- Cross Platform (Windows, Linux, OSX)
- Android Studio
- Proficient in Kotlin
  - and Java
- To deploy to Google Play Store: \$25 one time developer fee



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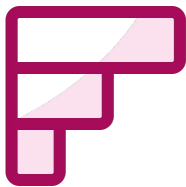
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## Your experience level in developing Mobile App

① Click **Present with Slido** or install our [Chrome extension](#) to activate this poll while presenting.

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## Rank Your Programming Language Fluency (highest to lowest)

① Click **Present with Slido** or install our [Chrome extension](#) to activate this poll while presenting.

# Reading Assignment

Read the following in Englesma/Dulimarta text book

- Appendix A: Learning Kotlin
- Chapter 1

