Stanford CS194A: Android App Development

Learn basic, foundational techniques for developing Android mobile applications and apply those toward building a single or multi page, networked Android application.

This is an outline for CS194A, offered Spring 2020 at Stanford University. Consider it a general overview of the planned trajectory of the course.

Term: Spring 2020
Instructor: Rahul Pandey (sponsored by Jay Borenstein)
Grading: credit/no credit
Meeting time: Wednesdays, 4:30pm - 5:50pm over Zoom

Email is the fastest way to reach me: **rkpandey@cs.stanford.edu**

Date	Topics	Assignment
Week 1 (April 8)	Why Android? Kotlin introduction Your first Android app	Setup Android Studio and get “Hello World” running
Week 2 (April 15)	Layouts and building a UI Responding to user input	Tip Calculator walkthrough [link]
Week 3 (April 22)	More UI elements RecyclerView	Tip Calculator extensions (**deliverable**)
Week 4 (April 29)	Activities and intents Activity lifecycle	Google Maps walkthrough [link]
Week 5 (May 6)	Permissions Maps and location	Google Maps extensions (**deliverable**)
Week 6 (May 13)	Networking and interacting with APIs	Yelp clone walkthrough [link]
Week 7 (May 20)	Remote databases (e.g. Firebase)	Yelp clone extensions (**deliverable**)
Week 8 (May 27)	Topics we’re not covering (see below)	
Week 9 (June 3)	Panel with Android engineers in industry	

Attendance
Attendance at lectures is encouraged, but not required. I'll post recordings of the lecture on Canvas within 48 hours.

Prerequisites
Some knowledge of programming is expected, ideally CS106B/X. Experience with Kotlin is not required. An Android device is not required since most tutorials will be using an emulator, but owning a real device may be helpful for testing/demo purposes.

Grading
To earn credit, you must complete each of the 3 walkthroughs, and complete **at least one** extension beyond the walkthrough. I'll provide ideas for extensions along with guides for implementing them. An extension can be a UI improvement, additional feature, or exploration of a more advanced Android concept. Grading will be done by a peer; you will share a Github link to your project and validate they've completed an extension.

There are no quizzes exams in this course.

Topics
As a 1 unit introductory course on Android, we plan on covering the topics listed in the outline above. There are also many topics we will not be covering, which I'll be touching on in the last lecture. Some of the topics we're **not** covering include:

- Games
- App architecture (MVP, MVVM, MVC, etc)
- Services
- Notifications
- Localization
- Local databases, SQL, Room
- Build systems such as Gradle

Documented Disability Statement
Students who may need an academic accommodation based on the impact of a disability must initiate the request with the Office of Accessible Education (OAE). Professional staff will evaluate the request with required documentation, recommend reasonable accommodations, and prepare an Accommodation Letter for faculty. Unless the student has a temporary disability, Accommodation letters are issued for the entire academic year. Students should contact the OAE as soon as possible since timely notice is needed to coordinate accommodations. The OAE is located at 563 Salvatierra Walk (phone: 723-1066, URL: https://oae.stanford.edu/.