

# 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 Fall 2021 at Stanford University. Consider it a general overview of the planned trajectory of the course.

**Term:** Fall 2021

**Instructor:** Rahul Pandey (sponsored by Jay Borenstein)

**Grading:** credit/no credit

**Meeting time:** Wednesdays, 5:30pm - 6:30pm at *Hewlett Teaching Center Rm 101*

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Date	Topics	Assignment
Week 1 (Sep 22)	Why Android? Your first Android app	Setup Android Studio and get "Hello World" running
Week 2 (Sep 29)	Kotlin introduction	Kotlin practice problems
Week 3 (Oct 6)	Layouts and building a UI Responding to user input	Tip Calculator walkthrough
Week 4 (Oct 13)	More UI elements RecyclerView	Tip Calculator extensions <b>(deliverable)</b>
Week 5 (Oct 20)	Activities and intents Activity lifecycle	Google Maps walkthrough
Week 6 (Oct 27)	Permissions Maps and location	Google Maps extensions <b>(deliverable)</b>
Week 7 (Nov 3)	Networking and interacting with APIs Remote databases (Firebase)	Yelp clone walkthrough
Week 8 (Nov 10)	React Native and Flutter Topics we're not covering	Yelp clone extensions <b>(deliverable)</b>
Week 9 (Nov 17)	Panel with Android engineers in industry	
Week 10 (Dec 1)	<i>(Optional)</i> Q&A + next steps	

## Attendance

Attendance at lectures is strongly encouraged, but not required. I will attempt to capture the audio lecture + screen recording for each class, but these may be low quality.

## 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/>).