

Android and Compose Quick Start

Background

The new platform for Android development is Jetpack Compose. We are building on Compose + Material 2 (since it is more stable than Material 3), and there is only one new project template for it (Empty Compose Activity). The other templates, and Zach's UI code, are XML which we won't use. The research and comparison of Compose and XML was done by Andrew:

https://docs.google.com/document/d/1I8dS5l_90xOPSHFhQBppebNIODOvh4gaCd1eSc4Ns6Q/edit?usp=drivesdk

Libraries

Graphing

- (Tested, working) Line chart only: <https://github.com/Madrapps/plot>
- (Tested, working) Lots of kinds of charts: <https://github.com/hi-manshu/Charty>
- Pie, bar, line: <https://github.com/bytebeats/compose-charts/>
- (Not working) Pie, bar, line: <https://github.com/tehras/charts>

Maps

- Google Maps API (use the Compose library):
<https://developers.google.com/maps/documentation/android-sdk/maps-compose>
- Mapbox: <https://docs.mapbox.com/android/maps/guides/>

Guides

Database

Anyone feel free to add SQL/Database guides here if you would like to share.

GitHub

Github will have an essential role throughout this project. I expect everyone to quickly learn and familiarize themselves on how to collaboratively work using git. Since we will be using android studio, git is built into the IDE, therefore it'll make our jobs much easier. If anyone has questions please ask Abdelrahman

- If you have no prior experience with using Git, please go through this interactive course: [GitHub Skills](#) (Skip the part about github actions & code security, we won't be needing that in our project)
- This is a simple video explaining how to install Git on your device & then how to set it up in android studio, please watch the entirety of the video if you have never used git on an IDE before: [How to Use Git and GitHub in Android Studio](#)
- This article discusses how to clone a repository onto your device using android studio: [How to Clone Android Project from GitHub in Android Studio? - GeeksforGeeks](#)

Branching/forking:

- We will use branching rather than forking.
- Github docs on branching: <https://docs.github.com/en/get-started/quickstart/github-flow>
- Github docs on forking: [Fork a repo - GitHub Docs](#)
- Article on differences between forking and branching: [The Definitive Guide to Forks and Branches in Git | Pluralsight](#)

Some additional resources:

- GitHub Docs (has Quickstart section): <https://docs.github.com/en>

General

Quick Start:

- Android app development overview, while on the Compose platform: <https://developer.android.com/courses/android-basics-compose/course>
- App architecture course (Intermediate level): <https://developer.android.com/courses/pathways/android-architecture>

Other Resources:

- State and ViewModel in Jetpack Compose: <https://developer.android.com/jetpack/compose/state>
- Android Developer Docs. This is the overall Android development documentation, from app architecture to file management to permissions to testing to security, and everything else there is to consider: <https://developer.android.com/docs>
- List of official Jetpack libraries: <https://developer.android.com/jetpack/androidx/explorer?case=all>
- Sample code:
 - Featured project in Compose, "Now In Android": <https://github.com/android/nowinandroid>
 - Lots more, and a guide on setting them up: <https://developer.android.com/jetpack/compose/setup#sample>
 - More (make sure the search bar contains "Compose" if looking at UI code): <https://developer.android.com/samples?text=Compose>
- Jetpack Community (Slack channels, forums): <https://developer.android.com/jetpack/community>

UI

For UI libraries (graphing, etc), see the Libraries section above.

We are building on Compose + Material 2 (since it is more stable than Material 3), and there is only one new project template for it (Empty Compose Activity).

Quick Start:

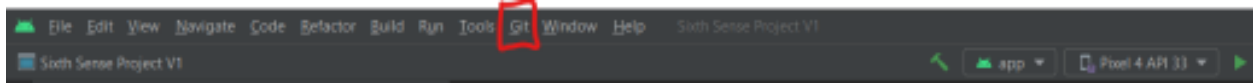
- (5 minutes) Introductory demo of Compose:
<https://developer.android.com/jetpack/compose/tutorial>
- The course for UI development with Compose:
<https://developer.android.com/courses/jetpack-compose/course>
- The Compose documentation, with guides for all of the different parts of UI development:
<https://developer.android.com/jetpack/compose/documentation>
- UI components: <https://m2.material.io/components>
- Design and styling guidelines (colors, icons, typography, etc):
<https://m2.material.io/design>

Other Resources:

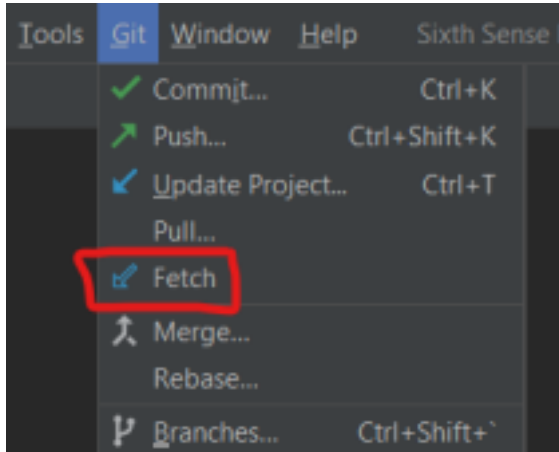
- Free-form graphics:
<https://developer.android.com/jetpack/compose/graphics/draw/overview>
 - Might allow us to make their map, or custom line charts
- Adding Jetpack Compose to an older project:
<https://developer.android.com/jetpack/compose/interop/adding>

Updating the Project Branches Using Fetch

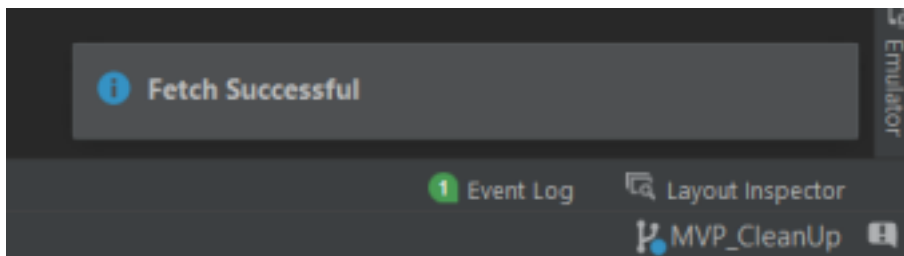
Step 1: Click on Git at the top nav bar



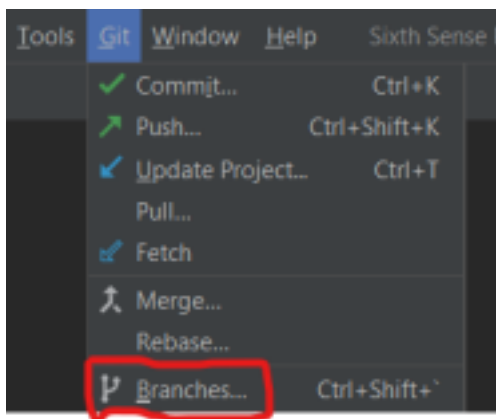
Step 2: Click on Fetch option inside the Git



Step 3: You will notice a successful message in the bottom right corner



Step 4: Click on Git again at the top bar and then on Branches option inside it
This will open up a pop-up box



Step 5: Scroll down to the section for “Remote Branches”

Click on the branch you need

Click on “Checkout”

Note: Don't go to branches under the “Local Branches” this is not updated

Only the “Remote Branches” are updated

