Instructions

For Assignment #3, you will make a simple "GeoTagger" Android App. The idea is to implement only the basic functionality required for "GeoTagging". The concepts of GeoTagging have been used by many popular apps (e.g., Instagram, Facebook).

Requirements:

- Obtain ACCESS_FINE_LOCATION and ACCESS_COARSE_LOCATION runtime permission from user.
- Have a button that lets a user add a "GeoTag" that creates a database record with the following information:
    - User's Name/Title of location
    - Android's current GPS location
    - Timestamp
    - Text the user enters about the location (why they chose to Tag the location)
- Store all the "GeoTags" in local database
- Display all "GeoTags" on Map
    - Each "GeoTag" should be displayed as a marker on the map using the coordinates saved in the database.
    - The marker should include the title saved in the database
    - NOTE a Google Maps Key has been created for this assignment. Please do not share the key outside of class.
        - MAP KEY: AIzaSyBGmeJQQgzDnwdVeWMIZUMkg_DP1xnd0iA
- When a "user" clicks on a "GeoTag" marker, the complete record in the database should be displayed on a view that is not the map. Examples of possible methods to display the data outside of the map include a Fragment above map (i.e. split screen), a pop-up dialog, etc.
    - To identify what marker was clicked map you can use GoogleMap.OnMarkerClickListener

<YOUR MAP OBJECT>.setOnMarkerClickListener(<*YOUR CLASS implements GoogleMap.OnMarkerClickListener*>);

- Data state needs to survive Android lifecycle changes
- The Android application needs to be written in Kotlin
- Only needs to support a single user
- All functions you write should be documented with comments
- For grading, submit your source files in a single ZIP on D2L

FOR "FUN" EXTRA CREDIT (really not worth the work for the few extra points, it is for people who are having fun learning Android and want to make a more realistic GeoTagger. ALSO note lots of details not included):

- Launch the camera and store a picture as part of each "GeoTag"
- Do NOT store the picture in the database, instead store a reference

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Implementation notes:

- If using an emulator you NEED to use the "Google Play" version of the emulator NOT "Google API" version as maps uses API calls to Google Play and you will likely get errors.
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  - MAP KEY: AIzaSyBGmeJQQgzDnwdVeWMIZUMkg_DP1xnd0iA
- If using an emulator, here are two methods to enter GPS coordinates:
  - Use the command line through telnet using the command "geo fix" - https://developer.android.com/studio/run/emulator-console.html
  - Use "Emulator Extended Controls" - https://developer.android.com/studio/run/emulator-extended-controls
- DEBUG TIP: You can create entries in your database to using code without simulating GPS coordinates. Helpful for development and debugging.

Location & Permission Resources:

- https://developers.google.com/maps/documentation/android-sdk/location
- https://developer.android.com/develop/sensors-and-location/location/permissions

Room Resources:

- Lesson 9: App Architecture (Persistence Layer) from Teach Android Development
- Codelab: Android Room with a View