Project 4 – Photo Notes Plus

Overview

This homework assignment builds on top of Project 3 by adding a few new features that are common and useful in today's mobile app, including voice note, geo-tagging, photo editing and shaking. Through the exercise, you will get familiar with Google location, Google map, audio recording/playback, sensor and custom view.

Requirements

Activities

The app has 4 activities:

1. List activity

Same as PA3. No changes here.

2. View Photo Activity

As defined in PA3, it displays the photo and the caption that was clicked on in the List Activity. The RETURN or a "Return" button will bring screen back to List activity.

In addition:

- If voice note was recorded, a playback icon is available. Clicking on the icon will playback the voice note recorded when the picture was taken
- If location was recorded, a map/location icon is available. Clicking on the icon will launch Map View Activity. See details later.

3. Add Photo Activity

This activity should have at least 4 fields:

- EditText field for the text caption
- Button or icon to record a voice note.
    - Provide visual cue when recording is on-going.
    - Provide a mean to stop recording.
    - Provide a mean to listen and re-record.
- Button for taking the photo. This should launch the camera intent.

- Save button. This should return to the list activity (use the finish()method).

Photo touch features:

- After a picture is taken by Camera app, a preview picture should be shown on screen.
- User can use finger to draw lines on the picture. The line color and width can be hardcoded. Alternative, you may provide a way to customize it.
- User can shake the phone to erase the finger drawing. However, the original picture should always stay in preview.
- Clicking on the “Save” button will save the edited picture to a file on external storage.

Geo-tagging feature

- You need to record the current location for the picture taken.
- It is OK to use the last known location for this purpose, although you are also encouraged to use location listener to get more accurate and up-to-date location.

Hint:

- You need to use custom view to display the picture for preview. It also enables you to capture the finger drawing from user.
- Picture needs to be scaled properly to fit the size of custom view. View::getWidth() and view::getHeight() methods give the dimensions of the custom view. You can either scale the file or scale the bitmap loaded from the picture file. Google around for solutions.
- Refer to this page on how to save custom view content to a jpg file: http://stackoverflow.com/questions/3107527/android-save-view-to-jpg-or-png

4. Map View Activity

This activity is launched from View Photo Activity.

- You must use SupportMapFragment as shown in the class demo
- You need to set a marker that indicates the location of picture taken
- The marker needs to be centered
- Use zoom level 17.

Menu Items

For List activity Option Menu should have an “Add” option (in ActionBar) and an “Uninstall” option (only shown in overflow menu) (similar to Homework 2). For other activities, Option Menu is optional.

Scoring

Total points are 10.

- Functionality
  - voice note (2 pt)
  - photo touch with finger and shake to erase (4 pt)
  - location and google map (2pt)
- Layout & UI (1 pt)
  - Aesthetically pleasing with customized launch icon
  - Render well in both landscape mode and portrait mode; Or fix activities in certain orientation
- Programming & coding (1 pt)
  - Neat & clean programming with clear naming
  - Correct usage of framework (e.g., use SupportMapFragment, custom view, etc)

Submission

- Make sure your project builds on the latest Android Studio and runs on emulator before submission
- Include a README.txt file at top level of project directory. Teacher/grader will read this file first before building and testing your program.
  - List any special studio settings, project settings or demo/testing instructions if necessary.
  - What are the features implemented? Any known limitations?
  - Are there any additional features?
  - Where are image/audio files stored?
  - Do you implement 6.0 run-time permission request or set targetSDK to 22 in build.gradle file?
  - Do you support both viewing modes or have fixed viewing modes?
  - Which method did you use to obtain current location?
- Rename your project directory as *lastname.firstname.pa4* (e.g., sun.jun.pa4) Recall that project directory can be located by switching to “Project” view in Android Studio.
- Zip the whole project directory as a ZIP file with naming as *lastname.firstname.pa2.zip*
  - *Note: Wrong file/directory name will deduct up to 1 point*
- Submit the zip file via Camino/Canvas