CS 213 Fall 2018: Android Project

Chess OR Photos OR RYO (Roll Your Own)

Posted Mon, Nov 19
Due Thu Dec 13, 11 PM in BitBucket

Worth 200 points (20% of course grade)

You will continue working in pairs. If you choose to roll your own project, you must get approval from your grader - see the RYO section at the bottom of this page.

You MUST use Git/Bitbucket to manage your repository. Your app MUST run correcty on the Nexus 4 (4.7 inch, 768x1280, xhdpi) device emulator that comes with Android Studio. Make sure your app runs on Android API Level 28 (Android 9.0 - Pie) We will test only for this level. (If you have issues with this, check with your grader.)

You may serialize the data used in your app, but are not required to do so - you can use alternative formats for storage on the device.

Photos

You are not required to carry over all the functionality from the Java FX implementation. Instead, you will implement a smaller set, as described below. You may reuse any of the code from your Java FX project.

Since the app will run on a personal smart phone, there is only a single user, who is the owner of the phone. So there is no logging in, and no admin functionality. Also, explicit captions are not required for photos (the filename will stand for the caption). Dates are not required either.

Your app should implement the following features:

- 30 pts Home screen. When the app comes up, it should load album and photo data from the previous session, if any, and list all albums with names in plain text. Off this "home" screen, you should be able to do the following, in one or more navigational steps.
- 40 pts Open, create, delete, and rename albums as listed in the Java FX project description. When opening an album, display all its photos, with their thumbnail images.
- 40 pts Once an album is open, you should be able to add, remove, or display a photo. The photo display screen should include an option for a slideshow, allowing you to go backward or forward in the album one photo at a time with manual controls.
- 20 pts When a photo is displayed, you should be able to add a tag to a photo. Only person and location are valid tag types; there are no typeless tags. You should also be able to delete a tag from a photo. Note: When displaying a photo, tags (if any) should be visible.
- 20 pts You should be able to move a photo from one album to another
- 50 pts You should be able to search for photos by tag (person and/or location), and matches should allow completion. For instance, if a location "New" is typed, matches should include photos taken in New York, New Mexico, New Zealand, etc. Note: You are not required to implement functionality to add new tag types, or save the matching photos in an album.

Chess

Port the terminal-based Chess program to Android: a chess app that lets two people play chess with each other on the phone. You may reuse any code from your chess assignment. You have to implement all the moves for all the pieces, determination of check, checkmate, and illegal moves (*including any that puts the mover's King in check*), but you are not required to implement stalemate.

Your app implement the following:

Playing chess (120 pts)

- 30 pts Two humans can use your app to play a game of Chess.
- 20 pts Your app must draw the board with icons and correctly shaded squares.
- 20 pts Players must move their pieces using touch input - either dragging a piece or touching first the piece's original square and then its destination.
- 10 pts Provide an 'undo' function that will undo the last move (but no farther).
- 10 pts Provide an 'AI' button that will choose a move for the current player. Choosing randomly from the set of legal moves is sufficient.
- 20 pts Provide functional 'draw' and 'resign' buttons.
- 10 pts When the game is over, report the outcome.

Recording games (50 pts)

- 20 pts Record all games as they're being played.
- 10 pts At the conclusion of a game, offer to store it and prompt the user for a game title.
- 20 pts List all recorded games, sorted by both date and by title (user can select which view to choose).

Game playback (30 pts)

- A function that allows the user to play a selected recorded game. The selected game should be playable one move at a time, per player.

RYO

You need to get approval from your grader. For this, you will need to provide the following to them:

- A short description of the app
- A detailed description of all features
- A storyboard of all activities that will be displayed to the user.

Depending on this, you may be asked to expand/shrink/modify the features (so there is sufficient breadth and depth, but not so much that you can't finish the project on time), before final approval. Also keep in mind if there is server set up required, you (NOT your grader) will be responsible for doing it yourself.

If you plan to go this route, start planning early so you can get approval with enough time left to build!!