Abstract

Design and build an application that allows the user to create a picture collage. The application should contain a collage library view and a collage creation view. The collage library is a list-style view of pictures that are contained in the app-specific picture library. It exhibits a thumbnail of the picture, as well as a summary of the picture file information. The collage view gives an area where pictures from the library can be added, then have their position and size manipulated to create the collage.

Components

- **Collage Library Fragment**: A subclass of ListFragment that contains a list view that shows a list of all pictures associated with the current collage. This collection may include pictures that have not yet been added to the collage. Each row in the list represents a picture and must exhibit a thumbnail of the picture, the size in pixels of the picture, the date the picture was taken or otherwise created, and whether the picture has already been added to the collage. If the picture has not been added to the collage, show a “+” icon. Otherwise, show a “-” icon. Tapping the “+” icon should add the picture to the collage, initially centered in the collage, and the largest dimension of the picture taking up 25% of the shortest dimension of the collage area. Tapping the “-” icon should remove the picture from the collage. Tapping the row should highlight the picture in the collage in some way to allow the user to find it (putting a border around the picture, initiating an animation on the picture that brightens it for a short period, etc). An add button should be contained in the application’s action menu to allow the user to add a new picture to the library.

- **Collage Fragment**: A subclass of Fragment that contains a view group that shows the pictures from the collage library that have been added to the collage. Pictures in the collage can be implemented as ImageView instances with the pictures assigned to them. The user should be able to move the picture around the collage by dragging. The picture should also be resizable in an aspect-ratio-preserving way by using a two-finger pinch gesture.

- **Picture Collage Data Model**: Contains the pictures that are in the collage library, as well as the locations and sizes of those pictures within the collage.

- **Persistence**: The UI in your app should restore to its current state when the device is rotated. When the device rotates, the aspect ratio of the collage view may change. When this happens, find the largest rectangle that contains all of the pictures in the collage. Then, center that rectangle in the new collage view. In this way, all pictures in the collage will remain on-screen. Additionally, the user’s collage should be saved using regular file output, so if they were to kill the app and start it again, their collage would be restored.

Handin

You should hand in your zipped project, including any supporting files, using the CADE Lab handin system on the website, or on the command line:

handin cs4962 project3 your_project_zip_file.zip