Mobile Application Programming: Android

Abstract

Using Project 1 as a base, create a painting application that allows the user to paint a picture, then allows the user to watch the picture be painted by itself. This is accomplished by having two modes of operation, a "create" mode, and a "watch" mode. In watch mode, the user has access to a scrub control that allows them to go forward and backward in time during the painting of the picture. Thus, it takes on the interface that a movie player has, with play, stop, and scrub. The application must also take full advantage of view persistence, allowing the user to rotate the device without losing their drawing (in create mode) or lose their place (in watch mode). When the paint area changes shape (e.g. by going from portrait to landscape), the picture contained should stretch to fill the new shape.

Components

- **Side Menu:** A strip along an edge of the interface containing buttons to activate actions. In create mode, the menu should contain a button colored in some way with the same color as the active color for the paint area view, and a button to enter watch mode. In watch mode, the menu contains a button to get back to create mode, a scrub control to change the position in playback of the painting (see Paint Area View), and a play/pause button that causes the position of the scrub control to move forward by itself at some suitable interval.
- **Paint Area View:** Allows painting as described in Project 1. In watch mode, the position of the scrub control dictates how many of the polylines should be displayed. For example, the user has drawn 3 curvy lines, the first red, the second blue, and the third green. The red line is made up of 100 points. The blue line is made up of 200 points. The green line is made up of 100 points. If the scrubber is at the half-way point, the full red line should be displayed, and half (100 points) of the blue line should be displayed. If the scrubber is at 80%, the full red and blue lines should be displayed, and 1/5 (20 points) of the green line should be displayed. In this way, when the user scrubs forward or presses the play button, the picture is repeatedly redrawn as the scrubber changes position, giving the impression that the picture is being drawn by itself. Scrubbing backward gives the opposite effect. The picture appears to be erased one line at a time as the user scrubs.
- **Palette View:** Allows choosing and mixing of colors as in Project 1. Is now displayed full-screen as a separate Activity when the color button is pressed in create mode.
- **Persistence:** The UI in your app should restore to its current state when the device is rotated. Additionally, the user's drawing should be saved using regular file output, so if they were to kill the app and start it again, their drawing would be restored (the UI may reset to a default, though). Consider using GSON, as most Android classes, like PointF, are not serializable.

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 project2 your_project_zip_file.zip