Abstract

Create a simple finger painting application that includes a dynamic paint-mixing painter’s palette. The top of the screen is a paint area where the user can draw pictures using their finger, using the selected color of paint from the palette. The bottom of the screen shows a painter’s palette with paints. One paint is the selected paint, selected by the user by single-tapping a paint, and is indicated with an outline, glow, or other highlighting mechanism. The selected paint may be combined with another paint to form a new paint by tapping a “mix” button and then tapping another paint. This causes another paint to be dynamically added to the palette which is a combination of the selected paint and the indicated paint. This paint then can be selected by the user to use in the paint area.

Components

- **Paint Area View**: A subclass of View that overrides onDraw, and allows the user to paint using their finger. This is accomplished by overriding the onTouch method of View and using the data given to form poly-lines. The view must be resizable, even after paint has been applied to the view. Thus, store the poly-lines and colors that the user draws so that the view may be re-drawn at the new size. Rescaling of the points from the old size to the new size should be applied, or the points should be stored in an abstract coordinate space (e.g. 0.0 -> 1.0 in x and y).

- **Palette View**: A subclass of ViewGroup that overrides onDraw to draw a painter’s palette board, and maintains a collection of paints. The class should offer addColor and removeColor methods that cause paint views to be added to and removed from the palette updating the layout. Override onLayout to layout the paint views around the palette. The palette view **must** be either circular or shaped like a traditional painter’s palette, and the paints should be laid out along the edge of the palette in a circle or following a painter’s palette shape. Do **not** lay the paints out in a grid.

- **Paint View**: A subclass of View that depicts a blob of paint of a particular color. Override onDraw to draw the paint blob to fill the view, respecting the padding of the view. Allow the paint to be highlighted using an outline or a glow effect by offering a boolean property “active”.

- **Color Mixing**: A “mix” button needs to be included in the interface in an appropriate location that allows the user to mix the selected color with another color. Tapping the “mix” button should highlight the button to indicate to the user that they are in “mix mode”. Then, tapping another color causes the selected color and the tapped color to create a third color which is a mixing of the selected color and the tapped color. You may use RGB averaging or true subtractive pigment mixing to determine the mixed color.

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 project1 your_project_zip_file.zip`