Description

Endeavor is an image manipulation program with two builtin tools, and image opening/saving capabilities. It is also written so that additional tools can be added without difficulty in very few lines of code.
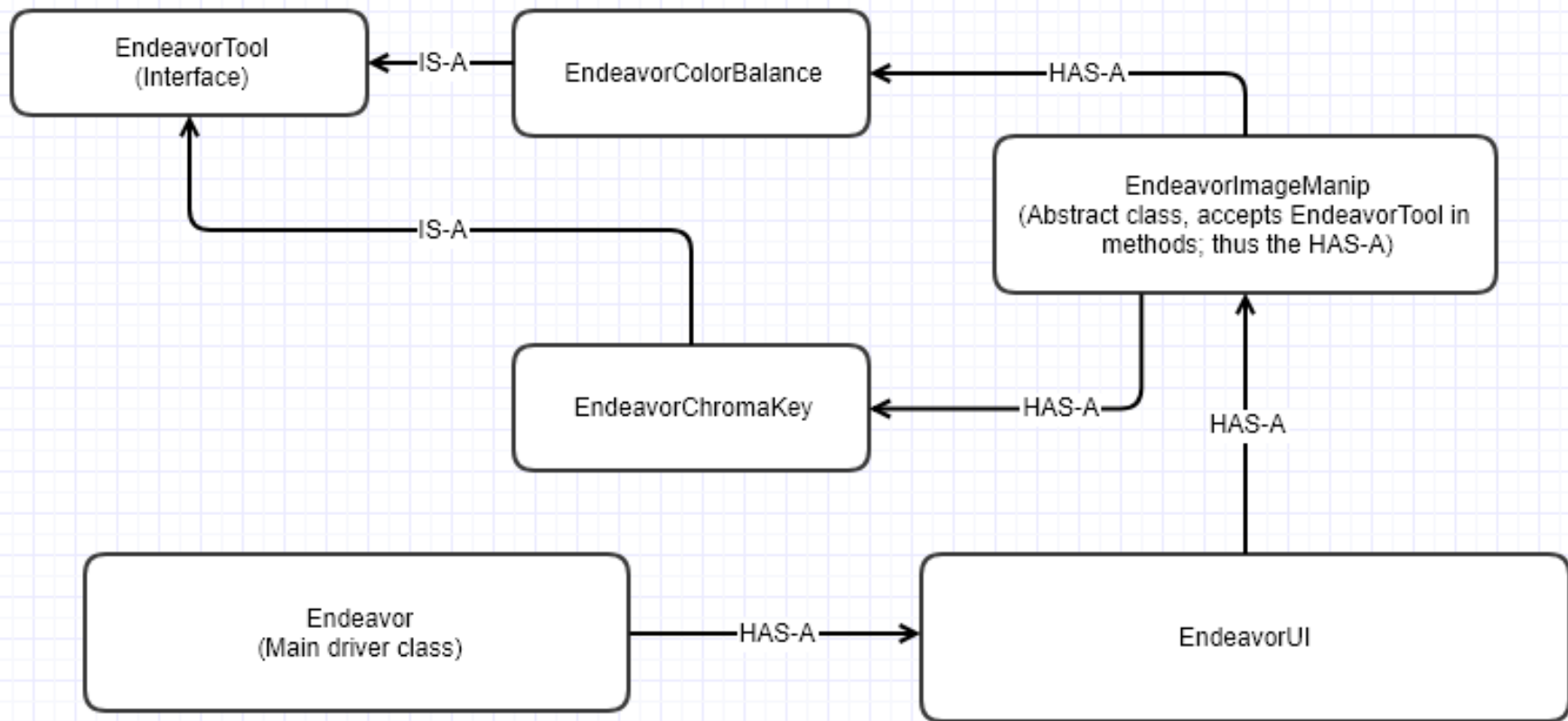
How to use

Endeavor will prompt the user to select an image on startup. Then, effects can be applied using the Tools menu, or the user can save the image/open a new image using the File menu.

For a more detailed explanation of each function that would not fit in a presentation, please see README.pdf.

UML Diagram

EndeavorTool

`EndeavorTool` is an interface that ensures certain methods, namely `getName`, `act`, and `configure`, are implemented. `getName` gets the name of the tool, `act` modifies a single pixel provided by EndeavorImageManip, and `configure` is run immediately after the user presses the button associated with the tool in the window toolbar.

EndeavorColorBalance

`EndeavorColorBalance` IS-A `EndeavorTool`. It implements all three methods. Its `configure` displays a color picking dialogue; the picked colors are then multiplied by a constant (default 0.1) and added to each pixel in `act`, to create a tinting effect.

EndeavorChromaKey

`EndeavorChromaKey` IS-A `EndeavorTool`, and also implements all three methods. `configure` accepts a color and chroma key allowance as input, and then colors all pixels within that allowance of the selected color black in `act`.

EndeavorImageManip

`EndeavorImageManip` has one job: to interface between `EndeavorUI` and the `EndeavorTool`s. It has one static method: `apply_effect`. This requires multiple parameters and applies the selected `EndeavorTool``'s effect to the image.

EndeavorUI

`EndeavorUI` is the largest and most complex class in the project, and impossible to describe on this slide. Suffice to say it creates the toolbar, handles loading of images and interfacing with `EndeavorImageManip`, and loads all `EndeavorTool`s for ready use in the Tool menu.

Endeavor (main class)

`Endeavor` is likewise the simplest class, as it contains a single static method: `main`. This method creates an `EndeavorUI` object which handles the rest of the setup, and then directs that object to ask the user for an initial image to edit.

Interesting features

- Warnings will pop up during IOExceptions or if the user fails to select an image.

- The Tint tool operates on an "Add" algorithm, in that a small amount of the tint color is "added" to the existing color. Therefore excessive tinting will noticeably brighten the image.