Presentation Color Creator

General description of the project (2 pts)

The program will allow users to select a color by either color-selecting using an eyedropper tool, selecting color on a color picker, or by entering its RGB values directly and obtaining the color's complement (opposite on the color wheel), analogous colors (colors near it on the color wheel), and triadic colors (three equidistant on the color wheel). The program would show the RGB values of the colors and show all of the colors next to each other. Then, the program would apply the color combination to a PowerPoint file template and allow the user to download it.

I would use TKInter to create a GUI. A GUI would be necessary to see the colors together and see the colors in the template (and download the template), but it could potentially run minimally with a command line interface as well. In that case, the user would enter the RGB values directly (or randomly generate them) and get RGB values back, without the slider system or color-picking.

Task Vignettes (User activity "flow") (4 pts)

1. User input (RGB values directly input, picked on color picker, or selected from uploaded image)

Ellen is creating a presentation for a conference. She has chosen a color she likes (perhaps the color of her lab's logo), but she wants to see what colors would look good with it. She uploads an image directly into the program and color-picks using an eyedropper tool. Alternatively, she could use another program to find the RGB values of the color or use a color picker in the program. She selects whether she wants to see complementary, analogous, or triadic colors using radio buttons. The program shows her two-three rectangles with the colors next to each other below the input area. For each color, the program also shows RGB values. The program also allows Ellen to download a presentation using the colors in a PowerPoint format which she can then edit directly.

2. Color palette randomizer

Ellen may not already have a starting color in mind. In that case, she can click the

"Random Color Palette" button to see new randomized harmonious color palettes.

Technical "flow" (3 pts)

1.

- User input
    - RGB values directly OR

    - Selected from user-uploaded image using eyedrop tool
- Create color block with input color (draw a rectangle)
- Calculate color values (e.g., complementary: R = 255 – R input, G = 255 – G input, B = 255 – B input)
    - For analogous and triadic, would convert RGB to HSV and back, to get two additional colors
- Create color blocks with generated colors, display next to input color
- Apply selected colors to the poster/presentation template.
    - Program will build a template as a PowerPoint file
    - User will be able to download the template file
- Version 2 will be implemented via TKInter

2.

- User input: “Random Color Palette” selected
- Random RGB values are generated
- The correct RGB values are generated in rectangles to create a harmonious color palette
- Apply selected colors to the poster/presentation template.
    - Program will build a template as a PowerPoint file
    - User will be able to download the template
- Version 2 will be implemented via TKInter

Blocks needed

- Grab input color (for 1)
- Generate random color (for 2)
- Generate new colors based on input color
- Radio buttons for complementary, analogous, triadic
- Output color blocks
- Buttons for templates
- Output template itself
    - Allow download template