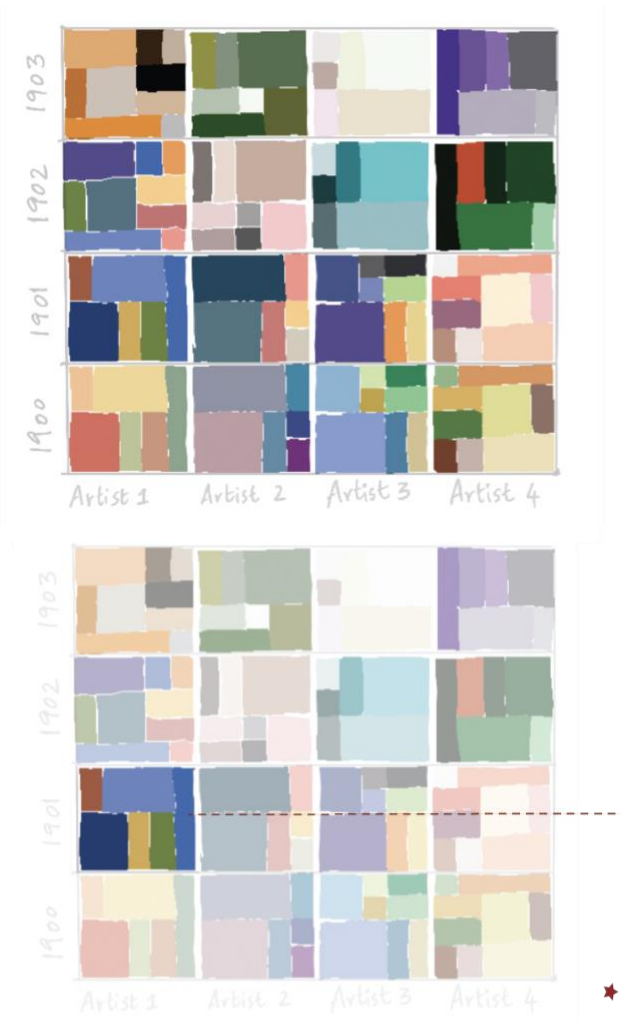
HUES AND TONES

Color extraction from paintings & producing maps/charts using Python

SEPT 30, 2020

DESIGNER'S SCOPE

- To make a visualization that depicts how colors are used in paintings by various artists. I plan to do this by making a prototype of a website using Adobe XD.
- Making a website or a dashboard is NOT in the developer's scope.
- The below picture shows 16 color palettes from 16 different paintings – *4 Artists over 4 years*. Each palette shows 7-8 top-used colors.
- Project specifics/design will be shared over the call.



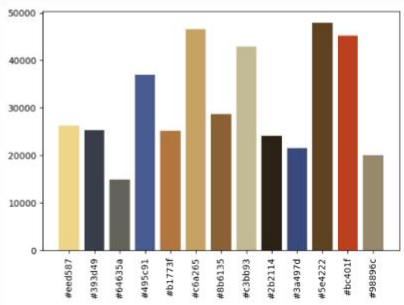
DEVELOPER'S SCOPE

- To produce color extractions from a painting like shown on the right.
- The Python code should provide flexibility to choose "number of colors" and size of the square/rectangle of the tree map. In this case, the map shows top 13 colors.

- These images are from STAGE 1: (the stage one Python code will be shared for you to develop on it)

PAINTING

TREE MAP

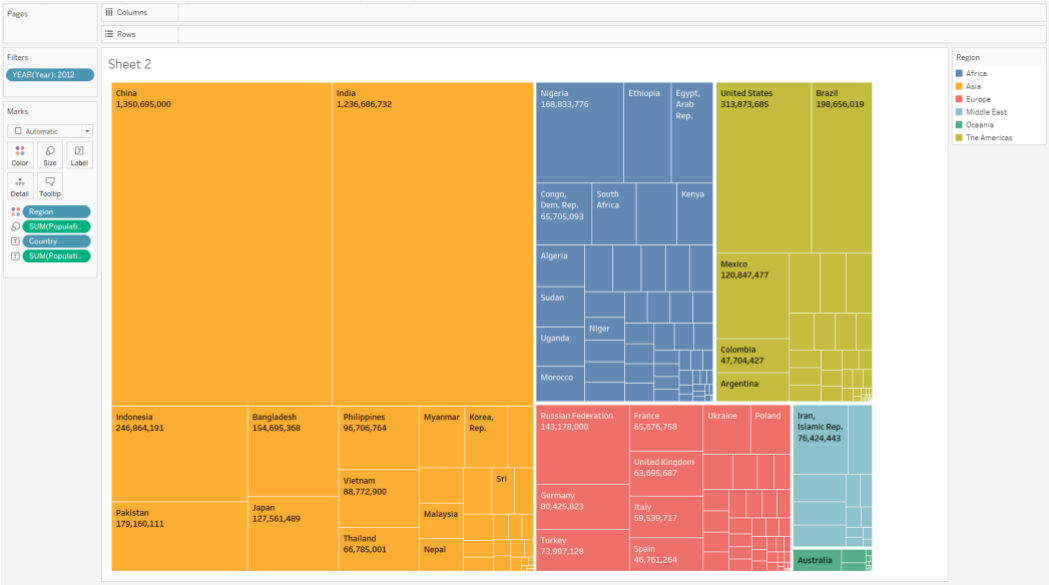


BAR CHART

THE TASK – Refining stage 1

1. TREE MAP

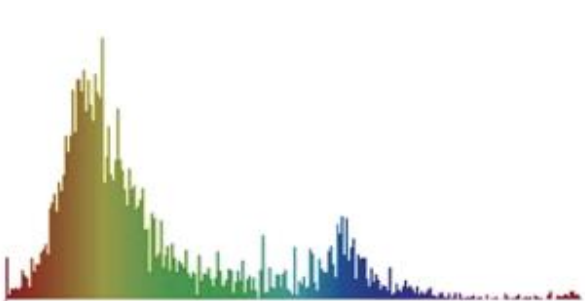
- Stage 1 tree map to be converted like this one: with an **"order" –** Highest to lowest proportion

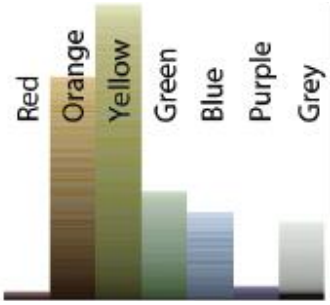


- Each category of color should have subcategories like in this image – for example, the big yellow square should be subdivided into all shades of yellow in that painting.
- The aim is to make it look like a "pixelated" image.

2. HISTOGRAM

- Stage 1 bar chart to be converted like this one: with x axis on HSB values.
- Each color should generate labels like hex value, color name, percentage of occurrence in the painting.
- The bar chart looks nice, but we can try making a histogram such as this one, that shows the gradation of colors used:
- You could give me options, based on your experimentation.





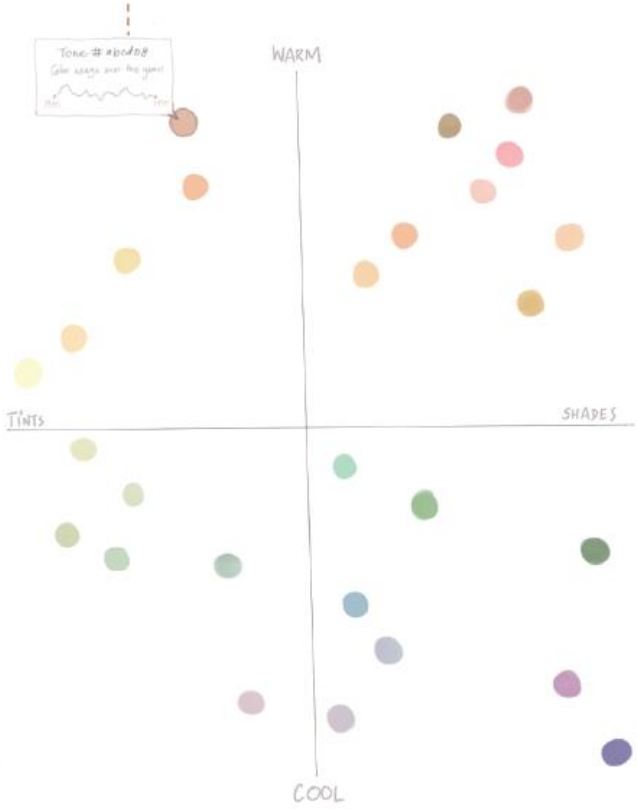
WHAT WE EXPECT:

- My ideas as a designer will be dynamic and you should be flexible to accommodate the additions/changes in the code as we progress with the design.
- I am not familiar with programming and might not know what ***can*** be achieved through coding or judge the time it will take to execute it. So **be creative with the outputs you provide,** and feel free to give suggestions.
- Will be working on shorter and faster timelines.

3. Derive the color scheme form a given Painting and then the warmer or cooler tone:

Painting

Color Scheme

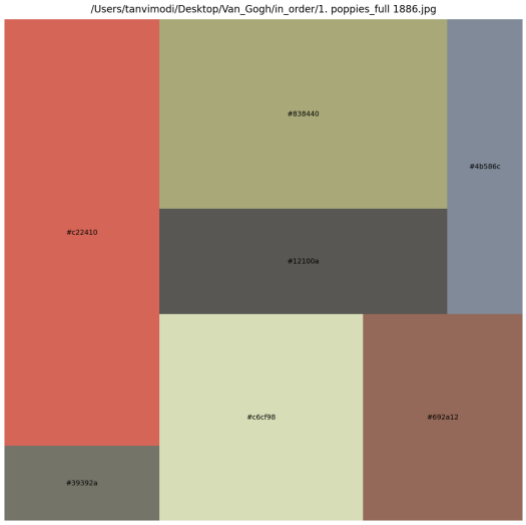


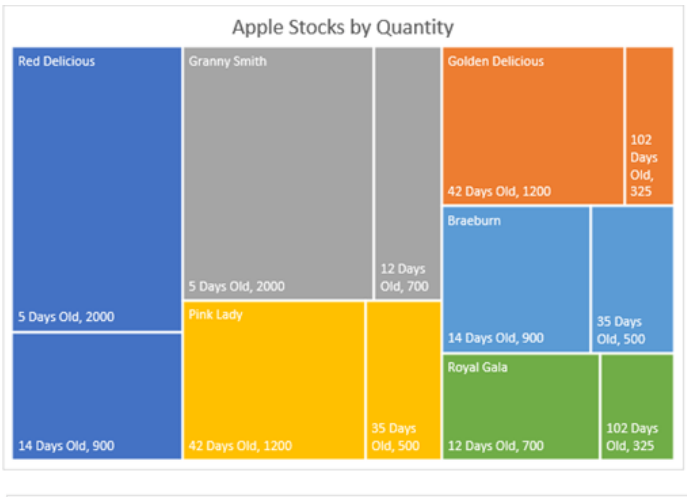
Distribution of Warm and Cool tones

TASK 1

4. TREE MAP

- Stage 1 tree map to be converted like this one: with an **"order" –** Highest to lowest proportion





- Colors need to be arranged in **hierarchy**
- The output image should preferably be a *square.*
- I need one image with labels and one without.
- The image with label could be "hex value" or "color name".
- Top 7 colors for each palette would do.
- Let's do a trial of ONE painting. If it comes out well, we can do rest of 15 images.
- Attached with the email – the first painting that you will use to produce the color palette.
- Attached with the email – the **Python code** for extracting the colors from the image.