Color Analysis Project with Python

Project Introduction

- Color is one of the most important elements of photography, because it affects everything from composition and visual appeal to the viewer's attention and emotions.
- This project can help you analyze colors of photographs through processing image data using a Python programming language.
- Students will complete Assignments 1-3 and use the deliverables from those assignments to create a Color Analysis presentation.

Learning Outcomes

1. Students will understand and apply color theory to their photographs.
2. Students will analyze colors on digital photographs through image processing using Python.

Project Process

1. Learn a color theory.
2. Take photos in color harmonies (monochromatic, analogous , and complementary schemes). Choose the best photo for three color harmonies.
3. Prepare 3 photos in required size in Photoshop (900x600 pixels, 72 dpi).
4. Use Python. Follow instructions of coding step by step. Create 3 pie charts.
5. Use Adobe Color. Choose the main color and create 3 color wheels by applying color harmony. Screenshot (Command + Shift + 4) https://color.adobe.com/create/color-wheel
6. Write a color analysis report with 3 photos, 3 pie charts, and 3 color wheels. (See the template and practice example for assistance)
7. Submit the report (ppt/pptx) on CANVAS.
8. Present your report in a class.

Rubric for Color Analysis Report (total: 10 pt.)

Criteria	2.5 pt Exceeds Expectations	1.5 pt Meets Expectations	0 pt Does Not Meet Expectations
Programming (Python)	Students successfully complete image processing by understanding and applying codes.	Students complete image processing, but they do not understand codes yet.	Students do not complete image processing and do not understand codes.
Color theory	Students understand color theory and apply it in analyzing colors.	Students understand color theory but have some difficulty to apply it in analyzing colors.	Students do not understand color theory.
Color Analysis	Students suggest improvement of color in photographs based on critical analysis of colors.	Students suggest improvement of color in photographs based on basic analysis of colors.	Students don't suggest improvement of color in photographs based on basic analysis of colors.
Completion of report	Students complete color analysis report with good writing, photos, and charts.	Students complete color analysis report, but some areas need to develop further (writing, photos or charts)	Students do not complete color analysis report with writing, photos, and charts.