

# **CSI 2120 - Similarity Image Search Comprehensive Assignment Deliverable 1**

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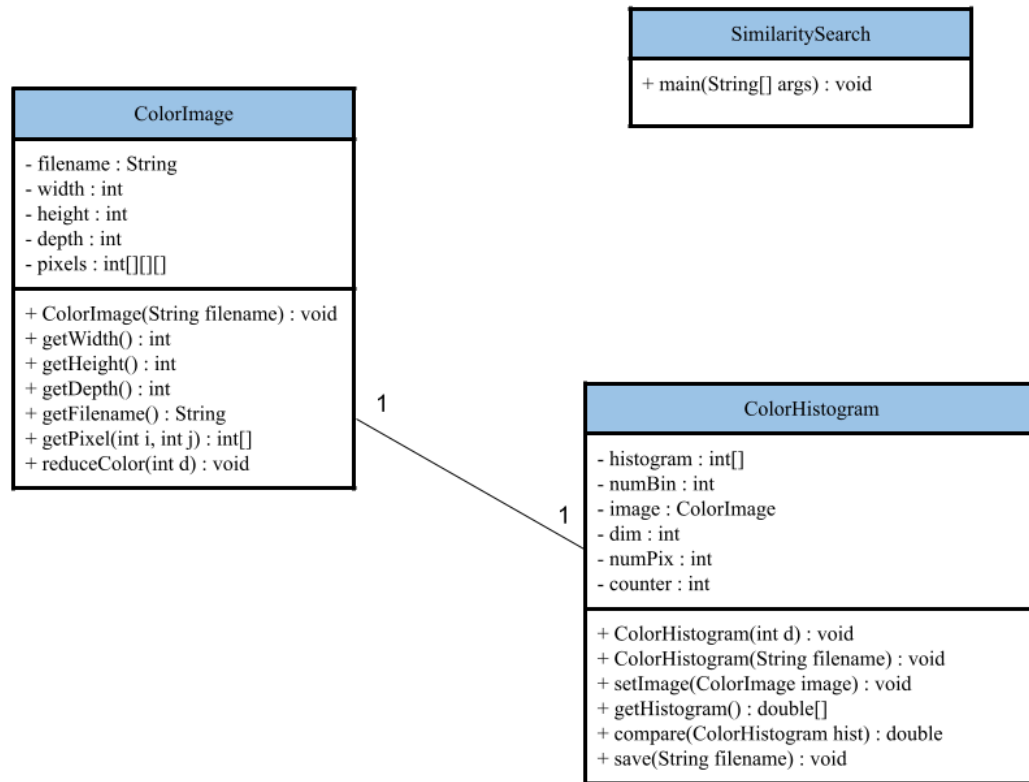
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**Deliverable Number: 1**

## UML Diagram



### File reading type:

For the query images, we are reading the image information from the ppm files. When we read the RGB values from the ppm files, we store the values of the pixels as an array in a 2-dimensional array.

### Notes for testing the implementations:

- When testing the implementations in the terminal, please input the directory path of the image dataset from within the folder of the datasets (ending with /imageDataset2\_15\_20).
- When testing, please have the ppm image file of the query image that you wish to test in the same folder as the Java classes (ColorImage, SimilaritySearch and ColorHistogram).

**Example of an input we ran and got the valid results (finding the 5 most similar images to query image q00.ppm):**

```
matinmobini@Matins-MacBook-Pro CSI_2120_Project_Part_1 % java SimilaritySearch q00.ppm /Users/mat
inmobini/Documents/CSI-2120-Programming-Paradigms/CSI_2120_Project_Part_1/imageDataset2_15_20
The 5 most similar images to the query image q00.ppm are:
1144.jpg has similarity: 1.0
3806.jpg has similarity: 0.7074537037037036
3714.jpg has similarity: 0.668431712962963
3756.jpg has similarity: 0.6620254629629632
2462.jpg has similarity: 0.6491030092592595
matinmobini@Matins-MacBook-Pro CSI_2120_Project_Part_1 %
```

In observing the results, we can agree that these are the 5 most similar images to the query image. For example, the 1144.jpg image is the exact same image as q00.ppm, and that is why their similarity is 1.0 equating to them being the same.

**REFERENCES:**

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- File (java platform SE 8 ). (2024, January 8).  
<https://docs.oracle.com/javase/8/docs/api/java/io/File.html#exists->
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<https://docs.oracle.com/javase/8/docs/api/java/io/FileReader.html>
- We received help with the RGB conversions in the ColorImage class from our classmate Eric Zhou (Student ID:300286231) when we encountered some bugs.
- Notes/Labs from previous classes including Java