COLOR DETECTION APPLICATION

Description

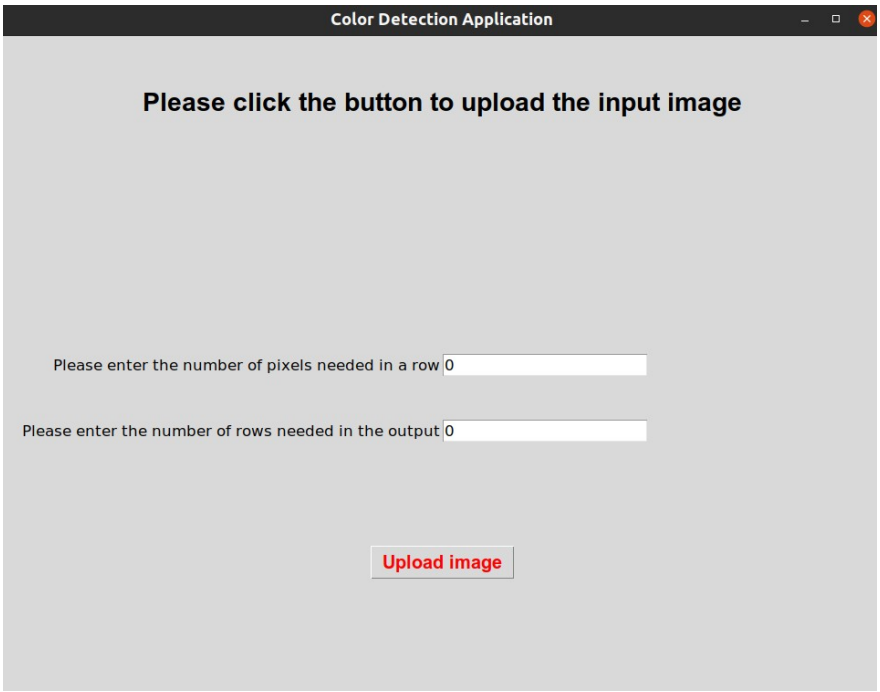
- The color detection application (CDA), as the name suggests, is a tool to demonstrate the Color Dectection part of the Image Analysis module.
- The main objective of the application is to extract the color of each pixel of the image with the color being in the ‘RGB’ format, which can in turn be used for further data processing.
- Now, extracting the information of each and every pixel would be impractical and there would be way too much data to analyse.
- Therefore, the CDA groups a number of pixels together (depends on the user input to what extent this grouping is done) and computes the mean RGB value of this group of pixels. This data can be turned in for further analysis.
- For example, the data consisting of the RGB values of an image of a particular pulp sample can be used to determine the quality of the pulp.
- The closest color of a “box” of the output grid will also be displayed.

Prerequisite (python) packages

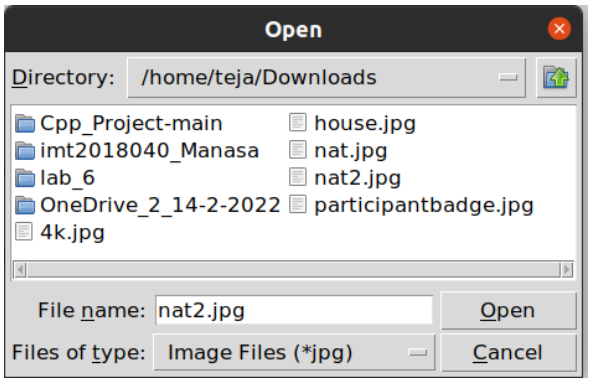
- tkinter
- PIL
- matplotlib
- scipy
- webcolors

How to run

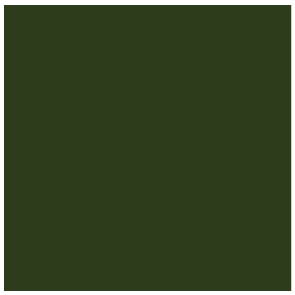
- The program can be used by executing the ‘mainwin.py’ file with python.
- This launches the main window of the CDA



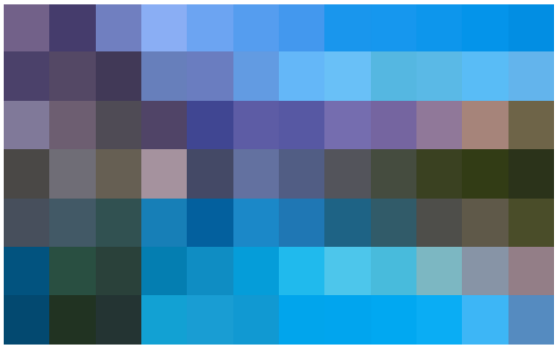
- The user can enter the number of pixels needed in a single row and also the number of rows needed for the output.
- Then the input image can be given by clicking the ‘Upload Image’ button.
- Choose the directory of the input image and select the image.



- Now that the input is given, the program will get to forming a grid over the input image and taking the average RGB values of each “box” containing a group of pixels. For example, the group of pixels shown on the left have a mean color, which is shown on the right.



- Thefore, when a complete image is given, we get the output as shown.



Source Code of CDA:
https://github.com/TejaJanakiRam/Color_Detection_Application