GROUP I PART 1

Here, we have to read an image and enhance the contrast such that only the achromatic part changes and the colour vector is preserved.

We performed the following operations in the code: -

1. The algorithm converts the colour space of the input image from BGR to HSV (Hue, Saturation, Value) using the BGR\_HSV\_CONVERSION function.

2. The algorithm then checks the saturation of each pixel in the image in the contrast\_enhancement function. If the saturation is less than 0.1 (indicating an achromatic or near grayscale pixel), it enhances the contrast of that pixel by multiplying the Value component by 1.3

3. After enhancing the contrast, the algorithm the HSV image back to BRG using the HSV\_BGR\_CONVERSION function

4 Finally, the algorithm saves the image and displays the enhanced image using Matplotlib.

5. For the output, we can see in the Image that the contrast of only the achromatic part changes and rest remains same preserving the colour vector.