MOBILE VISUAL COMPUTING PROGRAMMING ASSIGNMENT 1

- I have imported the following Libraries for the implementation of this program.
  - Rawpy – for reading the image and calculating the black level in image
  - Cv2 - for merging the images
  - Numpy – used to compute values and convert the image array to double
  - PIL – I used PIL to do image operations
  - Copy – I used copy function to perform deepcopy of the image array while creating three channels of red, green and blue images from the color filter array.
- I have created 3 channels of images red, green and blue by taking the values of neighboring pixels and replacing its intensity values with other values(of respective color chosen)

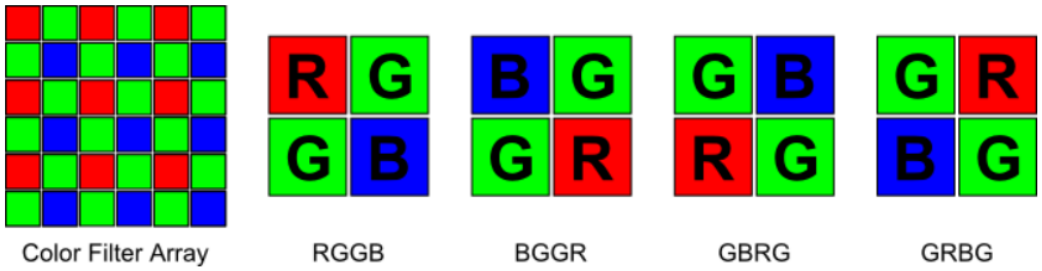

Fig 1: The above figure shows the color filter array

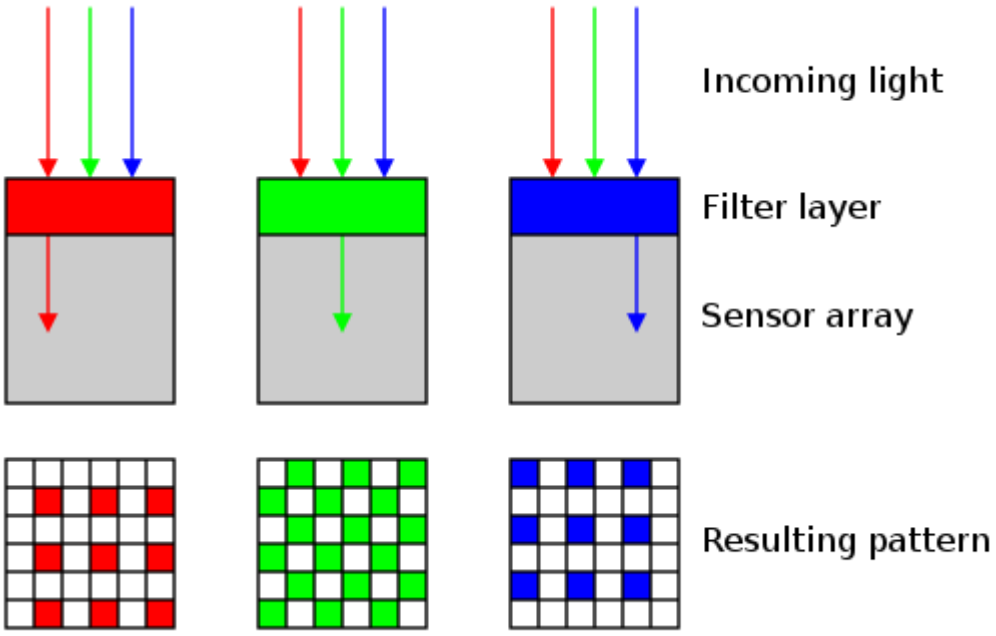

Fig 2: The above figure shows the creation of three channeled images of red, green and blue intensities

Steps for generation of Image:

- Read the .dng image(raw pixel values)
- Minimize the black level per channel using rawpy library
- Copy the image generated and create three channels of images using the interpolation of neighbouring pixel values(intensities){I have created a separate pdf file to explain my method(although its very basic)}
- Create three channels of images (red, green and blue)
- Merge the three images using cv2 library
- Introduce gamma correction for images(I have taken sRGB values for this using Wikipedia)

The Final Result I got was a bit dull greenish Image:

Fig3: Images's plotted part using matplot.lib

Fig 4: This is the saved image using matplotlib library