Lab 01

Aim: Introduction to image processing
a) Introduction to opencv & python.
b) Reading & displaying an image in python
c) RGB to Grayscale conversion.

Software used: Spyder

Theory:
Python is high level, interpreted, interactive & OOP language. It is designed to be highly readable. It uses readable english keywords frequently where as other languages uses punctuation & it has fewer syntactical constructions than other language.

Numpy: It is python package. Stands for 'Numerical python'. It is library consisting of multidimensional array objects & a collection of routines for processing of array. We can install numpy using popular python package installer, Pip (pip install - numpy)

Opencv: Open source computer vision.
It is widely used library for computer vision & ML tasks. Opencv python is the python implementation of opencv. It needs some pre-requisites like Numpy & matplotlib. It mainly focuses on image processing, videocapturing & analysis.

cv2.imread : reads an image.
cv2.imshow : displays an image.
cv2.COLOR_BGR2GRAY : Gray conversion.

Conclusion:
Basic python functions as well as opencv functions were studied. OpenCV accepts image in BGR format rather than RGB in case of gray transformation.