ROBOTICS WINTER CAMP
ASSIGNMENT-3

In this assignment, you will be given 2 different tasks-first one is related to OpenCV and the second one is related to Pyserial. Both the tasks are interlinked.

TASK-1

You are required to **detect** and **extract the different shapes of different colours** and **make multiple images for each colour** and submit them along with your **code**. You are given the following images named- **opencv1.jpeg** and **opencv2.png**. For both the images you are required to detect the different shades of red, green and blue and extract their respective shapes and make 3 different images, each for the 3 colours. **The new images need to have a white background with the shapes of their respective colours.** The images should be named **red.jpg**, **green.jpg** and **blue.jpg**.

REMEMBER YOU DON'T NEED TO DETECT THE SHAPES, YOU JUST NEED TO EXTRACT THEM

TASK-2

For this task, you require **3 LEDs** and an **Arduino**. When you have detected red colour from each of the images and saved the image light up an LED. In a similar fashion connect another LED to this circuit(with one LED) and light it up after green colour is detected and a similar process needs to be repeated with the 3rd LED after blue colour is detected. **Remember to give a delay of 2 seconds after the detection of each colour.**

In the end, all the 3 LEDs light up.

STUDY MATERIALS:

OpenCV Tutorials of Color Segmentation:

↦https://www.learnopencv.com/invisibility-cloak-using-color-detection-and-segmentation-with-opencv/

↦https://pythonprogramming.net/color-filter-python-opencv-tutorial/

↦You can also refer to Sentdex Python YouTube Videos for OpenCV.

Pyserial Tutorial:

http://www.zilogic.com/blog/tutorial-pyserial.html