Department of Computer Engineering
Faculty of Engineering
University of Sri Jayewardenepura

Course	Computer Vision & Image Processing
Course Code	CO4204
Title	Connected Component Labelling
Practical Number	1
Outcomes	Get familiar with basic pixel relationships in images
Deadline	18th December 2020

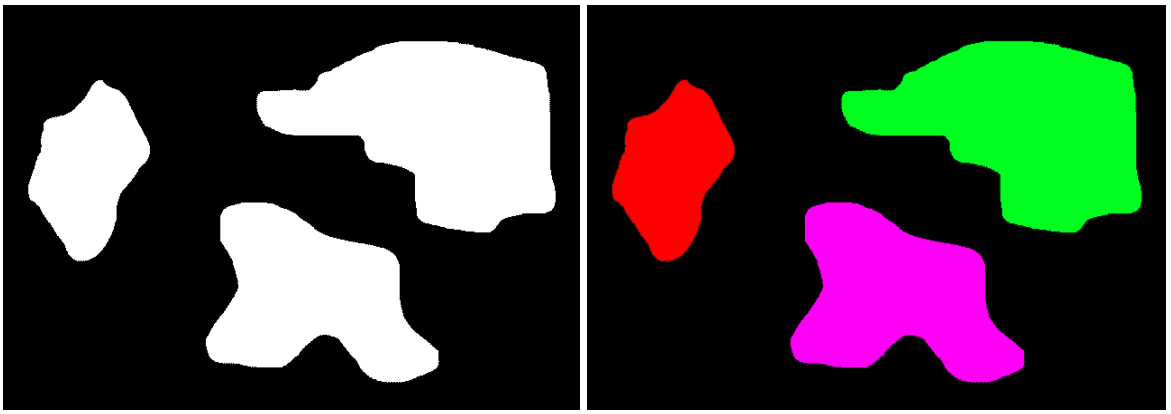
General Instructions:

- No food, drinks, backpacks, and bags are allowed to take inside the laboratory.
- Please save your work frequently during the practical session to avoid data loss due to unavoidable circumstances.
- Your files will be erased after the practical session. Therefore, please keep a backup for yourself.
- Please archive all files to a zip file, upload the zip file to LMS, and send as an attachment to coassignments@gmail.com.
- Use the following format when you are naming the zip file: yy_ENG_xxx_L.zip, yy_ENG_xxx is your registration number, and L stands for the practical number (e.g. 16_ENG_135_1.zip)

1. Two-pass algorithm for Connected Component Labelling

Go through the explanation of the two-pass algorithm in the lecture video and lecture slides and implement it using either Python or C++ languages. **You may use the OpenCV library only for basic operations such as image reads and writes**.

Consider that all the input images are binary images. The output should be a colour image with the labelling of each connected components with different colours.



Input image Output image with different labels

2. Submission Guidelines

Name your code file with your index number (ex. 16_ENG_001_P1.c) and upload it to the LMS on or before the deadline. When the file is submitted to the LMS, make sure

- The file is properly uploaded.
- Check the student statement, and
- Press the 'submit' button.

Warning: The assignment will not be properly submitted if the above steps are not correctly followed.

Deadline: **2400 hrs** on **18th December 2020**. Marks will be deducted from the late submissions. No assignment will be accepted by the LMS after 2400 hrs on 21st December 2020.