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**Assignment 1 - Report**

1. **Purpose:**

To implement programs for grayscale transformation of images, 4 connected component algorithm to identify and label regions.

1. **Method:**

**Negative Image**: Set each new pixel value to 255 – old pixel value.

**Histogram Equalization**: Applied the formula for equalization for each pixel.

norm(v) = round(((cdf(v) - mincdf) / (M \* N) - mincdf) \* (L - 1))

**Binary Image Transformation:**

Retrieved the threshold of Image.

If value(pixel) <= Threshold then set value to 0.

If value(pixel) > Threshold then set value to 255

1. **Result:**

**Negative Image:**

A sign in the dark

Description automatically generated A screenshot of a cell phone

Description automatically generated

A picture containing photo, person, water, riding

Description automatically generated A picture containing screenshot

Description automatically generated

**Histogram Equalization:**

A sign in the dark

Description automatically generated A screenshot of a cell phone

Description automatically generated

A close up of a street

Description automatically generated A screenshot of a cell phone

Description automatically generated

A large city

Description automatically generated A close up of a tower

Description automatically generated

A view of a city

Description automatically generated A close up of a device

Description automatically generated

**Binary Transformation:**

A picture containing computer

Description automatically generated A picture containing light

Description automatically generated

A picture containing sitting, table, monitor, holding

Description automatically generated A close up of text on a black background

Description automatically generated

A close up of a logo

Description automatically generated

1. **Bug Report:**

1. connected component algorithm not implemented.
2. Steps to Run:
3. Open Terminal
4. cd to project directory
5. To compile: g++ $(pkg-config --cflags --libs opencv4) -std=c++11 <program name>.cpp;

Program name: part1,part2