

**Gebze Technical University
Computer Engineering**

CSE 222 - 2018 Spring

HOMEWORK 5 REPORT

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1 INTRODUCTION

1.1 Problem Definition

In this homework, we need to read an image and compare by using LEX,EUC and BMX comparison methods.

1.2 System Requirements

I used IntelliJ IDEA 2018.3.5 (Community Edition) with

Build #IC-183.5912.21, built on February 26, 2019

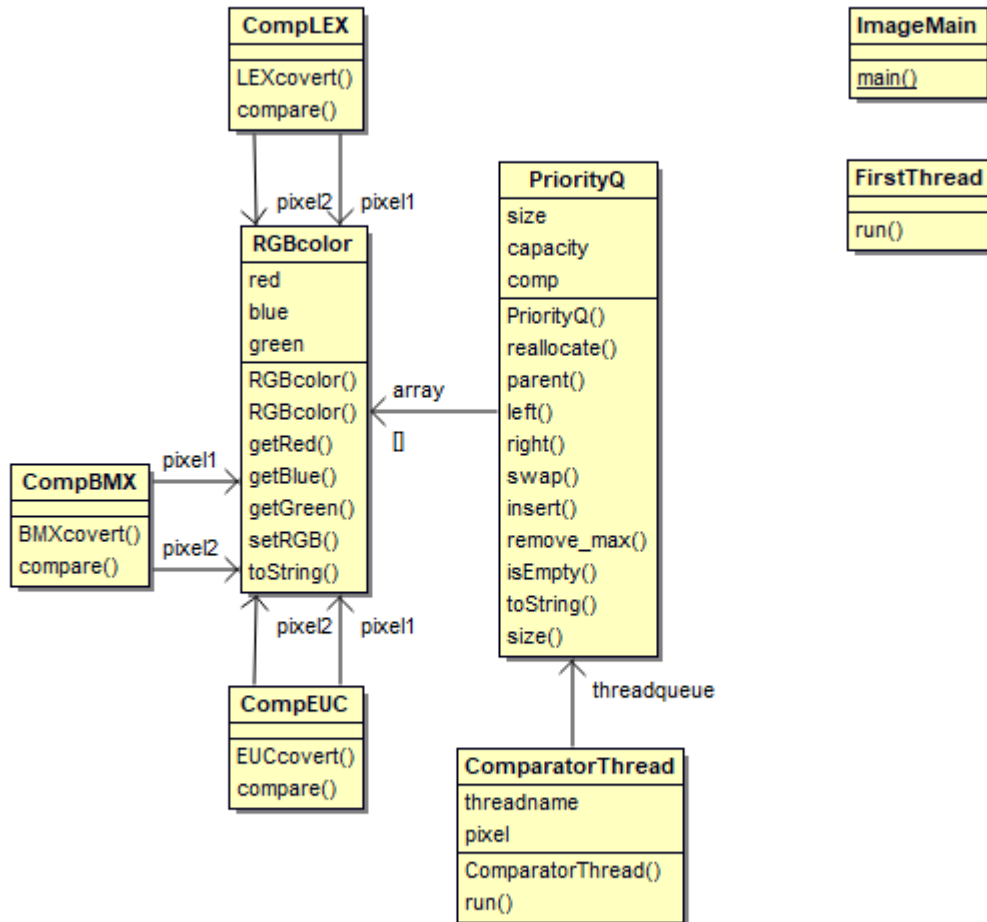
JRE: 1.8.0_152-release-1343-b28 amd64

JVM: OpenJDK 64-Bit Server VM by JetBrains s.r.o

Windows 10 10.0

2 METHOD

2.1 Class Diagrams



2.2 Problem Solution Approach

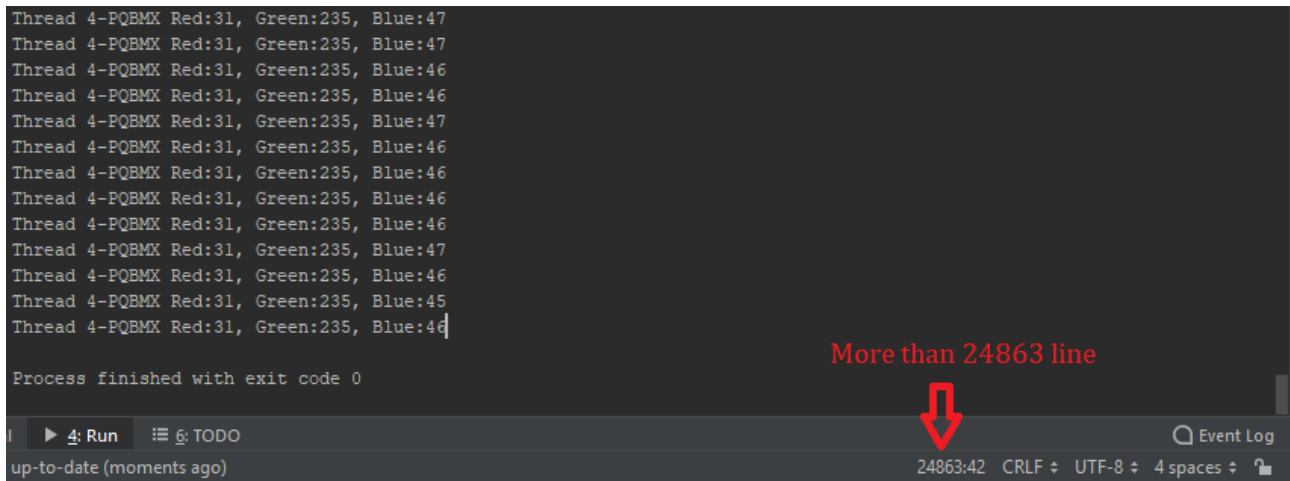
Firstly, I read the image (example.png) by using `BufferedImage` class. Then, I created a `RGBcolor` class to keep red, green and blue color. After that, I created the comparison classes (`LEX`, `EUC`, `BMX`). These classes implement from `Comparator` interface. Then, I prefer to create binary heap data structures. In `insert` and `remove_max` method, I used `synchronized` keyword in order to prevent corruption. In the next, I created the `controlthread` and in this class, I created 3 `comparatorthread` object in order to use priority queues and comparison methods. Finally, I insert the image pixels to priority queues and print with `comparator thread`.

3 RESULT

3.1 Test Cases

By using example.png.

3.2 Running Results



The screenshot shows a terminal window with a dark background. The main area contains a list of 15 lines of text, each starting with "Thread 4-PQBMX" followed by "Red:31, Green:235, Blue:47" or "Blue:46". Below this list, it says "Process finished with exit code 0". On the right side of the terminal, there is a red text annotation "More than 24863 line" with a red arrow pointing down to the status bar. The status bar at the bottom shows "4 Run", "6 TODO", "up-to-date (moments ago)", "24863:42", "CRLF", "UTF-8", "4 spaces", and "Event Log".

```
Thread 4-PQBMX Red:31, Green:235, Blue:47
Thread 4-PQBMX Red:31, Green:235, Blue:47
Thread 4-PQBMX Red:31, Green:235, Blue:46
Thread 4-PQBMX Red:31, Green:235, Blue:46
Thread 4-PQBMX Red:31, Green:235, Blue:47
Thread 4-PQBMX Red:31, Green:235, Blue:46
Thread 4-PQBMX Red:31, Green:235, Blue:46
Thread 4-PQBMX Red:31, Green:235, Blue:46
Thread 4-PQBMX Red:31, Green:235, Blue:46
Thread 4-PQBMX Red:31, Green:235, Blue:46
Thread 4-PQBMX Red:31, Green:235, Blue:47
Thread 4-PQBMX Red:31, Green:235, Blue:46
Thread 4-PQBMX Red:31, Green:235, Blue:45
Thread 4-PQBMX Red:31, Green:235, Blue:46
Process finished with exit code 0
```

More than 24863 line

4 Run 6 TODO up-to-date (moments ago) 24863:42 CRLF UTF-8 4 spaces Event Log

- Main titles -> 16pt , 2 line break
- Subtitles -> 14pt, 1.5 line break
- Paragraph -> 12pt, 1.5 line break