Gebze Technical University

Computer Engineering

CSE 222 - 2018 Spring

HOMEWORK 5 REPORT

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INTRODUCTION

Problem Definition

The problem is to create four threads and running them

The first one read pixels from an image an place them into three different max priority queue

According to a comparator.

The other threads are to remove an item from a specified queue and print the item to the screen.

System Requirements

- **Microsoft Windows 10**/8/7/Vista/2003/XP (incl.64-**bit**)
- 1 GB **RAM** minimum, 2 GB **RAM recommended**.
- 300 MB **hard disk space** + at least 1 GB for caches.
- 1024x768 minimum **screen resolution**.

METHOD

Class Pvector

`set(int r , int g, int b)`	Sets the values of the three color
`getRed()`	Return the amount of red in that color
`getGreen()`	Return the amount of green in that color
`getBlue()`	Return the amount of blue in that color
`toString ()`	Return a String

Class MAXPQ

`offer(Pvector item)`	Inserts an item into the queue. Returns true if successful; returns false if the item could not be inserted.
`poll()`	Removes the smallest entry and returns it. H the queue is empty, returns null .
`remove()`	Removes the smallest entry and returns it if the queue is not empty. H the queue is empty, throws a NoSuchElementException.
`peek()`	Returns the smallest entry without removing it. H the queue is empty, returns null .
`element()`	Returns the smallest entry without removing it. H the queue is empty, throws a NoSuchElementException .
`isEmpty()`	Return true if the queue was empty , false if not

`swap(int i , int j)`	Exchanges the object references in theData at indexes i and j .

Static class `LEX implements Comparator<Pvector>`

`compare(Pvector p , Pvector ch)`	Compare the Pvector object according to LEX method return 1 if p is bigg1er , -1 if ch is bigger , 0 is they are equal.

Static class `EUC implements Comparator<Pvector>`

`compare(Pvector p , Pvector ch)`	Compare the Pvector object according to EUC method return 1 if p is bigg1er , -1 if ch is bigger , 0 is they are equal.

Static class `BMX implements Comparator<Pvector>`

`compare(Pvector p , Pvector ch)`	Compare the Pvector object according to BMX method return 1 if p is bigg1er , -1 if ch is bigger , 0 is they are equal.

Static class `img_reader extends Thread`

`run()`	Runs the tread
`getnextpixel(int i, int j)`	Return a color from the file corresponding to the position i , j as a Pvector object

Static class `print_LEX extends Thread`

`run()`	Runs the tread

Static class `print_EUC extends Thread`

`run()`	Runs the tread

Static class `print_BMX extends Thread`

`run()`	Runs the tread

Static class `monitor`

`insert(Pvector P , MAXPQ PQ)`	Add p to PQ or lock the thread and notifying all the other thread
`remove(MAXPQ PQ )`	Removing an item from PQ or lock the thread and notifying all the other thread
`interruptme()`	Interrupt .