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Section: Image Processing

Project: **Project 0A - Binary and Non-binary Thresholding Operations**

Due Date: Sept 2nd

Algorithm Steps

step 0:

inFile <- open args[0]

outFile1 <- open args[1] // i.e., FileWriter outFile1 = new FileWriter(args[1]);

outFile2 <- open args[2]

numRows, numCols, minVal, maxVal <- read from inFile

thrValue <- ask user from console // Scanner in = new Scanner(system.in);

step 1:

outFile1 <- output numRows, numCols, 0, 1

outFile2 <- output numRows, numCols, 0, maxVal

step 2:

processing (inFile, outFile1, outFile2, thrValue)

step 3: close all files

Source Code:

```java
import java.io.FileReader;

import java.io.FileWriter;

import java.io.IOException;

import java.util.Scanner;



public class Main {

    public static void processing(Scanner inFile, FileWriter outFile1,
FileWriter outFile2, int thrVal, int numRows, int numCols) throws IOException
{

        int pixelVal;


        for(int i = 0; i < numRows; i ++){

            for (int j = 0; j < numCols; j ++) {

                pixelVal = inFile.nextInt();

                if(pixelVal >= thrVal){

                    outFile1.write("1 ");

                    outFile2.write(pixelVal + " ");

                }else{

                    outFile1.write("0 ");

                    outFile2.write("0 ");

                }

            }

            outFile1.write('\n');

            outFile2.write('\n');

        }

    }
```

```java
public static void main(String[] args) throws IOException {
    Scanner inFile = new Scanner(new FileReader(args[0]));
    FileWriter outFile1 = new FileWriter(args[1]),
               outFile2 = new FileWriter(args[2]);


    int numRows = inFile.nextInt();
    int numCols = inFile.nextInt();
    int minVal = inFile.nextInt();
    int maxVal = inFile.nextInt();


    System.out.print("Enter a Threshold Value: ");
    int thrVal = (new Scanner(System.in)).nextInt();


    outFile1.write(numRows + " " + numCols + " " + 0 + " " + 1 + "\n");
    outFile2.write(numRows + " " + numCols + " " + 0 + " " + maxVal +
"\n");


    processing(inFile, outFile1, outFile2, thrVal, numRows, numCols);


    outFile1.close();
    outFile2.close();
}
}
```

Program Output

Output 1

31 40 0 1

```
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Output 2

31 40 0 9

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