

Programming Fundamentals

Submitted to

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# **Lab Assignment 4**

## **Question 1**

Write a program that searches a file of numbers and displays the largest number, the smallest number, and the average of all the numbers in the file………….

## **Source Code**

package *F*ile\_*H*andling;

import java.util.Scanner;

import java.io.*\**;

public class checkingNumbers {

    public static *void* main(String[] *args*)throws IOException{

        Scanner input = **new** Scanner(System.in);

        //Getting input from user

        System.out.print("Enter file name:(abc.txt): ");

        String path = input.next();

        input.close();

        File myFile = **new** File(path);

        //if file not found

        if (!myFile.exists()){

            System.out.print("File not found");

            System.exit(1);

        }

        //variables for numbers

*int* largest = 0, smallest = 0, sum = 0 , count = 0, num = 0;

        //scanner to read from file

        Scanner Input = **new** Scanner(myFile);

        //initializing input from file

        largest = Input.nextInt();

        smallest = largest;

        num = largest;

        sum = largest;

        System.out.print("The numbers in the file are ");

        while (Input.hasNext()){

            //condition if all data is readed from file

            if (!Input.hasNext()){

                System.exit(1);

            }

            //finding largest, smallest and average

            num = Input.nextInt();

            //printing numbers in the file

            System.out.print(num + " ");

            sum += num;

            if (num > largest){

                largest = num;

            }

            else if (num < smallest){

                smallest = num;

            }

            count++;

        }

        Input.close();

        System.out.println();

        System.out.println("Largest number is " + largest + "\n" +

        "Smallest number is " + smallest + "\n" + "Average is " + (*int*)(sum/count));

    }

}

## **Output**

Text

Description automatically generated

## **Question 2**

Write a program that checks a text file for several formatting and punctuation matters. The program asks for the names of both an input file and an output file. It then copies all the text from the input file to the output file……………..

## **Source Code**

package *F*ile\_*H*andling;

import java.io.*\**;

import java.util.*\**;

public class formatAndCopy {

    public static *void* main(String[] *args*)throws IOException{

        Scanner in = **new** Scanner(System.in);

        //getting input file

        System.out.print("Enter a input file: ");

        String inputFile = in.next();

        File INPUTFILE = **new** File(inputFile);

        if (!INPUTFILE.exists()){

            System.out.print("File not found");

            System.exit(1);

        }

        //getting output file from user

        System.out.print("Enter a output file: ");

        String outputFile = in.next();

        File OUTPUTFILE = **new** File(outputFile);

        if (!OUTPUTFILE.exists()){

            System.out.print("File not found");

            System.exit(2);

        }

        in.close();

        String copiedInput = "";

        //using bufferReader to read data from input file

        BufferedReader input = **new** BufferedReader(**new** FileReader(INPUTFILE));

        //printWriter to print formatted data onto output file

        PrintWriter output = **new** PrintWriter(**new** FileOutputStream(OUTPUTFILE,true));

        //loop to read data from file

        while ((copiedInput = input.readLine()) != null){

            //storing a line in an character array

*char* [] chars = copiedInput.toCharArray();

            //captalizing first letter

            chars[0] = Character.toUpperCase(chars[0]);

            copiedInput = **new** String(chars);

            //replacing more than one whitespaces with single whitespace using trim

            copiedInput = copiedInput.replaceAll("\\s+", " ").trim();

            //captalizing first letter of every sentence using substring and built in methods

            copiedInput = copiedInput.substring(0,1).toUpperCase() + copiedInput.substring(1);

            //adding whitespace after completion of every sentence

            copiedInput = copiedInput.replace("?", "? ").replace("!", "! ").replace(".", ". ");

            //triming again if more than 1 whitespaces are present

            copiedInput = copiedInput.replaceAll("\\s+", " ").trim();

            System.out.println(copiedInput);

            //writing in output file

            output.println(copiedInput);

            System.out.print("Successfully copied!");

        }

        input.close();

        output.close();

    }

}

## **Output**

A screenshot of a computer

Description automatically generated with medium confidence

A screenshot of a computer

Description automatically generated

Text

Description automatically generated