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**\* Purpose of program:**

**\* Your program must start by prompting the user to provide the**

**\* filename of the input connection profile. Then the program**

**\* should load the information in a linked list and prompt the user**

**\* to perform one of the eight operations:**

**\* Print the linked list content on the terminal (ID, name, and**

**\* threat level of the people in a sequence they appear in the**

**\* linked list).**

**\* Search a person in the linked list with ID or name.**

**\* Insert a new person in a particular location index.**

**\* Swap two people in two specific location indices.**

**\* Remove a record containing a specific ID.**

**\* Remove all records with a certain threat level.**

**\* Write the content of the linked list in an output file that has the**

**\* same format as the input file.**

**\* Quit program.**

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**\* Date Last Modified: 02/28/17.**

**\*/**

**package nsa;**

**import java.io.\*;**

**import java.util.Scanner;**

**public class AnalyzePOI {**

**// Main method.**

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

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

**String[] array = readFile();**

**long[] ID = splitID(array);**

**String[] name = splitNames(array);**

**int[] threat = splitThreats(array);**

**POIList list = new POIList(ID[0], name[0], threat[0]);**

**POIList head = list;**

**for (int i = 1; i < name.length; i++) {**

**POIList c = new POIList(ID[i], name[i], threat[i]);**

**head.next = c;**

**head = c;**

**}**

**POI poi = new POI();**

**implementPOI(list, poi);**

**}**

**// Read text file and return an array of Strings.**

**public static String[] readFile() throws IOException {**

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

**System.out.println("Please enter the name of the file you want to import: ");**

**String file = scnr.next();**

**FileReader fr = new FileReader(file);**

**BufferedReader br = new BufferedReader(fr);**

**int counter = 0;**

**while (br.readLine() != null) {**

**counter++;**

**}**

**br.close();**

**fr = new FileReader(file);**

**br = new BufferedReader(fr);**

**String[] array = new String[counter];**

**for (int i = 0; i < counter; i++) {**

**array[i] = br.readLine();**

**}**

**br.close();**

**return array;**

**}**

**// Split array into ID's.**

**public static long[] splitID(String[] array) {**

**long[] ID = new long[array.length / 3];**

**String[] array2 = new String[array.length / 3];**

**int j = 0;**

**for (int i = 0; i < array.length; i = i + 3) {**

**array2[j] = array[i];**

**j++;**

**}**

**try {**

**for (int i = 0; i < array2.length; i++) {**

**ID[i] = Long.parseLong(array2[i]);**

**}**

**return ID;**

**}**

**catch(Exception e) {**

**System.out.println("Make sure you are using an long value.");**

**long[] wrong = {000000};**

**return wrong;**

**}**

**}**

**// Split array into names.**

**public static String[] splitNames(String[] array) {**

**String[] names = new String[array.length / 3];**

**int j = 0;**

**for (int i = 1; i < array.length; i = i + 3) {**

**names[j] = array[i];**

**j++;**

**}**

**return names;**

**}**

**// Split array into threat levels.**

**public static int[] splitThreats(String[] array) {**

**int[] threats = new int[array.length / 3];**

**String[] array2 = new String[array.length / 3];**

**int j = 0;**

**for (int i = 2; i < array.length; i = i + 3) {**

**array2[j] = array[i];**

**j++;**

**}**

**try {**

**for (int i = 0; i < array2.length; i++) {**

**threats[i] = Integer.parseInt(array2[i]);**

**}**

**return threats;**

**}**

**catch(Exception e) {**

**System.out.println("Make sure you are using an integer value.");**

**int[] wrong = {000};**

**return wrong;**

**}**

**}**

**// Print array of longs.**

**public static void printArray(long[] array) {**

**for (int i = 0; i < array.length; i++)**

**System.out.println(array[i]);**

**}**

**// Print array of Strings.**

**public static void printArray(String[] array) {**

**for (int i = 0; i < array.length; i++)**

**System.out.println(array[i]);**

**}**

**// Print array of ints.**

**public static void printArray(int[] array) {**

**for (int i = 0; i < array.length; i++)**

**System.out.println(array[i]);**

**}**

**// Implement the operations of the linked list.**

**public static void implementPOI(POIList list, POI poi) {**

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

**boolean keepGoing = true;**

**while (keepGoing) {**

**System.out.println("Select an operation to run implement (i.e. Type:1, 2, ... , n):");**

**System.out.println(" Operation 1: Print the linked list content on the termina");**

**System.out.println(" Operation 2: Search a person in the linked list with ID.");**

**System.out.println(" Operation 3: Search a person in the linked list with a particular name.");**

**System.out.println(" Operation 4: Insert a new person in a particular location index.");**

**System.out.println(" Operation 5: Swap two people in two specific location indices.");**

**System.out.println(" Operation 6: Remove a record containing a specific ID.");**

**System.out.println(" Operation 7: Remove all records with a certain threat level.");**

**System.out.println(" Operation 8: Write the content of the linked list in an output file that has the same format as the input file.");**

**System.out.println(" Operation 9: Quit the program.");**

**System.out.println("");**

**System.out.print("Implement Operation: ");**

**int implement = scnr.nextInt();**

**if (implement == 1) {**

**System.out.println("Printing Linked List...");**

**poi.printLL(list);**

**System.out.println("");**

**}**

**else if (implement == 2) {**

**System.out.println("Plese enter an ID to search: ");**

**long newID = scnr.nextLong();**

**System.out.println("Searching ID...");**

**poi.search(list, newID);**

**System.out.println("");**

**}**

**else if (implement == 3) {**

**System.out.println("");**

**System.out.println("Plese enter an name to search: ");**

**System.out.print("First Name: ");**

**String firstName = scnr.next();**

**System.out.print("Last Name: ");**

**String lastName = scnr.next();**

**String newName = firstName + " " + lastName;**

**System.out.println("Searching Name...");**

**poi.searchName(list, newName);**

**System.out.println("");**

**}**

**else if (implement == 4) {**

**System.out.println("Plese enter an new POI: ");**

**System.out.print("ID: ");**

**long newID = scnr.nextLong();**

**System.out.print("First Name: ");**

**String firstName = scnr.next();**

**System.out.print("Last Name: ");**

**String lastName = scnr.next();**

**String newName = firstName + " " + lastName;**

**System.out.print("Threat Level: ");**

**int newThreat = scnr.nextInt();**

**System.out.println("Inserting POI...");**

**POIList insertee = new POIList(newID, newName, newThreat);**

**System.out.println("Now insert a position to enter the new POI you just created: ");**

**int position = scnr.nextInt();**

**POIList inserted = poi.insert(list, insertee, position);**

**poi.printLL(inserted);**

**System.out.println("");**

**}**

**else if (implement == 5) {**

**System.out.println("Please enter 2 positions you want to swap: ");**

**System.out.print("Position 1: ");**

**int position1 = scnr.nextInt();**

**System.out.print("Position 2: ");**

**int position2 = scnr.nextInt();**

**System.out.println("Swapping POI...");**

**poi.swap(list, position1, position2);**

**poi.printLL(list);**

**System.out.println("");**

**}**

**else if (implement == 6) {**

**System.out.println("Please enter the ID of the POI that you wish to remove: ");**

**System.out.print("ID: ");**

**int toRemove = scnr.nextInt();**

**System.out.println("Removing POI...");**

**POIList removed = poi.remove(list, toRemove);**

**poi.printLL(removed);**

**System.out.println("");**

**}**

**else if (implement == 7) {**

**System.out.println("Please enter the highest threat level you wish to allow: ");**

**System.out.print("Threat Level: ");**

**int threatNum = scnr.nextInt();**

**System.out.println("Removing Non-threats...");**

**POIList threatless = poi.removeThreat(list, threatNum);**

**poi.printLL(threatless);**

**System.out.println("");**

**}**

**else if (implement == 8) {**

**System.out.println("Writing to file...");**

**poi.writeFile(list);**

**System.out.println("");**

**}**

**else {**

**System.out.println("Quitting program...");**

**System.out.println("Program Ended.");**

**keepGoing = false;**

**}**

**}**

**}**

**}**