**/\*Code by: Nicholas Venecia \*/**

**package nsa;**

**import java.io.FileNotFoundException;**

**import java.io.PrintWriter;**

**import java.util.Scanner;**

**public class POI {**

**public POI() {}**

**// 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).**

**public void printLL(POIList list) {**

**while (list != null) {**

**System.out.println(list.getName() + ": ID: " + list.getID()**

**+ ", Level: " +list.getThreat());**

**list = list.next;**

**}**

**}**

**// Search a person in the linked list with ID.**

**public void search(POIList list, long ID) {**

**while (list != null) {**

**if (list.getID() == ID) {**

**System.out.println("ID searched: " + ID);**

**System.out.println(" Name: " + list.getName());**

**System.out.println(" Level: " + list.getThreat());**

**return;**

**}**

**list = list.next;**

**}**

**System.out.println(" ERROR: The ID searched: " + ID);**

**System.out.println(" ID entered did not match any records in our database.");**

**return;**

**}**

**// Search a person in the linked list with a particular name.**

**public void searchName(POIList list, String name) {**

**while (list != null) {**

**if (list.getName().equals(name)) {**

**System.out.println("Name searched: " + name);**

**System.out.println(" ID: " + list.getID());**

**System.out.println(" Level: " + list.getThreat());**

**return;**

**}**

**list = list.next;**

**}**

**System.out.println(" ERROR: The NAME searched: " + name);**

**System.out.println(" NAME entered did not match any records in our database.");**

**return;**

**}**

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

**public POIList insert(POIList list, POIList insertee, int position) {**

**if (position < 0) { // Invalid position.**

**System.out.println("Invalid position given");**

**return list;**

**}**

**if (list == null) // Boundary condition.**

**return insertee;**

**if (position == 0) { // What if position is 0?**

**insertee.next = list;**

**return insertee;**

**}**

**POIList head = list;**

**POIList temp = list.next;**

**int i = 0;**

**while (i < position - 1 && head.next != null) {**

**head = head.next;**

**i++;**

**}**

**if (i == position - 1) {**

**insertee.next = head.next;**

**head.next = insertee;**

**}**

**else {**

**System.out.println("Position was not found.");**

**}**

**return list;**

**}**

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

**public POIList swap(POIList list, int position1, int position2) {**

**if (position1 < 0 || position2 < 0) {**

**System.out.println("ERROR: Invlaid position given.");**

**return list;**

**}**

**if (position1 == position2) {**

**System.out.println("ERROR: Equivalant positions.");**

**return list;**

**}**

**int maxPosition = Math.max(position1, position2);**

**POIList swap1 = null;**

**POIList swap2 = null;**

**POIList head = list;**

**POIList temp = list.next;**

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

**if (head == null) {**

**System.out.println("ERROR: Invlaid position given.");**

**return list;**

**}**

**if (i == position1)**

**swap1 = head;**

**if (i == position2)**

**swap2 = head;**

**head = temp;**

**temp = temp.next;**

**}**

**POIList aux = swap1;**

**swap1 = swap2;**

**swap2 = aux;**

**return list;**

**}**

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

**public POIList remove(POIList list, long ID) {**

**POIList head = list;**

**POIList temp = list.next;**

**if (head == null)**

**return list;**

**if (head.getID() == ID)**

**return temp;**

**while (temp != null) {**

**if (temp.getID() == ID) {**

**if (temp.next == null) {**

**temp = null;**

**return list;**

**}**

**else {**

**head.next = temp.next;**

**return list;**

**}**

**}**

**head = temp;**

**temp = temp.next;**

**}**

**return list;**

**}**

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

**public POIList removeThreat(POIList list, int threat) {**

**// Write the content of the linked list in an output file that has the same format as the input file.**

**public void writeFile(POIList list) {**

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

**System.out.print("Name your output file: ");**

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

**try {**

**PrintWriter outputStream = new PrintWriter(fileName);**

**outputStream.println("This is a list of all the POI's with a threat level of 3 or greater:");**

**outputStream.println("");**

**while (list != null) {**

**outputStream.println(list.getID());**

**outputStream.println(list.getName());**

**outputStream.println(list.getThreat());**

**list = list.next;**

**}**

**outputStream.close();**

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

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

**System.out.println("Your file's name is " + fileName);**

**}**

**catch (FileNotFoundException e) {**

**System.out.println("ERROR: Error while writing file.");**

**}**

**}**

**}**