import java.io.\*;

import java.util.ArrayList;

import java.util.HashMap;

public class wordsInFiles {

private HashMap<String, ArrayList<String>>wordsMap;

public wordsInFiles(){

wordsMap = new HashMap<String, ArrayList<String>>();

}

private void addWordsInFile(File f){

FileResource fileResource = new FileResource(f.toString());

String fileName = f.getName();

for (String words : fileResource.words()) {

//for(String words : wordsMap.keySet()){

if(! wordsMap.containsKey(words)){

//create an arrayList to be the value

ArrayList<String>newList = new ArrayList<String>();

newList.add(words);

// put the key and updated value in the map

wordsMap.put(words, newList);

}else{

ArrayList<String>currentList = wordsMap.get(words);

currentList.add(fileName);

wordsMap.put(words,currentList);

}

// }

}}

public void buildWordsFileMap(){

wordsMap.clear();

DirectoryResource res = new DirectoryResource();

for(File f : res.selectedFiles()){

addWordsInFile(f);

}

}

// This method returns the maximum number of files any word appears in, considering all words

// from a group of files. There are 4 files. Two words appear in three of the files.

// So, the maxNumber would return 3.

public int maxNumber(){

//System.out.print("The greatest number of files a word appears in is");

int max = 0;

for(String f : wordsMap.keySet()){

ArrayList<String>currentFile = wordsMap.get(f);

int count = currentFile.size();

if (max < count){

max = count;

}

}

return max;

}

//This method returns an ArrayList of words that appear in exactly number files.

// the call wordsInNumFiles(2) would return an ArrayList with the words "love","are" and "dogs"

private ArrayList wordsInNumFiles(int number){

ArrayList<String>wordList = new ArrayList<String>();

for (String key : wordsMap.keySet()){

ArrayList<String>filewithWords = wordsMap.get(key);

int count = filewithWords.size();

if (count == number){

wordList.add(key);

}

}

return wordList;

}

// This method prints the names of the files this word appears in, one filename per line.

public void printFiles(String words){

System.out.println("The files contain "+ words +" are(is): \t");

ArrayList<String>fileName = new ArrayList<String>();

for(String current : wordsMap.keySet()){

if (current == words)

fileName = wordsMap.get(current);

}

for(int k = 0 ; k < fileName.size(); k++){

System.out.println(fileName.get(k)); // print out the filenames

}

}

public void tester(){

//wordsInFiles wf = new wordsInFiles();

buildWordsFileMap();

int max = maxNumber();

ArrayList<String> list = wordsInNumFiles(max);

System.out.println("The greatest number of files a word appears in is "+max+", and there are "+list.size()+ " such words: ");

for (int k = 0; k < list.size(); k++) {

System.out.println(list.get(k)+" ");

}

// System.out.println("\t");

System.out.println("\t");

for (int k = 0; k < list.size(); k++) {

printFiles(list.get(k) );

}

}

public static void main(String[] args) {

// TODO Auto-generated method stub

wordsInFiles wf = new wordsInFiles();

wf.tester();

}

}