CSVObject.java

import java.io.FileWriter;
import java.io.IOException;
import java.util.Map;
import java.util.TreeMap;
public class CSVObject {
private Map<String, Integer> wordFrequency;
private int totalWords;
private String theMostUseble;
private int numberOfRepTheMostUseble;
private String theLeastUseble;
private int numberOfRepTheLeastUseble;
public CSVObject() {
wordFrequency = new TreeMap<>(); // слово, частота, частота%
theMostUseble = null; // самое частое слово
numberOfRepTheMostUseble = 0; // количество повторений самого частого слова
theLeastUseble = null; // самое редкое слово
numberOfRepTheLeastUseble = 0; // количество повторений самого редкого слова
totalWords = 0; // additional
}
public void putWordFrequency(String word) {
wordFrequency.put(word, wordFrequency.getOrDefault(word, 0) + 1);
this.totalWords+=1;
}
public void setFrequencyOfMostAndLeastUseble() {
for (String word : wordFrequency.keySet()) {
if (theLeastUseble == null || wordFrequency.get(word) < wordFrequency.get(theLeastUseble)) {
theLeastUseble = word;
}
if (theMostUseble == null || wordFrequency.get(word) > wordFrequency.get(theMostUseble)) {
theMostUseble = word;
}
}
}
public void outputToFileCSV(String fileName) {
try (FileWriter writer = new FileWriter(fileName)) {
writer.append("Слово,Частота,Частота (в %),Самое частое слово,Количество повторений,Самое редкое слово,Количество повторений\n");
for (String word : wordFrequency.keySet()) {
writer.append(word); // Слово
writer.append(",");
writer.append(wordFrequency.get(word).toString()); // Частота
writer.append(",");
int proc = wordFrequency.get(word)/totalWords\*100;
writer.append(Integer.toString(proc)); // Частота в %
writer.append(",");
writer.append(theMostUseble); // Самое частое слово
writer.append(",");
writer.append(Integer.toString(numberOfRepTheMostUseble));
writer.append(",");
writer.append(theLeastUseble);
writer.append(",");
writer.append(Integer.toString(numberOfRepTheLeastUseble));
}
} catch (IOException e) {
e.printStackTrace();
}
}
public String getTheMostUseble(){ return this.theMostUseble; }
public int getNumberOfRepTheMostUseble(){ return this.numberOfRepTheMostUseble; }
public String getTheLeastUseble(){ return this.theLeastUseble; }
public int getNumberOfRepTheLeastUseble(){ return this.numberOfRepTheLeastUseble; }
public int getTotalWords() { return this.totalWords; }
}

JsonObject.java

public class JsonObject {
private String fileName;
private int amountOfLetters;
private String theMostCommonLetter;
private int numberOfRepTheMostCommonLetter;
private String rareSymbol;
private int numberOfRepRareSymbol;
private String theMostCommonWord;
private int numberOfRepCommonWord;
private String rareWord;
private int numberOfRepRareWord;
public void setFileName(String \_fileName){ this.fileName = \_fileName; }
public void setAmountOfLetters(int amount){ this.amountOfLetters = amount; }
public void setMostCommonLetter(String letter){ this.theMostCommonLetter = letter; }
public void setNumberOfRepTheMostCommonLetter(int number){ this.numberOfRepTheMostCommonLetter = number; }
public void setRareSymbol(String symbol){ this.rareSymbol = symbol; }
public void setNumberOfRepRareSymbol(int number){ this.numberOfRepRareSymbol = number; }
public void setTheMostCommonWord(String word){ this.theMostCommonWord = word; }
public void setNumberOfRepCommonWord(int number){ this.numberOfRepCommonWord = number; }
public void setRareWord(String word){ this.rareWord = word; }
public void setNumberOfRepRareWord(int number){ this.numberOfRepRareWord = number; }
public String getFileName(){ return this.fileName; }
public int getAmountOfLetters(){ return this.amountOfLetters; }
public String getMostCommonLetter(){ return this.theMostCommonLetter; }
public int getNumberOfRepTheMostCommonLetter(){ return this.numberOfRepTheMostCommonLetter; }
public String getRareSymbol(){ return this.rareSymbol; }
public int getNumberOfRepRareSymbol(){ return this.numberOfRepRareSymbol; }
public String getTheMostCommonWord(){ return this.theMostCommonWord; }
public int getNumberOfRepCommonWord(){ return this.numberOfRepCommonWord; }
public String getRareWord(){ return this.rareWord; }
public int getNumberOfRepRareWord(){ return this.numberOfRepRareWord; }
}

Main.java

import java.io.BufferedReader;
import java.io.FileReader;
import java.io.IOException;
import java.util.regex.Pattern;
public class Main {
public static void createCSV(String fileName, int idx) {
CSVObject objCSV = new CSVObject();
// Чтение
try (BufferedReader reader = new BufferedReader(new FileReader(fileName))) {
String line;
Pattern wordPattern = Pattern.compile("[^a-zA-Z0-9]+"); // не буквы, не цифры, от одного и более раза
while ((line = reader.readLine()) != null) {
String[] words = wordPattern.split(line);
for (String word : words) {
if (!word.isEmpty()) {
objCSV.putWordFrequency(word); // подсчёт частоты
}
}
}
} catch (IOException e) {
e.printStackTrace();
return;
}
// Расчёт
objCSV.setFrequencyOfMostAndLeastUseble();
// Запись
String outputFileName = "output" + Integer.toString(idx) + ".csv";
objCSV.outputToFileCSV(outputFileName);
}
public static void createJSON(String fileName) {
}
public static void main(String[] args) {
if (args.length == 0) {
System.out.println("Аргументы не распознаны. Для вызова помощи используйте следующее:");
System.out.println("java lab4 -help");
return;
}
String key = args[0];
switch(key) {
case "-csv": {
for (int i = 1; i < args.length; ++i) {
createCSV(args[i], i);
}
break;
}
case "-json": {
for (int i = 1; i < args.length; ++i) {
createJSON(args[i]);
}
break;
}
case "-help": {
System.out.println("Program abilities:");
System.out.println("-csv\tfilename : Write to CSV file");
System.out.println("-csv\tfilename1 [filename2...]: Write to CSV files for multiple text files");
System.out.println("-json\tfilename : Write to JSON file");
System.out.println("-json\tfilename1 [filename2...]: Write JSON files for multiple text files");
System.out.println("-help\t : Description of launch parameters");
}
}
}
}