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**CS 60**

**Homework #7**

**Problem 1:**

#include <iostream>

#include<fstream>

#include <string>

#include <vector>

using namespace std;

int main(){

vector<string> vect;

//ifstream inFile("gentleseduction.txt"); // for Gentle Seduction

ifstream inFile("don\_quixote.txt");

string word;

while (inFile >> word){

vect.push\_back(word);

}

inFile.close();

sort(vect.begin(), vect.end());

ofstream outFile("outGS.txt");

for(auto e:vect){

outFile<<e<<endl;

}

outFile.close();

//Deleting duplicates

vector<string> vectNoDup;

ifstream finalInFile("outGS.txt");

//ofstream finalOutFile("outFinalGS.txt"); // for Gentle Seduction

ofstream finalOutFile("outFinalDonQuixote.txt");

string wordIn;

while (finalInFile >> wordIn){

vectNoDup.push\_back(wordIn);

}

finalInFile.close();

size\_t lengthOfVect = vectNoDup.size();

for(size\_t i = 0; i < lengthOfVect; ++i){

if(vectNoDup[i] != vectNoDup[i+1]){

finalOutFile<<vectNoDup[i] <<endl;

}

}

finalOutFile.close();

return 0;

}

**OUTPUT FILE For Gentle Seduction**

would

wouldn't

wrapped

write

wrong,

wrong.

wrought

year

year.

year."

yearning

yearning,

years

years,

years.

years?

yet

yet."

yielded

you

you'd

you'll

you're

you,

you.

you."

young

young."

younger;

your

yourself,

youth

**OUTPUT FILE For Don Quixote**

you;

you;"

you;'

you?

you?"

youare

young

young,

younger

youngest,

your

yours

yours,

yours-

yours.

yours."

yours;

yourself

yourself,

yourself.

yourself."

yourself;

yourself?"

yourselves

yourselves,

yourselves,"

youth

youth's

youth,

youth-

youth.

youth;

youthful

youthful,

youths

youths,

youths.

zagals,

zaquizami,

zeal

zeal,

zebra

zebra,

zebra;

zodiacs,

zoltanis

**Problem 1B:**

#include <iostream>

#include<fstream>

#include <string>

#include <vector>

using namespace std;

int main(){

vector<string> vect;

ifstream inFile("gentleseduction.txt");

string word;

while (inFile >> word){

vect.push\_back(word);

}

inFile.close();

sort(vect.begin(), vect.end());

ofstream outFile("outGS.txt");

for(auto e:vect){

outFile<<e<<endl;

}

outFile.close();

//Deleting duplicates

vector<string> vectNoDup;

ifstream finalInFile("outGS.txt");

ofstream finalOutFile("noDupsNumTimes.txt");

string wordIn;

while (finalInFile >> wordIn){

vectNoDup.push\_back(wordIn);

}

finalInFile.close();

size\_t lengthOfVect = vectNoDup.size();

size\_t tempCount = 1;

for(size\_t i = 0; i < lengthOfVect; ++i){

if(vectNoDup[i] == vectNoDup[i+1]){

tempCount++;

}

else{

finalOutFile<<vectNoDup[i] << " Num Times Occurred: " << tempCount <<endl;

tempCount =1;

}

}

finalOutFile.close();

return 0;

}

**OUTPUT FILE For Gentle Seduction**

would Num Times Occurred: 74

wouldn't Num Times Occurred: 1

wrapped Num Times Occurred: 1

write Num Times Occurred: 1

wrong, Num Times Occurred: 1

wrong. Num Times Occurred: 1

wrought Num Times Occurred: 1

year Num Times Occurred: 3

year. Num Times Occurred: 1

year." Num Times Occurred: 1

yearning Num Times Occurred: 1

yearning, Num Times Occurred: 1

years Num Times Occurred: 8

years, Num Times Occurred: 3

years. Num Times Occurred: 4

years? Num Times Occurred: 1

yet Num Times Occurred: 6

yet." Num Times Occurred: 1

yielded Num Times Occurred: 1

you Num Times Occurred: 26

you'd Num Times Occurred: 1

you'll Num Times Occurred: 6

you're Num Times Occurred: 4

you, Num Times Occurred: 1

you. Num Times Occurred: 2

you." Num Times Occurred: 3

young Num Times Occurred: 1

young." Num Times Occurred: 1

younger; Num Times Occurred: 1

your Num Times Occurred: 9

yourself, Num Times Occurred: 3

youth Num Times Occurred: 1

**OUTPUT FILE For Don Quixote**

you Num Times Occurred: 1813

you! Num Times Occurred: 2

you!" Num Times Occurred: 2

you'? Num Times Occurred: 1

you'd Num Times Occurred: 1

you'll Num Times Occurred: 7

you're Num Times Occurred: 4

you've Num Times Occurred: 1

you, Num Times Occurred: 231

you," Num Times Occurred: 18

you,' Num Times Occurred: 1

you. Num Times Occurred: 20

you." Num Times Occurred: 34

you.' Num Times Occurred: 2

you.I Num Times Occurred: 1

you: Num Times Occurred: 1

you; Num Times Occurred: 46

you;" Num Times Occurred: 4

you;' Num Times Occurred: 2

you? Num Times Occurred: 9

you?" Num Times Occurred: 3

youare Num Times Occurred: 1

young Num Times Occurred: 81

young, Num Times Occurred: 3

younger Num Times Occurred: 6

youngest, Num Times Occurred: 1

your Num Times Occurred: 1279

yours Num Times Occurred: 16

yours, Num Times Occurred: 17

yours- Num Times Occurred: 1

yours. Num Times Occurred: 2

yours." Num Times Occurred: 4

yours; Num Times Occurred: 3

yourself Num Times Occurred: 70

yourself, Num Times Occurred: 15

yourself. Num Times Occurred: 1

yourself." Num Times Occurred: 1

yourself; Num Times Occurred: 4

yourself?" Num Times Occurred: 1

yourselves Num Times Occurred: 15

yourselves, Num Times Occurred: 2

yourselves," Num Times Occurred: 1

youth Num Times Occurred: 51

youth's Num Times Occurred: 1

youth, Num Times Occurred: 16

youth- Num Times Occurred: 1

youth. Num Times Occurred: 3

youth; Num Times Occurred: 4

youthful Num Times Occurred: 1

youthful, Num Times Occurred: 1

youths Num Times Occurred: 3

youths, Num Times Occurred: 1

youths. Num Times Occurred: 1

zagals, Num Times Occurred: 1

zaquizami, Num Times Occurred: 1

zeal Num Times Occurred: 7

zeal, Num Times Occurred: 1

zebra Num Times Occurred: 1

zebra, Num Times Occurred: 1

zebra; Num Times Occurred: 1

zodiacs, Num Times Occurred: 1

zoltanis Num Times Occurred: 1

**Problem 2:**

#include <iostream>

#include<fstream>

#include <string>

#include <set>

using namespace std;

int main(){

set<string> setOfWords;

//ifstream inFile("gentleseduction.txt"); //For Gentle Seduction

ifstream inFile("don\_quixote.txt");

string word;

while (inFile >> word){

setOfWords.insert(word);

}

inFile.close();

//ofstream outFile("outGS.txt"); //For Gentle Seduction

ofstream outFile("outDQ.txt");

for(auto e:setOfWords){

outFile<<e<<endl;

}

outFile.close();

return 0;

}

**OUTPUT FILE For Gentle Seduction**

would

wouldn't

wrapped

write

wrong,

wrong.

wrought

year

year.

year."

yearning

yearning,

years

years,

years.

years?

yet

yet."

yielded

you

you'd

you'll

you're

you,

you.

you."

young

young."

younger;

your

yourself,

youth

**OUTPUT FILE For Don Quixote**

you

you!

you!"

you'?

you'd

you'll

you're

you've

you,

you,"

you,'

you.

you."

you.'

you.I

you:

you;

you;"

you;'

you?

you?"

youare

young

young,

younger

youngest,

your

yours

yours,

yours-

yours.

yours."

yours;

yourself

yourself,

yourself.

yourself."

yourself;

yourself?"

yourselves

yourselves,

yourselves,"

youth

youth's

youth,

youth-

youth.

youth;

youthful

youthful,

youths

youths,

youths.

zagals,

zaquizami,

zeal

zeal,

zebra

zebra,

zebra;

zodiacs,

zoltanis

Problem 3: I prefer to use a set as it does the work of not allowing duplicates and sorting the strings for me. However, for 1b I would rather use a vector as it allows for the user to add items in a certain order, this was useful for being able to count the number of times an item occurred in a set that allowed duplicates.

**Problem 3 Main Event:**

#include <iostream>

#include<fstream>

#include <string>

#include <map>

#include <vector>

#include <set>

using namespace std;

int stringToInt(string a);

int countNumScores(int scorePassed);

multiset<int> sortedScores;

void printMap(map<int, pair<int,vector<string> > > tempMap);

int finalScore = 0;

int main(){

//The first int is the score.

//The second int is how many people got that score.

//The vector of strings is a list of everyone who got that score.

map<int, pair<int,vector<string> > > myBigMap;

//Reading in from file

ifstream inFile("scorename.txt");

string word;

int initialBoot = 0;

string number;

string name;

int countOfScore;

map<int, vector<string>> preMap;

while (getline(inFile, word)){

while(word[initialBoot] != ' '){

initialBoot++;

}

number = word.substr(0,initialBoot);

name = word.substr(initialBoot+1, word.size());

int numInInt = stringToInt(number);

preMap[numInInt].push\_back(name);//Filling Pre Vector with the score and the names of the people who got that score

//Filling the num people who got the score

initialBoot = 0;

}

//Making Pairs from preMap

vector<string> tempNameHolder;

int numScores = 0;

for(auto e: preMap){

for(int i = 0; i < e.second.size(); i++){

numScores++;

tempNameHolder.push\_back(e.second[i]); // Adds Name to Vector

}

pair<int,vector<string>> tempPair;

tempPair.first = e.second.size();

tempPair.second = tempNameHolder;

myBigMap[e.first] = tempPair;

tempNameHolder.erase(tempNameHolder.begin(), tempNameHolder.end());

}

int countToStop = 0;

//FOR PRINTING THE SCORES

for(auto e: myBigMap){

while(countToStop != e.first){

cout<<countToStop<<endl;

countToStop++;

}

cout<<countToStop;

for(int i = 0; i < e.second.first; i++){

cout<<"X";

}

cout<<endl;

countToStop++;

}

//DONE PRINTING SCORES

//FOR ASKING USER IF THEY WANT TO PRINT NAMES FOR GIVEN SCORE

cout<<""<<endl;

cout<<"Enter a score to see the people who received that score."<<endl;

int scoreToSee;

cin >> scoreToSee;

for(auto e : myBigMap){

if(e.first == scoreToSee){

for(int i = 0; i < e.second.first; i++){

cout<<e.second.second[i] << endl;

}

}

}

return 0;

}

//For converting the text file score string to an int

int stringToInt(string a){

char zero = '0';

int codeZero = zero;

int tempNum;

int numCode = 0;

for(std::size\_t i = 0; i < a.size(); ++i){

tempNum = a[i];

if(tempNum - codeZero == 0){

numCode = numCode\*10;

}

else{

numCode += tempNum - codeZero;

}

}

sortedScores.insert(numCode);

return numCode;

}

//For counting number of each score

int countNumScores(int scorePassed){

int counter = 0;

for(auto e : sortedScores){

if(e == scorePassed){

counter++;

}

finalScore = e;

}

return counter;

}

**OUTPUT:**

FHosts-MacBook-Pro:Problem Three fhost$ ./main

0

1

2

3

4

5XXXX

6XXXXXXXX

7

8X

9

10XX

Enter a score to see the people who received that score.

6

Billie Jean King

Billy Ray Cyrus

Kim Kardashian

Taylor Swift

Adam Levine

Paul Walker

George Clooney

Ryan Gosling

FHosts-MacBook-Pro:Problem Three fhost$ ./main

0

1

2

3

4

5XXXX

6XXXXXXXX

7

8X

9

10XX

Enter a score to see the people who received that score.

10

Emma Watson

Anna Karenina