**PAT乙级1085 PAT单位排行 （25 分）**

#define \_CRT\_SECURE\_NO\_WARNINGS

#include <iostream>

#include <algorithm>

#include <string.h>

#include <cctype>

#include <map>

#include <cstdio>

using namespace std;

struct School

{

char name[7]; // 学校名

int grade; // 学校加权总分

int people; // 学校人数

int rank; // 学校排名

}S[100001];

int cmp(School s1, School s2)

{ /\* 按题目要求进行排序 \*/

if (s1.grade != s2.grade)

return s1.grade > s2.grade;

else

{

if (s1.people != s2.people)

return s1.people < s2.people;

else

return strcmp(s1.name, s2.name) < 0;

}

}

void ToLower(char \*s)

{ /\* 大小写转换 \*/

for (int i = 0; i < strlen(s); i++)

s[i] = tolower(s[i]);

}

int main(int argc, char const \*argv[])

{ /\* 能用scanf的地方就用scanf，能用printf的地方就用printf，不然会超时 \*/

int N, idx = 0;

double grade;

char ID[7], name[7];

scanf("%d", &N);

map <string, double> mGrade, mNum, mName; // 保存学校成绩,和学校人数,和学校姓名

for (int i = 0; i < N; i++)

{

scanf("%s %lf %s", ID, &grade, name);

ToLower(name); // 全部转为小写

if (!mName[name])

{ /\* 记录不重复的名字和个数 \*/

strcpy(S[idx++].name, name);

mName[name]++;

}

mNum[name]++;

if (ID[0] == 'T')

mGrade[name] += grade\*1.5;

else if (ID[0] == 'A')

mGrade[name] += grade;

else

mGrade[name] += grade / 1.5;

}

for (int i = 0; i < idx; i++)

{

S[i].grade = (int)mGrade[S[i].name];

S[i].people = mNum[S[i].name];

}

sort(S, S + idx, cmp);

printf("%d\n", idx); // 输出单位个数

S[0].rank = 1;

cout << 1 << " " << S[0].name << " " << S[0].grade << " " << S[0].people << endl;

for (int i = 1; i < idx; i++)

{

if (S[i].grade == S[i - 1].grade) // 如果成绩相同

S[i].rank = S[i - 1].rank;

else

S[i].rank = i + 1;

printf("%d %s %d %d\n", S[i].rank, S[i].name, S[i].grade, S[i].people);

}

return 0;

}