#include <iostream>

using namespace std;

#include<fstream>

#define FILENAME "xsxx.txt"

#include<stdio.h>

#include<string>

const int MAXN = 100;

int n = 0;

class student

{

public:

student();

int number[MAXN];

string name[MAXN];

string xb[MAXN];

double cj1[MAXN];

double cj2[MAXN];

double cj3[MAXN];

double average[MAXN];

void informationputin();

void save();

void find();

void arrary();

void sx();

};

student::student()

{

int number[MAXN] = { 0 };

string name[MAXN];

string xb[MAXN];

double cj1[MAXN] = { 0 };

double cj2[MAXN] = { 0 };

double cj3[MAXN] = { 0 };

double average[MAXN] = { 0 };

}

class manu

{

public:

manu();

void exit1();

void manu1();

void manu2();

~manu();

};

manu::manu()//构造

{

;

}

manu::~manu()//析构

{

;

}

void manu::exit1()//退出程序

{

cout << "欢迎下次使用" << endl ;

exit(0);

}

void manu::manu1()//菜单

{

cout << "\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*" << endl;

cout << "\*\*\*\*\* 学生成绩管理系统 \*\*\*\*\*" << endl;

cout << "\*\*\*\*\* 0.退出系统 \*\*\*\*\*" << endl;

cout << "\*\*\*\*\* 1.信息录入 \*\*\*\*\*" << endl;

cout << "\*\*\*\*\* 2.信息查询 \*\*\*\*\*" << endl;

cout << "\*\*\*\*\* 3.按照学生成绩平均分排序 \*\*\*\*\*" << endl;

cout << "\*\*\*\*\* 4.修改或删除信息 \*\*\*\*\*" << endl;

cout << "\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*" << endl;

cout << endl;

}

void manu::manu2()//菜单2

{

cout << "\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*" << endl;

cout << "\*\*\*\*\* 学生成绩管理系统 \*\*\*\*\*" << endl;

cout << "\*\*\*\*\* 0.退出系统 \*\*\*\*\*" << endl;

cout << "\*\*\*\*\* 2.信息查询 \*\*\*\*\*" << endl;

cout << "\*\*\*\*\* 3.按照学生成绩平均分排序 \*\*\*\*\*" << endl;

cout << "\*\*\*\*\* 4.修改或删除信息 \*\*\*\*\*" << endl;

cout << "\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*" << endl;

cout << endl;

}

void student::informationputin()//输入信息

{

int num = 0;

cout <<"请输入学生学号（输入-1结束输入信息）：" << endl;

cin >> num;

while (num != -1)

{

this->number[n] = num;

cout << "请输入学生姓名：" << endl;

cin >> this->name[n];

cout << "请输入学生姓别：" << endl;

cin >> this->xb[n];

cout << "请输入第一科成绩：" << endl;

cin >> this->cj1[n];

cout << "请输入第二科成绩：" << endl;

cin >> this->cj2[n];

cout << "请输入第三科成绩：" << endl;

cin >> this->cj3[n];

this->average[n] = (this->cj1[n] + this->cj2[n] + this->cj3[n]) / 3;

cout << "请输入学生学号（输入-1结束输入信息）：" << endl;

cin >> num;

::n++;

}

}

void student::save()

{

int b;

fstream xwj;

xwj.open(FILENAME,ios::out);

for(b=0;b<::n;b++)

{

xwj<<this->number[b] << " " << this->name[b]<<" "<<this->xb[b]<<" " << this->cj1[b] << " " << this->cj2[b] << " " << this->cj3[b] << " " << this->average[b] << endl;

}

xwj.close();

}

void student::find()//输入学号，查询学生各门课程的成绩，并显示；

{

int num1 = 000,v=0;

cout << "请输入学生学号以查询学生各门课程的成绩" <<endl;

cin >> num1;

for(v=0;v<n;v++)

{if(this->number[v]==num1)

{

cout <<this->number[v]<<" " << this->name[v] << "第一科： " << this->cj1[v] << "第二科: " << this->cj2[v] << "第三科: " << this->cj3[v] << endl;

}

}

}

void student::arrary()//排序：按各门课程的成绩平均分进行排序，并显示

{

int i=0,j=0,xh=0;

double temp=0;

string xm,xing;

for(i=0;i<::n;i++)

{

for (j=0;j<::n-i;j++)

{

if (this->average[j] < this->average[j + 1])

{

temp = this->average[j];

this->average[j] = this->average[j + 1];

this->average[j + 1] = temp;

xh = this->number[j];

this->number[j] = this->number[j + 1];

this->number[j + 1] = xh;

xm = this->name[j];

this->name[j] = this->name[j + 1];

this->name[j + 1] = xm;

xing = this->xb[j];

this->xb[j] = this->xb[j + 1];

this->xb[j + 1] = xing;

temp = this->cj1[j];

this->cj1[j] = this->cj1[j + 1];

this->cj1[j + 1] = temp;

temp = this->cj2[j];

this->cj2[j] = this->cj2[j + 1];

this->cj2[j + 1] = temp;

temp = this->cj3[j];

this->cj3[j] = this->cj3[j + 1];

this->cj3[j + 1] = temp;

}

}

}

for (i = 0;i < ::n;i++)

{

cout << this->number[i] << " " << this->name[i] << " " << "平均分" << this->average[i] << endl;

}

}

void student::sx()//信息删除与修改——输入学号，修改或删除该学生的成绩信息。

{

int h = 0,i=0,q=0,xh=0;

double temp = 0;

string xm,xing ;

cout<<"请输入学号(输入-1结束)："<<endl;

cin >> h;

while (h != -1)

{

for (i = 0;i < ::n;i++)

{

if(this->number[i] == h)

{

break;

}

}

cout << "1.删除该成绩信息" << endl;

cout << "2.修改该成绩信息" << endl;

cin >> h;

switch (h)

{

case 1:

for (q = i;q < ::n;q++)

{

temp = this->average[q];

this->average[q] = this->average[q + 1];

this->average[q + 1] = temp;

xh = this->number[q];

this->number[q] = this->number[q + 1];

this->number[q + 1] = xh;

xm = this->name[q];

this->name[q] = this->name[q + 1];

this->name[q + 1] = xm;

xing = this->xb[q];

this->xb[q] = this->xb[q + 1];

this->xb[q + 1] = xing;

temp = this->cj1[q];

this->cj1[q] = this->cj1[q + 1];

this->cj1[q + 1] = temp;

temp = this->cj2[q];

this->cj2[q] = this->cj2[q + 1];

this->cj2[q + 1] = temp;

temp = this->cj3[q];

this->cj3[q] = this->cj3[q + 1];

this->cj3[q + 1] = temp;

};::n = ::n - 1;

break;

case 2:

cout << "请输入新的学号：" << endl;

cin >> this->number[i];

cout << "请输入新的性别：" << endl;

cin >> this->xb[i];

cout << "请输入新的名字：" << endl;

cin >> this->name[i];

cout << "请输入新的第一科成绩：" << endl;

cin >> this->cj1[i];

cout << "请输入新的第二科成绩：" << endl;

cin >> this->cj2[i];

cout << "请输入新的第三科成绩：" << endl;

cin >> this->cj3[i];

this->average[i] = (this->cj1[i] + this->cj2[i] + this->cj3[i]) / 3;

break;

}

cout << "请输入学号以继续修改或删除信息(输入-1结束)：" << endl;

cin >> h;

}

}

manu sm;

student xs;

int main()

{

sm.manu1();

int choice = 1;

while (choice!=0)

{

cin >> choice;

switch (choice)

{

case 0:

sm.exit1();

case 1:

xs.informationputin();

sm.manu2();

xs.save();

break;

case 2:

xs.find();

sm.manu2();

break;

case 3:

xs.arrary();

sm.manu2();

break;

case 4:

xs.sx();

xs.save();

sm.manu2();

break;

}

}

return 0;

}