**School management system:-**

**Code:-**

**#include <iostream>**

**#include <fstream>**

**#include <string>**

**#include <vector>**

**#include <stdio.h>**

**#include <stdlib.h>**

**#include <string.h>**

**#include <sstream>**

**#include <algorithm> //sort**

**using namespace std;**

**int sze=0;**

**bool keep=false;**

**struct student{**

**int id;**

**string name;**

**float score;**

**string phone;**

**int age;**

**string city;**

**string email;**

**};**

**struct student arr\_of\_students[1000];**

**void menu();**

**vector<string> parse(string x){**

**vector<string> v;**

**int start=0;**

**for(int i=0;i<x.size();i++){**

**if(x[i]==','){**

**string k="";**

**for(int j=start;j<i;j++){**

**k+=x[j];**

**}**

**start=i+1;**

**v.push\_back(k);**

**}**

**}**

**string k="";**

**for(int i=start;i<x.size();i++){**

**k+=x[i];**

**}**

**v.push\_back(k);**

**return v;**

**}**

**void load\_all(){**

**string line;**

**ifstream myfile("students.txt");**

**if(sze==0){**

**if (myfile.is\_open())**

**{**

**while ( getline (myfile,line) )**

**{**

**vector<string> v;**

**v=parse(line);**

**stringstream ss1( v[1] );**

**int id;**

**ss1 >> id;**

**stringstream ss2( v[5] );**

**int age;**

**ss2 >> age;**

**stringstream ss3( v[6] );**

**float score;**

**ss3 >> score;**

**arr\_of\_students[sze].name=v[0];**

**arr\_of\_students[sze].id=id;**

**arr\_of\_students[sze].city=v[2];**

**arr\_of\_students[sze].phone=v[3];**

**arr\_of\_students[sze].email=v[4];**

**arr\_of\_students[sze].age=age;**

**arr\_of\_students[sze].score=score;**

**sze++;**

**}**

**myfile.close();**

**}else{**

**return;**

**}**

**}**

**return ;**

**}**

**bool get\_student(int id){**

**load\_all();**

**bool found=false;**

**for(int i=0;i<sze;i++){**

**if(arr\_of\_students[i].id==id){**

**found=true;**

**cout<<"STUDENT FOUND"<<endl<<endl;**

**cout<<"STUDENT'S ID : "<<arr\_of\_students[i].id<<endl<<endl;**

**cout<<"STUDENT'S NAME : "<<arr\_of\_students[i].name<<endl<<endl;**

**cout<<"STUDENT'S SCORE : "<<arr\_of\_students[i].score<<endl<<endl;**

**cout<<"STUDENT'S AGE : "<<arr\_of\_students[i].age<<endl<<endl;**

**cout<<"STUDENT'S EMAIL : "<<arr\_of\_students[i].email<<endl<<endl;**

**cout<<"STUDENT'S PHONE : "<<arr\_of\_students[i].phone<<endl<<endl;**

**cout<<"STUDENT'S CITY : "<<arr\_of\_students[i].city<<endl;**

**return found;**

**}**

**}**

**cout<<"NOT FOUND!! "<<endl;**

**return false;**

**}**

**bool add\_student(int id,string name,string phone,string city,string email,int age,float score){**

**load\_all();**

**vector<student> v\_s;**

**for(int i=0;i<sze;i++){**

**if(arr\_of\_students[i].id==id){**

**return false;**

**}**

**v\_s.push\_back(arr\_of\_students[i]);**

**}**

**student s;**

**s.id=id;**

**s.name=name;**

**s.phone=phone;**

**s.city=city;**

**s.email=email;**

**s.age=age;**

**s.score=score;**

**v\_s.push\_back(s);**

**sze++;**

**int x=0;**

**for(int i=0;i<sze;i++){**

**arr\_of\_students[i].id=v\_s[i].id;**

**arr\_of\_students[i].name=v\_s[i].name;**

**arr\_of\_students[i].phone=v\_s[i].phone;**

**arr\_of\_students[i].city=v\_s[i].city;**

**arr\_of\_students[i].email=v\_s[i].email;**

**arr\_of\_students[i].age=v\_s[i].age;**

**arr\_of\_students[i].score=v\_s[i].score;**

**}**

**return true;**

**}**

**void print(){**

**load\_all();**

**int ids[sze];**

**if(!sze){**

**cout<<"NO STUDENTS FOUND !! "<<endl;**

**}**

**student students[sze];**

**for(int i=0;i<sze;i++){**

**ids[i]=arr\_of\_students[i].id;**

**}**

**sort(ids,ids+sze);**

**for(int i=0;i<sze;i++){**

**for(int j=0;j<sze;j++){**

**if(ids[i]==arr\_of\_students[j].id){**

**cout<<endl<<"======================"<<endl;**

**cout<<"== STUDENT NUMBER "<< i+1<<" =="<<endl;**

**cout<<"======================"<<endl<<endl;**

**cout<<"STUDENT'S NAME : "<<arr\_of\_students[j].name<<" "<<endl<<endl;**

**cout<<"STUDENT'S ID : "<<arr\_of\_students[j].id<<" "<<endl<<endl;**

**cout<<"STUDENT'S AGE : "<<arr\_of\_students[j].age<<" "<<endl<<endl;**

**cout<<"STUDENT'S EMAIL : "<<arr\_of\_students[j].email<<" "<<endl<<endl;**

**cout<<"STUDENT'S PHONE : "<<arr\_of\_students[j].phone<<" "<<endl<<endl;**

**cout<<"STUDENT'S CITY : "<<arr\_of\_students[j].city<<" "<<endl<<endl;**

**cout<<"STUDENT'S SCORE : "<<arr\_of\_students[j].score<<" "<<endl<<endl;**

**}**

**}**

**}**

**}**

**void statistics(){**

**bool counted=false;**

**load\_all();**

**float scores[sze];**

**student top\_students[sze];**

**float av=0;**

**int counter=0;**

**for(int i=0;i<sze;i++){**

**scores[i]=arr\_of\_students[i].score;**

**av+=scores[i];**

**counted=true;**

**counter++;**

**}**

**if(counted && counter>=4){**

**sort(scores,scores+sze);**

**for(int i=0;i<sze;i++){**

**for(int j=0;j<sze;j++){**

**if(scores[i]==arr\_of\_students[j].score){**

**top\_students[i].name=arr\_of\_students[i].name;**

**top\_students[i].id=arr\_of\_students[i].id;**

**top\_students[i].score=arr\_of\_students[i].score;**

**}**

**}**

**}**

**cout<<endl<<"TOP 5 STUDENTS : " <<endl<<endl;**

**for(int i=sze-1;i>sze-6;i--){**

**cout<<"STUDENT'S ID : "<<top\_students[i].id <<endl<<"STUDENT'S NAME : "<<top\_students[i].name<<endl<<"STUDENT'S SCORE : "<<top\_students[i].score<<endl<<endl<<endl;**

**}**

**av=av/(float)sze;**

**float MIN,MAX;**

**MIN=scores[0];**

**MAX=scores[sze-1];**

**cout<<"AVERAGE SCORE OF ALL STUDENTS : "<<av <<endl;**

**cout<<"MINIMUM SCORE OF ALL STUDENTS : "<<MIN<<endl;**

**cout<<"MAXIMUM SCORE OF ALL STUDENTS : "<<MAX<<endl;**

**}else{**

**cout<<"NO STUDENTS FOUNDED !!"<<endl;**

**}**

**}**

**bool update\_score(int id,float score){**

**load\_all();**

**for(int i=0;i<sze;i++){**

**if(arr\_of\_students[i].id==id){**

**arr\_of\_students[i].score=score;**

**return true;**

**}**

**}**

**return false;**

**}**

**bool delete\_student(int id){**

**load\_all();**

**vector<student> v\_s;**

**bool founded=false;**

**for(int i=0;i<sze;i++){**

**if(arr\_of\_students[i].id!=id){**

**v\_s.push\_back(arr\_of\_students[i]);**

**}else{**

**founded=true;**

**}**

**}**

**//cout<<v\_s.size()<<" "<<sze;**

**if(founded){**

**cout<<endl<<"STUDENT OF ID "<< id <<" DELETED "<<endl;**

**}else{**

**cout<<"NO STUDENT FOUND IN DATABASE" <<endl;**

**return false;**

**}**

**for(int i=0;i<sze-1;i++){**

**arr\_of\_students[i].id=v\_s[i].id;**

**//cout<<arr\_of\_students[i].id<<" ";**

**arr\_of\_students[i].name=v\_s[i].name;**

**//cout<<arr\_of\_students[i].name<<" ";**

**arr\_of\_students[i].city=v\_s[i].city;**

**//cout<<arr\_of\_students[i].city<<" ";**

**arr\_of\_students[i].email=v\_s[i].email;**

**//cout<<arr\_of\_students[i].email<<" ";**

**arr\_of\_students[i].phone=v\_s[i].phone;**

**//cout<<arr\_of\_students[i].phone<<" ";**

**arr\_of\_students[i].age=v\_s[i].age;**

**//cout<<arr\_of\_students[i].age<<" ";**

**arr\_of\_students[i].score=v\_s[i].score;**

**//cout<<arr\_of\_students[i].score<<" ";**

**//cout<<endl;**

**}**

**arr\_of\_students[sze-1].id=0;**

**arr\_of\_students[sze-1].name="";**

**arr\_of\_students[sze-1].city="";**

**arr\_of\_students[sze-1].email="";**

**arr\_of\_students[sze-1].phone="";**

**arr\_of\_students[sze-1].age=0;**

**arr\_of\_students[sze-1].score=0;**

**if(founded){**

**return true;**

**}**

**else{**

**return false;**

**}**

**}**

**bool save(){**

**//load\_all();**

**keep=false;**

**remove("students.txt");**

**ofstream newFile("students.txt", std::ios\_base::app);**

**string a[sze];**

**if(newFile.is\_open()){**

**for(int i=0;i<sze;i++){**

**if(arr\_of\_students[i].id>0){**

**newFile<<arr\_of\_students[i].name<<","<<arr\_of\_students[i].id<<","<<arr\_of\_students[i].city<<","<<arr\_of\_students[i].phone<<","<<arr\_of\_students[i].email<<","<<arr\_of\_students[i].age<<","<<arr\_of\_students[i].score<<endl;**

**}**

**}**

**newFile.close();**

**keep=true;**

**return true;**

**}**

**return false;**

**}**

**void exit(){**

**if(keep==true){**

**exit(0);**

**}else{**

**cout<<"PRESS ANY KEY TO SAVE AND EXIT OR PRESS 0 TO BACK TO MAIN MENU WITHOUT SAVING : ";**

**string x;cin>>x;**

**if(x.size()>0 && x!="0"){**

**save();**

**}**

**else{**

**menu();**

**}**

**}**

**}**

**void menu(){**

**system("CLS");**

**int x ;**

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

**cout<<" =============================================="<<endl;**

**cout<<" == WELCOME TO SCHOOL MANAGEMENT SYSTEM =="<<endl;**

**cout<<" =============================================="<<endl<<endl;**

**cout<<endl;**

**cout<<" PRESS 1 TO ADD NEW STUDENT "<<endl;**

**cout<<endl;**

**cout<<" PRESS 2 TO SEARCH FOR STUDENT BY ID "<<endl;**

**cout<<endl;**

**cout<<" PRESS 3 TO PRINT ALL STUDENTS INFORMATION "<<endl;**

**cout<<endl;**

**cout<<" PRESS 4 TO SHOW STUDENT'S STATISTICS"<<endl;**

**cout<<endl;**

**cout<<" PRESS 5 TO DELETE STUDENT'S INFORMATION "<<endl;**

**cout<<endl;**

**cout<<" PRESS 6 TO UPDATE STUDENT'S SCORE "<<endl;**

**cout<<endl;**

**cout<<" PRESS 7 TO EXIT THE APPLICATION "<<endl;**

**cout<<endl;**

**cout<<" ENTER YOUR CHOICE : ";cin>>x;**

**cout<<endl<<"================================================================================"<<endl<<endl;**

**system("CLS");**

**if (x==1){**

**cout<<"ADD NEW STUDENT : "<<endl<<endl;**

**int id;string name;string phone;string city;string email;int age;float score;**

**cout<<"ENTER STUDENT'S ID : ";**

**cin>>id;**

**cout<<endl<<"ENTER STUDENT'S NAME : ";**

**cin>>name;**

**cout<<endl<<"ENTER STUDENT'S PHONE : ";**

**cin>>phone;**

**cout<<endl<<"ENTER STUDENT'S CITY : ";**

**cin>>city;**

**cout<<endl<<"ENTER STUDENT'S EMAIL : ";**

**cin>>email;**

**cout<<endl<<"ENTER STUDENT'S AGE : ";**

**cin>>age;**

**cout<<endl<<"ENTER STUDENT'S SCORE : ";**

**cin>>score;**

**if(add\_student(id,name,phone,city,email,age,score)){**

**save();**

**cout<<endl<<"STUDENT DATA SAVED ! \nPRESS ENTER TO BACK TO MAIN MENU";**

**}else{**

**cout<<endl<<"STUDENT DATA SAVED ! \nSTUDENT MAY BE EXIST OR DATA IS NOT RIGTH \nPRESS ENTER TO BACK TO MAIN MENU";**

**}**

**cin.ignore();**

**cin.get();**

**menu();**

**}**

**else if (x==2){**

**cout<<"SEARCH FOR STUDENT BY ID : "<<endl<<endl;**

**cout<<"ENTER STUDENT'S ID : ";**

**int x;**

**cin>>x;**

**cout<<endl;**

**get\_student(x);**

**cout<<endl<<"PRESS ENTER TO BACK TO MAIN MENU";**

**cin.ignore();**

**cin.get();**

**menu();**

**// not found user**

**}**

**else if (x==3){**

**cout<<"PRINT ALL STUDENT DATA : "<<endl<<endl;**

**print();**

**cout<<endl<<"PRESS ENTER TO BACK TO MAIN MENU";**

**cin.ignore();**

**cin.get();**

**menu();**

**}**

**else if (x==4){**

**cout<<"SHOW STATISTICS : "<<endl;**

**statistics();**

**cout<<endl<<"PRESS ENTER TO BACK TO MAIN MENU";**

**cin.ignore();**

**cin.get();**

**menu();**

**}**

**else if(x==5){**

**int x;**

**cout<<"DELETE STUDENT DATA :"<<endl<<endl;**

**cout<<"ENTER STUDENT ID: ";**

**cin>>x;**

**if(!delete\_student(x)){**

**save();**

**}**

**cout<<endl<<"PRESS ENTER TO BACK TO MAIN MENU";**

**cin.ignore();**

**cin.get();**

**menu();**

**}**

**else if (x==6){**

**int x;**

**float y;**

**cout<<"UPDATE STUDENT'S DATA : "<<endl<<endl;**

**cout<<"ENTER STUDENT ID : ";**

**cin>>x;**

**cout<<endl<<"ENTER NEW STUDENT SCORE : ";**

**cin>>y;**

**if(update\_score(x , y)){**

**save();**

**cout<<endl<<"STUDENT OF ID "<<x <<" SCORE EQUAL "<<y<<endl;**

**}else{**

**cout<<"STUDENT OF ID "<<x<<" is not exist"<<endl;**

**}**

**cout<<endl<<"PRESS ENTER TO BACK TO MAIN MENU";**

**cin.ignore();**

**cin.get();**

**menu();**

**}**

**else if (x==7){**

**cout<<"EXITING PROGRAM \n"<<endl;**

**exit();**

**}**

**else {**

**cout<<"WRONG CHOICE ... TRY AGAIN"<<endl;**

**cout<<endl<<"PRESS ENTER TO BACK TO MAIN MENU";**

**cin.ignore();**

**cin.get();**

**menu();**

**}**

**}**

**int main()**

**{**

**menu();**

**}**