**OS Assignment 1**

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**GITHUB Link:** https://github.com/MUSTANGBRO20/OS-Assignment-1.git

**CODE:**

#include<iostream.h>  
#include<conio.h>  
#include<stdlib.h>  
#include<graphics.h>  
int i=1,j=1;  
long start\_std\_id=110000;  
long start\_stf\_id=120000;  
void student\_available\_seat(int);  
void student\_admit\_particular\_id(int);  
class staff  
{  
protected:  
long stf\_id;  
char name[10];  
int salary;  
int class\_name;  
public :  
void staff\_data();  
void staff\_display();  
}stf[10];  
void staff::staff\_data()  
{  
//staff\_id=stf\_id+j;  
stf\_id=++start\_stf\_id;  
  
cout<<"enter staff\_name:";  
cin>>name;  
cout<<"enter salary:";  
cin>>salary;  
cout<<"enter class\_name in integer:";  
cin>>class\_name;  
}  
void staff::staff\_display()  
{  
cout<<endl<<"staff\_id:";  
cout<<stf\_id<<endl;  
cout<<"staff\_name:";  
cout<<name<<endl;  
cout<<"salary:";  
cout<<salary<<endl;  
cout<<"class\_name:";  
cout<<class\_name<<endl;  
}  
  
class fees  
{  
public:  
int fees\_status;  
int month\_num;  
int tution\_fees;  
int exam\_fees;  
int transport\_fees;  
}fees\_month[12][4];  
  
class student:public fees  
{  
public:  
long std\_id;  
char student\_name[20];  
char parent\_name[20];  
int class\_name;  
char address[50];  
char mobile\_num[11];  
char addmission\_date[10];  
public:  
void student\_data();  
void student\_display();  
void student\_fees\_pay(int );  
void student\_fees\_status(int);  
void student\_delete();  
void student\_fees\_delete(int);  
void student\_data\_particular\_id(int);  
void student\_upgrade(int);  
  
}std[10];  
void student::student\_upgrade(int m)  
{  
  
if(std[m].student\_name[0]!='\0')  
std[m].class\_name+=1;  
}  
  
void student::student\_data()  
{  
int cname;  
std\_id=++start\_std\_id;  
int m=std\_id-110000;  
if(std[m].student\_name[0]=='\0')  
{  
cout<<"enter student\_name(length[20]):";  
cin>>std[m].student\_name;  
  
cout<<"enter class\_name in integer(0-12):";  
cin>>cname;  
if(cname>=0&&cname<=12)  
std[m].class\_name=cname;  
else  
cout<<"error in class\_name"<<endl;  
  
  
cout<<"enter parent\_name(length[20]):";  
cin>>std[m].parent\_name;  
cout<<"enter mobile\_number(length[10]):";  
cin>>std[m].mobile\_num;  
cout<<"enter addmission\_date(format[dd/mm/yy]):";  
cin>>std[m].addmission\_date;  
cout<<"enter address(length[50]):";  
cin>>std[m].address;  
}  
}  
void student::student\_display()  
{  
  
cout<<endl<<"student\_id:";  
cout<<std\_id<<endl;  
cout<<"student\_name:";  
cout<<student\_name<<endl;  
cout<<"class\_name:";  
cout<<class\_name<<endl;  
cout<<"parent\_name(length[20]):";  
cout<<parent\_name<<endl;  
cout<<"mobile\_number(length[10]):";  
cout<<mobile\_num<<endl;  
cout<<"addmission\_date(format[dd/mm/yy]):";  
cout<<addmission\_date<<endl;  
cout<<"address(length[50]):";  
cout<<address<<endl;  
}  
  
  
void student::student\_fees\_pay(int a)  
{  
if(std[a].student\_name[0]!='\0')  
{  
cout<<"jan-dec is equivalent to 1-12:"<<endl;  
cout<<"enter digit(1-12):";  
cin>>month\_num;  
cout<<"tution\_fees:";  
cin>>fees\_month[month\_num][a].tution\_fees;  
fees\_month[month\_num][a].fees\_status=1;  
student\_fees\_status(a);  
}  
else  
cout<<"student is not admitted at:"<<a+110000<<endl;  
}  
  
void student::student\_fees\_status(int a)  
{  
for(int m=1;m<=12;m++)  
{  
if(fees\_month[m][a].fees\_status==1)  
cout<<"fees of month "<<m<<" is paid......"<<endl;  
else  
cout<<"fees of month "<<m<<" is due"<<endl;  
}  
}  
void student::student\_delete()  
{  
//std\_id=NULL;  
for(int m=0;m<20;m++)  
{  
student\_name[m]='\0';  
parent\_name[m]='\0';  
}  
class\_name=NULL;  
for(m=0;m<50;m++)  
address[i]='\0';  
for(m=0;m<11;m++)  
mobile\_num[m]='\0';  
for(m=0;m<10;m++)  
addmission\_date[m]='\0';  
}  
void student::student\_fees\_delete(int a)  
{  
for(int i=1;i<=12;i++)  
{  
fees\_month[i][a].fees\_status=NULL;  
fees\_month[i][a].tution\_fees=NULL;  
fees\_month[i][a].exam\_fees=NULL;  
fees\_month[i][a].transport\_fees=NULL;  
}  
}  
void student\_available\_seat(int a)  
{  
for(int m=1;m<=a;m++)  
{  
if(std[m].student\_name[0]=='\0')  
cout<<"std\_id: "<<m+110000<<endl;  
}  
}  
void student\_admit\_particular\_id(int a)  
{  
if(std[a].student\_name[0]=='\0')  
{  
std[a].student\_data\_particular\_id(a);  
std[a].student\_display();  
}  
else  
cout<<"student is already admitted at this std\_id"<<endl;  
}  
void student::student\_data\_particular\_id(int a)  
{  
int cname;  
std\_id=110000+a;  
cout<<"enter student\_name(length[20]):";  
cin>>student\_name;  
  
cout<<"enter class\_name in integer(0-12):";  
cin>>cname;  
if(cname>=0&&cname<=12)  
std[a].class\_name=cname;  
else  
cout<<"error in class name"<<endl;  
  
cout<<"enter parent\_name(length[20]):";  
cin>>parent\_name;  
cout<<"enter mobile\_number(length[10]):";  
cin>>mobile\_num;  
cout<<"enter addmission\_date(format[dd/mm/yy]):";  
cin>>addmission\_date;  
cout<<"enter address(length[50]):";  
cin>>address;  
}  
  
void main()  
{  
int gd=DETECT,gm;  
long n,std\_id,stf\_id;  
int m;  
long id;  
initgraph(&gd,&gm,"C:\\TurboC3\\BGI");  
setbkcolor(3);  
x:  
cleardevice();  
cout<<"=============================================="<<endl;  
cout<<" MENU "<<endl;  
cout<<"=============================================="<<endl;  
cout<<" Made by saurabh\_gupta "<<endl;  
cout<<" enter [1] for adding new student "<<endl;  
cout<<" enter [2] for staff "<<endl;  
cout<<" enter [3] to get information "<<endl;  
cout<<" enter [4] for fees payment "<<endl;  
cout<<" enter [5] for fees status "<<endl;  
cout<<"=============================================="<<endl;  
cout<<" enter [-1] for deleting student "<<endl;  
cout<<" enter [-2] to see available seat "<<endl;  
cout<<" enter [-3] to admit student at a particular std\_id:"<<endl;  
cout<<" enter [-4] to upgrade students in next class: "<<endl;  
cout<<" enter [0] to exit "<<endl;  
cout<<"=============================================="<<endl;  
cout<<" start\_std\_id:"<<start\_std\_id+1<<" start\_staff\_id"<<start\_stf\_id+1<<endl;  
cout<<"==============================================="<<endl<<"::";  
cin>>n;  
  
switch(n)  
{  
case 1:  
  
std[i].student\_data();  
//cleardevice();  
std[i].student\_display();  
i++;  
cout<<"enter [0] to go back:";  
cin>>m;  
if(m==0)  
goto x;  
break;  
  
  
case 2:  
  
stf[j].staff\_data();  
cleardevice();  
stf[j].staff\_display();  
j++;  
cout<<endl<<"enter [0] to go back:";  
cin>>m;  
if(m==0)  
goto x;  
break;  
  
case 3:  
  
cout<<"enter id:";  
cin>>id;  
if(id>110000&&id<120000)  
{  
m=id-110000;  
std[m].student\_display();  
}  
else  
{  
m=id-120000;  
stf[m].staff\_display();  
}  
cout<<endl<<"enter [0] to go back:";  
cin>>m;  
if(m==0)  
goto x;  
  
case 4:  
  
cout<<"enter id:";  
cin>>id;  
if(id>110000&&id<120000)  
{  
m=id-110000;  
cout<<"student\_name:"<<std[m].student\_name<<endl;  
cout<<"class\_name:"<<std[m].class\_name<<endl;  
cout<<"parent\_name:"<<std[m].parent\_name<<endl;  
std[m].student\_fees\_pay(m);  
}  
  
cout<<endl<<"enter [0] to go back:";  
cin>>m;  
if(m==0)  
goto x;  
  
case 5:  
  
cout<<"enter id:";  
cin>>id;  
if(id>110000&&id<120000)  
{  
m=id-110000;  
cout<<"student\_name:"<<std[m].student\_name<<endl;  
cout<<"class\_name:"<<std[m].class\_name<<endl;  
cout<<"parent\_name:"<<std[m].parent\_name<<endl;  
std[m].student\_fees\_status(m);  
  
cout<<endl<<"enter [0] to go back:";  
cin>>m;  
if(m==0)  
goto x;  
case -1:  
  
cout<<"enter std\_id:";  
cin>>id;  
if(id>110000&&id<120000)  
{  
m=id-110000;  
std[m].student\_delete();  
std[m].student\_fees\_delete(m);  
cout<<"student std\_id:"<<m+110000<<" is deleted"<<endl;  
cout<<"std\_id:"<<m+110000<<" is now available for another student"<<endl;  
cout<<"student availabel seat is updated:"<<endl;  
  
std[m].student\_display();  
std[m].student\_fees\_status(i);  
}  
cout<<endl<<"enter [0] to go back:";  
cin>>m;  
if(m==0)  
goto x;  
  
  
case -2:  
  
cout<<"enter number of seats to see availability:";  
cin>>m;  
student\_available\_seat(m);  
  
cout<<endl<<"enter [0] to go back:";  
cin>>m;  
if(m==0)  
goto x;  
  
case -3:  
  
cout<<"enter std\_id:";  
cin>>id;  
m=id-110000;  
student\_admit\_particular\_id(m);  
cout<<endl<<"enter [0] to go back:";  
cin>>m;  
if(m==0)  
goto x;  
  
case -4:  
  
for(m=1;m<400;m++)  
std[m].student\_upgrade(m);  
cout<<endl<<"enter [0] to go back:";  
cin>>m;  
if(m==0)  
goto x;  
  
}  
}  
getch();  
}