#include<iostream>

#include<stdlib.h>

#include<iomanip>

#include<strings.h>

#include<fstream>

#include<conio.h>

#include<stdio.h>

using namespace std;

void import\_data();

void export\_data();

int authenticate();

void search();

void display();

void insert();

void delete\_data();

void modify();

int \*index(char bldg[],int lab\_no,int slot);

struct slot

{

int index;

int check=0;

char bldg[4];

int lab\_no;

int slot;

};

//char passc[8]="qwertyui",useridc[20]="Mihir";

struct slot s[500];

int main()

{

import\_data();

int choice=0,check=0;

cout<<"Lab Slot Search\n";

do

{

switch(choice)

{

case 0:

check=1;

cout<<"\nAdmin\t1";

cout<<"\nUser\t2";

cout<<"\nExit\t8\n";

cin>>choice;

continue;

case 1:

if(check && authenticate())

{

cout<<"\nWrong userid or password";

choice=0;

continue;

}

check=0;

cout<<"\nMain menu\t0";

cout<<"\nSearch\t\t3";

cout<<"\nDisplay\t\t4";

cout<<"\nInsert\t\t5";

cout<<"\nDelete\t\t6";

cout<<"\nModify\t\t7\n";

cin>>choice;

continue;

case 2:

cout<<"Main menu\t0";

cout<<"\nSearch\t\t3";

cin>>choice;

continue;

case 3:

search();

choice=1;

break;

case 4:

display();

choice=1;

break;

case 5:

insert();

choice=1;

break;

case 6:

delete\_data();

choice=1;

break;

case 7:

modify();

choice=1;

break;

case 8:

export\_data();

choice=10;

}

}while(choice!=10);

}

int\* index(char bldg[], int lab\_no, int slot)

{

char c;

static int indx[3];

indx[0]=0;indx[1]=499;indx[2]=1;

c=bldg[0];

switch(c)

{

case 'S':

indx[0]=0;

indx[1]=320;

break;

case 'T':

indx[0]=321;

indx[1]=499;

break;

}

if(lab\_no>=0);

{

indx[0]+=(lab\_no/100)\*40+((lab\_no%100)-16)\*10;

indx[1]=indx[0]+10;

}

if(lab\_no>=0)

{

indx[0]+=(((slot/100)%30)%6);

indx[1]=indx[0];

indx[2]=1;

}

else

{

indx[0]+=(((slot/100)%30)%6);

indx[2]=10;

}

indx[0]-=1;

indx[1]-=1;

return indx;

}

void import\_data()

{

char i[4],lab\_num[4],lab\_slot[5]; //index

int indx;

ifstream fin;

fin.open("Database.txt",ios::in);

if(!fin)

{

cout<<"Error! Can not open file";

return;

}

fin.seekg(0);

while(fin)

{

fin.getline(i,4);

indx=atoi(i);

if(s[indx].check==0)

s[indx].check=1;

else

indx++;

s[indx].index=indx;

fin.getline(s[indx].bldg,4);

fin.getline(lab\_num,4);

s[indx].lab\_no=atoi(lab\_num);

fin.getline(lab\_slot,5);

s[indx].slot=atoi(lab\_slot);

s[indx].check=1;

}

fin.close();

}

void export\_data()

{

ofstream fout;

fout.open("Database.txt",ios::out);

for(int i=0;i<500;i++)

{

if(s[i].check==0)

continue;

fout<<setw(3)<<setfill('0')<<i<<"\n";

fout<<s[i].bldg<<"\n";

fflush(stdin);

fout<<setw(3)<<setfill('0')<<s[i].lab\_no<<"\n";

fout<<setw(4)<<setfill('0')<<s[i].slot<<"\n";

}

fout.close();

}

void search()

{

char build[4];

int num,slt;

int \*p;

cout<<"Enter the building (enter -1 if none)\t: ";

cin>>build;

cout<<"Enter class number (enter -1 if none)\t:";

cin>>num;

cout<<"Enter the lab slot (enter -1 if none)\t: ";

cin>>slt;

p=index(build,num,slt);

for(int i=p[0];i<=p[1];i+=p[2])

{

if(s[i].check==0 && s[i+1].check==0)

cout<<"NOT EMPTY";

else if(s[i+1].check==1)

cout<<s[i+1].bldg<<"\t"<<s[i+1].lab\_no<<"\t"<<s[i+1].slot<<"\n";

else

cout<<s[i].bldg<<"\t"<<s[i].lab\_no<<"\t"<<s[i].slot<<"\n";

}

}

void display()

{

for(int i=0;i<500;i++)

{

if(s[i].check==0)

continue;

cout<<s[i].bldg<<"\t"<<s[i].lab\_no<<"\t"<<"L"<<s[i].slot/100<<"+L"<<s[i].slot%100<<endl;

}

}

void insert()

{

char build[4];

int num,slt,\*p,i;

cout<<"Enter the building\t: ";

cin>>build;

cout<<"Enter class number\t:";

cin>>num;

cout<<"Enter the lab slot\t: ";

cin>>slt;

p=index(build,num,slt);

i=p[0];

if(s[i].check==1)

{

cout<<"Already exitsts!";

return;

}

cout<<i;

s[i].index=i;

s[i].check=1;

strcpy(s[i].bldg,build);

s[i].lab\_no=num;

s[i].slot=slt;

}

void delete\_data()

{

char build[4];

int num,slt,\*p,i;

cout<<"Enter the building\t: ";

cin>>build;

cout<<"Enter class number\t:";

cin>>num;

cout<<"Enter the lab slot\t: ";

cin>>slt;

p=index(build,num,slt);

s[p[0]].check=0;

}

void modify()

{

char build[4];

int num,slt,\*p,i;

cout<<"Enter the building\t: ";

cin>>build;

cout<<"Enter class number\t:";

cin>>num;

cout<<"Enter the lab slot\t: ";

cin>>slt;

p=index(build,num,slt);

s[p[0]].check=0;

cout<<"Enter the modified building\t: ";

cin>>build;

cout<<"Enter modified class number\t:";

cin>>num;

cout<<"Enter the modified lab slot\t: ";

cin>>slt;

p=index(build,num,slt);

s[p[0]].check=1;

s[p[0]].lab\_no=num;

s[p[0]].slot=slt;

strcpy(s[p[0]].bldg,build);

}

int authenticate()

{

char userid[20],pass[20],a;

cout<<"Enter Username\t: ";

cin>>userid;

cout<<"Enter Password\t: ";

for(int i=0;i<8;i++)

{

a=getch();

cout<<"\*";

pass[i]=a;

}

a=0;

if(strcmp("Mihir",userid) || strcmp("qwertyui",pass))

return 1;

return 0;

}