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#include <conio.h>

#include <cstdio>

#include <iostream>

#include <string.h>

#include <cstdlib>

using namespace std;

static int p = 0;

class a
{
    char busn[ 5], driver[ 10], arrival[ 5], depart[ 5], from[ 10], to[ 10], seat[ 8][ 4][ 10];
public:
    void install();
    void allotment();
    void empty();
    void show();
    void avail();
    void position(int i);
}

bus[ 10];

void vline(char ch)
{
    for (int i=80;i>0;i-- )
        cout<<ch;
}

void a::install()
{
    cout<<" Enter bus no: ";
    cin>>bus[ p].busn;
}

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        cout<<"\nEnter Driver's name: ";
        cin>>bus[p].driver;
        cout<<"\nArrival time: ";
        cin>>bus[p].arrival;
        cout<<"\nDeparture: ";
        cin>>bus[p].depart;
        cout<<"\nFrom: \t\t\t";
        cin>>bus[p].from;
        cout<<"\nTo: \t\t\t";
        cin>>bus[p].to;
        bus[p].empty();
        p++;
    }
    void a::allotment()
    {
        int seat;
        char number[5];
        top:
        cout<<" Bus no: ";
        cin>>number;
        int n;
        for(n=0;n<=p;n++)
        {
            if (strcmp(bus[n].busn, number)==0)
                break;
        }
        while(n<=p)
        {

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cout<<"\nSeat Number: ";

cin>>seat;

if (seat>32)
{
    cout<<"\nThere are only 32 seats available in this bus.";
}
else
{
    if (strcmp(bus[n].seat[seat/4][(seat%4)-1], "Empty")==0)
    {
        cout<<"Enter passenger's name: ";
        cin>>bus[n].seat[seat/4][(seat%4)-1];
        break;
    }
    else
        cout<<"The seat no. is already reserved.\n";
}
}

if (n>p)
{
    cout<<"Enter correct bus no.\n";
    goto top;
}
}

void a::empty()
{
    for(int i=0; i<8;i++)
    {

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        for(int j=0;j<4;j++)
        {
            strcpy(bus[p].seat[i][j], " Empty");
        }
    }
}

void a::show()
{
    int n;
    char number[ 5];
    cout<<" Enter bus no: ";
    cin>>number;
    for(n=0;n<=p;n++)
    {
        if (strcmp(bus[ n].busn, number)==0)
            break;
    }
    while(n<=p)
    {
        vline('*');
        cout<<" Bus no: \t" <<bus[ n].busn
        <<" \nDriver: \t" <<bus[ n].driver<<" \t\tArrival time: \t"
        <<bus[ n].arrival<<" \tDeparture time:" <<bus[ n].depart
        <<" \nFrom: \t\t" <<bus[ n].from<<" \t\tTo: \t\t" <<
        bus[ n].to<<" \n";
        vline('*');
        bus[ 0].position(n);
        int a=1;
    }
}

```



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for (int i=0; i<8; i++)
{
    for(int j =0;j <4;j ++ )
    {
        a++;
        if (strcmp(bus[n].seat[i][j], " Empty")!=0)
            cout<<" \nThe seat no " <<(a- 1)<<" is reserved for " <<bus[n].seat[i][j] <<" .";
    }
}
break;
}
if (n>p)
    cout<<" Enter correct bus no: ";
}
void a::position(int l)
{
    int s=0;p=0;
    for (int i =0; i<8;i++)
    {
        cout<<" \n";
        for (int j = 0;j <4; j ++ )
        {
            s++;
            if (strcmp(bus[l].seat[i][j], " Empty")==0)
            {
                cout.width(5);
                cout.fill(' ');
                cout<<s<<" .";
            }
        }
    }
}

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        cout.width(10);

        cout.fill(' ');

        cout<<bus[l].seat[i][j];

        p++;
    }

    else

    {

        cout.width(5);

        cout.fill(' ');

        cout<<s<<".";

        cout.width(10);

        cout.fill(' ');

        cout<<bus[l].seat[i][j];

    }

}

}

cout<<"\n\nThere are " <<p<<" seats empty in Bus No: " <<bus[l].busn;

}

void a::avail()

{

    for(int n=0;n<p;n++)

    {

        vline('*');

        cout<<" Bus no: \t" <<bus[n].busn<<"\nDriver: \t" <<bus[n].driver

        <<"\t\tArrival time: \t" <<bus[n].arrival<<"\tDeparture Time: \t"

        <<bus[n].depart<<"\nFrom: \t\t" <<bus[n].from<<"\t\tTo: \t\t\t"

        <<bus[n].to<<"\n";
    }
}

```



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        vline('*');
        vline('_');
    }
}

int main()
{
    system("cls");

    int w;

    while(1)
    {
        //system("cls");
        cout<<"\n\n";
        cout<<"\t\t***SIMPLE BUS RESERVATION SYSTEM***";

        cout<<"\n\n";

        cout<<"\t\t\t1.Install\n\t\t\t"
        <<"2.Reservation\n\t\t\t"
        <<"3.Show\n\t\t\t"
        <<"4.Buses Available \n\t\t\t"
        <<"5.Exit";

        cout<<"\n\t\t\tEnter your choice:- ";

        cin>>w;

        switch(w)
        {
            case 1: bus[p].install();

                break;

            case 2: bus[p].allotment();

                break;

            case 3: bus[0].show();

                break;

```



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    case 4: bus[0].avail();  
        break;  
    case 5: exit(0);  
    }  
}  
return 0;  
}
```

