Bus Reservation System

C++ Code :-

```cpp
#include <iostream>
#include <cstring>
using namespace std;
static int p = 0;
class volvo //class name
{
 private : //by default -- private (DATA-MEMBERS)
 char busn[10];
 char driver[10];
 char arrival[10];
 char depart[10];
 char from[10];
 char to[10];
 char seat[9][5][20];
public: // MEMBER FUNCTIONS
 void install();
 void ticket();
 void empty();
 void show();
 void position (int l);
}bus[20];

void volvo::install() // Scope Resolution Operator
{
 cout<<endl;
 cout<<"Enter bus no: ";
 cin>>bus[p].busn;
 cout<<"Enter Driver's name: ";
 cin>>bus[p].driver;
 cout<<"Arrival time: ";
 cin>>bus[p].arrival;
 cout<<"Departure: ";
 cin>>bus[p].depart;
 cout<<"From: ";
 cin>>bus[p].from;
 cout<<"To: ";
 cin>>bus[p].to;
 bus[p].empty();
 p++;

 cout<<endl<<endl<<"Bus added Sucessfully "<< endl << endl;
}
```

```cpp
void volvo::ticket() // Scope Resolution Operator
{
 int seat;
 char number[10];
 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)
 {
  cout<<"Seat Number: ";
  cin>>seat;
  if(seat>45)
  {
   cout<<"There are only 45 seats available in this bus.";
  }
  else
  {
  if (strcmp(bus[n].seat[seat/5][(seat%5)-1] , "Empty")==0)
   {
     cout<<"Enter passanger's name: ";
     cin>>bus[n].seat[seat/5][(seat%5)-1];

     cout<<endl<<endl<<"Seat Reserved Sucessfully "<<endl <<endl;
     break;
   }
  else
   cout<<"This seat is already reserved."<< endl;
   }
   }
  if(n>p)
  {
   cout<<"Enter Correct Bus no."<<endl;
   goto top;
  }
 }
void volvo::show()
{
 int n;
 char number[5];
 cout<<"\t\t\tEnter bus no: ";
 cin>>number;
 for(n=0;n<=p;n++)
 {
  if(strcmp(bus[n].busn, number)==0)
```

```cpp
   break;
  }
 while(n<=p)
 {
  cout<<"Bus no: "<<bus[n].busn <<endl ;
  cout<<"Driver: "<<bus[n].driver <<endl ;
  cout<<"Arrival time: "<<bus[n].arrival <<endl ;
  cout<<"Departure time: "<<bus[n].depart <<endl ;
  cout<<"From: "<<bus[n].from <<endl ;
  cout<<"To: "<<bus[n].to <<endl ;
  bus[0].position(n);
  int a=1;
  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<<"The seat no "<<(a-1)<<" is reserved for "<<bus[n].seat[i][j]<<".";
   }
  }
  break;
  }
  if(n>p)
   cout<<"Enter correct bus no: ";
}
void volvo::empty() // Scope Resolution Operator
{
 for(int i=0; i<9;i++)
 {
  for(int j=0;j<5;j++)
  {
    strcpy(bus[p].seat[i][j] , "Empty");
  }
 }
}
void volvo::position(int l)
{
 int s=0;p=0;
 for (int i =0; i<9;i++)
 {
  cout<<endl ;
  for (int j = 0;j<5; j++)
  {
    s++;
    if(strcmp(bus[l].seat[i][j], "Empty")==0)
     {
       cout.width(5);
       cout.fill(' ');
       cout<<s<<".";
```

```cpp
        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\n\t\t\tThere are "<<p<<" seats empty in Bus No: "<<bus[l].busn<<endl;
  }
int main()
{
int ch;
 cout<<"Bus Reservation System Project in C++"<<endl <<endl ;
while (1)
{
 cout<<endl;

 // Screen Display
 cout<<"1.Add Bus"<<endl;
 cout<<"2.Bus Reservation"<<endl;
 cout<<"3.Show"<<endl;
 cout<<"4.Exit"<<endl;
 cout<<endl<<"Enter your choice:-> ";
 cin>>ch;
 switch(ch) // Switch Case - Statement
 {
  case 1:  bus[p].install();
    break;
  case 2:  bus[p].ticket();
    break;
  case 3:  bus[p].show();
    break;
  case 4:  cout<<"THANK YOU !!! WELCOME BACK AGAIN !!!" <<endl <<endl;
       exit(0); // Exiting the Program
 }
 }
return 0;
}
```

OUTPUT :-

1.)   Add Bus

```
Bus Reservation System Project in C++


1.Add Bus
2.Bus Reservation
3.Show
4.Exit

Enter your choice:-> 1
Enter bus no: 2121
Enter Driver's name: Raju
Arrival time: 11:45AM
Departure: 12:00PM
From: Surat
To: Ahmedabad
Bus added Sucessfully
```

2.)   Bus Reservation

```
1.Add Bus
2.Bus Reservation
3.Show
4.Exit

Enter your choice:-> 2
Bus no: 2121
Seat Number: 25
Enter passanger's name: Mili
Seat Reserved Sucessfully
```

3.)   Show Bus

```
1.Add Bus
2.Bus Reservation
3.Show
4.Exit

Enter your choice:-> 3
Enter bus no: 2121
Bus no: 2121
Driver: Raju
Arrival time: 11:45AM
Departure time: 12:00PM
From: Surat
To: Ahmedabad

    1.      Empty   2.      Empty   3.      Empty   4.      Empty   5.      Empty
    6.      Empty   7.      Empty   8.      Empty   9.      Empty   10.     Empty
   11.      Empty   12.     Empty   13.     Empty   14.     Empty   15.     Empty
   16.      Empty   17.     Empty   18.     Empty   19.     Empty   20.     Empty
   21.      Empty   22.     Empty   23.     Empty   24.     Empty   25.      Mili
   26.      Empty   27.     Empty   28.     Empty   29.     Empty   30.     Empty
   31.      Empty   32.     Empty   33.     Empty   34.     Empty   35.     Empty
   36.      Empty   37.     Empty   38.     Empty   39.     Empty   40.     Empty
   41.      Empty   42.     Empty   43.     Empty   44.     Empty   45.     Empty

        There are 44 seats empty in Bus No: 2121
```

4.)   Exit Program

```
1.Add Bus
2.Bus Reservation
3.Show
4.Exit

Enter your choice:-> 4
THANK YOU !!! WELCOME BACK AGAIN !!!
```