# BUS TICKET BOOKING SYSTEM

## Introduction:

Bus management/reservation system is a simple C++ project. Here, the user can perform tasks like install bus information, reserve bus seat, show reservation information and show information regarding the buses available.

## Purpose:

The proposal is about the bus management system. This project is for the users who want to book the tickets for the journey they want to do at the time of their desire and also for owner of buses.

## WHAT DOES IT DO?

It will display a menu, having Six options:

1. **Add New Bus:** This feature allows you to Add a typical bus information before it can be reserved by the passengers or shown in buses available. It includes the bus no., driver's name, arrival time, departure time and destination (from and to) of the bus.

2. **Reservation:** This feature is very simple; it includes the bus no., seat number and the passenger's name. The seat number of the particular bus is reserved under the passenger's name.

3. **Show Bus Details:** With this feature, you can show all the information regarding the buses and their respective seats. It contains all the information stored by the previous two function of this project. It also enlists the no. of empty seats in a bus along with the seat number registered to a passenger. (Scroll down to view the output screen of this feature.)

4. **Available buses:** With this feature, you can show all the information regarding the buses and their respective seats. It contains all the information stored by the previous two function

of this project. It also enlists the no. of empty seats in a bus along with the seat number registered to a passenger. (Scroll down to view the output screen of this feature.)

5. **Search details by Passenger name:** It can Search details of Passenger with his or her name. like when and in which he or she booked Seats and how many total seats booked.

6. **Exit:** If you want to exit the menu, select this option.

## Libraries used in the code:

### CSTDLIB

The <cstdlib> header file declares a set of general-purpose functions such as: atof() to convert string to double. It also contains a few mathematical functions. For example, abs() to find the absolute value of a number.

### STRING.H

**string**. **h** is the **header file** required for **string** functions. This function appends not more than n characters from the **string** pointed to by src to the end of the **string** pointed to by dest plus a terminating Null-character.

#### IOSTREAM

Iostream provides basic input and output services for C++ programs. iostream uses the objects cin , cout , cerr , and clog for sending data to and from the standard streams input, output, error (unbuffered), and log (buffered) respectively.

### Member wise

### M. UMAIR

Done compilation. Have made to functions named as show bus (details) show name in the project.

Show bus

In this it will take bus number and date of the bus from the user. And will show all details of the bus. Like how many seats are filled. How many of them are reserved and will also show the name of the passenger who has reserved the seat in the bus.

It can Search details of Passenger with his or her name. Like when and in which he or she booked Seats and how many total seats booked.

Means it will take the passengers name and will tell how many passengers named ali have reserved seat in which bus and on which date in all of the buses installed.

## Code:

```
void a::showBus()


{


  int n,d,date2;


  char number[5];


  cout<<"Enter bus no: ";


  cin>>number;


  cout<<"Enter date(Not including Month and year : ";


  cin>>date2;


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


  {


    if(strcmp(bus[n][0].busn, number)==0)

    {

        top:

        for(d=0;d<days;d++)

        {
```

```
            if(bus[n][4].date < date2)
            {
                cout<<"\n Please enter valid Date";

                goto top;
            }

            else if(bus[n][d].date == date2)
                break;
        }
        break;
    }

}

while(n<=p)

    {

      vline('*');

      cout<<"\n\nBus no: \t"<<bus[n][d].busn<<"\t\tDriver: \t"<<bus[n][d].driver

      <<"\nDate : \t"<<bus[n][d].date<<"\nArrival time: \t"

      <<bus[n][d].arrival<<"\t\tDeparture time:"<<bus[n][d].depart

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

      bus[n][d].to<<"\n";
```

```
        vline('*');

        bus[0][d].position(n , d);

        int a=1;

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

        {

          for(int j=0;j<4;j++)

          {

            a++;

            if(strcmp(bus[n][d].seat[i][j],"Empty")!=0)

            cout<<"\nThe seat no "<<(a-1)<<" is reserved for
"<<bus[n][d].seat[i][j]<<".";

          }

        }

        break;

    }

    if(n>p)
```

```
    cout<<"Enter correct bus no: ";

}


void a::showName()
{
    char name[10];

    int noseats = 0;

    cout<<"\nPlease enter a Name of Passenger without space, to search Seats : ";

    cin>>name;

    for(int i=0;i<p;i++)
    {
        for(int j=0;j<days;j++)
        {
            for(int k=0;k<8;k++)
            {
                for(int m=0;m<4;m++)
                {
                    if(strcmp(bus[i][j].seat[k][m] , name)==0)
                    {
                        int seatno = (4*k)+(m+1);
                        cout<<"\n\n "<<name<<" has booked Seat number. "<< seatno

                        <<" in Bus number. "<<bus[i][j].busn<<" on "<<bus[i][j].date
```

```
                        << " June 2020";


                        noseats++;


                    }
                }
            }
        }
    }


    if(noseats>0)
    {
        cout<<"\n\n\t"<<name<<" has Booked total "<<noseats<<" Seats";
    }


    else
        cout<<"\n\n\tThere is no Seat booked by "<<name;



}
```

## Ayeza Rehman

Made to functions that are install and avail.

Installation

In this we will give a bus number when the program will ask about it. Then we have to give certain details about it like bus number, departure, arrival, from where to which city and driver name as well.

Avail

This feature shows all the buses available. All the information about the buses that are there. In which bus which seats are empty, filled, there timings and their destination (from-to).

## Code:

```
void a::install()
{
	cout<<"Enter bus no: ";

	cin>>bus[p][0].busn;

	cout<<"\nEnter Driver's name: ";

	cin>>bus[p][0].driver;

	cout<<"\nArrival time: ";

	cin>>bus[p][0].arrival;

	cout<<"\nDeparture: ";

	cin>>bus[p][0].depart;

	cout<<"\nFrom: \t\t";

	cin>>bus[p][0].from;

	cout<<"\nTo: \t\t";

	cin>>bus[p][0].to;
```

```
      bus[p][0].empty();

      bus[p][0].date = TodayDate;

    for(int i=1;i<days;i++)
    {

      strcpy(bus[p][i].busn , bus[p][0].busn);
      strcpy(bus[p][i].driver , bus[p][0].driver);
      strcpy(bus[p][i].arrival , bus[p][0].arrival);
      strcpy(bus[p][i].depart , bus[p][0].depart);
      strcpy(bus[p][i].from , bus[p][0].from);
      strcpy(bus[p][i].to , bus[p][0].to);
      bus[p][i].empty();
      bus[p][i].date = bus[p][i-1].date + 1;
    }
  ++p;
}

void a::avail()

{
  if(p>0)
  {

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

    {
        for(int d=0;d<5;d++)
        {
```

```
            vline('*');


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


            <<"\nDate : \t"<<bus[n][d].date<<"\t\tArrival time:
\t"<<bus[n][d].arrival


            <<"\tDeparture Time: \t"<<bus[n][d].depart<<"\nFrom:
\t\t"<<bus[n][d].from


            <<"\t\tTo: \t\t\t"<<bus[n][d].to<<"\n";


            vline('*');


            vline('_');


        }
    }
  }
  else
    cout<<"\nThere is no bus Available ";


}
```

## Shahbaz khan

Made two functions that are

Allotment

In this it asks the user to select a seat for him/her and asks information about at what time they want to go which seat number they want and on which day and in which bus the user wants to go.

Position

It tells the seat display that which of the seats are empty and which of the seat sare available. Gives the menu basically a sketch that which of the following are empty or filled.

## Code :

```
void a::allotment()

{

  int seat;

  char number[5];

  top:

  cout<<"Enter Bus no: ";

  cin>>number;

  int n;

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

  {

    if(strcmp(bus[n][0].busn, number)==0)
        break;

  }

  while(n<=p)
```

```
{

  cout<<"\n\t\tAvailable Dates for this Bus : \n";

  for(int i=0;i<days;i++)
  {
      cout<<"\n\t"<<bus[n][i].date<<"-June, 2020";
  }

  int date1;

  top1:

  cout<<"\n\n  Please enter date, for booking(Not including Month and year : ";

  cin>>date1;

  int d;

  for(d=0;d<days;d++)
  {
      if(bus[n][4].date < date1)
          {
              cout<<"\n Please enter valid Date";

              goto top1;
          }
      else if(bus[n][d].date == date1)
          break;
```

```
}

int s;

cout<<"\n How many Seats do you want to book : ";
cin>>s;

for(int i=0;i<s;i++)
{
    cout<<"\nPlease enter Seat number : ";

    cin>>seat;

    if(seat>32)

    {
      cout<<"\nThere are only 32 seats available in this bus.";
      s++;
    }

    else

    {

      if (strcmp(bus[n][d].seat[seat/4][(seat%4)-1], "Empty")==0)

      {

        cout<<"Enter short passenger's name without space : ";
```

```
            cin>>bus[n][d].seat[seat/4][(seat%4)-1];

          }

          else
          {
              cout<<"The seat no. is already reserved.\n";
              s++;

          }

       }

    }
    break;

}

    if(n>p)

    {

      cout<<"Enter correct bus no.\n";

      goto top;

    }

  }
```

```
void a::position(int l, int m)

{

  int serialno=0,emptyseats=0;

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

  {

    cout<<"\n";

    for (int j = 0;j<4; j++)

    {

      serialno++;

      if(strcmp(bus[l][m].seat[i][j], "Empty")==0)

        {

          cout.width(5);

          cout.fill(' ');

          cout<<serialno<<".";

          cout.width(10);
```

```
        cout.fill(' ');

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

        emptyseats++;

      }

      else

      {

      cout.width(5);

      cout.fill(' ');

      cout<<serialno<<".";

      cout.width(10);

      cout.fill(' ');

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

      }

    }

  }
```

```
   cout<<"\n";
   vline('*');

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

  }
```

# Complete Code:

```
#include <iostream>

#include <string.h>

#include <cstdlib>

using namespace std;

static int p = 0 , days = 5 , noOfBuses = 10 , TodayDate = 1;



class a

{

  char busn[5], driver[10], arrival[5], depart[5], from[10], to[10], seat[8][4][10];
  int date;

public:

  void install();
```

```
  void allotment();

  void empty();

  void showBus();

  void showName();

  void avail();

  void position(int i , int m);

}
bus[10][5];

void vline(char ch)

{

  for (int i=80;i>0;i--)
    cout<<ch;

}

void a::install()

{
      cout<<"Enter bus no: ";
```

```
    cin>>bus[p][0].busn;

    cout<<"\nEnter Driver's name: ";

    cin>>bus[p][0].driver;

    cout<<"\nArrival time: ";

    cin>>bus[p][0].arrival;

    cout<<"\nDeparture: ";

    cin>>bus[p][0].depart;

    cout<<"\nFrom: \t\t";

    cin>>bus[p][0].from;

    cout<<"\nTo: \t\t";

    cin>>bus[p][0].to;

    bus[p][0].empty();

    bus[p][0].date = TodayDate;

  for(int i=1;i<days;i++)
  {

    strcpy(bus[p][i].busn , bus[p][0].busn);
```

```
      strcpy(bus[p][i].driver , bus[p][0].driver);

      strcpy(bus[p][i].arrival , bus[p][0].arrival);

      strcpy(bus[p][i].depart , bus[p][0].depart);

      strcpy(bus[p][i].from , bus[p][0].from);

      strcpy(bus[p][i].to , bus[p][0].to);

      bus[p][i].empty();

      bus[p][i].date = bus[p][i-1].date + 1;
    }
  ++p;
}

void a::allotment()

{

  int seat;

  char number[5];

  top:

  cout<<"Enter Bus no: ";
```

```
cin>>number;

int n;

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

{

  if(strcmp(bus[n][0].busn, number)==0)
      break;

}

while(n<=p)

{

  cout<<"\n\t\tAvailable Dates for this Bus : \n";

  for(int i=0;i<days;i++)
  {
      cout<<"\n\t"<<bus[n][i].date<<"-June, 2020";
  }

  int date1;

  top1:

  cout<<"\n\n  Please enter date, for booking(Not including Month and year : ";
```

```
cin>>date1;

int d;

for(d=0;d<days;d++)
{
    if(bus[n][4].date < date1)
        {
            cout<<"\n Please enter valid Date";

            goto top1;
        }
    else if(bus[n][d].date == date1)
        break;

}

int s;

cout<<"\n How many Seats do you want to book : ";
cin>>s;

for(int i=0;i<s;i++)
{
    cout<<"\nPlease enter Seat number : ";

    cin>>seat;

    if(seat>32)
```

```
    {
      cout<<"\nThere are only 32 seats available in this bus.";
      s++;
    }

    else

    {

      if (strcmp(bus[n][d].seat[seat/4][(seat%4)-1], "Empty")==0)

      {

        cout<<"Enter short passenger's name without space : ";

        cin>>bus[n][d].seat[seat/4][(seat%4)-1];

      }

      else
      {
          cout<<"The seat no. is already reserved.\n";
          s++;

      }

   }

}
break;
```

```
}

    if(n>p)

    {

      cout<<"Enter correct bus no.\n";

      goto top;

    }

  }



void a::empty()

{
    for(int d=0;d<days;d++)
    {
      for(int i=0; i<8;i++)
      {
        for(int j=0;j<4;j++)
        {
          strcpy(bus[p][d].seat[i][j], "Empty");

        }
      }
    }
```

```
}

void a::showBus()
{
  int n,d,date2;
  char number[5];
  cout<<"Enter bus no: ";
  cin>>number;
  top:
  cout<<"Enter date(Not including Month and year : ";
  cin>>date2;
  for(n=0;n<=p;n++)
  {
    if(strcmp(bus[n][0].busn, number)==0)
    {
        for(d=0;d<days;d++)
        {
```

```
            if(bus[n][4].date < date2)
            {
                cout<<"\n Please enter valid Date";

                goto top;
            }

            else if(bus[n][d].date == date2)
                break;
        }
        break;
    }

}

while(n<=p)

    {

      vline('*');

      cout<<"\n\nBus no: \t"<<bus[n][d].busn<<"\t\tDriver: \t"<<bus[n][d].driver

      <<"\nDate : \t"<<bus[n][d].date<<"\nArrival time: \t"

      <<bus[n][d].arrival<<"\t\tDeparture time:"<<bus[n][d].depart

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

      bus[n][d].to<<"\n";
```

```
        vline('*');

        bus[0][d].position(n , d);

        int a=1;

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

        {

          for(int j=0;j<4;j++)

          {

            a++;

            if(strcmp(bus[n][d].seat[i][j],"Empty")!=0)

            cout<<"\nThe seat no "<<(a-1)<<" is reserved for
"<<bus[n][d].seat[i][j]<<".";

          }

       }

       break;

    }

    if(n>p)
```

```
    cout<<"Enter correct bus no: ";

}


void a::showName()
{
    char name[10];

    int noseats = 0;

    cout<<"\nPlease enter a Name of Passenger without space, to search Seats : ";

    cin>>name;

    for(int i=0;i<p;i++)
    {
        for(int j=0;j<days;j++)
        {
            for(int k=0;k<8;k++)
            {
                for(int m=0;m<4;m++)
                {
                    if(strcmp(bus[i][j].seat[k][m] , name)==0)
                    {
                        int seatno = (4*k)+(m+1);
                        cout<<"\n\n "<<name<<" has booked Seat number. "<< seatno

                        <<" in Bus number. "<<bus[i][j].busn<<" on "<<bus[i][j].date
```

```
                        << " June 2020";

                        noseats++;

                    }
                }
            }
        }

    if(noseats>0)
    {
        cout<<"\n\n\t"<<name<<" has Booked total "<<noseats<<" Seats";
    }

    else
        cout<<"\n\n\tThere is no Seat booked by "<<name;


}


void a::position(int l, int m)

{

  int serialno=0,emptyseats=0;

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

```
{
  cout<<"\n";
  for (int j = 0;j<4; j++)
  {
    serialno++;
    if(strcmp(bus[l][m].seat[i][j], "Empty")==0)
      {
        cout.width(5);
        cout.fill(' ');
        cout<<serialno<<".";
        cout.width(10);
        cout.fill(' ');
        cout<<bus[l][m].seat[i][j];
        emptyseats++;
      }
```

```
        else

        {

        cout.width(5);

        cout.fill(' ');

        cout<<serialno<<".";

        cout.width(10);

        cout.fill(' ');

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

        }

       }

     }
    cout<<"\n";
    vline('*');

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

   }

void a::avail()
```

```
{
  if(p>0)
  {

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

    {
        for(int d=0;d<5;d++)
        {
            vline('*');

            cout<<"\nBus no: \t"<<bus[n][d].busn<<"\t\tDriver: \t"<<bus[n][d].driver

            <<"\nDate : \t"<<bus[n][d].date<<"\t\tArrival time:
\t"<<bus[n][d].arrival

            <<"\tDeparture Time: \t"<<bus[n][d].depart<<"\nFrom:
\t\t"<<bus[n][d].from

            <<"\t\tTo: \t\t\t"<<bus[n][d].to<<"\n";

            vline('*');

            cout<<"\n";

            vline('_');

            cout<<"\n";

        }
```

```
    }
  }
  else
    cout<<"\nThere is no bus Available ";

}

int main()

{

system("cls");

int w;

while(1)

{

    //system("cls");

  cout<<"\n\n\n\n";

  cout<<"\t\t\t1.Add new Bus\n\t\t\t"

  <<"2.Reservation of Seats\n\t\t\t"

  <<"3.Show Bus Details\n\t\t\t"

  <<"4.Show Available Buses. \n\t\t\t"
```

```
<<"5.Search Booked Seats with Passenger's name. \n\t\t\t"

<<"6.Exit";

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

cin>>w;

switch(w)

{

  case 1:  bus[p][0].install();

    break;

  case 2:  bus[p][0].allotment();

    break;

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

    break;

  case 4:  bus[0][0].avail();

    break;

  case 5:  bus[0][0].showName();
```

```
      break;

    case 6:  exit(0);

  }

}

return 0;

}
```

# Output: