

# **SRM Bus Reservation System**

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for the partial fulfillment of the requirements to award the degree of

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# Certificate

Date: 16-Nov-22

This is to certify that the work present in this Project entitled “**SRM Bus Reservation System**” has been carried out by Sanjeet under my/our supervision. The work is genuine, original, and suitable for submission to the SRM University – AP for the award of Bachelor of Technology/Master of Technology in **School of Engineering and Sciences**.

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## Acknowledgements

“The pleasure that follows the successful completion of this project would remain incomplete without a word of gratitude for the people and without whose cooperation this project would remain incomplete. It is not mere formality to place a record the tireless efforts, ceaseless cooperation, constant guidance, and encouragement of the people associated with the assignment but a distinct necessity for the ethnicity and readability of the project.”

The management theories learnt in this semester brought into practice. We have tried to make best use of their opportunity. The work bears the imprint of many persons under whom we did this project

We are thankful to our instructor Mr. Rajiv Senapati, for his scholarly guidance, advice, and encouragement and for providing necessary facilities to carry out the discussion in prescribed period.

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# Table of Contents

Certificate	i
Acknowledgements	iii
Table of Contents	v
Abstract	vii
1.Introduction	13
2.Methodology	15
<b>2.1 Install Bus Information</b>	
<b>2.2 Reservation</b>	
<b>2.3 Show Reservation Information</b>	
<b>2.4 Buses Available</b>	
5.Concluding Remarks	25
6.Future Work	27
References	28

## **Abstract**

As the name suggests the Bus Resevation System is a software that handles the bus reservation data. It makes the work of a Manager very easy instead of writing data in a notebook. In past, the Bus Resevation were done using tickets and books to write the data along with customers' names and bus routes and bus timings.. So, it was very difficult to keep track of each and every record.

In this project the bus reservation system & the other entire task on the bus system application is can done thought Menu based program. The other tasks are as following: - (Here all this things is can done only by administrator user)

I. In this project we can add new bus-root

II. We can modified existing bus-root

III. We can delete bus-root

IV. We can delete bus.

# System Requirement Specification

The project can be accessed or developed under this criterion only

**SOFTWARE REQUIREMENTS:** Any Windows, Macintosh, Linux-based operating system with any IDLE containing Python version 3.5.4 or above

## **HARDWARE REQUIREMENTS: -**

Hard disk drive: 100 GB and cloud data if

needed RAM: Minimum 2 GB

Processor: intel core i3 or AMD Ryzen 3

**Requirements For Software Development:** Windows 7 or up are required. The system must be connected via LAN and connection to internet is mandatory, only if u have cloud system or not necessary.

## **Introduction:**

Design and develop a Bus Reservation System for SRM University AP. In this project, various types of modules are available to manage customer, reservation, bus schedule, bus route and seat. Project should capable of generating reports on reservation, customer, bus route, seat etc. The minimum required features are listed below in the feature section.

The Bus Reservation System is a basic console program that runs on the C++ platform . The system uses bus information, which includes the bus number, seat number, and the passenger's name, to book a seat on the bus. Under the passenger's name, the specific bus seat number is booked.

# Methodology

Basically four features are available in this project. Here, I am going to briefly describe the features:

1. **Install Bus Information**

This feature allows you to install 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 Reservation Information**

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 particular passenger. (Scroll down to view the output screen of this feature.)

4. **Buses Available**

This feature simply shows the buses available for reservation, and the information regarding the bus no. stored under the first feature.



## Code

```
#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;
```

```

cout<<"Enter Driver's name: ";
cin>>bus[p].driver;
cout<<"\nArrival time: ";
cin>>bus[p].arrival;
cout<<"\nDeparture: ";
cin>>bus[p].depart;
cout<<"\nFrom: ";
cin>>bus[p].from;
cout<<"\nTo: ";
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)
    {
        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 passanger'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++)
    {
        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;
        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<<". ";
                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<<"Driver: "<<bus[n].driver<<"Arrival time: "
"<<bus[n].arrival<<"Departure Time: "

        <<bus[n].depart<<"From: "<<bus[n].from<<"To: "<<bus[n].to<<"\n";

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

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

```

```

while(1)
{ cout<<"\n1.Install\n"<<"2.Reservation\n"<<"3.Show\n"<<"4.Buses Available.
\n"<<"5.Exit";

cout<<"\nEnter your choice:-> ";

cin>>w;

switch(w)
{
    case 1: bus[p].install();
    break;
    case 2: bus[p].allotment();
    break;
    case 3: bus[0].show();
    break;
    case 4: bus[0].avail();
    break;
    case 5: exit(0);
}
}
return 0;
}

```

## Output:

```
1.Install
2.Reservation
3.Show
4.Buses Available.
5.Exit
Enter your choice:-> 1
Enter bus no: 1
Enter Driver's name: Ravi

Arrival time: 7:50

Departure: 8:30

From: Guntur

To: Mangalgiri

1.Install
2.Reservation
3.Show
4.Buses Available.
5.Exit
Enter your choice:-> 2
Bus no: 1

Seat Number: 25
Enter passanger's name: Suresh

1.Install
```

```
Enter passanger's name: Suresh

1.Install
2.Reservation
3.Show
4.Buses Available.
5.Exit
Enter your choice:-> 3
Enter bus no: 1
*****Bus no: 1
Driver:      Ravi      Arrival time: 7:50   Departure time:8:30
From:      Guntur      To:      MangalgiriEmpty
*****
  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.    Suresh  26.    Empty  27.    Empty  28.    Empty
 29.    Empty  30.    Empty  31.    Empty  32.    Empty

There are 31 seats empty in Bus No: 1
The seat no 25 is reserved for Suresh.
```



## Concluding Remarks

- It is flexible and user friendly management software.
- It is designed to reduce time taken for storing data and calculations.
- The implementation of the system in the organization will considerably reduce data entry, time and also provide readily calculated reports.
- It is very helpful to organize and maintain the records
- The main moto of this project is to digitalize the bus reservation process, initialization of this process is done by C++ due to its versatility and liability, The chance of integrating it with many header file and file handling usage.

## Future Work

The futuristic vision of this project is to add data base servers for this entire data using in built header files like `fstream`, `cstring`, etc.. Storing details in the cloud for end- to-end encryption of data.

Using the data of this reservation system and creating a data model which includes semi supervised learning and some of the former artificial intelligence techniques. This includes how the user and admin can get the data of the members and use the information required .

Developing a user-friendly application, which has a biased front-end showcasing different aspects and options for user and admin, integrating the application with fintech enterprises for transactions, and bus companies, which makes this management system more reliable.

## References

1. <https://www.codewithc.com/bus-reservation-system-project-in-c/>