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# OOPS Project: Bus Reservation System

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# Project Aim And Working

We have created a bus reservation system in which we can store the data of buses and reserve tickets and then also fetch them accordingly.

- ❑ Install Bus: makes you add bus details.
- ❑ Reservation of bus seats: reserving bus tickets for the passengers.
- ❑ Show Ticket availability: Shows ticket availability and the tickets reserved.
- ❑ Buses Available: Displays the number of buses available.
- ❑ Exit: ends the program.

The names suggest what the functions would do.

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# What We Used

## Switch Case

- Switch case statement is used when we have multiple conditions and we need to perform different actions based on the condition.

## Syntax

```
switch (n)
{
    case 1: // code to be
executed if n = 1;
        break;
    case 2: // code to be
executed if n = 2;
        break;
    default: // code to be
executed if n doesn't match
any cases
}
```

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# What We Used

## Conditional Statements

- If Else Statement:- It is used to execute some statement code block if the expression is evaluated to true, otherwise executes else statement code block.

## Syntax

```
if(condition){  
  
    //Statements inside of if block  
  
}  
  
else{  
  
    //Statements inside of else  
    block  
  
}
```

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# What We Used

## Loops

- While loop
- Do-while loop
- For loop
- Range based Loop:- It is a new feature of C++ which was added in C++ 11. It is only worked in CodeBlocks and Visual Studio Code.

## Encapsulation

- Binding data members and member functions in one unit known as a class. With the help of this concept, data is not accessible to the outside world and only those functions which are declared in class can access it.
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# What We Used

## Class and Objects

- A class in C++ is a user defined data type or data structure. In simple words, a class is a collection of objects of similar type. It is an instance of class. When a class is defined, no memory is allocated when object is instantiated memory is allocated.

## Syntax

```
class ClassName  
  
{ Access specifier;  
  
    Data Member;  
  
    Member Functions;  
  
};  
  
ClassName ObjectName;
```

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# What We Used

## Inheritance

- Inheritance is a process by which objects of new class acquire the properties of objects of existing class. Using inheritance, we can increase a class functionalities.

## Syntax

```
class subclass_name :  
    access_mode base_class_name  
{  
    //body of subclass  
};
```

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# What We Used

## Functions Like

- `fflush(stdin)` is used to clear the buffer.
- `vline()`:- It draw a vertical line using `ch` starting at the cursor position in the window.

## Other functions

- Data Hiding:- Using access specifiers like `public`, `private` and `protected` we can choose which members can be accessed by outside sources and which members cannot.
  - STL:- We used classes defined in Standard Template Library like “string” classes.
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# Results

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```
C:\Users\Akul Gaiind\Desktop\bus reservation system.exe

1.Install
2.Reservation
3.Show
4.Buses Available.
5.Exit
Enter your choice:-> 1

Enter bus no: 1

Enter Driver's name: Ajay

Arrival time: 12:30pm

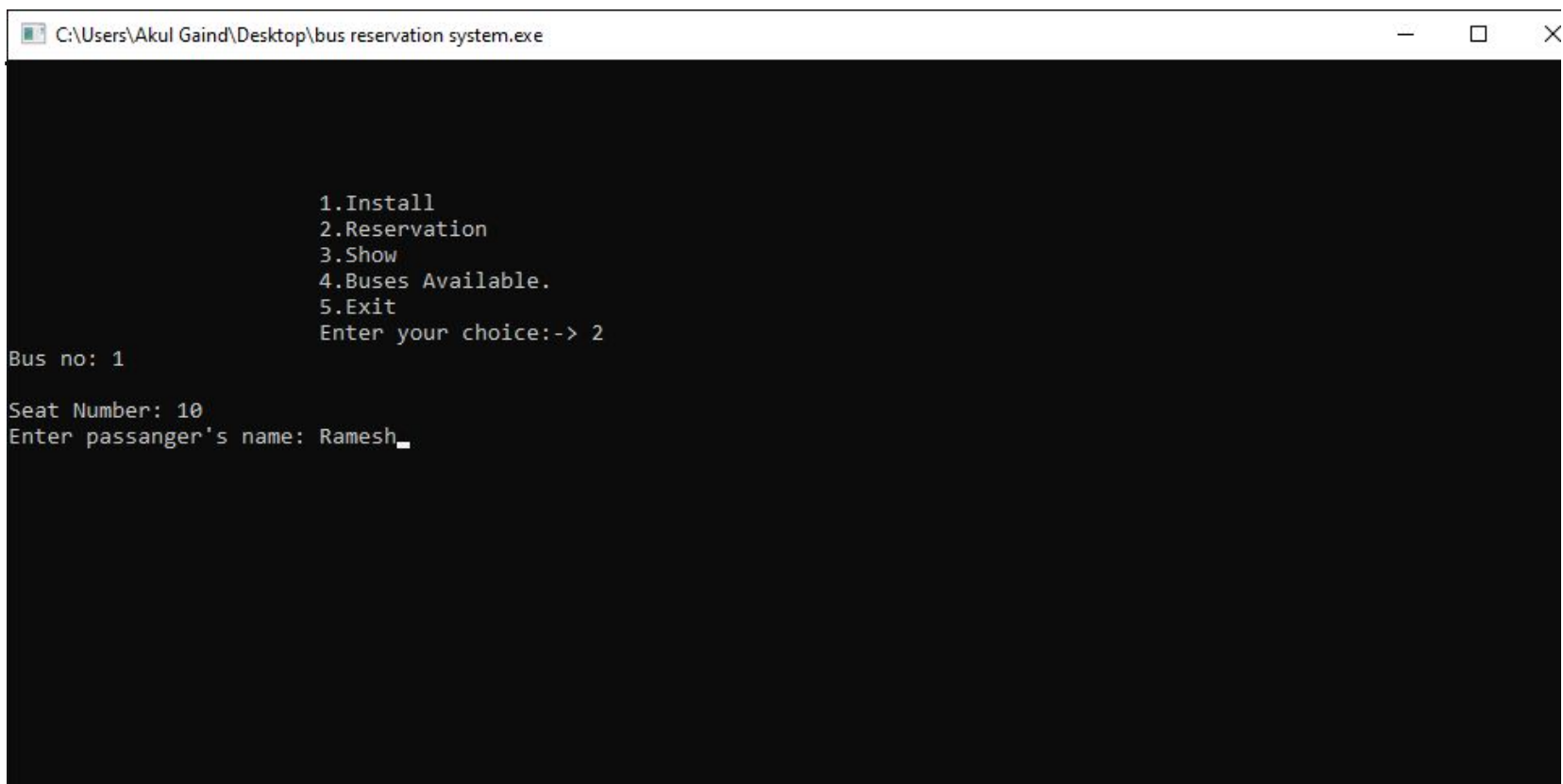
Departure: 12:35pm

From: Chandigarh

To: Delhi
```

## Installing a Bus Information

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```
C:\Users\Akul Gaiind\Desktop\bus reservation system.exe

1.Install
2.Reservation
3.Show
4.Buses Available.
5.Exit
Enter your choice:-> 2

Bus no: 1

Seat Number: 10
Enter passanger's name: Ramesh_
```

Reserving ticket for a Passenger

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```
C:\Users\Akul Gaiind\Desktop\bus reservation system.exe

5.Exit
Enter your choice:-> 3

Enter bus no: 1
*****
Bus no: 1      Driver: Suresh  Arrival time: 1pm      Departure time: 2pm
From: Mumbai   To: Delhi
*****
  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.   Empty  26.   Empty  27.   Empty  28.   Empty
 29.   Empty  30.   Empty  31.   Empty  32.   Empty

There are 32 seats empty in Bus No: 1

1.Install
2.Reservation
3.Show
4.Buses Available.
5.Exit
Enter your choice:-> _
```

## Checking Seats Reserved/Availability

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```
C:\Users\Akul Gaind\Desktop\bus reservation system.exe

1.Install
2.Reservation
3.Show
4.Buses Available.
5.Exit
Enter your choice:-> 4
*****

Bus no:      1
Driver:      Suresh      Arrival time:  1pm      Departure Time:      2pm
From:        Mumbai      To:              Delhi
*****

*****

Bus no:      2
Driver:      Ajay        Arrival time:  5pm      Departure Time:      6pm
From:        Delhi       To:              Chandigarh
*****

*****

1.Install
2.Reservation
3.Show
4.Buses Available.
```

Showing Buses Available

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