Sandip Institute of Technology and Research Centre, Nashik Department of Computer Engineering (2020-21)

**SAVITRIBAI PHULE P U N E UNIVERSITY**

**A MINI PROJECT REPORT ON**

**“Bus Reservation System”**

Submitted by Group Id BE2020A11:

1.Sharvari Birute.

2.Chetana Mahajan.

3.Hemal Sawdekar

Under the Guidance of

Prof. Vivek Waghmare



DEPARTMENT OF COMPUTER ENGINEERING

# Sandip Institute of Technology and Research Centre, Nashik Mahiravani, Trimbak Road, Tal Dist. Nashik – 422 213, Maharashtra, India.

**Acknowledgement**

It is my immense pleasure to work on this preliminary project report on **“Bus Reservation System”.**

I would like to take this opportunity to thank my internal guide **Prof. Vivek Waghmare sir** for giving me all help and guidance I needed. I am really grateful to them for their kind of support. Their valuable suggestion was very helpful.

I am also grateful to **Prof. Amol Potgantwar sir**. Head of computer Engineering Department, Sandip Institute of Technology And research center for his indispensable support and suggestion.

Sharvari Birute.

Chetana Mahajan.

Hemal Sawdekar

(B.E Computer Engg.)

**Abstract**

Traveling is a large growing business across all countries. Bus reservation system deals with maintenance of records of details of each passenger. It also includes maintenance of information like schedule and details of each bus. We observed the working of the Bus reservation system and after going through it, we get to know that there are many operations, which they have to do manually. It takes a lot of time and causing many errors while data entry. Due to this, sometimes a lot of problems occur and they were facing many disputes with customers. To solve the above problem, and further maintaining records of passenger details, seat availability, price per seat, bill generation and other things, we are offering this proposal of computerized reservation system. By using this software, we can reserve tickets from any part of the world, through telephone lines, via internet. Customer can check availability of bus and reserve selective seats. The project provides and checks all sorts of constraints so that user does give only useful data and thus validation is done in an effective way

|  |  |  |
| --- | --- | --- |
| **Sr. No** | **Name of topic** | **Page No.** |
| 1 | Introduction | 5 |
| 2. | Introduction | 5 |
| 3. | Overview | 6 |
| 4. | Methodology | 7 |
| 5. | Scope of Project | 7 |
| 6. | Proposed system | 8 |
| 7. | Advantages over Traditional System | 8 |
| 8. | Specific Requirement | 9 |
| 9. | Block Diagram | 9 |
| 10. | Hardware Requirement | 10 |
| 11. | Software Requirement | 10 |
| 12. | Programming coding | 11-19 |
| 13. | Output Screen | 20 |
| 14. | Conclusion | 21 |

**INTRODUCTION**

System analysis is a process of gathering and interpreting facts, diagnosing problems and the information to recommend improvements on the system. It is a problem-solving activity that requires intensive communication between the system users and system developers. System analysis or study is an important phase of any system development process. The system is studied to the minutest detail and analyzed. The system analyst plays the role of the interrogator and dwells deep into the working of the present system. The system is viewed as a whole and the input to the system are identified. The outputs from the organizations are traced to the various processes. System analysis is concerned with becoming aware of the problem, identifying the relevant and decisional variables, analyzing and synthesizing the various factors and determining an optimal or at least a satisfactory solution or program of action.

# Overview

The ticket machines would end the use of the hefty 1.5-kg ticket racks carried by conductors. It would also end the practice of tearing out tickets and marking fare stages. The Conductor would just have to key in the details about the fare stage and the ticket machine would print out the ticket. The machine weighs only 800 grams and is convenient to carry. The parameters are almost like that of a railway ticket, the only difference being that the machine is portable. The machine can print out 2,300 tickets, including the journey report in order to facilitate inspection by the corporation's checking inspectors. The ticket machines would help prevent loss on account of malpractice. It would also help in providing adequate data to the corporation, particularly with regard to the boarding of passengers from fare stages and important points. This would help the corporation prepare and organize its schedules more efficiently on the basis of traffic demand. Besides, it would provide data on concessions given to various sections. Another additional feature is that the data in the ticket machine could be fed into the computer. More over the depots of the corporation would be fully computerized so we want to add some other modules in our domain for depot’s verification. A detailed study of the process must be made by various techniques like interviews, questionnaires etc. The data collected by these sources must be scrutinized to arrive to a conclusion. The conclusion is an understanding of how the system functions. This system is called the existing system. Now the existing system is subjected to close study and problem areas are identified. The designer now functions as a problem solver and tries to sort out the difficulties that the enterprise faces. The solutions are given as proposals.

      Preliminary study is the process of gathering and interpreting facts, using the information for further studies on the system. Preliminary study is problem solving activity that requires intensive communication between the system users and system developers. It does various feasibility studies. In these studies, a rough figure of the system activities can be obtained, from which the decision about the strategies to be followed for effective system study and analysis can be taken. 

**EXISTING SYSTEM**

Existing system refers to the system that is being followed till now. The existing system requires more computational time, more manual calculations, and the complexity involved in Selection of features is high. The other disadvantages are lack of security of data, Deficiency of Data accuracy, Time consuming etc. To avoid all these limitations and make the working more accurately the system needs to be computerized.    Here in the Electronic bus ticketing, a detailed study of existing system is carried along with all the steps in system analysis.

* **Draw backs of existing system.**

      Here in the Electronic bus ticketing, a detailed study of existing system is carried along with all the steps in system analysis. An idea for creating a better project was carried and the next steps were followed.

* Lack of security of data.
* More man power.
* Time consuming.
* Consumes large volume of pare work.
* Needs manual calculations.
* No direct role for the higher officials.
* Damage of machines due to lack of attention.

To avoid all these limitations and make the working more accurately the system needs to be computerized.

# Proposed System

# 

The aim of proposed system is to develop a system of improved facilities. The proposed system can overcome all the limitations of the existing system. The system provides proper security and reduces the manual work. The existing system has several disadvantages and many more difficulties to work well. The proposed system tries to eliminate or reduce these difficulties up to some extent. The proposed system will help the user to reduce the workload and mental conflict. The proposed system helps the user to work user friendly and he can easily do his jobs without time lagging.

**Advantages of Proposed System**

The system is very simple in design and to implement. The system requires very low system resources and the system will work in almost all configurations. It has got following features

* Ensure data accuracy.
* Minimize manual data entry.
* Minimum time needed for the various processing
* Greater efficiency
* Better Service
* Minimum time required
* The ticket machines would help prevent loss on account of malpractice
* It would also help in providing adequate data to the corporation, particularly with regard to boarding of passengers from fare stages and important points
* This would help the corporation prepare and organize its schedules more efficiently on the basis of traffic demand.
* It would provide data on concessions given to various sections.
* Another additional feature is that the data in the ticket machine could be fed into the computer.

# Specific Requirements:

# 

# Data-Flow Diagram

Administrator

Administrator

Passenger Details details

**fig.1.1 Data flow Diagram of password protected personal dairy.**

**Level 1 DFD Administrator**

Administrator

Admin id, password

Route management

Admin details

Bus details

View Bus Details

Login

Verify

Validate

Bus Ticketing

Trip information

Bus Stop

**Description**

**Hardware Interfaces Requirement**

* Core 2 Duo System.
* 500 Gb HDD.
* 1GB RAM.

# Software Requirements

* Windows 7
* C Compiler
* Dev C++

**Program Coding**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | |  |  | | --- | --- | | #include<bits/stdc++.h>  using namespace std;  int p = 0;  class a  {  char busn[5], driver[10], arrival[10], depart[10], from[10], to[10], seat[8][4][10];  public:  void addNewBus();  void allotmentOfSeatToPassenger();  void empty();  void showAvailableBusSeats();  void showAvailableBuses();  void showReservedBusSeats(int i);  }  bus[25];  void vline(char ch)  {  for (int i=75;i>0;i--){  cout<<ch;  }  cout<<endl;  }  void a::addNewBus()  {  cout<<"Enter bus no: ";  cin>>bus[p].busn;  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::allotmentOfSeatToPassenger()  {  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 number 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::showAvailableBusSeats()  {  int n;  char number[5];  cout<<"Enter bus no: ";  cin>>number;  for(n=0;n<=p;n++)  {  if(strcmp(bus[n].busn, number)==0) // if matched the n will be the index of bus  break;  }  while(n<=p)  {  vline('\*'); // Prints a line with '\*'  cout<<"\nBus 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].showReservedBusSeats(n); //Checks for reserved seats in the current bus( nth bus)  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::showReservedBusSeats(int l)  {  int s=0,h=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];  h++;  }  else  {  cout.width(5);  cout.fill(' ');  cout<<s<<".";  cout.width(10);  cout.fill(' ');  cout<<bus[l].seat[i][j];  }  }  }  cout<<"\n\nThere are "<<h<<" seats empty in Bus No: "<<bus[l].busn;  }  void a::showAvailableBuses()  {  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";  vline('\*');  vline('\_');  }  }  int main()  {  int choice;  while(1)  {  cout<<endl;  vline('\*');  cout<<"\n\n";  cout<<"\t\t\t1.Add new Bus Details:\n\t\t\t"  <<"2.Reserve your seats:\n\t\t\t"  <<"3.Show the available seats in a bus:\n\t\t\t"  <<"4.Buses Available Now: \n\t\t\t"  <<"5.Exit";  cout<<endl;  vline('\*');  cout<<"\n\t\t\tEnter your choice:-> ";  cin>>choice;  vline('\*');  switch(choice)  {  case 1: bus[p].addNewBus();  break;  case 2: bus[p].allotmentOfSeatToPassenger();  break;  case 3: bus[0].showAvailableBusSeats();  break;  case 4: bus[0].showAvailableBuses();  break;  case 5: {  cout<<"Visit Again!"<<endl<<"Thanks You"<<endl;  exit(0);  };  }  }  return 0;  } |  | | **Output Screen** |  | |  |

**Fig. OUTPUT OF PROGRAM**

**Conclusion**

.

The project Bus Reservation is completed, satisfying the required design specifications. The system provides a user-friendly interface. The software is developed with modular approach. All modules in the system have been tested with valid data and invalid data and everything work successfully. Thus, the system has fulfilled all the objectives identified and is able to replace the existing system. The constraints are met and overcome successfully. The system is designed as like it was decided in the design phase. This software has a user-friendly screen that enables the user to use without any inconvenience. The ticket machines would end the use of the hefty 1.5-kg ticket racks carried by conductors. Instead, the conductor would just have to key in the details about the fare stage and the ticket machine would print out the ticket. The machine weighs only 800 grams and is convenient to carry. The parameters are almost like that of a railway ticket, the only difference being that the machine is portable. It would also help in providing adequate data to the corporation, particularly with regard to the boarding of passengers from fare stages and important points. This would help the corporation prepare and organize its schedules more efficiently on the basis of traffic demand. Besides, it would provide data on concessions given to various sections. Another additional feature is that the data in the ticket machine could be fed into the computer.

The application has been tested with live data and has provided a successful result. Hence the software has proved to work efficiently.