Project for 1St Semester of Bachelor of Information Technology

**Bus Reservation System**



**Prinsa Maharjan (7096)**

**Subhawana Kunwar (7204)**

**Sudarshan Khatri (7099)**

**KIST college of Information Technology**

**Faculty of Science and Technology**

**Purbanchal University, Nepal**

**June 12, 2024**

**STUDENT’S DECLARATION**

We hereby declare that the project in the report entitled

**Bus Reservation System**

Submitted in partial fulfillment of the requirement for the award of Bachelor in Information Technology (BIT) of the Purbanchal University is our orginal work and has not been submitted for award of any other degree or other similar titile or prize.

|  |  |  |  |
| --- | --- | --- | --- |
| S.N. | Name | Registration No. | Symbol No. |
| 1. | Prinsa Maharjan | 05832024392023 | 310903 |
| 2. | Subhawana Kunwar | 05832024472023 | 310904 |
| 3. | Sudharshan Khatri | 05832024482023 | 310886 |

**RECOMMENDATION**

This is to certify that this project entitled **Bus Reservation System** submitted by **Prinsa Maharjan, Subhawana Kunwar, Sudarshan Khatri** in partial fulfillment of the requirements of the project of Bachelors of Information Technology awarded by Purbanchal University, has been completed under my supervision. I recommend the same for acceptance by Purbanchal University.

Deepak Khadka

Coordinator

Kist college of Information Technology

1 August 2024

**CERTIFICATE**

This project entitled **Bus Reservation System** prepared and summited by **Prinsa Maharjan, Subhawana Kunwar and Sudarshan Khatri** has been examined by us and is accepted for the award of the degree of Bachelor of Information Technology by Purbanchal University.

**External examiner Signature Date 1 August,2024**

**Deepak Khadka**

**Supervisor Signature Date 1 August,2024**

**ACKNOWLEGEMENT**

We are pleased to present the “**Bus Reservation System**” as our 1st semester project. We would like to express our sincere gratitude to all those who have supported and guided us throughout the duration of this project.

Firstly, we extend our deepest thanks to our BIT Coordinator **Mr. Deepak Khadka** whose expertise, guidance, and encouragement have been invaluable. His insights and feedback have greatly enriched this project. We are extremely grateful to our faculty **Mr. Roshan Shrestha** for guiding us through different aspects of project presentation.

We also grateful to our colleagues and team members Prinsa Maharjan, Subhawana Kunwar, Sudarshan Khatri, for their active inspiration and cooperation. Our dedication and hard work have been instrumental in the successful completion of this project.

We also thank **PURBANCHAL UNIVERSITY** for designing such a course structure, where we get to learn and implement new things

Lastly, we would like to thank our family and friends for their unwavering support and encouragement throughout this project.

Sincerely,

Prinsa Maharjan (7096)

Subhawana Kunwar (7204)

Sudarshan Khatri (7099)

## Abstract

The “**Bus Reservation System**” is a software that allows users to book tickets for their journey in advance and saving valuable time. It offers multiple features to provide a hassle-free experience to a traveler. It’s the software which shifts the manual system of bus ticket purchasing tradition into an online platform.it helps to manages and store huge number of user data sequentially. In case of our software, the service provider is administrator and service seeker are the bus user.it provides the admin with different choices by Listing, reading, viewing, editing, updating and canceling records. Furthermore, this software gives the user to reserve tickets and provide real-time availability of seats and schedules.in simpler terms it aims to eliminate manual effort of bus ticket reserving method as well as managing the data. Therefore, the solution to the traditional system.

**Table of content**

[Chapter 1 8](#_Toc173153208)

[INTRODUCTION 8](#_Toc173153209)

[1.1 Background 8](#_Toc173153210)

[1.2 Objective of the project 8](#_Toc173153211)

[1.3 Features 8](#_Toc173153212)

[1.4 Future implementation of project 9](#_Toc173153213)

[1.5 Process in the project use 9](#_Toc173153214)

[1.6 Introduction to software/language used 10](#_Toc173153215)

[Chapter 2 11](#_Toc173153216)

[2.1 SYSTEM RECOMMENDATIONS 11](#_Toc173153217)

[Chapter 3 11](#_Toc173153218)

[SYSTEM DESIGN 11](#_Toc173153219)

[3.1Algorithm 11](#_Toc173153220)

[3.2 Flowchart 13](#_Toc173153221)

[Chapter 4 15](#_Toc173153222)

[CONCLUSION 15](#_Toc173153223)

[Chapter 5 16](#_Toc173153224)

[BILIOGRAPHYHY 16](#_Toc173153225)

# Chapter 1

## INTRODUCTION

### 1.1 Background

Technological advancements have significantly transformed the transportation sector, enhancing efficiency, safety, and user experience. To promote convenience, efficiency the transportation service by bus, the bus reservation system plays a vital role.

Bus reservation system is as an automated alternative to going to a bus station and waiting in line to buy a ticket. It automates the reservation process, making it quicker and easier for travelers to secure their seats. It opens up the opportunity to improve the efficiency in transportation maintenance, security, evaluates the drivers and ensure client satisfaction.  It discards the traditional paper-based approach and embraces the digital approach. This is cost saving and less time consuming without having to go through rigorous way of manually doing it.

### 1.2 Objective of the project

The main objectives are as follows:

* To provide real-time availability of seats and schedules.
* To offer easy-to-use interface for customers to book tickets.
* Facilitate reservation of bus tickets.

The general objectives are as follows:

* Reduce manual errors and improve booking accuracy.
* To ensure secure handling of customer data and information.
* To provide customer service efficiently.

### 1.3 Features

1. **Admin**

* Add the bus list
* Show and update bus list
* Show and update passenger list

1. **User**

* Signup
* login and book ticket
* show the information of passenger

### 1.4 Future implementation of project

In the future, improved version of “bus reservation system” will allow much more accessibility to the users. The project right now is simpler version so it lacks advanced features and is limited in some aspects.

These drawbacks will be added in future to make “bus reservation system” more efficient and effective.

Some future implementations are as follows:

* it may include cloud backup capabilities for data security and accessibility.
* It can introduce a real time feedback mechanism.
* It could transform into a web application, accessible from anywhere for enhanced convenience and accessibility.
* It might add a downloading feature, allowing users to download their tickets.

### 1.5 Process in the project use

This software is made for the use of bus users. Access is provided depending upon the type of user, if user is admin, they need to login using their password and username which is set in the system itself. The admin can add, show and update the bus list and passenger list. The user can use the services like book the ticket and show the information of passenger.

### 1.6 Introduction to software/language used

The C programming language created in early 1970s at bell labs by Dennis Ritchie, stands as one of the most influential programming languages in computer history. Because of its ease of use and low-level features, C is frequently used to create operating system. Today, C remains a foundational language in computer science and software development, playing crucial role in embedded system, game development and more.it is procedural language that focuses on procedure and syntax. Some main topic dealt in C programming are:

* Variable and constant
* Array
* Pointers
* String
* String handling function
* Structure
* Function
* File handling

### 

# Chapter 2

### 2.1 SYSTEM RECOMMENDATIONS

The minimum requirement of the system is:

**Hardware**

* Pc with intel i5
* 8 MB of RAM or more
* Color monitor
* Hard disk with at least 50 MB of free space

**Software**

* Os windows (windows XP, Windows 7/8/10)/Mac/Linux

# Chapter 3

## SYSTEM DESIGN

### 3.1Algorithm

1. **Main Menu**

Step 1: Start

Step 2: Display a menu with two options; ADMIN\_MENU and USER\_MENU.

Step 3: Ask the user to enter the option.

Step 4: If the option is 1 then go to Admin menu, else if it is 2 then go to User menu and if it is neither 1 or 2 then print “sorry”.

Step 5: Stop

1. **Add list of bus (Admin Menu)**

Step 1: Start

Step 2: Add the list of bus.

Step 3: If admin want to update again then print “go” else print “no”.

Step 4: Stop

1. **Update bus information (Admin menu)**

Step 1: Start

Step 2: Display bus list.

Step 3: Enter ‘y’ if you want to update bus details and ‘x’ to exit.

Step 4: If ‘y’ is chosen then enter the bus number that you want to update.

Step 5: If admin want to update again then print “go” else print “no”.

Step 6: Stop

1. **Update passenger information (Admin menu)**

Step 1: Start

Step 2: Display passenger list.

Step 3: Enter ‘y’ if you want to update passenger details and ‘x’ to exit.

Step 4: If ‘y’ is chosen then enter the passenger Id number that you want to update.

Step 5: If admin want to update again then print “go” else print “no”.

Step 6: Stop

1. **Sign up (User menu)**

Step 1: Start

Step 2: Enter the full name, user’s name and password to sign up.

Step 3: If sign up is successful display successful message.

Step 4: Stop

1. **Booking ticket (User menu)**

Step 1: Start

Step 2: Enter the bus number for the ticket of the bust of the respective bus.

Step 3: Check for the available seats.

Step 4: If the seats are available, enter the name and age.

Step 5: Display successful message.

Step 6: Stop

1. **Passenger information (User Menu)**

Step 1: Start

Step 2: choose the option of passenger information

Step 3: show the passenger information

Step 4: Stop

1. **Delete bus record (User menu)**

Step 1: Start

Step2: Enter the number of buses to delete

Step 3: Enter the bus number of the bus to be deleted.

Step 4: If the bus number don’t match the data print bus not found message.

Step 5: If the bus number matches delete the record.

Step 6: Display ‘bus number deleted successfully’.

Step 7: Stop

### 3.2 Flowchart

Start

Yes

No

Exit User Portal

Continue User?

View Passenger Information

Login and Booking Ticket

Sign up

User Option

End

Exit Admin Portal

Invalid Admin Credentials

No

Continue Admin?

Update passenger Information

Update Bus Information

List Bus

Admin option

Admin Menu

User Menu

Admin Login

Admin or User

Loading

Yes

# Chapter 4

### CONCLUSION

We were successfully able to complete this project entitled “bus reservation system” which is CUI based software application developed using the C programming language. This project was developed to book tickets.it also aims to add, update and delete bus record and passenger lists. While doing this project, we learned about various topics of C programming language such as file handling, structure and control flow. Creating this project will surely give us a boost of confidence and encourage us to work on further project in the future.

However, it is not a complete system and there are many further improvements that can be done to make it more user-friendly and easier to access and use. Also adding additional features to make it more effective and efficient.

### Chapter 5

### BILIOGRAPHYHY

* https://www.geeksforgeeks.org/c-functions/?ref=lbp
* https://www.programiz.com/c-programming/c-file-input-output
* https://stackoverflow.com/questions/840501/how-do-function-pointers-in-c-work?rq=2
* https://www.w3schools.com/c/c\_files\_write.php
* https://www.youtube.com/watch?v=Eny1B864byY
* https://www.youtube.com/watch?v=tKDPIGdwFSo
* https://www.programiz.com/c-programming/c-pointers