

Tourism Management System using C++ - Project Report

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Abstract

The **Tourism Management System** (TMS) is developed using C++ to enhance the operational efficiency of tourism businesses. This system addresses the common challenges faced in managing bookings, customer data, and tour packages by automating these processes and integrating them into a single platform. Key functionalities include user registration, booking management, customer information management, tour package management, payment processing, and reporting.

The project began with a thorough analysis of existing systems and a feasibility study covering economic, technical, and schedule aspects. The requirements analysis phase defined the software and hardware specifications needed for development. The implementation involved coding the functionalities, setting up the system, and rigorous testing to ensure reliability and user-friendliness.

Declaration

I hereby declare that the project report titled "Tourism Management System using C++" submitted to Bangladesh University of Business & Technology (BUBT), is a record of an original work done by me under the guidance of [Guide's Name]. This project report has not been submitted to any other institution for the award of any degree or diploma.

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Acknowledgement

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Approval

This is to certify that the project report titled "**Tourism Management System using C++**" submitted by **Fahim** and **Nur al mahmud maye** ID **20215103024** and **20215103025** Department of Computer Science and Engineering (CSE), Bangladesh University of Business and Technology (BUBT) under the supervision of **Ms. Sabiha Firdaus** , Department of Computer Science and Engineering (CSE) has been accepted as appeasement for the partial fruition of the requirement for the degree of Bachelor of Science (B.Sc.) in Computer Science and Engineering and endorsed as to its contents.

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1. Introduction

1.1 Introduction

The Tourism Management System (TMS) is designed to streamline the management and operational processes of a tourism company. Implemented using C++, this system offers functionalities such as managing bookings, client information, and tour packages. The primary goal is to enhance efficiency and provide a seamless experience for both the management and the clients.

1.2 Problem Statement

The tourism industry often faces challenges related to managing reservations, customer data, and tour schedules efficiently. Manual handling of these tasks can lead to errors, double bookings, and dissatisfied customers. The Tourism Management System aims to address these issues by automating and centralising these functions.

1.3 Problem Background

Tourism management involves various complex tasks such as booking management, customer relationship management, and handling tour details. Traditional methods involve manual paperwork and outdated software, leading to inefficiencies. There is a need for a comprehensive system that integrates all these tasks, ensuring accuracy and saving time.

1.4 Objectives

- To develop a robust and user-friendly system for managing tourism-related activities.
- To automate booking and customer management processes.
- To enhance the accuracy of data and reduce human error.
- To provide a scalable solution that can be expanded as needed.

1.5 Motivations

The motivation behind this project is to leverage technology to simplify the management processes within the tourism industry. By developing a system that automates and integrates key functions, we aim to improve operational efficiency and customer satisfaction.

2. Background

2.1 Introduction

Understanding the current landscape of tourism management systems is crucial. This section provides an analysis of existing systems and evaluates the feasibility of developing a new system.

2.2 Existing System Analysis

Current systems in use are often fragmented, with separate tools for booking, customer management, and scheduling. These systems are not well-integrated, leading to data inconsistencies and operational inefficiencies. There is a significant need for an integrated solution that consolidates all functions into a single platform.

2.3 Feasibility Study

2.3.1 Economic Feasibility

Developing the Tourism Management System in C++ is cost-effective as it leverages open-source tools and libraries. Initial development costs are manageable, and the long-term benefits in terms of efficiency and error reduction justify the investment.

2.3.2 Technical Feasibility

C++ is a powerful language that provides control over system resources, making it ideal for developing a robust and efficient tourism management system. Existing libraries and frameworks in C++ can be utilised to speed up development.

2.3.3 Schedule Feasibility

A detailed project plan with phased development and testing ensures that the project can be completed within a reasonable timeframe. The project is divided into modules, each with specific deadlines, ensuring timely completion.

3. Requirement Analysis

3.1 Introduction

Requirement analysis is a critical phase that involves understanding and documenting the functional and non-functional requirements of the system.

3.2 Software Requirement

- Operating System: Windows/Linux/macOS
- Programming Language: C++
- Integrated Development Environment (IDE): Visual Studio, Code::Blocks

3.3 Hardware Requirement

- Processor: Intel i5 or higher
- RAM: 8GB or higher
- Storage: 500GB HDD or higher

4. Implementation and Testing

4.1 Introduction

This section covers the implementation of the system and the various functionalities it offers. It also details the testing procedures to ensure the system works as intended.

4.2 System Setup

Setting up the system involves configuring the development environment, setting up the database, and integrating necessary libraries.

4.3 Functionalities

4.3.1 Function 1: User Registration and Authentication

Allows new users to register and existing users to log in securely.

4.3.2 Function 2: Booking Management

Enables users to book tours and manage their bookings.

4.3.3 Function 3: Customer Information Management

Stores and manages customer details securely.

4.3.4 Function 4: Tour Package Management

Allows the administration to add, update, and delete tour packages.

4.3.5 Function 5: Payment Processing

Integrates payment gateways to handle payments securely.

4.3.6 Function 6: Reporting and Analytics

Generates reports on bookings, customer data, and financials.

4.4 Implementation

FULL CODE OF OUR PROJECT PASTED IN THIS LINK.

<https://paste.myconan.net/497013>

4.5 Testing

```
"C:\University Projects\tourisi" X + v
'clear' is not recognized as an internal or external command,
operable program or batch file.

WELCOME TO HOLIDAY TRIP
=====
Find your best holiday destination here...

PRESS ENTER TO CONTINUE...

'clear' is not recognized as an internal or external command,
operable program or batch file.

=====
Your Identity?
-----
1. Admin
2. User
=====

ENTER YOUR ANSWER :
```

Fig 4.1: home screen

```
"C:\University Projects\tourisi" X + v

=====

ENTER YOUR ANSWER : 1
'clear' is not recognized as an internal or external command,
operable program or batch file.

WELCOME ADMIN
-----
1. Registration
2. Login
0. Back To Home
=====

ENTER YOUR ANSWER : 1

Enter Your Name : fahim
Enter Username : fahim_Rashid
Enter Email : fahim@gmail.com
Enter Password : fahim

Your information is successfully stored
we will send you admin login passowrd

Enter username : fahim_Rashid
Enter password : fahim

Successfully login
```

Fig 4.2 : admin registration and login


```
"C:\University Projects\tourisi x + v
=====
Your Identity?
-----
1. Admin
2. User
=====

ENTER YOUR ANSWER : 1
'clear' is not recognized as an internal or external command,
operable program or batch file.

WELCOME ADMIN
-----
1. Registration
2. Login
0. Back To Home
=====

ENTER YOUR ANSWARE : 1

Enter Your Name : fahim Rashid
Enter Username : fahimRashid
Enter Email : fahimrashid@gmail.com
Enter Password : fahim

Your information is successfully stored
we will send you admin login passowrd
```

Fig 4.3 : admin view trip

```
1. Add New Trip
2. View Trip
3. Delete Trip
0. Back to Main Manu

ENTER YOUR ANSWARE : 1

Trip ID no      : 101
Enter Location  : sylhet
Enter Travel Cost : 3400
Enter Service charge : 100
Enter Date      : 12-6-24
Enter Time      : 10

1. Add New Trip
2. View Trip
3. Delete Trip
0. Back to Main Manu

ENTER YOUR ANSWARE :
```

Fig 4.4 : admin add trip

```
1. Add New Trip
2. View Trip
3. Delete Trip
0. Back to Main Menu

ENTER YOUR ANSWER : 3

5

Trip Deleted ..

1. Add New Trip
2. View Trip
3. Delete Trip
0. Back to Main Menu

ENTER YOUR ANSWER :
```

Fig 4.5 : admin delete trip

```
=====
Your Identity?
-----
1. Admin
2. User
=====

ENTER YOUR ANSWER : 2
'clear' is not recognized as an internal or external command,
operable program or batch file.

WELCOME USER
-----
1. Registration
2. Login
3. Find Trips
0. Back To Home
=====

ENTER YOUR ANSWER : 1

Enter your full name : Nur al mahmud Mayen
Enter username : nurAlMahmudMayen
Enter email : nurAlMahmudMayen@gmail.com
Enter password : mayen

Your information is successfully stored
```

Fig 4.6 : User registration and login

```
1. View Trip
2. Display Your Trip
3. Cancel Trip
0. Back to Main Menu

ENTER YOUR ANSWER : 1

AVAILABLE TRIP LIST

=====
ID no.    Location    Travel_Cost    Extra_cost    Date    Time
=====
102      Saint Martin    5000          100          24-06-2022    8.56
201      Dhaka          4200          300          10-6-24        10
101      sylhet         3400          100          12-6-24        10
=====
```

Fig 4.7 : User View Trip

```
Enter Trip Id No => 102
Trip Booked Successfully

1. View Trip
2. Display Your Trip
3. Cancel Trip
0. Back to Main Menu

ENTER YOUR ANSWER : 2

Trip booked List

Your Trip Booking List bellow.
101
101
1
102
```

Fig 4.8 :User Booked trip list

```
1. View Trip
2. Display Your Trip
3. Cancel Trip
0. Back to Main Menu

ENTER YOUR ANSWARE : 3

Cancel Id No => 101

Trip Celcelled ..

1. View Trip
2. Display Your Trip
3. Cancel Trip
0. Back to Main Menu

ENTER YOUR ANSWARE : 2

Trip booked List

Your Trip Booking List bellow.
1
102
```

Fig 4.9 : User cancel trip

5. Impacts, Ethics, and Challenges

5.1 Impacts (on Society)

The TMS will significantly improve the efficiency of tourism operations, leading to better customer service and satisfaction. It can also help in promoting tourism by making it easier for customers to book and manage tours.

Impact Area	Positive Impacts	Negative Impacts
Economical	Increased Job opportunities	Risk of economic dependence on tourism
	Boost to local businesses and infrastructure	Seasonal employment may lead to economic instability
Cultural	Promotion and preservation of local culture and traditions	Potential for cultural commodification
	Increased awareness and appreciation of cultural heritage	Loss of cultural authenticity due to commercialization
Environmental	Encourages conservation efforts	Overcrowding leading to environmental degradation
	Financial incentives for maintaining natural attractions	-Increased waste and pollution

Table 5.1 : Impact on society

5.2 Ethics

The system is designed with data privacy and security in mind. Customer data is handled with strict confidentiality, and measures are taken to prevent unauthorised access.

5.3 Challenges

Key challenges include ensuring the system is scalable, managing data security, and integrating with various external services such as payment gateways. Another challenge is ensuring the system is user-friendly for both the administration and customers.

6. Conclusion

6.1 Future Works and Limitations

Future work includes adding more advanced features such as AI-based recommendations, multi-language support, and mobile app integration. Limitations of the current system include dependence on internet connectivity for certain features and the initial cost of setup and training.

We will also add in app payment system in future . and fixed some bugs if required.

8. References

1. Stroustrup, B. (2013). The C++ Programming Language. Addison-Wesley.
2. Meyers, S. (2005). Effective C++: 55 Specific Ways to Improve Your Programs and Designs. Addison-Wesley.
3. ISO/IEC. (2017). Information technology – Programming languages – C++. International Organization for Standardization.

9. Figures

9.1 Use case diagram

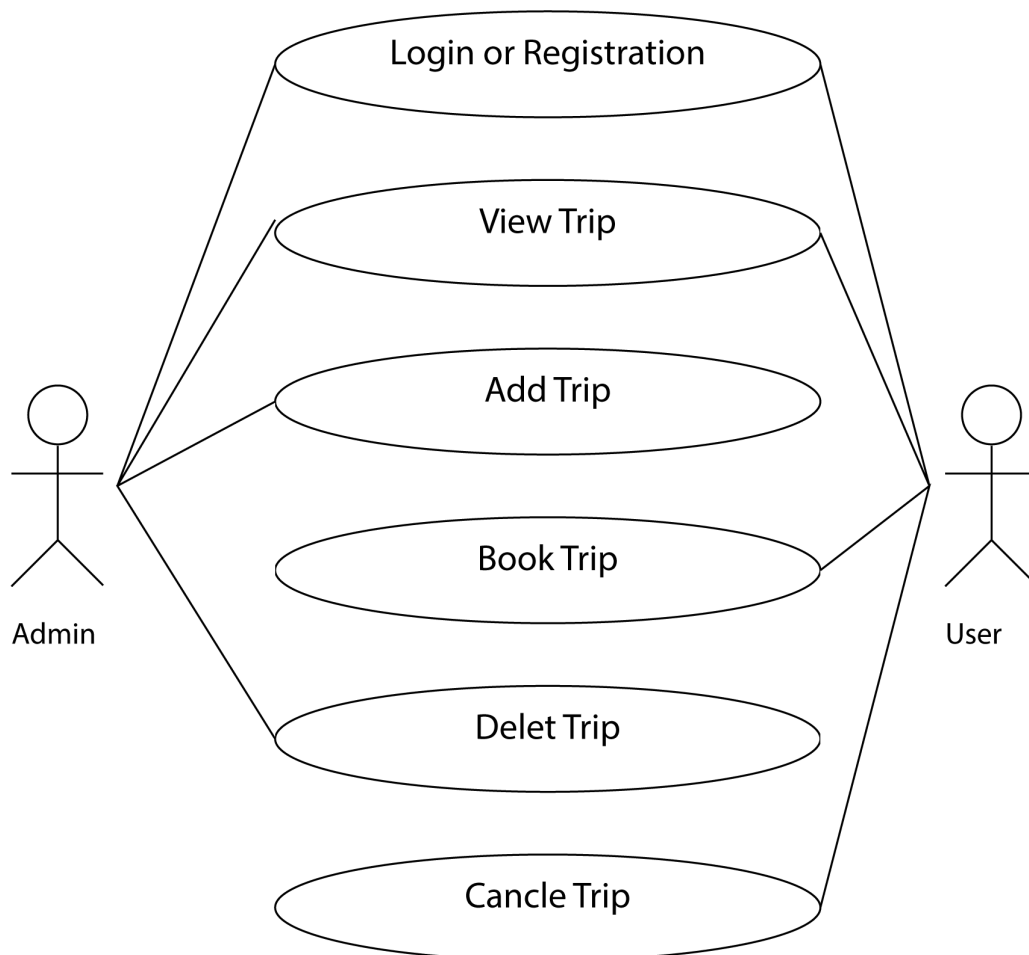


Fig 9.1 :Use case diagram

9.2 Flow chart diagram

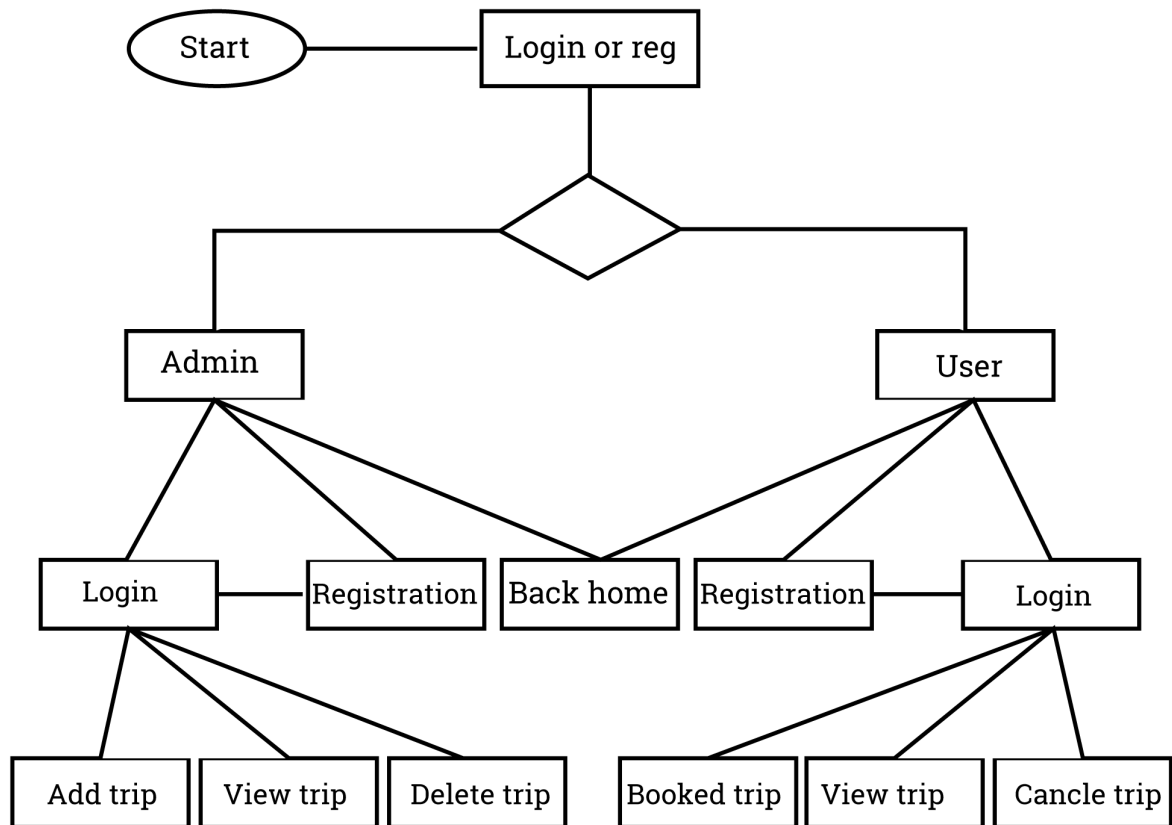


Fig 9.2 : Flow chart