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Proposal
On
Travel management application

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May 2024

ABSTRACT

This project introduces a user-friendly tourist application built with C++, Qt, and SQL to simplify and enhance travel planning by combining everything you need for your trip – booking cabs, hotels, and tour guides – into one convenient platform. Using C++ ensures smooth and reliable performance, while Qt provides a visually appealing interface across various devices, and SQL securely manages all booking details and personal information. With this app, users can effortlessly search for book cabs, hotels, and guides that suit their preferences and budget. The cab service allows for booking rides and viewing details, the hotel module provides comprehensive accommodation information, and the guide service offers professional tour guides to enhance the travel experience. The goal is to streamline the entire travel planning process, making it more convenient and efficient by integrating essential travel services into one app, catering to modern travelers seeking hassle-free, well-organized trips. This project showcases the effective use of modern programming technologies to create a valuable tool for anyone who loves to travel, combining a unified booking platform, an intuitive interface, efficient data management, comprehensive service information, and an enhanced overall travel experience.

Keywords: Qt(framework for GUI) , SQL(Sequential Database Language) , GUI(Graphical User Interface).

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LIST OF ABBREVIATION:

OOP	Object Oriented Programming
GUI	Graphical User Interface
SQL	Sequential Query Language
DBMS	Database Management System

11.INTRODUCTION:

1.1.Background :

The tourism industry is rapidly evolving with the rise of digital technology, making travel planning more efficient and integrated. Traditional methods of booking through travel agents or individual providers are being replaced by modern applications that combine multiple services into one platform. This project leverages the power of C++, Qt, and SQL to create a user-friendly application that simplifies the process of booking hotels, cabs, and guides. By offering a one-stop solution, the app saves users time and effort, providing personalized recommendations, and seamless management of all travel needs. This innovative approach not only enhances the convenience of travel planning but also aims to revolutionize the way people organize their trips, making the experience more enjoyable and hassle-free.

1.2.Motivation:

Being ourselves fond of traveling we had face difficulty to manage hotel, vehicle and guide during our tours. With a ambition to provide a solution to the travel freaks, we have decided to make comprehensive travel management app. We all know how difficult it is to find a whole package of hotel, cab, guide and so on during travel time. So, we came up with a idea to develop a application using C++ as core language, qt for user interface and mysql as a database to store the information.And also to learn object , class and other programming topics we have thought about developing a project which can teach the fundamental concept of programming. This project is mix of solution to travelers and learning concepts of programming.

1.3.Objectives:

The project aims to fulfill following :

a. Hassle free comprehensive solution to book everything related to traveling with no need to visit different websites for hotel booking, vehicle renting/booking, guide booking etc.

b. To make the user friendly interface, where users can interact without any difficulties.

c. Packaged solution to travelers without needing to put much time in travel management, where they can book packages and hop in without thinking much about managerial part.

d. Make the best use of the c++ programming language during the built of the project, from using the core c++ itself to using qt framework written in c++ which works robustly to make application using c++ programming language concept.

e. Make use of the database management system so that the data of the users be stored safely in database, where the chance of data breach is minimum.

2. LITERATURE REVIEW

Literature Review for Tourist Application Project

Introduction

Tourist applications play a pivotal role in enhancing travel experiences by providing users with access to essential services such as hotel booking, guide booking, and car booking. This literature review explores existing research, technological frameworks, and key components relevant to the development of a tourist application incorporating these features.

Evolution of Tourist Applications

Tourist applications have evolved significantly with advancements in technology and changing consumer preferences. According to Gretzel and Fesenmaier (2013), the proliferation of smartphones and mobile apps has transformed how travelers plan and experience their trips. Tourist applications offer convenience, personalization, and real-time access to information, enabling users to make informed decisions and optimize their travel experiences.

Technological Frameworks

1. Database Management:

- Relational databases like MySQL and PostgreSQL are widely used for storing and managing data in tourist applications. Wang and Liu (2016) discuss the benefits of relational databases in handling structured data such as user profiles, bookings, and location information.

2.C++

-C++ is a low level programming language used majorly for the logic development in the application development. It is a cross-platform language that can be used to create high-performance applications.It was developed by Bjarne Stroustrup, as an extension to the C language.It gives programmers a high level of control over system resources and memory.

3.Qt

-Qt is a C++ framework that supports the WOCA (Write Once, Compile Anywhere) principle, which means Qt is a cross-platform framework. It's mainly used to develop applications and graphical user interfaces (GUIs) that can run across different operating systems

Key Components of Tourist Applications

1. Hotel Booking:

- Hotel booking functionality allows users to search for hotels, view availability, and make reservations. People emphasize the importance of seamless hotel booking processes in tourist applications to enhance user satisfaction and loyalty.

2. Guide Booking:

- Guide booking features enable users to find local guides, view their profiles and ratings, and book guided tours or experiences. Fuchs, Ricci, and Cantoni (2010) discuss the role of personalized recommendations and social interactions in guide booking platforms to enhance user engagement and trust.

3. Car Booking:

- Car booking functionality allows users to search for rental cars, compare prices and features, and make reservations. Rysman (2009) highlights the importance of transparent pricing, flexible booking options, and reliable customer support in car rental services to attract and retain customers.

Existing Systems and Comparative Analysis

Several studies have evaluated existing tourist applications, comparing features, usability, and performance. Han, Yuan, and Li (2014) provide a comparative analysis of popular travel apps, highlighting strengths and weaknesses in areas such as user interface design, search functionality, and booking processes. Such analyses help identify best practices and areas for improvement in tourist application development.

Conclusion

Tourist applications play a crucial role in facilitating travel planning and enhancing tourist experiences. By leveraging advanced technologies, robust backend infrastructure, and user-centered design principles, tourist applications can provide users with seamless access to hotel booking, guide booking, car booking, and other essential services. Future research and development efforts should focus on improving personalization, accessibility, and integration with emerging technologies to further enhance the utility and effectiveness of tourist applications.

3. PROPOSED SYSTEM ARCHITECTURE

3.1 System Architecture or Block Diagram:

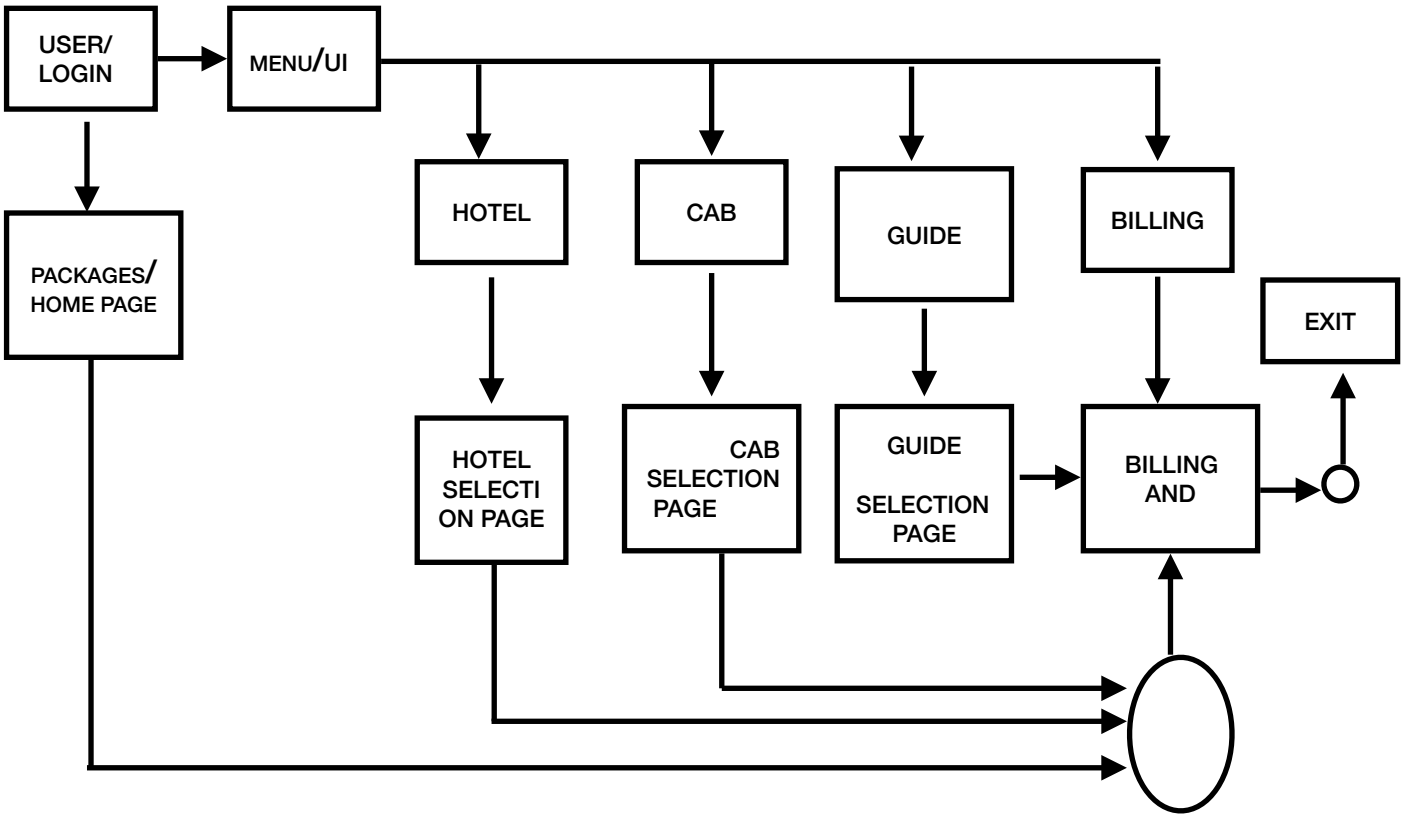


Figure 3.1 Block Diagram of System Architecture

3.2 Parts of Program

3.2.1 Login

The login page will have a username and password container .Where a user can log in to the application if his/her account is registered if not then account should be registered. This part help us to keep the security system strong.

3.2.2 Menu UI

There will be four options in menu i.e hotel, cab, guide and billing which have it's own application.you just need to click in those menu you can open a new window where you can book.

3.2.3 Packages

There would be different packages for user so that the user can select a best option as per their needs and priorities.

3.2.4 Hotel

If user wants to manage their traveling in detail and not interested in readymade packages. They can book hotel individually from this option of the menu.

3.2.5 Cab

If user wants to manage their traveling in detail and not interested in readymade packages. They can book or rent vehicles individually as per their need from this option of the menu.

3.2.6 Guide

If user wants to manage their traveling in detail and not interested in readymade packages. They can book guide as per their need from this option of the menu. The contact of guide are given to users so, that users can be familiar to guide and ask for themself, if guide is the one for them.

3.2.7 Billing

In this part user can find the total price needed for the destination .
User can pay the price to the hotel, cab and guide personally in offline but the price will be as in the billing page.And there will be no worry of the booking of selected facilities.

4. METHODOLOGY

The various methodologies that were used in gathering data and analysis which are relevant to the research includes different header files, structures, and file handling.

4.1 Header Files

In C++ language, header files contains the set of predefined standard library functions.It contains C++ function declarations and macro definitions to be shared between several source files. In this project, we have used several header files as per convenience that are listed below:

i. iostream
ii. string.h
Iii.window.h
iv.math.h

4.2 Functions and Conditional Statements

Functions are used in almost every step of development of this game. Any activity tobe performed if handed out to the respective functions which makes the program readable as well as efficient. These functions are accessed from specific classes some of which are public where as some are protected in the class. Similarly, conditional statements are also used densely in the game. What is to be done when something specific happens is governed by the conditional statements in the programming world. They make programming easier by branching out a single statement with multiple outcomes. If the character hits the wall then the game is over else the game continues is an example of condition in the game.

4.3 Class

A class in C++ is composite data type declaration that defines a physically grouped list of variables under one name in a block of memory, allowing the different variables to be accessed via a single pointer or by the struct declared name which returns the same address. Various classes are used along with API's which is the core of the entire game or similar to blueprints. Majority of the classes are described under header files where as some on the cpp file itself. Those header files along with the class they contain has been specifically divided according to our need which means that each header file has its own purpose different than the later.

4.4 DMA

In order to store the scores, distances and time played by the player, we need to use data files and for efficient management of memory, we use DMA which allows us to allocate memory for specific variable during runtime. Since this is a progressive game so the same map with variation in obstacles is needed to be displayed, hence on allocating dynamically we can delete the part that we no longer need and use it for the upcoming part.

5.Application and Scope:

a.The application combines hotel, cab, and guide booking services into a single platform, streamlining the travel planning process.

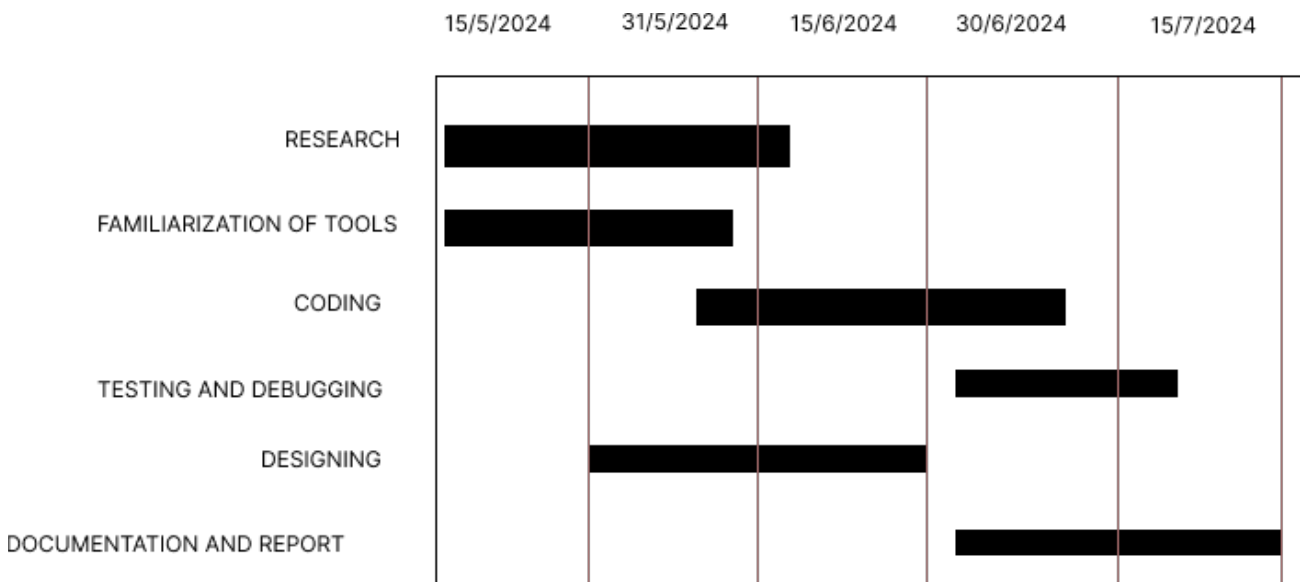
b. Using Qt for a cross-platform GUI ensures an intuitive and visually appealing user experience, accessible on multiple operating systems.

c. SQL is employed to securely store and manage user data, booking details, and service provider information, ensuring reliability and performance.

d. By integrating essential travel services into one application, it will provide convenience, efficiency, and a more enjoyable travel experience for modern travelers.

6. Time estimation :

Table : Time Estimation Gantt Chart



7. FEASIBILITY ANALYSIS

The main objective of the feasibility analysis is to test the Technical, Operational and Economical feasibility for adding new modules and debugging old running system. These are the aspects of feasibility analysis:

7.1 TechnicalFeasibility

The technical issue usually raised during the feasibility stage of the investigation includes the following:

- It exists to do what is suggested.
- The proposed application provides adequate response to inquiries, regardless the number or the location of users.
- The application can be upgraded after development.

7.2 OperationalFeasibility

Proposed projects are beneficial only if they can meet the organization's operating requirements. Some of the important issues raised to test the operational feasibility of the project include the following:

- There is sufficient support for the management from the users.
- The application will work properly after it is developed and implemented.
- There will not be any resistance from the user that will undermine the possible benefits.

7.3 EconomicFeasibility

A system can be developed technically and that will be used if it becomes the good investment for the organization. In the economic feasibility the development cost in creating the system is evaluated against the ultimate benefit derived from the use of new system. Financial benefits must equal or exceed the costs. Since, it is based on C++ and qt, so no development cost is to be allocated.

6.4 Hardware Requirements

- Intel i3 2.8 Ghz Processor and above
- RAM 2GB and above
- HDD 5GB Hard disc and above

7.5 SoftwareRequirements

- WINDOWS OS (8 or higher) or Linux or MacOS
- Basic integrated graphic or higher(NVIDIA or AMD)

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