A Simplified Approach for Management of Travel Agency Using C++ Programming Language

Virat Bhambhe¹, Dr. Naresh Chauhan²
¹P.G.D.C.A. student, Annamalai University - Directorate of Distance Education (Tamil Nadu), INDIA
²Professor, Department of Computer Engineering, JC Bose University of Science and Technology, YMCA, Faridabad, INDIA

Abstract:- People used to travel or move between distant geographical locations for business, religious pilgrimages, visiting people, obtaining health care, gathering of information, pleasure etc. Travel can be done by using public or private transportation which includes automobile, train, boat, bus, airplane, ship or other means. It can be one way or round trip and with or without luggage. It can also include stays at hotels at locations during the movement. Travel agency is an organization which plays an important role in the entire process of developing and promoting tourism in the country or at a destination. It packages and processes all the attractions, accesses, amenities and ancillary services of a country and presents them to tourists. It is an important link between the clients and principal suppliers. It ensures rapid travel services. It provides authentic and reliable travel information. It establishes a good relationship with clients and vendors. A good travel agency is one which makes arrangements of travel tickets (air, rail, road, and sea), accommodation and other travel-related services from principle suppliers. In order to handle large number of clients and provide them fast and accurate services there is a need of software which can manage client’s details easily. This project of travel agency management system is developed using C++ programming language. It can be used for travel in some of the major Indian cities. It is used for viewing tourist places, reserve transportation, reserve accommodation, view existing bookings. It is used for registration of clients, search registered clients, modify/edit the registration details of clients and delete the registration records of clients. It also provides details of cost/amount of reservation. It help travel agent to manage business process. It improves client's travel processes. It reduces travel agency operational costs. It increases business profitability. It is beneficial for travel agent, tour operators, travel agency and destination management company. In this way it provides a better solution for the problem of managing client’s details efficiently.

Keywords: Travel, Travel agent, Travel agency, Management, C++

I. INTRODUCTION

In order to maintain client details a lot of effort has to be made by a travelling agency. In order to make the process of maintaining the details of a client much more easily this program is developed. This program is developed by using C++ programming language. The details of client record can be saved by utilizing this program. It can be used by various travel agencies in order to manage the day to day functioning of dealing with record of clients. It can be used to manage the client records of transportation and accommodation reservations. The various features provided by this program are reservation, view, search, edit, delete of client records.

II. TRAVEL

Movement is in the nature of the human beings. When the people used to move between different places at distance geographical locations then this movement of people between the different locations is called travel.

Travel can be done by using different transportation means. It can be done by using public transportation or private transportation. People can travel to the different locations by using various means they can use bicycle, automobiles, train, airplane, bus, ship, boat and even walk to the different locations on the foot. It can be with or without luggage and it can be one way or round trip [1], [2]. In the 20th century due to the progress and technological developments in the airplane technology air travel got a big boost [3]. Due to large number of demand for personal travel, many people called this period as the golden age of travel [4].

III. TRAVEL AGENT

People used to travel different places across the world. During their travel they need various kinds of information regarding the destinations, modes of travel, accommodation, climatic conditions of the country or location where they are about to travel and other details of the destination. For their help we need a person who can provide them all such kinds of useful information and such a person is called a travel agent. A travel agent has full knowledge of the related destinations as per according to the customer satisfaction [5].

Travel agent can be called as a person who undertakes a job for another person that may be the principal supplier as the principal supplier provides commission to the travel agent. Principal supplier can set the goals of the job for example selling tickets and can also control the manner in which the job will be completed [6].

IV. TRAVEL AGENCY

It may be a firm or Corporation which is run by a travel agent. In a travel agency all the services regarding travel are provided to the customers by the travel agent and the travel business is done as per according to the satisfaction of the customer [5].
In the travel industry much more growth can be achieved by using electronic commerce [7], [8], [9].

As per the Travel Industry Association of America [10] the tourism and travel industry is one of the biggest employer in United States of America and third largest retail sales industry in USA.

Travel agencies exist primarily as intermediaries between clients and primary suppliers of travel services [11], such as airlines and hotels, and customers from which they get their commission.

The main important roles of travel agencies are distribution, information, reservation and services. Other duties includes arrangement of the transportation, preparation of individual itineraries, arrangement for stay at the hotels, guest houses and handling and advising on the details regarding the travel like visa etc [12].

In the year 1998 the airlines imposed a cap on the commission to the travel agencies due to which the commissions dropped up to 8% for both the international and the domestic flights [13].

Let us take an example of a Philadelphia based travel agency called Rosenbluth travel [14] which provides travel related services to the Wal-Mart employees and arranges air, hotel, and car rental reservations.

From the past few years due to the advancement in the technology travel agencies are making a good use of technology to provide better services to the customer. Travel agencies which are not following the change in the technological advancement will have to change themselves in order to survive in the modern world [15], [16].

The travel agencies dealing with the corporate had adopted the new technologies for the electronic commerce in order to improve their businesses [6].

There are various models which are used to describe the interaction between the sellers and buyers in the electronic commerce market. The model which was proposed recently is intermediation disintermediation - reintermediation (IDR) cycle [17]. The pattern of interactions among the players in the electronic commerce activities can be identified by studying the different cases which are explained by using the model of IDR cycles [18].

In order to convert traditional travel agencies to be available on the electronic commerce platform there is a conversion process. There are various factors which affect this conversion process like system usability, knowledge and resources [19].

Due to the easy availability of online travel websites the relevance of the traditional agencies reduces. It is also possible up to much extent that there are the travellers who will bypass traditional travel agencies [20].

According to the industry practitioners and academia people like those from the travel industry the use of the internet in inter-organizational relation is a very important knowledge based discovery [21], [22], [23].

Due to the availability of internet the various segments of the service industry are affected. This includes the travel and tourism industry. Internet related applications had gained much popularity in the last few years [24].

Important strength of a traditional travel agency is there availability to provide accurate information to its clients regarding the travel [25], [26].

Travel and tourism industry can be benefited much from the internet because it is an information oriented industry [27], [28], [29].

In the industry some people use technology to do business on the electronic commerce platform while other uses technology for support functions only such as communications [30].

In order to be successful in the inter-organizational relationships commitment is very important [31], [32]. A large amount of attention is being paid for commitment towards client in providing good services [33] and principal components among this is trust [31], [34].

In order to encourage customers to stay in the relationship, investment of time and efforts are required in order to create psychological bonds [35], [36].

In order to promote medical tourism travel companies promote other countries good medical facilities [37]. Rich people travel outside their country for medical treatment [38], [39], [40].

There are various examples of media coverage tracking a person getting cancer treatment in the state of New York, a teacher travelled to India in order to get medical treatment and cab driver visited Belgrade for medical surgery [41], [42], [43].

In the USA those people who cannot afford to get expensive medical services travel to places like India and Thailand where the medical service are less costly [44]. Many USA companies have a travel options in their health insurance plans to get medical treatment in another country [45].

In order to provide financial incentives to state employees willing to travel outside USA for healthcare services West Virginia is considering legislation [46], [47].

Many people travel outside home country for organ transplantation and study suggest that commercial out of the country transplantation increases morbidity and mortality rates [48], [49], [50].

V. C++ PROGRAMMING LANGUAGE

C++ was built by Bjarne Stroustrup, a Danish computer scientist as an extension of the C programming language so that high level features for program organization can be
realized [51], [52], [53], [54], [55]. C++ was developed in the year 1979 [56], [57].

C++ includes software infrastructure which is helpful in making programs on almost any problem. It consists of resource-constrained applications which consists of video games, desktop applications, servers and various other performance critical applications example telephone switches or space probes [58], [59].

International organization for standardization (ISO) had standardized C++ and the latest version was released in December 2017 known as C++17 [60].

The new version of C++ was scheduled to release after every three years since the year 2012 [61]. The next planned version of C++ is C++20 standard and then C++23 [62].

At the initial level the C programming language which was developed earlier than the C++ in that C with classes added features to the C compiler, Cpre, including classes, strong typing, derived classes, inlining and default arguments [63].

The first standard edition of the C++ programming language was released in the year 1985 [64]. In October month of the same year the first commercial implementation of the C++ was released [53]. The Second Edition of the C++ programming language C++ 2.0 released in the year 1989, which was followed by an update in the year 1991[65]. In December 2014 another update known as C++ 14 was introduced. C++ 17 edition was introduced with more features and thereafter there are plans for next version of the C++ for the year 2020 [66].

As per the year 2019 the ranking of the C++ programming language among the other programming language is fourth and it is behind the Java, C and Python programming languages [67], [68].

Bjarne Stroustrup was announced as the winner of the year 2018 Charles Stark Draper prize for engineering for developing and cost-effective rising the C++ programming language [69].

The various reasons due to which C++ is very popular are we can write almost any type of program in it, it is easy to use, it is fast to produce results, it is object oriented, and it is standardized by The American National Standards Institute (ANSI) and the International Standards Organization (ISO) [70].

The various applications of C++ are Application Software Development, Programming Languages Development, Computation Programming, Games Development, Embedded System etc [71].

VI. SCOPE OF PROJECT

The aim of this project is to provide the efficient travelling services to the clients of travel agency. This project provides the various facilities to the clients such as reservation registration, view, search, edit, delete etc.

VII. REQUIREMENTS

7.1. Hardware requirements:
Minimum Processor Type - Intel 386 or higher
Minimum RAM Size - 4 MB
Minimum Hard Drive Space - 25 MB

7.2. Software requirements
Turbo C++ software by Borland International Inc.
OS Required - Microsoft DOS, Microsoft Windows 3.1 or later, PC DOS
OS Family - Windows

VIII. SYSTEM DESIGN

The system of the program is designed in such a way that once the program is started we have to select a choice out of the various options which are reservation, view, search, edit, delete, and exit. As per according to the selected choice the desired results are produced by the program.

These options can be selected for the transportation and accommodation reservation.

IX. FUNCTIONS USED IN PROGRAM

9.1 Header files

- conio.h: conio.h is a C header file used mostly by MS-DOS compilers to provide console input/output [72].
- stdio.h: Input and Output operations can be performed in C++ using this header file [73].
- iomanip.h: It is part of the Input/output library of the C++ Standard Library [74].
- dos.h: It contains functions for handling interrupts, producing sound, date and time functions etc. [75].
- fstream.h: The fstream library allows us to work with files [76].
- ctype.h: It contains inbuilt functions to handle characters [77].
- string.h: This header file defines several functions to manipulate strings and arrays [78].

9.2 Global variable

int i=0

www.rsisinternational.org
9.3 Global functions
void startup()
int opening1()
void opening2()
void maketrfile()
void makehofile()
void places()

9.4 Class travelagency - class travel agency consisting of functions and data members related to hotel and Transportation reservations.

9.5 Member functions for hotel reservation
void resho()
void showhotel()
void viewhorec()
void showhotelrec()
void delhotelrec()
void searchhotrec()
void transferhoteldata()
void edithoteldata()
void transferhoteldata1()

9.6 Member functions for transport reservation
void restr()
void showtransport()
void viewtrrec()
void showtransportrec()
void deltransportrec()
void searchtransportrec()
void transfertransportdata()
void edittransportdata()
void transfertransportdata1()

9.7 Function to calculate price
void assignprice()

9.8 Function to view different destination
void nindia(int ndes)
void sindia(int sdes)
void eindia(int wdes)
void windia(int edes)
void cindia(int cdes)

9.9 Other functions
void travelagency::resho() - Function used to reserve hotel.
void travelagency::showhotel() - Function used to show hotel reservations
void travelagency::viewhorec() - Function used to view hotel records
void travelagency::showhotelrec() - Function used to show all hotel reservations
void travelagency::delhotelrec() - Function used to delete a hotel record.
void travelagency::transferhoteldata() - Function used to transfer undeleted hotel records.
void travelagency::searchhotrec() - Function used to search for a hotel record.
void travelagency::edithoteldata() - Function used to edit a hotel record.
void travelagency::transferhoteldata1() - Function used to transfer edited hotel records.
void travelagency::restr() - Function used to reserve transportation
void travelagency::showtransport() - Function used to show transport reservation.
void travelagency::viewtrrec() - Function used to view transport records.
void travelagency::showtransportrec() - Function used to show all transport records.
void travelagency::deltransportrec() - Function used to delete a transport records.
void travelagency::transfertransportdata() - Function used to transfer undeleted transport records.
void travelagency::searchtransportrec() - Function used to search for a transport records.
void travelagency::edittransportdata() - Function used to edit transport record.
void travelagency::transfertransportdata1() - Function used to transfer edited transport records.
void main() - Main function used to call other functions
textcolor(WHITE) – To make output text colour white
textbackground(BLACK) – To make output background colour black
void maketrfile() - Function used to make transport record.
void makehofile() - Function used to make hotel record.
void startup() - Function used to display introduction screen
int opening1() - Function used to display menu.
void opening2() - Function to display menu with places
void places() - Function used to display choice of destination.
void travelagency::nindia(int ndes) - Function used to display north-india information.
void travelagency::sindia(int sdes) - Function used to display south-india information.
void travelagency::eindia(int edes) - Function used to display east-india information.
void travelagency::windia(int wdes) - Function used to display west-india information.
void travelagency::cindia(int cdes) - Function used to display central-india information.
void travelagency::assignprice() - Function used to assign price according to destination

X. ADVANTAGES
1. This program reduces the paperwork.
2. This program saves the time as client does not have to wait in the long queues.
3. Client does not need to worry about transportation reservation and accommodation reservation on its own.
4. Client records can be managed very efficiently.
5. Client records can be accessed using the program easily.

XI. DISADVANTAGES
1. Online reservation facility is not available in such type of program.
2. In this program only limited numbers of cities are available.
3. Computer system is required in order to run this program.
4. Software is required to run this program as it is based upon C++ programming language.

XII. RESULTS

Choose Destination
1. NORTH INDIA
2. SOUTH INDIA
3. EAST INDIA
4. WEST INDIA
5. CENTRAL INDIA
6. EXIT
??ENTER CHOICE>>>.....?

Figure 12.1 Introduction screen 1
Figure 12.2 Introduction screen 2
Figure 12.3 Main menu
Figure 12.4 Main menu with option 1 selected
Figure 12.5 Destination menu
Figure 12.6 Destination menu with option 1 selected

Figure 12.7 Destinations of North India

Figure 12.8 Destinations of North India with option 2 selected

Figure 12.9 Destinations of Haryana with Transportation and Accommodation details

Figure 12.10 Destination menu with option 2 selected

Figure 12.11 Destinations of South India

Figure 12.12 Destination menu with option 3 selected

Figure 12.13 Destinations of East India
Figure 12.14 Destination menu with option 4 selected

Figure 12.15 Destinations of West India

Figure 12.16 Destination menu with option 5 selected

Figure 12.17 Destinations of Central India

Figure 12.18 Destination menu with option 6 (EXIT) selected

Figure 12.19 Main menu with option 2 selected

Figure 12.20 Modes of Transportation

Figure 12.21 Modes of Transportation with option 1 selected

Figure 12.22 Destination cities menu
Figure 12.30 Transportation Reservation form of Rakesh Kumar

**Transport Reservation Form**

Name: Rakesh Kumar
Address: 91, Sun Apartments, Delhi
Destination: Chandigarh
Mode of Transport: Train
Type of Tickets to be Reserved (1/0):
   Executive: 0  Economy: 1

Is the information correct (y/n)? y

Figure 12.31 Processing for Reservation

**Transport Reservation**

Name: Rakesh Kumar
Address: 91, Sun Apartments, Delhi
Mode of transportation: Train  Destination: Chandigarh
No. of EXECUTIVE class tickets reserved: 0
No. of ECONOMY class tickets reserved: 1

Your Reservation have been done Please pay the Amount!!!

Amount: Rs. 2000.00

Figure 12.32 Transportation Reservation details of Rakesh Kumar with amount to be paid

**Transport Reservation**

Name: Krishna Sharma
Address: 36, Glorious Apartments, New Delhi
Mode of transportation: Road (Bus)  Destination: Shimla
No. of EXECUTIVE class tickets reserved: 1
No. of ECONOMY class tickets reserved: 0

Your Reservation have been done Please pay the Amount!!!

Amount: Rs. 900.00

Figure 12.33 Modes of Transportation with option 3 selected

Figure 12.34 Destination cities menu with option 4 selected

Figure 12.35 Transportation Reservation form of Krishna Sharma

**Transport Reservation Form**

Name: Krishna Sharma
Address: 36, Glorious Apartments, New Delhi
Destination: Shimla  Mode of Transport: Road (Bus)
Type of Tickets to be Reserved (1/0):
   Executive: 1  Economy: 0

Is the information correct (y/n)? y

Figure 12.36 Processing for Reservation

Figure 12.37 Transportation Reservation details of Krishna Sharma with amount to be paid
Figure 12.38 Main menu with option 3 selected

Figure 12.39 Type of hotel choice menu

Figure 12.40 Type of hotel choice menu with option 1 selected

Figure 12.41 Destination cities menu with option 14 selected

Figure 12.42 Hotel Reservation form

Figure 12.43 Hotel Reservation form of Vijay Kumar

Figure 12.44 Processing for Reservation

Figure 12.45 Hotel Reservation details of Vijay Kumar with amount to be paid

Figure 12.46 Type of hotel choice menu with option 2 selected

Figure 12.47 Destination cities menu with option 8 selected
Figure 12.48 Hotel Reservation form of Ramesh Kumar

Figure 12.49 Processing for Reservation

Figure 12.50 Hotel Reservation details of Ramesh Kumar with amount to be paid

Figure 12.51 Type of hotel choice menu with option 3 selected

Figure 12.52 Destination cities menu with option 16 selected

Figure 12.53 Hotel Reservation form of Ram Kumar

Figure 12.54 Processing for Reservation

Figure 12.55 Hotel Reservation details of Ram Kumar with amount to be paid
Figure 12.56 Main menu with option 4 selected

Figure 12.57 Choice menu for hotel and transportation reservation records with option 1 selected

Figure 12.58 Hotel reservation information menu

Figure 12.59 Hotel reservation information menu with option 1 selected

Figure 12.60 Hotel reservation record details of Vijay Kumar

Figure 12.61 Hotel reservation record details of Ramesh Kumar

Figure 12.62 Hotel reservation record details of Ram Kumar

Figure 12.63 Hotel reservation information menu with option 2 selected
Figure 12.64 Hotel reservation record of Ramesh Kumar deleted after entering the name.

Figure 12.65 Hotel reservation information menu with option 3 selected.

Figure 12.66 Hotel reservation record of Ram Kumar is searched after entering the name.

Figure 12.67 Hotel reservation record details of Ram Kumar is displayed as a result of the search.

Figure 12.68 Hotel reservation information menu with option 4 selected.

Figure 12.69 Hotel reservation record of Vijay Kumar is edited after entering the name.

Figure 12.70 Type of hotel choice menu with option 1 selected.

Figure 12.71 Destination cities menu with option 14 selected.
Figure 12.79 Transportation reservation record details of Ram Kumar

Figure 12.80 Transportation reservation record details of Rakesh Kumar

Figure 12.81 Transportation reservation record details of Krishna Sharma

Figure 12.82 Transportation reservation information menu with option 2 selected

Figure 12.83 Transportation reservation record of Krishna Sharma deleted after entering the name

Figure 12.84 Transportation reservation information menu with option 3 selected

Figure 12.85 Transportation reservation record of Ram Kumar is searched after entering the name
Figure 12.86 Transportation reservation record details of Ram Kumar is displayed as a result of the search.

Figure 12.87 Transportation reservation information menu with option 4 selected.

Figure 12.88 Transportation reservation record of Rakesh Kumar is edited after entering the name.

Figure 12.89 Modes of transportation with option 2 selected.

Figure 12.90 Destination cities menu with option 2 selected.

Figure 12.91 Transportation reservation form of Rakesh Kumar for editing.

Figure 12.92 Transportation reservation record details of Rakesh Kumar after editing.
This program effectively manages the various travel reservation related problems faced by a travel agency by performing the different operations on the client records. The various features provided by the program like reservation registration, view, search, edit, delete makes the work of a travel agency very easier. It also provides details regarding the reservation amount or cost of a client due to which this program is very useful for a travel agency. It also helps a travel agency in saving much of time by managing all the travel related client data. The different features of this program can be wisely utilized by a travel agency for a better management of day to day client related problems. The travel agency management system is a very useful system for a moving world where time is very precious. The various features provided in the travel agency management system helps a travel agency in managing all the travel related records and thus improving the efficiency of travel agency.

XIV. FUTURE RESEARCH WORK

This program can be modified to perform the additional operations like online reservations. It can be enhanced in the future to make more cities available to the clients.


AUTHORS

Virat Bhambhe received B.Tech. (Electronics and Instrumentation Engineering) degree from Uttar Pradesh Technical University, Lucknow (Uttar Pradesh), India and M.Tech. (Electrical and Electronics Engineering) degree from Dr. A.P.J. Abdul Kalam Technical University, Lucknow (Uttar Pradesh), India. Presently he is working towards Post Graduate Diploma in Computer Applications (P.G.D.C.A.) from Annamalai University – Directorate of Distance Education (Tamil Nadu), India. He has more than 07 years overall experience which includes experience of teaching B.Tech. Students in various engineering colleges and Industrial experience. He had published two research papers in International Journal of Engineering Research & Technology (IJERT). He is a member of various national and international organizations. He is a member of International Association of Engineers (Hong Kong), Member of Computer Science Teachers Association (USA), Member of The Society of Digital Information and Wireless Communications (USA), Associate Member (UACCE) of the Institute of Research Engineers and Doctors (USA), Member Internet Society (USA), Life Member Systems Society of India. His interest lies in C and C++ programming languages and Web technologies like HTML, CSS and PHP.

Dr. Naresh Chauhan received his Ph.D. (Computer Engg.) from MD University, Rohtak (Haryana) in 2008, M.Tech. (Information Technology) from GGS Indra Prastha University, Delhi in 2004 and B.Tech. (Computer Engg.) from NIT Kurukshetra, in the year 1992. He has about 28 years of experience in teaching and Industries. He served Bharat Electronics Ltd. and Motorola India Ltd. Presently, he is working as Professor in Deptt. of Computer Engg. at JC Bose University of Science & Technology, YMCA, Faridabad (India). His research interest includes Internet technologies, Software Engineering, Software Testing and Real time systems. He has published two books on Software Testing and Operating Systems published from Oxford University Press, India.