**Travel and Accommodation Services Platform for HappyHolidayss (Pvt) Ltd.**

**Final Report**

Name: **Chandrakumaran Subiharan**

London Met ID No: **21038365**

London Metropolitan University

**Declaration**

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**Module Leader: Prof. Ruvan Student ID: 21038365**

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**Acknowledgements**

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**Abstract**

Travel and Accommodation Services system is a web-based application that allows travelers to check for home rentals, tour packages and for accommodation providers to list their property and manage it. At HappyHolidayss (Pvt) Ltd, the traditional method of the Tourist and Partner management system is presently in use which involved the use of papers for storing client/partner information. With this method, there is always a long queue, loss of data, incomplete clients/partner information, and inaccuracy. An online Travel and Accommodation system will be implemented for Happy Holidayss (Pvt) Ltd to solve the existing problems. This system too mainly focuses on component operations like selling Travel and Accommodation Services to customers with a wide variety of Categories and analyze company transaction information under a single framework. Moreover, the convenient features to increase the customer service letting to access a variety of information and the flexibility of the database information makes this system as an idyllic Travel and Accommodation Platform for any.

The basic objective of this extension is to create a web-based Travel and Accommodation Platform for Happy Holidayss (Pvt) Ltd that grants clients to see and reserve a tour, homes in online also for the administrators to manage partners and earnings. There are various web-based travel and accommodation systems which were arranged utilizing the comparable innovations.

The solution was designed and constructed by adhering to the three-tier architecture method along with an Object –oriented approach for the coding phase. The coding was carried out by using PHP version 7.4, JavaScript, jQuery and design was carried out using HTML5 and CSS along with MySQL for database construction process. Apache Xampp server was used as the web server due its limitless compatibilities with PHP applications.

The project has been completed and this report demonstrates the work carried out from scratch. Each chapter describes the work carried out in each phase until the final implementation of the aforementioned Web-based Travel and Accommodation Platform for HappyHolidayss (Pvt)Ltd.

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**Abbreviations**

TAMS - Travel and Accommodation Management System

B2B - Business-to-Business

B2C - Business-to-Consumer

C2B - Consumer-to-Business

C2C - Consumer-to- Consumer

HTML - Hypertext Markup Language

CSS - Cascading Style Sheets

MySQL - My Structured Query Language

U.S - United States

IT - Information Technology

DOI - Diffusion of Innovation

OTA - Online Travel Agency

ERP - Enterprise Resource Planning

OOP - Object Oriented Programming

UML - Unified Modeling Language

GUI - Graphical User Interface

DFD - Data Flow Diagram

SDLC - System Development Life Cycle

PHP - Hypertext Preprocessor

ERD - Entity Relationship Diagram

PC - Personal Computer

RDBMS - Relational Database Management System

RAM - Random Access Memory

OS - Operating System

TB - Tera Byte

GC - Google Chrome

MF - Mozilla Firefox

# **Chapter 1 Introduction**

People today are living completely different lives than they were years ago since the advent of technology. Technology is one of the main ways to change the world. Whenever, people want to book a stay or tour package also list their property and travel packages, they should go to travel agency in person or they should call them. But this project (Online travel and accommodation platform) will help to connect clients with bookings and listing properties/travel packages on happyholidayss (Pvt)Ltd. “The ultimate promise of technology is to make of a world that we command by the push of a button.” (Volker Grassmuck)

Advances in technology have revolutionized the way we do things. It has provided us with the means to improve our lives and to maximize our sources, our time and our efforts. With the use of these technologies, many transactions have become faster, more efficient, more accurate and more efficient for processing. Technology is important in today's world because it performs numerous functions in many of the most significant aspects of modern society, such as business, communication and education. (Importance of information technology in today world, 2020)

HappyHolidayss (Pvt) Ltd is Travel and Accommodation Services providing Agency located  
in Colombo, Sri Lanka. The business model they currently using is consumer-to-business  
which It is the transfer of services, it is a business model where end users create products and  
services that are used by business and institutions. When it comes to Happyholidayss (Pvt)Ltd  
the accommodation service providers are the end users who serve their accommodation services as product to Happyholidayss (Pvt)Ltd.



Figure 1 Happy Holidayss (Pvt)Ltd Logo (Author Designed)

The current system used by this agency to manage their internal and external process is a paper-based system in all information of transaction are recorded and stored in a logbook. Operation it takes time to look for what they need and it is not efficient because the owner spends a lot of time in finding the record of the old transaction. They’re spending a lot of time in changing the records of transaction if the filled up with wrong information due to human error, according to the manager of this travel agency. because they keep on doing their job manually, it resulted to a very messy office, lots of papers around the desks and information gathered, the proponents came up with an idea of proposing a system that is relevant to the needs of the travel agency, highly efficient to meet their needs and most of all simple. They need to use automated system to make easier with their business. The proposed HappyHolidayss (Pvt) Ltd Travel and Accommodation Services online Platform aims to organize data that computerized the process of managing their valuable customers and partners details and transaction by creating an online travel marketplace while changing the organization business model by C2B to C2C.

Computerized travel and accommodation services platform will be used to track all information pertaining to customer bookings, partners properties management and travel package management within agency. Simply put it is a retail business, that sells travel related products and services to customers, on behalf of suppliers, such as home rentals and tour packages.

The most reason to choose a project like this TAMS is often to form another sort of opportunity for the nationwide new clients to book or list property with all necessities. Which can permit customers to look and make reservation (homes, tours) and for partners (service providers) to list their property, travel packages.

The clients get the opportunity to preserve their claim account by registering in with the personal details and they can search and reserve services. The partners will have additional and main functions, such as managing the bookings, managing listed travel packages. Finally, the system administrator will have the all-important functionalities that can manage the whole system such as transaction management, client’s management, partner verification and so on. And these functions are not accessible to general users such as maintaining accounts and inserting, deleting, updating and other functions... In addition, the application will use HTML, CSS, JavaScript and jQuery for Frontend development. PHP to implement business execution in the back-end logic, and MySQL as the project database, finally it will be run the project on XAMPP local server technology.

## **Goals**

The main goal is to perform quality, accurate and efficient work from the proposed automated travel and accommodation management system. To build and successfully deploy to happyholidayss(pvt)ltd. for internal use as well as for public use.

**1.1.1 Aim of the project**

The aim of this study is to eliminates the use of paper for storing records in company and develop an interactive web-application that helps potential customers to book a stay and for Partners to list their property in an easy manner. With this system, apart from deciding to make payments at the service provider counter, payments can also be done via online also clients will get enough information about the various travel and accommodation services in Sri Lanka that may ease their travel. Moreover, to business process automation by HappyHolidayss (Pvt)Ltd.

**1.1.2 Objective of the project**

* To arouse the marketing strategies of the business by accommodating digital marketing approaches to the proposed application at the business.
* User Friendly is provided in the app with various controls and the rich user interface system.
* Design a web-based system that makes information more detailed, efficient and accurate and reduces the delay encountered so far with the existing manual system.
* To develop aiming the administrative end whereas the majority access will be guaranteed for the administrator of the application.
* To develop this application in order to reduce the manual payment method which are done using Bank deposits.
* To preserve money which are intended to be wasted at calling the agency or visiting (for customer beneficiary).
* This can give the good security for user information because data is not in client machine.
* The employee information can be stored in centralized database which can be maintained by the system.
* To explore the problems encountered in the management of the existing manual system.
* It can be accessed over the Intranet.
* Manage customers and partners in the source market, and query performance at any time.

## **Motivation**

Technology and tourism are currently two of the fastest growing sectors in the context of the globalization of the world economy. This trend creates an unprecedented opportunity for the development of businesses, institutions and tourist destinations, as well as a growing demand for trained professionals in both fields of knowledge. Tourism organizations are now faced with the challenge of integrating new information and communication technologies into the development of new management and marketing models to strengthen their competitiveness. (Kyrylov, 2020)

Tourism is travel for recreational, leisure, religious, family purposes, usually of limited duration. Tourism is considered an essential activity for nations because of its direct effects on the social, cultural, educational and economic sectors of national societies and their international relations. However, tourism is emerging as one of Sri Lanka's most functional industries. It has a great impact in our nation by helping to create employment opportunities, developing infrastructure and a very rich source of income. By solving this particular problem of tourism management at the national level, it helps to improve the infrastructure development of the country and attracts more tourists. It provides services such as a good transport and communications network, affordable and comfortable housing, essential infrastructure and superb facilities. (Kyrylov, 2020)

The reason to be motivated to undertake a project like this is to preserve more time from busy lifestyles, especially for the college and university students these days from the experiences gained. Moreover, doing a project like this primarily motivates to take challenges which have interesting research background. It provides the prospect to learn about new areas which are very useful for the society by now. One of the major achievements which can be gained is by integrating the manual and automated spheres together to make the whole process as an automated application.

The capabilities like time management are a must which needs to be with author for the resource demands inside this project when meeting with deadlines. Also, sometimes unexpected issues might bounce in when the project commence and should be ready to develop solutions to move forward with the project. When it comes to any type of project like this is to plan properly about the resources and also must eligible to forecast the estimates and the predictions. One of the most important things is to have a knowledge in between everything from business to IT field. It may not seem to be a necessity but it will help to have a basic familiarity within the industry and the types of projects too.

## **Method**

The project was commenced and carried out as follows;

The methodologies which took over to the development of the project is mentioned in the chapter 5. With the meeting took over with the client, all the necessary user requirements were able to identified and outlined to a specification. Step by step, the requirements needed from the developers’ side was identified and put into thought with the client requirements. System designing was done directly after the system analysis and requirement gathering by outlining sketches, prototypes, UML and other relevant DFD diagrams. The developer was able to implement the first few front-end designs which are login, registration and main index of public portal. With the selection of SDLC model, the developer took steps to unit test the system together by showing the designed interfaces to the client to get more live feedbacks.



Figure 2 SDLC of project

The project was carried out by holding to the three-tier architecture. The main reason to select the three-tier architectural plan is because it is the client-server architecture in which the user interfaces, data access and storage and the business processes are managed. Moreover, any of the three tiers can be upgraded independently when needed. According to the previous experiences gained it was easier for the author to select when making changes in the logic of the business and when changing for new GUI environments, this plan is faster and easier. The reusability of the logic is immense, like it can be used with other projects and will be helpful for further use. The database is more secured because the clients cannot access it directly. The resistance to change, availability, reusability and scalability is high in this architecture.

The diagram architecture of the system is based as follow;

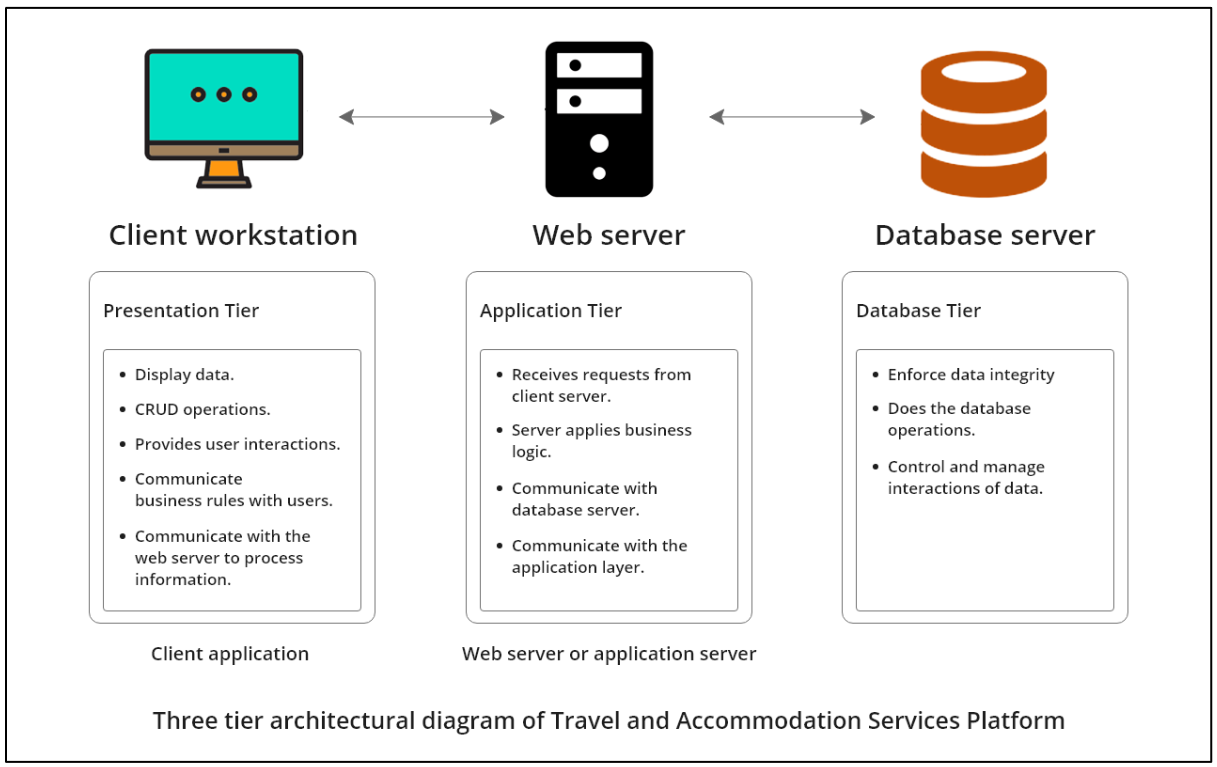


Figure 3 3 Tier architecture

Beneath the quantitative method dependence is put on inquire about methods to acquire the information. it is much more helpful to summarize information utilizing quantitative models. The nature of questionnaires is in a general sense qualitative in conception, since they include a few of the abilities within the development, and administration of it; but on quantitative in its extreme execution; since the results are more often than not communicated in quantitative terms. There are two sorts of information that can be collected: primary and secondary data. Primary data are data the author of the project have collected for their observational consider. That have been done through questionnaires and surveys. After looking at the reason of this study, it has been chosen to utilize a blend between qualitative and quantitative inquire about in arrange to assemble a more profound knowledge on the accessible information.

**Applied Method**

For the reason of gathering pertinent essential information for this proposal work, two distinctive methods were utilized as phone interviews and surveys to the real client and for few common public customers of them.

***The questionnaires were measured and coded as clarified in Appendix B and in chapter 6.***

## **Overview**

To foster a web-based application for the proposed solution, various Technologies should be considered and perceived. These incorporate the three-tier architecture (mentioned in chapter 1 - 1.3), server and side scripting techniques, the implementation techniques like PHP, programming languages (like JavaScript, jQuery, HTML 5 and CSS), and relational database (like MySQL).

**Incorporating of the web application and database**

In this project, MySQL is utilized as the backend database. MySQL is an open-source DBMS. MySQL is a relational DBMS which stores information in various tables, instead of in one goliath table. These tables can be referenced to one another, to get to and keep up with information easily. Can be utilized to change needs because of the efficiency. To work on the presentation, MySQL is multi-threaded database engine. Numerous users can perform read activities at the same time, yet while writing, just hold up another user that requirements admittance to the information being refreshed.

The application users requesting from this web-based commerce site ought to have the alternative to urge information about the platform of happyholidayss(pvt)ltd, select things they wish to book and yield data when checking out. The platform is given the capacity to take after slants and interaction of the travel services to prepare the bookings. So, a productive database is fundamental for the upkeep and the improvement of this site. Essentially in a static Web page, all the content is distinguished and set when the page is created. As the developer get to a static page as for the solution of HappyHolidayss, the page reliably appears a comparable data and alter once in a while concurring to the regulatory needs. In a dynamic Web page of course the substance contrasts subordinate on client data and data got from outside sources..

A data-based Web page is specified when a client clicks a hyperlink or a button on a Web page structure. Within the event that the ask comes from clicking a hyperlink, the joins specifies either a Web server program or a Web page that calls a Web server program. In a few cases, the program plays out a static address, for case, retrieve all information required from the listed services. This address doesn't require any client input, because the results changes depending on when the request is made. The request is made when the client can click a button, rather than a hyperlink, the web server program commonly uses the structure inputs to create an address.

For instance, the customer may book five services to be bought and what's more, at that point yield the commitment to the web server program. The web server program at that point, at that point, administrates the arrange, making a effective Web page response to assert the trade. In either case, the web server is liable for sorting out the inquiry results by including HTML labels. The web server program at that point, sends the program's yield back to the customer's program as a Web page.

**Website page Programming Options**

As all other Ecommerce stages this web application can make data-based Web pages by using

server side and client side taking care of advancements or a half breed of the two. With server-

side preparing, the web server gets the interesting Web page demand, performs all processing

critical to create the page, and a short time later sends it to the client for appear within the

client's program. Client side dealing with is done on the client workstation by having the client

program execute a program that collaborates directly with the database.

**Technologies acquired:**

HTML which is the standard markup language is utilized to develop the application forms. HTML components structure the website, everything being equal. Is use to make interactive forms. It gives a way to make organized documents by indicating primary semantics. It can insert scripts written in dialects, for example, JavaScript which influence the conduct of HTML pages.

CSS was expected to permit to isolate content from design so HTML could perform a greater amount of the capacity that it was initially based on the markup of content, without stress over the plan and layout. CSS are the specialized specification for a design. A stylesheet for a Web page fills a similar need, yet with the added functionality of likewise telling the web browser how to deliver the document being seen.

What recognizes PHP from something like client-side JavaScript is that the code is executed on the server, producing HTML which is then shipped off the client. The client would get the consequences of running that content, however would not know what the underlying code was. Can even arrange the web server to handle all the HTML documents with PHP, and afterward it's absolutely impossible that the client can determine what have at the disposal.

# **Chapter 2 Background and Problem Statement**

## **Introduction**

The primary mode of travel services marketplace and management in happyholidayss agency is done manually and in order to gain more profit and add efficiency for the transaction purposes, the clients decided to come up for an automated system to manage the marketplace and public online booking to increase the accuracy in placing reservations and managing it. This chapter basically analyze the existing relevant literature about online travel and accommodation platforms and ecommerce.

**2.1.2 Background**

The web has been favored by increasingly individuals for its high effectiveness and abundance, and e-commerce has emerged. The online travel services marketplace may be a shape of e-commerce and reservation deals industry in one shape, it has numerous improvements, Ninety-one percent of U.S. consumers use the Internet to book travel online, rather than going to a physical travel agency, due to the speed, time, convenience, and satisfaction of using it. The Internet offers consumers the advantage of making travel purchases online by dealing directly with travel suppliers (Hashim, Ismail, Awang, & Safri, 2014). Internet travel sales totaled over $ 565 billion in 2016 (Agag & El-Masry, 14 2017). Internet sales will increase continuously over time; as more and more businesses adopt Internet application systems (Del Chiappa, 2013). Economic growth and IT development are driving high demand among international travel customers (Wei-Lin & Hsin-Pin, 2012). Travelers actively search various websites (e.g., Expedia, Priceline, and Airbnb) on the internet to meet their travel needs and find deals. The travel industry has faced drastic changes when it comes to B2B e-commerce and B2C e-commerce as many people purchase travel products and services over the internet (Siddiqui & Khan, 2016). Travel agencies should adopt e-commerce technology to increase their competitive advantage and boost their marketing efforts (Menon & Yao, 2017). Information and communication technologies, e-commerce applications have a great influence on businesses around the world. Internet application systems such as e-commerce and B2B have grown since 2011.

At present, an enormous applications and websites can be found easily regarding the Travel ecommerce field. Simply by giving a click to a web browser, can be easily navigated in to a variety of websites.

Every famous travel reservation system available in Sri Lanka consist of public portals which includes stay, tour bookings, search filtering, online pay options, user profile management. Thus, for the development of the provided solution for happyholidayss the functionalities of few travel service providers systems were examined. Without examining the nature of the prevailing systems, it would be much hard to develop the system. When it comes to the internal portals of all systems the services managements, service type, reports, tracking of reservation is a must. Was able to come up with solutions to include the features of travel and accommodation system in to the happyholidayss solution as well. But comparing to the very well-known applications, the requirements of the happyholidayss client is less as well as the functionalities which have developed is less. However, the functionalities which have been designed and developed for happyholidayss is perfectly required and relevant to their medium business.

Because the study of existing systems helped to gather requirements and to limit the project by identifying most important features requested by client that the system should consisted by eliminating various scope creeps and requirement anomalies.

## **Literature Review**

Present the ‘state-of-the-art’ of product/systems in this area. You should organize this in some other way than by company or by date in order to show your understanding!

During the last decade, technological innovations have changed people’s lives and the way that owners conduct business (Dash, Bhusan, & Samal, 2014). Since 2013 Travel agents use the Internet to market products and services, provide customer service and support, perform electronic transactions, and gather information. The Internet is an electronic platform whose users seek to implement technological innovations, establish new business practices, and change the competitive advantage of many industries, including the travel and tourism industry.

(Xiang et al., 2014).

**Introduction to E-Business**

E-business improves efficiency, productivity, and performance in many businesses and industries around the world (Sun & Ifeanyi, 2014). E-business enhances revenue generation for small and large firms (Franco, Santos, Ramalho, & Nunes, 2014). Many leaders are developing business models to evaluate the effect of e-business (Wynn, Martin, & Lau, 2013). E-business can reach customers globally and can promote success in business operations (McElheran, 2015). Leaders who implement e-business in their firms must reorganize and restructure continuously, and teach their employees how to implement an IT strategy (Chong, Ooi, Bao, & Lin, 2014). Internet technology affects business processes by moving physical activities online or making physical activities more cost effective than traditional methods for suppliers and customers (Porter, 2001). E-commerce has dominated the travel industry worldwide and has allowed businesses to grow and provide for customers’ needs (Akaka, Vargo, & Schau, 2015). Many consumers are leaving traditional brick-and-mortar travel agencies and turning to e-commerce websites or OTAs to plan and book personal and leisure travel (Bilgihan, 2016). In 2016, online travel sales exceeded $565 billion because of Internet travel commerce (Agag & El-Masry, 2017). In 2016, 36.7 million U.S. customers purchased travel products and services over the Internet using electronic devices, an increase of 16.0 million since 2012 (Law, Leung, Lo, Leung, & Fong, 2015). Internet technologies and applications allow customers to acquire and purchase travel and tourism products directly from travel suppliers (Morosan, 2014). Consumers are looking for cost savings when shopping for travel.

E-commerce and e-business are both prime components of business strategy and very important for economic development (Georgiadis & Chau, 2013). When implementing business processes and technologies into their organizations, leaders in traditional travel agencies should ensure that processes flow effectively, and that information is available to meet customers’ needs (McElheran, 2015). Business owners who adopt e-commerce technology into their organizations generate more revenue than business owners who do not adopt technology (Khan, Liang, & Shahzad, 2014). Many travel agencies, retail, and wholesale companies implement the same business structure. The stakeholders are similar: customers or travelers and technology providers; suppliers; and intermediaries (i.e., retail travel agencies and wholesalers); (Soto-Acosta, Colomo-Palacios, & Popa, 2014). The retail, wholesale, and travel and tourism companies also procure the same e-commerce business models. Wholesale travel agencies use the B2B business model, retail travel agencies use the B2C business model and agencies who conduct business as travel marketplace platform use the C2C business model (Tussyadiah, 2015). C2C signifies a market environment in which one customer purchases Products from another customer using a third-party platform to facilitate the transaction. (Traver, 2020) In this happyholidayss (Pvt)Ltd. Study, this agency is using C2C business model by enabling people to lease or rent short-term lodging including homes and tours.

**Customer-to-Customer E-Commerce**

In 2010, the travel and tourism industry saw a dramatic increase in travel and online bookings, thanks to advanced Internet technology and networks (Vladimirov, 2015). C2C e-commerce is the process of making transactions between customers and client entities over the Internet or the World Wide Web. C2C marketing has gained popularity with the advent of the Internet and companies such as Airbnb, Agoda homes, Booking.com. (C2C Guide, 2020) Global networks and emerging delivery models are the main drivers of C2C e-commerce (Hanna, 2016). The C2C marketplace is becoming increasingly popular with sellers looking to maximize their sales potential by connecting with customers they might not otherwise be able to reach using traditional selling methods. In the United States, 2019 saw over 100 million visits to the leading C2C and buy / sell. (C2C Guide, 2020)

**Customer-to-Customer Model**

The C2C market has evolved since the late 1990s largely thanks to the Internet and e- commerce.

The C2C model predicts transactions between consumers. Here, a consumer sells directly to another consumer. Booking.com and Airbnb are common examples of online Travel Marketplace websites that provide an opportunity for a consumer to advertise and sell their product online to another consumer. However, it is important that both the seller and the buyer register on the website. Usually, the seller has to pay a fixed percentage of the amount to the website when he rents a product to another consumer, the buyer should also pay a specific percentage to the website to make this transaction possible through the online platform. The site brings the buyer and seller together to do business. Figure 1 shows two consumer (consumer 1 and consumer 2) and a website that provides space for advertising. Customer 1 places an ad on the website about the products they want to sell, and Customer 2 visits the website to find the products they want to buy. The transaction between customers continues until payment is made and the product is delivered. (Dane, 2019)

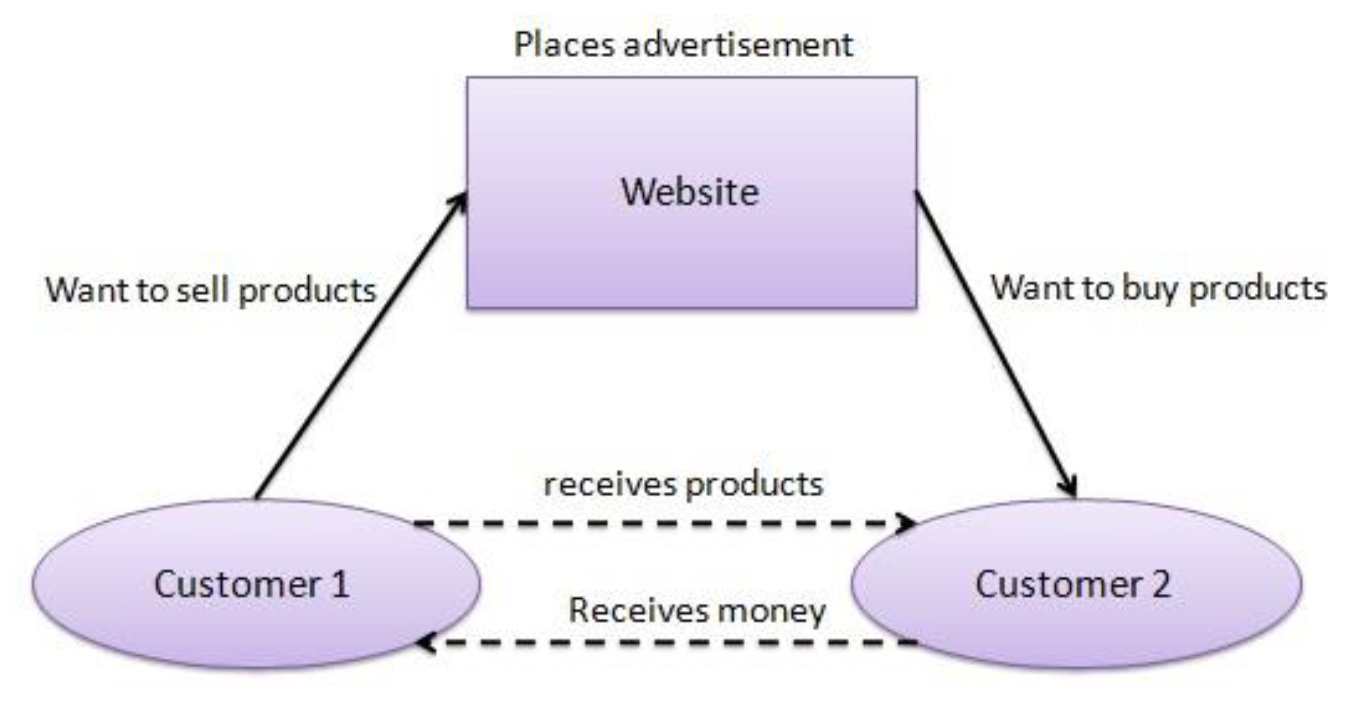


Figure 4 C2C business model (Dan, 2019)

**The Role of Travel Agencies**

The role of travel agents working in traditional brick and mortar retail agencies is diminishing, due to the emergence of the Internet and new innovative information technologies. Travel agents face challenges to reinvent roles and increase sales and revenue due to online travel agencies and travel intermediaries that have emerged in the global market (Zare & Chukwunonso, 2015). E-commerce offers consumers the ability and freedom to search for travel online, compare prices to popular destinations, and book leisure and business travel online, without using the services of traditional travel agencies. (Bandara and Silva, 2016).

**E-Commerce Adoption**

Traditional brick-and-mortar retail companies, threatened by online e-commerce retailers, are establishing themselves in online markets (Siddiqui & Khan, 2016). In 2017, consumers in the U.S. spent more than $760 billion in online travel purchases. Statistics revealed that 80% of customers who use the Internet and purchase products online are less than 30 years old (Siddiqui & Khan, 2016).

Abou-Shouk, Lim, and Megicks (2013) and Roma, Zambuto, and Perrone (2014) reported that travel agencies must find another approach to reach customers and increase profits. The researchers determined that adopting e-commerce could provide travel agencies with the knowledge and flexibility to survive in the industry. E-commerce adoption can be initiated from the slow adoption stage and progress to the final stage by using advance technology to perform electronic processing (Abou-Shouk, Lim, & Megicks, 2013). E-commerce adoption consists of various stages and different levels. The adoption process includes three stages: (a) adoption, (b) implementation, and (c) post-implementation. Studies have shown that productivity growth increases five times higher for organizations that decide to adopt e- commerce processes into business models than companies who decide not to adopt e- commerce (Abebe, 2014).

E-commerce adoption has a positive effect on customers and businesses because they can conduct financial transactions online without having to walk into physical locations. Adopting e-commerce has made businesses and consumers lives easier and productive.

**The Major Modules of The System**

Booking through the TAMS provides access to supply arrangements for:

* Home reservations
* Tour reservations

Tours and Homes Reservations

homes and Tour reservation has made reserving the homes and Tours easier and thus made the homes and Tours a lot more popular. There is availability of homes and Tours almost at all times. It is not like the Hotel Booking that are most of the times busy. The TAMS online house and tour reservation facility is a great advancement for making the reservation easy for one and all. Now, one can save the time and energy which he/she would need to invest in going to the company and reserving the unique homes or tour. One thing that one has to do is to search for the website of the travel company that provides the services necessary to travel. This has made the online home and tour reservation easy for the customers. On the website, customers will be asked to fill up a form for reservation. On the website itself, the information about what all the chargers and the services are gotten. As the booking and the transaction are online, the payment has to be done with debit card or bank transfer. Customers can also change their plans and cancel the reservation in online. HappyHolidayss (Pvt) Ltd portal will charge reservation prices from the customers.

**Reserving an Accommodation**

Prior to internet, travelers could write, telephone the accommodation service provider directly, or have to use a happyholidayss travel agent to make reservation. Nowadays, our travel agent has pictures of rental properties, information on prices and deals, and even information on local resorts. Online home reservations are also helpful for making last minute travel arrangements. Online TAMS also provide Homes and Tour reservations to most travelers and allow for management of lodging locations and allow date amendments and cancellations online. The location information of the property is listed on the property description page. All the information regarding the property and service provider is listed on the description page. All the information regarding the property (such as facilities and rates) is also located on each property’s web page.

Likewise, when travelers are planning for a vacation, it’s important to consider where they are going to stay. It is essential to always consider the place where they will stay during the rest of your vacation to prevent hassle and inconveniences. Property reservation and booking of some is time consuming. For them, doing such is very tiring, that is why they usually have a hard time dealing with these things. Usually, customers may contact the hotel directly 24hours after they have made their online booking, to confirm that the booking has appeared in the travel agent’s local computer system. The ultimate service provided by TAMS to the partners and the online travelers is that it provides a single database from which all reservation sources draw immediate room availability and rates. Travelers need to understand that property renting rates vary. So, to get the best, they will need to spend some time researching and may need to negotiate price when making reservations. Whether the property is booked, the destination and travel dates are filled to see a list of available properties. After making reservations, the traveler will always receive a confirmation e-mail with all the details and contact information for the booked property.

**The Need for Travel and Accommodation Management System**

TAMS offer direct access to variety of choices including Different types of Homes and Tours. This allows one to see any deals and alternatives available, and gives the opportunity to choose the best package according to available budget and travel needs.

For travelers to be able to tweak their own travel plan to suit their personal needs is particularly important. This is something that HappyHolidayss (Pvt)Ltd explicitly recognizes and conveniently works to provide for their customer. With offline manual bookings, this is not the case.

One of the greatest benefits of using TAMS is the ability of a traveler being able to arrange trips in his/her own time, at their own pace and without any sort of pressure or human influence. Another beneficial aspect of the system is the flexibility offered to customers which collocate with the service offered by HappyHolidayss (Pvt)Ltd. HappyHolidayss is restricted to office opening hours, but there are no time constraints with TAMS. One can make reservations any time of the day, any day of the week (24/7).

**Existing Travel and Accommodations Service platform’s**

A travel and accommodations service platforms are business that operates as the intermediary between the travel industry (supplier) and the traveler (purchaser). Part of the role of the travel agency is to market prepackaged travel tours and holidays to potential travelers. The agency can further function as a broker between the traveler and hotels, car rentals, and tour companies (Westcott, 2020). Travel agencies can be small and privately owned or part of a larger entity. There few applications currently active in Sri Lanka which provides good service although it does not support to low budget reservations. The Applications are shown below;

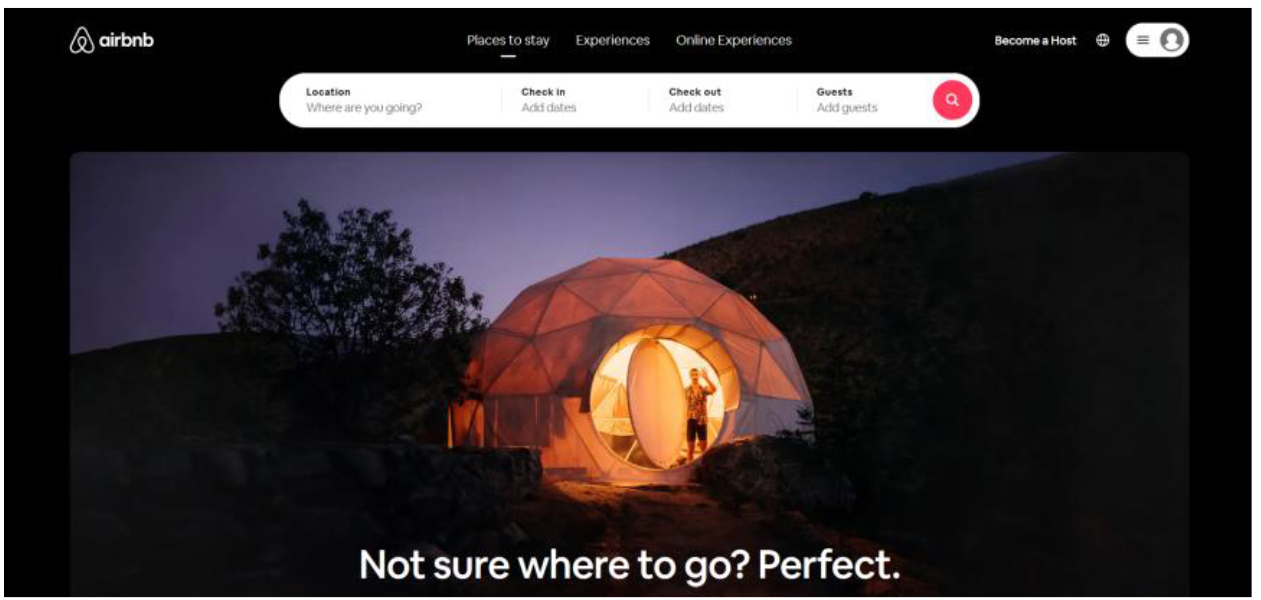


Figure 5 Airbnb (airbnb.com,2022)

**Booking.com**

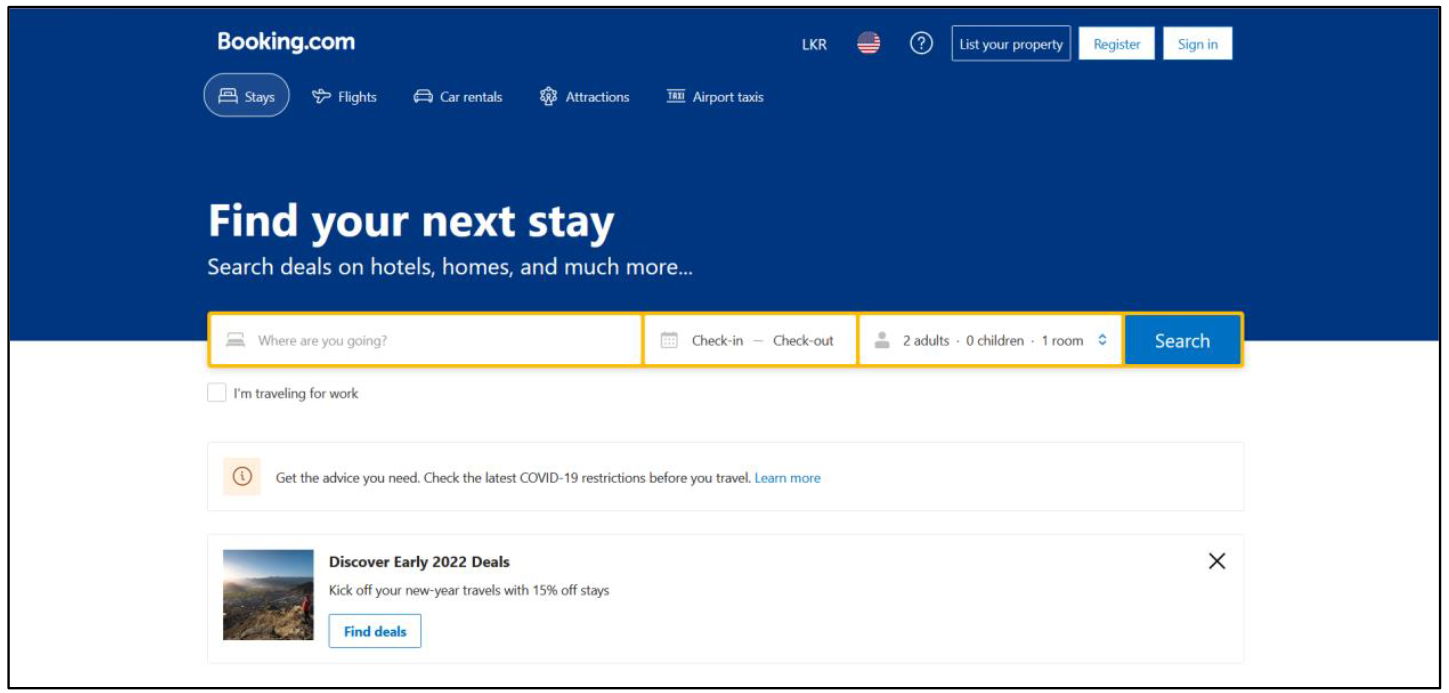


Figure 6 Booking.com (booking.com,2022)

**Agoda**

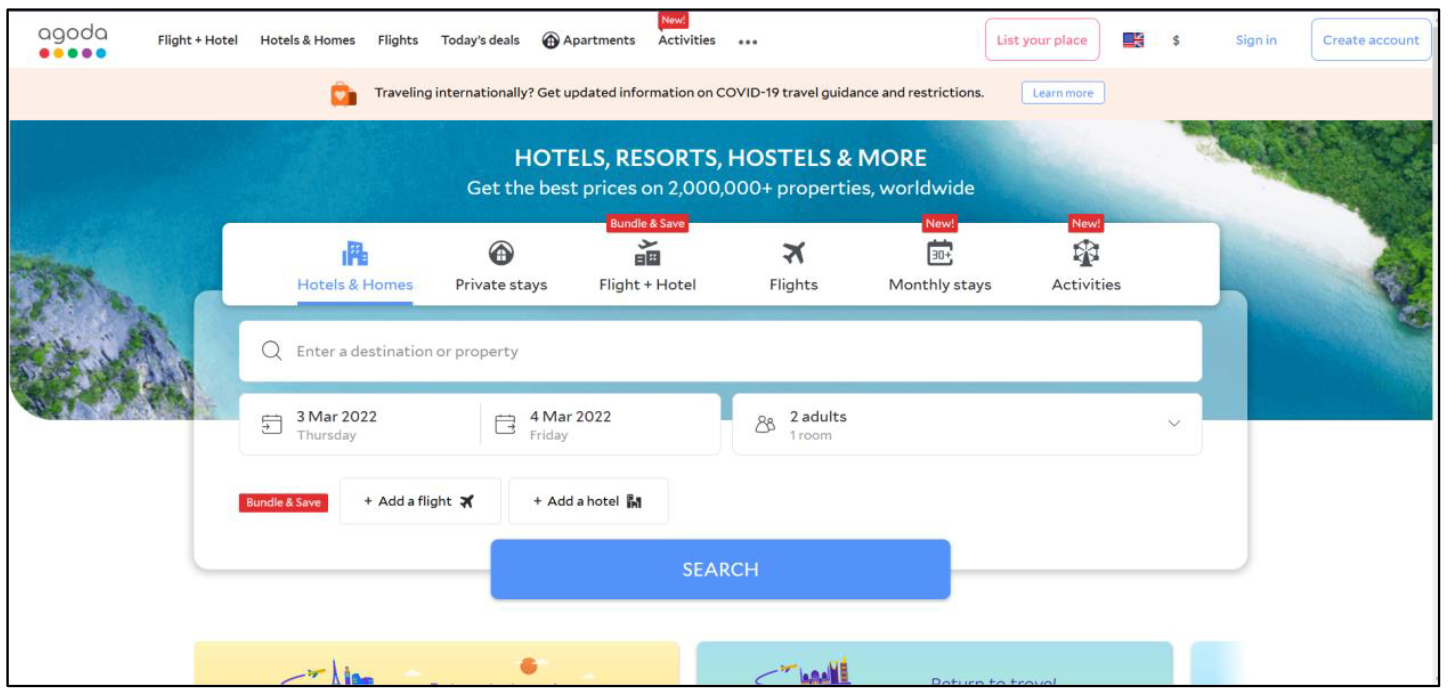


Figure 7 Agoda (agoda.com,2022)

## **Problem Statement**

Since HappyHolidayss (Pvt) Ltd has a manual system for booking and managing customer transactions, they face some issues in issuing customer reservation requests. Everything necessary things for the reservation is done in paper format. As a result, it has become very difficult for staff to keep the records up to date. For example, if customers need to change their arrival date, it becomes difficult for them to find the customer reservation details to update because there are so many customer reservations records. Again, with the current system, customers can't provide feedback online, and staff can't respond quickly either. Additionally, tourists from other countries and towns should call directly for reservations. Therefore, they may not be able to view apartment rooms or hotel rooms before booking.

As it stands, the management of HappyHolidayss (Pvt) Ltd has attracted a few clients over the years due to errors inherent in the manual system. It is no longer a novelty that the loss of customer contact details, the reasons are not far-fetched. Due to this manual procedure involved in booking and processing transactions, customers have no choice but to be at the mercy of these error-prone procedures. The method of storing information in the company is poor. This limits the number of official documents that can be accessed by clients as the manual system cannot handle old information that might be useful to be a client at all times. There is little or no security control system to protect client documents and confidential client information from unauthorized access.

A much-known reality is that human work which are powerless can cause blunders and will be a diversion for the clients moreover due to the exhausted or else inept group individuals. This automated framework will still require a human interaction but it diminishes a number of problems. The web application will perform the demands and it is more productive since it is less inclined to form any botches. With the physical interaction with the HappyHolidayss agency, it is unable to protect time and it'll take time to book a stay or list the property. The time for book a stay and property listing can be decreased by means of this online web application, with a few clicks without any help of human since all features are virtual rather than physical. In spite of the forthright costs for the establishment of the application and the equipment’s, it spares the benefit over time on the staff differentiating with the manual procedures.

**Proposed solution for the given problem statement**

To overcome the existing issues regarding managing and booking stays/tours, this project aims to reduce the issues while saving both time and effort of the users. The system will be designed for any kind of users with a user-friendly access to the system through some brainstorm sessions conducted with the client. The system information will be stored and analyze interactively and will be only accessed with an online internet connection. The system which is to be designed have following features like;

* Accessibility to the system at anywhere by anyone with simple internet connection.
* Accuracy and flexibility to handle data at any time.
* Faster retrieval and better storage system and rapid system response time.
* Application needs to store information about new entries of homes, tour packages, partners, customers bookings and etc...
* Application needs to guarantee the access to the internal staff to manage the partners and booking status and all.

It’s clear to see how this approach might be a very good way to address the existing issues they’re currently facing. if this problem is solved local and foreign tourists can easily reserve stays and travel activities on the website with more information’s which would help them to get best decision on their travel plan. In addition, happy holidays (Pvt) Ltd. business process with accommodation service partners can become both easier and more effective with this travel and accommodation booking web-application. As a result, this would create new opportunities to many accommodation providers also it benefits happyholidayss (Pvt) Ltd. so considering mentioned solutions to the problems.

Since the proposed system is a web application it should be developed for the best execution including the graphical user interfaces for navigating among the application, must consist of dynamically configurable system interfaces and pictorial representation for better system attraction from customer and partner accesses.

# **Chapter 3 project management**

The project management is the process on which the project development is carried on starting from finding the client up to deploying the service. According to (ultimatesdlc, 2015), management of any project is setting up clear planning, controlling and organizing and reporting phases up to the successful completion of the project. This chapter consist of the overview and the deliverables involved in the project management and the importance is on the efficient execution of the modules and its components and the improvements which took place. The end result was enhanced with quality by creating efficiency for the happyholidayss staff and the public users.

## **Approach**

The planning of the project took place after the project proposal approval. Several researches were taken in this background because travel and accommodation systems can be seen and accessed everywhere these days. Since HappyHolidayss agency is a medium scale and is a growing business, a well-suited application is planned to design and develop according to the client requirements.

The project topic was chosen when selecting a real client at the same time considering about the problem domain of the client. Then after the project topic approval, requirement gathering and analysis is done to furthermore build up the project proposal. Project proposal was very much essential to be done before the commencement of the project to outline the modules, data flows and other architectural components of the system. As per the guidance and deadlines set up the initial proposal was made. At this stage, the methodology which is needed to the system design and implementation, data flow diagrams, architectural diagrams and other UML diagrams were identified and designed for further system clarification. Researches and comparison researches were undertaken while designing the system initial plan.

A wise plan had to be undertaken when selecting the most suitable development model since the real client business is a small scale and need an efficient system to manage their components. As the developer and need to interact with the real client to get satisfactory feedbacks, to create new modules after each phase the model which is iterative SDLC model have to be chosen.

The system implementation phase is planned after all the designing and analysis phases are done. First the sketches and prototypes were analyzed before putting those to direct implementation. Front end designs were developed and at the same time the back end of the system was also started to develop. The execution has been finished utilizing PHP. PHP has been utilized to associate with the backend data base. In this execution, MySQL Server has been utilized as the backend RDBMS. PHP processes the data sources or commands given by the client and interprets them in the orders reasonable to the backend database. The yield delivered by the backend data base is additionally dealt with by PHP which then showed on the Browser screen.

The system testing which includes Blackbox and Whitebox testing together with a user acceptance testing was carried out to ensure that all requirements in the design specification is met.

The technical background will be defined in this report with the design, implementation and testing backgrounds while the basic descriptions and essential functionalities are mentioned in the proposal. Moreover, a user manual will be handed over to the client which consist of the information regarding the operations and system information.

## **Initial Project Plan**

System analysis and requirement gathering specifications regarding the software, hardware, users, functional and non-functional requirements are gathered and documented on the project proposal and have presented and have done according to the form Gantt chart. After gathering requirements, the architectural plan and the logical instructional flows of the system to be made was designed. The architectural, ERD, sequence, DFDs, flowcharts, use case, activity diagrams are outlined for further purposes when implementing the system and documenting.

After the designing stage, author started to implement the system. First the databases were designed for the relevant objects of the system. Moreover, quick researches for the implementation of the system were taken by the author because of the selection of the languages. It was tough when identifying and implementing relevant codes for the system interface implementation. Prototyping the system was done but changes keep happening in the prototype designs as well. The below Gantt chart is the former milestone chart mentioned in the project proposal

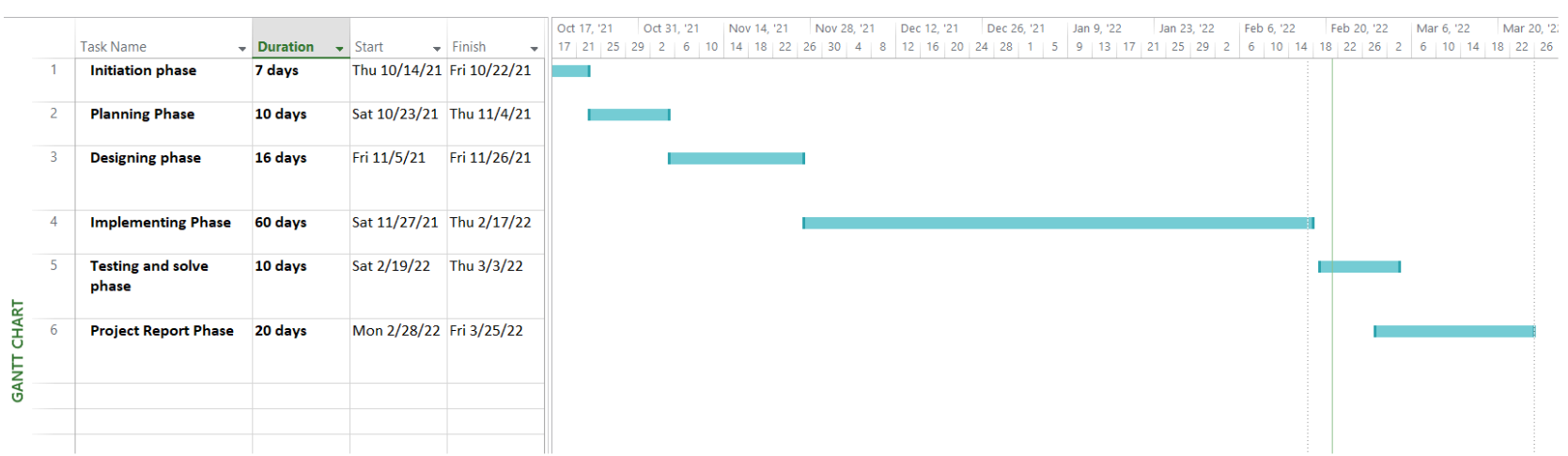


Figure 8 Initial project Gantt chart

## **Problems and Changes to the Plan**

There were major changes for the plan from its initial plan. One Month was extended from the project timeline, where the initial project deadline was planned to be 26/03/2022 and it was brought back to 26/04/2022, due to the fact that the development stage is bit late. Hence the need of the application is not much hurry to the client. Hence the project plan was modified in a major level. Where processes were expedited to complete the tasks much quicker.

When it comes to the implementation of the system, problems regarding to development occurred. For instance, making logics to the Report Generation, Booking management and other internal portal functions. However, with experimenting about the codes relevant to the technologies selected the problems were encountered to be resolved successfully

## **Final Project Record**

The milestones for each task are set by considering the clients requirements as well as by considering the developers capacities. First phases of the selected SDLC model was conducted smoothly but the initial stage from implementation got weakened in the middle of the milestone chart but was able to be on track by undertaking back the tasks again. The phase which got weakened is the implementation phase. However, in the implementation phase, the databases were able to construct and the coding phase got delayed due to some circumstances and because of that the logical solutions for different tasks inside coding components were unable to develop. However, developer was able to be on track. When it comes to the testing phase of the system, nothing got delayed the errands went smoothly. The initial Gantt chart changed with consent the chart was changed and the final project schedule is as follows;

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task Name | Start | Finish | Duration | Status |
| **Initiation Phase** | **10/14/2021** | **10/22/2021** | **7 days** | **Completed** |
| Outline the project plan | 10/14/2021 | 10/16/2021 | 2d | Completed |
| Outline project requirements | 10/14/2021 | 10/16/2021 | 2d | Completed |
| Analyze a project control plan | 10/17/2021 | 10/20/2021 | 3d | Completed |
| Access the impacts from online systems | 10/17/2021 | 10/20/2021 | 3d | Completed |
| Evaluate the solution | 10/20/2021 | 10/22/2021 | 2d | Completed |
| Review | 10/20/2021 | 10/22/2021 | 2d | Completed |
| Finalize the project plan | 10/20/2021 | 10/22/2021 | 2d | Completed |
| **Planning Phase** | **10/23/2021** | **11/04/2021** | **10 days** | **Completed** |
| Complete work breakdown | 10/23/2021 | 10/26/2021 | 3d | Completed |
| Study existing manual issues | 10/26/2021 | 10/28/2021 | 2d | Completed |
| Understand and analyze the customer digital interaction | 10/28/2021 | 10/30/2021 | 2d | Completed |
| Plan timeframes | 11/01/2021 | 11/03/2021 | 2d | Completed |
| Make budget estimations | 11/03/2021 | 11/04/2021 | 1d | Completed |
| **Designing Phase** | **11/05/2021** | **11/26/2021** | **16 days** | **Completed** |
| Design dataflow archi. diagram | 11/05/2021 | 11/10/2021 | 5d | Completed |
| Review ecommerce methods | 11/10/2021 | 11/12/2021 | 2d | Completed |
| Finalize ecommerce methods | 11/12/2021 | 11/14/2021 | 2d | Completed |
| Deciding technologies and tools | 11/14/2021 | 11/16/2021 | 2d | Completed |
| Design sketches and wireframes | 11/18/2021 | 11/20/2021 | 2d | Completed |
| Design and develop prototypes | 11/21/2021 | 11/26/2021 | 5d | Completed |
| **Implementing Phase** | **11/27/2021** | **2/25/2022** | **90 days** | **Completed** |
| Develop proposed solution using tools and technologies | 11/27/2021 | 1/16/2022 | 50d | Completed |
| Develop and design database | 1/16/2021 | 2/25/2022 | 40d | Completed |
| **Testing and Solve Phase** | **2/28/2022** | **3/18/2022** | **20 days** | **Completed** |
| Whitebox testing | 2/28/2022 | 3/03/2022 | 5d | Completed |
| Blackbox testing | 3/03/2022 | 3/08/2022 | 5d | Completed |
| Requirement testing | 3/08/2022 | 3/13/2022 | 5d | Completed |
| Detect and complete issues | 3/13/2022 | 3/18/2022 | 5d | Completed |
| **Improve Phase** | **3/19/2022** | **3/24/2022** | **5 days** | **Completed** |
| Improve and apply solution | 3/19/2022 | 3/24/2022 | 5d | Completed |
| **Execute and Control Project** | **3/25/2022** | **4/25/2022** | **30 days** | **Completed** |
| Complete overall development sessions | 3/25/2022 | 3/30/2022 | 5d | Completed |
| Prepare documentation | 3/30/2022 | 4/20/2022 | 20d | Completed |
| Feedback and submit reviews | 4/21/2022 | 4/23/2022 | 2d | Completed |
| Deliver the solution | 4/23/2022 | 4/25/2022 | 3d | Completed |

Table 1 Final project Gantt chart

# **Chapter 4 feasibility study**

This chapter discusses about how feasible the project is. Here it is understood if the project is able to be accomplished based on different factors like Time, Cost, Scope, Technical and Economic Feasibility.

**4.1 Time feasibility**

This feasibility was carried out to assess whether the system can be developed within the given time. The schedule which is proposed for the HappyHolidayss Online Travel and Accommodations platform solution were started once with the necessary approvals were confirmed. The Web Application is assumed to be designed and developed from a time period like 5 months. The task breakdowns from the date of approval up to the deployment phase was not stable due to several circumstances and had to make changes. The time changes are mentioned in the project interim and the current surpassed timeline of the Web Application is as follows When considering out the project plan developed in the project proposal, the system didn't possess enough time to complete some formatting. Hence time wise developed solution was slightly not feasible.

**4.2 Cost feasibility.**

In this study, the measurement for the capital and the relevant resources which are essential to the development of the solution were identified and allocated. The hardware and software resource cost were assessed and found that there was no need of allocating cost to hardware and software requirements because the relevant requirements are already available within the developer who is author itself. As the solution was a web-based system the cost had to be assessed for domain purchase and for hosting server. This cost was included as the maintenance cost. Therefore, the implemented system was cost wise feasible.

**4.3 Scope feasibility**

By considering the outlined project proposal the scope of the system was able to define well. It was able to define because of the researches done on customer interaction and reviewing of similar solutions. With the client satisfaction regarding the functionalities and the suggested system design the scope was able to put into a working solution. The project is scope wise feasible.

**4.4 Technical feasibility.**

In this study it is to identify the resources available for the implementation of the software. The analyst of the system should be there to identify the technical and resource availabilities of the system by providing emphasis on the productivity, reliability, maintainability and performance of the system to be implemented. After analyzing the system, the evaluation should determine whether the technical features are available or not.

What can be developed if any new technology is needed?

Can the work get fulfilled with the proposed solution?

Can the system be upgraded once developed and so on?

The HappyHolidayss (Pvt)Ltd need to be equipped with the computing facilities and software for the technical feasibility. The purpose behind utilizing the technology is that it assists with getting to any system from anyplace notwithstanding the time. To actualize the online booking, include for HappyHolidayss platform they should keep a rapid network access, a server which will store the needed back-end information and which will show the necessary front end information for the customers and Hosts. It would likewise be better if a reinforcement storeroom could be kept up, as the server is to store significant information. The client/hosts subtleties, services subtleties and so forth with the above technology augments, the organization will have a cost increment of in any event from the current costs.

Technical needs which the proposed platform need is the selection of front end and back ends of the system. According to the proposal an extensive study was conducted to identify the most suitable platform for the travel product selling system. Choice of front end should be user friendly for any type of user classification. For instance, the scalability, flexibility, robustness, perfect reporting features, independent platform, good printing options, easy debugging and so forth. On the other side, the choice of the back end must consist with efficient handling on data, good features for security, efficient maintenance and data retrievals, multiple support for users, stored procedures and so forth. The project solution is designed and developed by using PHP, JavaScript, HTML and CSS is VSCODE and MySQL database. Because all of the tools and technologies are already available there were no additional purchases. Since it is a web-based system, hosting was done using third party resources and users of the system will only require an internet access to use the system. Therefore, the system is possible to deliver from developer’s point of view because the required technology and resources were available and no specific program or technology was needed to deliver the solution. Hence proposed solution was technically feasible.

**4.5 Economic feasibility**

To evaluate the effectiveness of the system which is proposes, the economic feasibility is the most important study. The main objective of the system of Happy Holidayss Travel Management is to have a result with better economic to increase the efficiency of the system within next time duration. The cost benefit analysis needs to be performed for this requirement to analyze the cost and the benefit of the expected system of TAMS. There are some primary surveys which need to be concluded. For example, in TAMS there is a need to address solutions for questions as follows: The cost for the investigation of the full system.

Hardware and software cost for the application of class to be conducted.

How will the proposed system give the exact HappyHolidayss Travel and Accommodation platform desires?

Will the reduced cost for the arrangements give a benefit for the organization and so forth?

When assuming the economical side of the organization, the HappyHolidayss Agancy needs to spend on some assets and facilities in order to gain good profits on the business. The assets and the other facilities are like the materials, insurance, staff, online transaction costs, costs on backups, internet facilities and more. By implementing these types of facilities will ensure for a guaranteed booking. The feasibility of the project remains in hands of the man hours which required and whether the system can be developed with the gathered requirements and funds available. The system will increase the satisfaction of users because there will be no initial cost because the cost is only affected to the solution implementation. After successful implementation the cost which spend on the project can be cover through the system. Hence long terms benefits can be achieved by HappyHolidayss (Pvt)Ltd Travel and Accommodation Platform, the system is economically feasible.

# **Chapter 5 design**

The designing is the process of designing the system by outlining all system modules and components, system architecture, all interface designs and its data as specified in the proposal document. The designing chapter includes UML diagrams to make it more-easy to analyze the techniques which have used. UML diagrams like use case diagram, class diagram, ER diagram were designed. Also diagrams like DFD level 0, DFD level 1, DFD level 2, sequence diagram, activity diagrams were designed to model the entire system. It was seemed too easy to design the system but in a wider intellect, it denotes a severe and methodical tactics which includes all practical aspects needed.

**5.1 The SDLC Model Used**

By considering several distinct methodologies in software development life cycle, iterative model was selected as the most suitable development model for the system. With the commencement of the project, the requirements were identified but with the commencement of the implementation, further requirements which are most suitable were identified and that is because of the iterative model methods. Author who is also the developer identified requirements and implemented while testing the unit at the same time. The cycles are then divided and each module is implemented and tested by producing a newly implemented module each time.

The reason to select this SDLC model, a working version was able to produce at each phase before the final integration to make it more-easy to make changes. Furthermore, the model involves in the business modeling, designing and system analysis, implementation, final testing and up to deployment;

* Inception when the project idea is started
* Elaboration in which the project and its resources are identified
* Structuring when the project starts to implement and complete
* Transition happens when the product is deployed

**5.2 Hardware and software requirements**

**5.2.1 System Requirement Specification**

**Introduction**

Purpose

This software design document states the architecture and design of the system of Happyholidayss system. Since, happyholidayss (Pvt)Ltd handled its company functionalities manually, it has been hard for them to handle all the processes due to its demand. Since manual processes are outdated, the HappyHolidayss (Pvt)Ltd decided to implement an automated system including all of the functionalities done through less manually. The target audience of this system are the Customers and Hosts to provide a productive service business. The employees get the privilege to work with less effort also to maintain efficient business reports.

**Scope**

Objective

Main objective is to leave the manual system and start over with a fully automated system where the users of the system could process with the daily demanding tasks with much ease. The entire system is checked in order to ensure whether the functionalities are working. From the interface links to the buttons moving on to the main functions of the system are tested well to ensure whether it’s working properly to ensure it has good usability.

Goals

The main goal is to perform quality, accurate and efficient work from the proposed automated system. Services management needs to be done in an accurate way in all types of platforms. Also, to handle the high demand of work load by accurate transactions. Plus, generating of reports at every final task in an accurate way. The employees of the HappyHolidayss should take the fullest benefit from this proposed automated system, as it makes easy to perform their assigned tasks and the employees needs to perform the tasks in most appropriate ways which increases the quality of the HappyHolidayss.

Benefits

Since the HappyHolidayass system is based to a web application, this system may work across multiple number of platforms. Also, all of the bug fixes can be quickly fix and implemented without stepping on to any corporate approvals. Likewise, the security purposes can be easily audited. For instance, anyone who have that technical expertise knowledge can inspect through the code and find out the errors and fix the possible errors. These kinds of products are cheaper than the commercially marketed products and are created by a set of skilled experts. Due to the skillful experts and the eye that keeps monitoring multiple number of people, which bugs and their defects, the reliability of the system increases. Last but least, the automated bookstore system of Emma helps the systems users and the Hosts of the business to become flexible.

Context

Due to the increase of demand for the HappyHolidayss Agancy the number of Bookings and property,tour listing has been increased. An automated system has been proposed to HappyHolidayss to perform their daily tasks efficiently by eliminating manual systems from company. The importance of this project is measurable because due to this developing automated system, it not only increases the efficiency but also the productivity and also the financial level of the company. The benefit of this project is that it provides a renowned service for the clients of the happyholidayss and a great employee interaction with the proposed automated system. To the newly proposed automated system for the HappyHolidayss, the agency has decided to use iterative methodology over the traditional methods because the user requirements are more likely to be met. Even when the requirements change, the focus on the values are constant and the rhythm which the iterative methodology creates aids to develop a quality motivated team where it increases the productivity of the work all time. In iterative method it involves iterations in which the requirements could be designed, validate or test during the iteration and it is a great advantage to the HappyHolidayss because the changes might occur and if it wants to be changed, it can be changed possibly in any iteration. Not only that, considering about the customer satisfaction, iterative involves customers throughout the development phase and that is a great advantage. In iterative methodology the development process is divided into iterations and developed, and that is why it is flexible than traditional methodologies. So, the changes are shown in each phase of the developing system in order to make the progress of the developing system more worth. Also, the testing is typically done conversely with the programming in the same iteration. Therefore, a solution is made strategically through iterative approach to the project of the happyholidayss because it keeps up with technology landscape and the user requirements. Though developing a software is costing, it offers a great long-term benefit to the agency. The benefit is none other than making the work ease. And increase the productivity of the bookings and other working departments. Generating of daily reports of the bookings and prevailing services makes the agency environment more efficient. Also, when storing data, it will be an immense advantage when it can search data from anywhere with simple automated searches rather than digging up to huge file. All of the problems can be resolved via working with this proposed automated system.

Current system

The process of the current system of happyholidayss is done via paper based. Also, the generating of final reports, check the credit worthy clients, acknowledgement of the bookings and its final demands are to be generated to the clients are all done via manual-based systems where each of the activities were assigned among the company crew. The current manual paper-based harm the operation of the agency in a vast manner. Simply it consumes much time and also the employee struggle when performing high number of targeted bookings.

**Requirements addressed**

Hardware requirements

* **Server side**: Desktop Server PC with 200GB Hard Disc, Processor with 3.0Ghz, Ram of 6GB, Network Card, Static IP with High Bandwidth Internet Connection.
* **Client-side**: PC, Laptop with facility with internet access.

Software requirements

* **Server-side**: Windows Server 2008 Operating system Apache with PHP 5.0 or higher Enabled MySQL server 4.1 or higher.
* **Client side**: Any OS such as Windows, Linux, IOS with Desktop, Laptop with JavaScript enabled web browser such as Firefox, Chrome, Microsoft Edge, Safari, Opera.

**Functional requirements**

**Admin:**

* The system must separate login page for admin and It should be navigated to the admin dashboard if credentials were correct.
* The admin can view the Bookings and should allow to update status.
* Admin can add internal user, update internal user and delete the internal user from the database.
* Admin can view the reviews and inquiries and update the status also can delete it.
* Admin can view the earnings history.
* Admin Generate customer, partner, bookings, earnings date wise and daily reports.
* Internal portal needs to view summaries of the internal functionalities.
* Rather than that the management page should have the features to insert, update and delete. Also search the required entity whenever the system admin wants.
* Also, the accuracy of generating reports of particular fields must generate in a rapid access whenever necessary by the admin.
* The Internal Users, Customers modifications and the partner modifications need to be handled by the admin.

**Customer:**

* Login page is simple and neat designed page. Here login option is provided to login. Also, signup option is provided for the new customers to sign-up.
* Customer should get register instantly without any verification in order to give best experience.
* Can view all available services, view them, and make booking decision.
* Thank you, page, the final service booked should displayed on this screen. This displays the service details, booking start date, end date, total amount, and etc. As a result, the user will have a clear idea of how much the entire amount of this section is.
* Customer should able to view confirmed booking, unconfirmed booking and cancelled in their dashboard.
* Customer should able to pay booking amount via card.

**Partner:**

* The system must separate a login page for partner and it should be navigated to the partner dashboard if credentials were correct.
* Partner registration page should be showed in separate page.
* Partner not able to login after registration without admin verification.
* Partner dashboard should able to show listed service and booking status counts to make decisions.
* Partner will allow to create new homes and tour packages.
* Partner should be able to generate earning, booking reports.

Non-functional requirement

Reliability

All of the quality attributes just specify how the system needs to be run without facing any failure in a particular given period of time under some defined conditions. The critical failures, the usage of the conditions and the time are fairly tricky. The reliability of the HappyHolidayss proposed system can be measured by the count of critical bugs which are found in the production for some period of time. Or else by counting down the means of the failing times in the system.

Availability

Availability defines how the system is accessible for the user at any point of the system. The new system must work parallel with the other machines due to the workload gaining. The time defines the availability of the system. The accuracy and the working speed of the interfaces in the proposed system and also the processing speed in generating reports depicts seamless availability of a system.

Security

All of the data inside the HappyHolidayss proposed system needs to be protected against the suspicious malware attacks and also from the unauthorized accesses. So, in order to protect the system, only the panel of admins have authorized access. The only thing that has to be done is to define the flow of the login and different user roles as system behaviors and actions of users. The public portal users only can read the data but the modification functionality accessed are not provided. Nor the public users can’t get access to the system database.

Usability

This function fulfills, only if the user requirements are up to a satisfactory level. And also depending the ease of using the systems. The newly proposed system needs to address how fast it takes for the users to complete the processes and the how fast the users can reach to their ultimate goals. The proposed system must give the privilege to use of the interfaces whenever the admin and partners wants, updating of database, inserting and deleting of data, for instance, work after some time and start efficiently right back when needed. Most importantly when and where the errors take place and how easy and pleasant is it to use the system. Another development strategy that needs to be addressed under the usability functionality is that all of the navigations, as such the buttons needs to be clear in order to process a work.

Maintainability

The time required for fixing of solutions in the designed system defines the maintainability of the system which changes the performances and other types of qualities. Same as the reliability of the system, the main ability expresses the probability of repairing in sometimes

**5.2.2 User Categories and their Characteristics**

This system consists of different user roles and each of the user roles have its own functionalities with given authentications to access the assigned functionalities. The user role functions are as follows;

Public portal – public end user

* Sign in and sign up – the users have the chance to register in to the system and acquire his/her email and log in to the system to own a user profile.
* User profile – the users have the ability to changes user credentials View book items – view details of the booking
* View Personal Dashboard.
* Search Services.

Internal Portal – Partner

* Sign Up and Sign in
* Business Dashboard
* Manage Bookings and listed service
* Generate Reports
* View Earnings

Internal Portal – Admin

* Sign in
* Analyze Business process though dashboard
* Generate Reports
* Update Stats of records
* Verify partners, reviews and inquiries.

**5.3 Evaluating of solutions**

The system was constructed adhering to Object-Oriented concepts such as abstraction, encapsulation, inheritance and polymorphism. The reasons for developing the system under OOP programming paradigm is to obtain:

* More maintainable codes.
* To identify the source of errors becomes easier because objects are self-contained.
* Ability to add further enhancement to the system without tampering the entire system code.

In addition to the OOP approach which have mentioned above, the system has been constructed by using the three-tier architecture because it is a client-server architecture in which the functional processing logic, the data access, the data storage and user interfaces are developed and then maintained as independent modules on separate platforms. It is a software design pattern and a well-established software architecture.

The user interfaces of the whole system were carried out by using HTML5 and CSS. The designing was done by using VSCODE and also AdobeXD was used to Make prototypes which were required for the system.

This business logic layer was designed by using UML diagrams such as Class, Sequence and Use case. The data access tier was designed using Entity Relationship diagram and the tables were implemented into the MySQL server 4.1 database after normalization.

This solution is designed and developed according to the needs of the client. Complications occurred when gathering requirements. As such gathering of the exact requirements, for instance setting up of objectives of the client was one glitch. That particular complication was solved by conducting virtual gatherings. That is one whole complication which faced at the requirement gathering phase.

When it comes to the second phase of the development period, it was not much complicated and was able to clarify the glitches regarding the designs and logical designs by examining and doing number of practical tryouts.

At the implementation phase, many anomalies occurred when constructing own logical solutions for each and every functionality which are requested by the client. Constructed logical solutions failed but was able to clarify with number of other alternative tryouts. As such, considering about the most complex codes. The complex forms like the search, report generation and the crud operations were mainly focused. To clarify the implications databases were well formed with clear attributes and construction of variables, conditional statements and local calculation methods were useful.

The phase of testing the system was clear and no implications occurred. All together after all this time, the management of time in each and every development phase got overdue. As such the designing and the implementation phases became the two main phases which got pretentious for that phase time management. The rest of the other development phases were passable and aligned with the initial project schedule. With the supervision being given, the timeline for each phase was able broaden to make this system completed and was able to be on track back.

**5.3.1 Designing Procedure of the system**

**Use case relationship design**

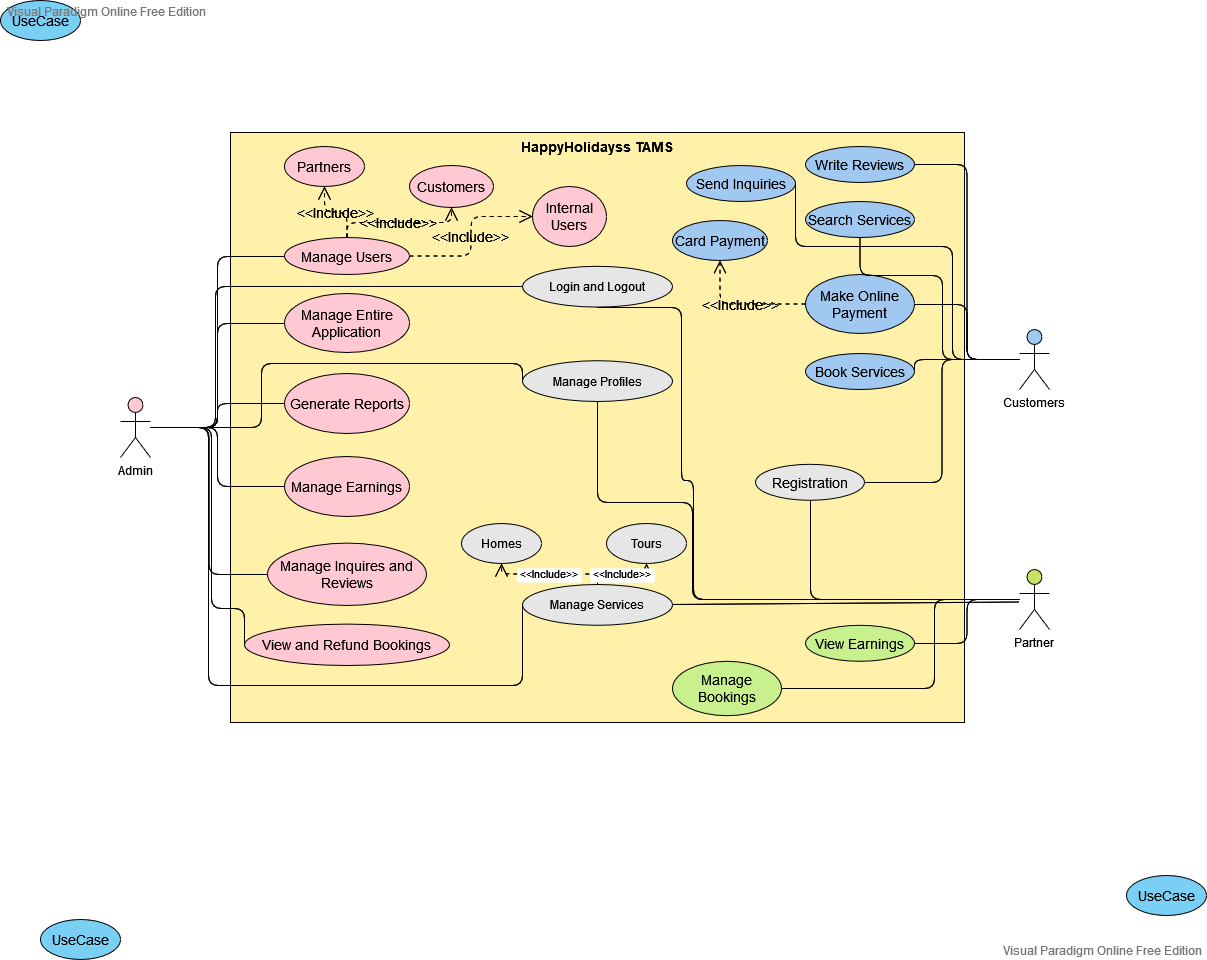
The initial stage of designing a use case diagram is to identify the use cases from the functional requirements of the project. According to (visual-paradigm, 2021), a use case forms the primary requirements for an under developed program to define the behavior of the system but not exactly method of making it happen. The interaction of the objects within the system can be identified. The system actors will be the system admin, partner and the customer. The requirements were identified and organized. Each of the actors have their own access privileges. There are common features as well as unique features for the users as shown below.   
  


Figure 9 Use Case diagram of the system

**Class Diagram Design**

The class diagram is designed after analyzing the attributes and methods.

**System Database Design**

A decent data set plan is significant in guaranteeing reliable information, disposal of information excess, effective execution of inquiries and elite application.

Before straightforwardly carrying out the database utilizing MySQL database, ER diagram was attracted to get a reasonable comprehension about the entire system. Having planned an E-R diagram for the system database, the social portrayal of the database model turns out to be somewhat direct. An ER diagram gives graphical and diagrammatical portrayal of different substances, its relationships and attributes between the entities. This turn helps in clear comprehension of the data structure and in limiting repetition and different issues. The real execution of the tables was begun subsequent to finishing a broad database normalization process.

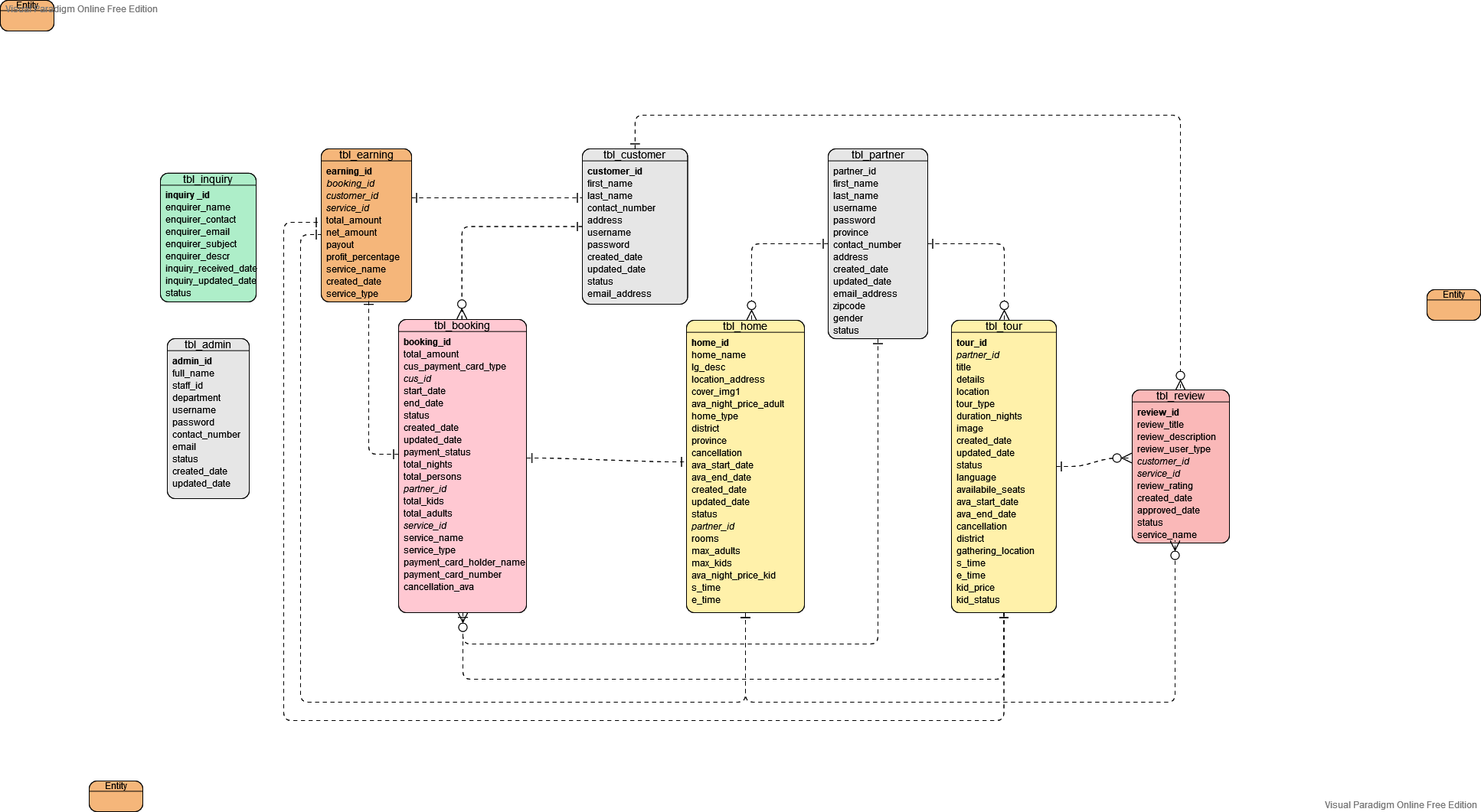


Figure 10 Entity Relationship Diagram of the system

Database Design

The database system which is used to implement the back end of the system by using MySQL.

Table of Customer

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Data Type | Field Length | Constraint | Extra |
| customer\_id | int | (11) | (PK) | AUTO\_INCREMENT |
| first\_name | varchar | (200) | - | - |
| last\_name | varchar | (200) | - | - |
| address | varchar | (200) | - | - |
| email\_address | varchar | (200) | - | - |
| contact\_number | varchar | (200) | - | - |
| username | varchar | (100) | - | - |
| password | varchar | (100) | - | - |
| created\_date | timestamp | - | - | - |
| updated\_date | timestamp | - | - | ON UPDATE CURRENT\_TIMESTAMP() |
| status | tinyint | (1) | - | - |

Table 2 Data dictionary of customer table

Table of Partner

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Data Type | Field Length | Constraint | Extra |
| partner\_id | int | (11) | (PK) | AUTO\_INCREMENT |
| first\_name | varchar | (200) | - | - |
| last\_name | varchar | (200) | - | - |
| username | varchar | (200) | - | - |
| password | varchar | (200) | - | - |
| address | varchar | (200) | - | - |
| email\_address | varchar | (500) | - | - |
| contact\_number | varchar | (200) | - | - |
| status | tinyint | (1) | - | - |
| gender | varchar | (100) | - | - |
| zipcode | int | (6) | - | - |
| created\_date | timestamp | - | - | - |
| updated\_date | timestamp | - | - | ON UPDATE CURRENT\_TIMESTAMP() |
| province | varchar | (50) | - | - |

Table 3 Data dictionary of partner table

Table of Admin

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Data Type | Field Length | Constraint | Extra |
| admin\_id | int | (11) | (PK) | AUTO\_INCREMENT |
| full\_name | varchar | (100) | - | - |
| username | varchar | (100) | - | - |
| password | varchar | (100) | - | - |
| contact\_number | varchar | (200) | - | - |
| staff\_id | varchar | (10) | - | - |
| department | varchar | (50) | - | - |
| email | varchar | (100) | - | - |
| status | tinyint | (1) | - | - |
| created\_date | timestamp | - | - | - |
| updated\_date | timestamp | - | - | ON UPDATE CURRENT\_TIMESTAMP() |

Table 4 Data dictionary of admin table

Table of Booking

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Data Type | Field Length | Constraint | Extra |
| booking\_id | int | (10) | (PK) | AUTO\_INCREMENT |
| total\_amount | float | - | - | - |
| cus\_payment\_card\_type | varchar | (100) | - | - |
| cus\_id | int | (10) | (FK) | - |
| start\_date | date | - | - | - |
| end\_date | date | - | - | - |
| status | tinyint | (1) | - | - |
| created\_date | timestamp |  | - | - |
| updated\_date | timestamp |  | - | |  |  | | --- | --- | | ON UPDATE CURRENT\_TIMESTAMP() | [Change](http://localhost:8080/phpmyadmin/index.php?route=/table/structure/change&db=tams_db&table=tbl_booking&field=updated_date&change_column=1) | |
| payment\_status | tinyint | (1) | - | - |
| total\_nights | int | (20) | - | - |
| total\_persons | int | (20) | - | - |
| partner\_id | int | (10) | (FK) | - |
| total\_kids | int | (11) | - | - |
| total\_adults | int | (11) | - | - |
| service\_id | int | (11) | (FK) | - |
| service\_name | varchar | (100) | - | - |
| service\_type | varchar | (100) | - | - |
| payment\_card\_holder\_name | varchar | (100) | - | - |
| payment\_card\_number | int | (100) | - | - |
| cancellation\_ava | tinyint | (1) | - | - |

Table 5 Data dictionary of booking table

Table of Earning

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Data Type | Field Length | Constraint | Extra |
| earning\_id | int | (11) | (PK) | AUTO\_INCREMENT |
| booking\_id | int | (11) | (FK) | - |
| customer\_id | Int | (11) | (FK) | - |
| service\_id | int | (11) | (FK) | - |
| total\_amount | float | - | - | - |
| payout | float | - | - | - |
| net\_amount | float | - | - | - |
| created\_date | timestamp | - | - | - |
| service\_type | varchar | (100) | - | - |
| service\_name | varchar | (100) | - | - |
| profit\_percentage | decimal | (10,0) | - | - |

Table 6 Data dictionary of Earning table

Table of Tour

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Data Type | Field Length | Constraint | Extra |
| tour\_id | int | (11) | (PK) | AUTO\_INCREMENT |
| title | varchar | (100) | - | - |
| details | varchar | (500) | - | - |
| location | varchar | (100) | - | - |
| tour\_type | varchar | (100) | - | - |
| duration\_nights | int | (10) | - | - |
| adult\_price | double | - | - | - |
| image | text | - | - | - |
| created\_date | timestamp | - | - | - |
| updated\_date | timestamp | - | - | ON UPDATE CURRENT\_TIMESTAMP() |
| partner\_id | int | (10) | (FK) | - |
| status | tinyint | (1) | - | - |
| language | varchar | (100) | - | - |
| availabile\_seats | int | (11) | - | - |
| ava\_start\_date | date | - | - | - |
| ava\_end\_date | date | - | - | - |
| cancellation | tinyint | (1) | - | - |
| district | varchar | (100) | - | - |
| gathering\_location | varchar | (100) | - | - |
| s\_time | time | - | - | - |
| e\_time | time | - | - | - |
| kid\_price | float | - | - | - |
| kid\_status | tinyint | (1) | - | - |

Table 7 Data dictionary of Tour table

Table of Review

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Data Type | Field Length | Constraint | Extra |
| review\_id | int | (11) | (PK) | AUTO\_INCREMENT |
| review\_title | varchar | (200) | - | - |
| review\_description | varchar | (600) | - | - |
| review\_user\_type | varchar | (100) | - | - |
| customer\_id | int | (11) | (FK) | - |
| service\_id | int | (11) | (FK) | - |
| review\_rating | int | (11) | - | - |
| created\_date | timestamp | - | - | - |
| approved\_date | timestamp | - | - | ON UPDATE CURRENT\_TIMESTAMP() |
| status | tinyint | (1) | - | - |
| service\_name | varchar | (100) | - | - |

Table 8 Data dictionary of Review table

Table of Inquiry

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Data Type | Field Length | Constraint | Extra |
| inquiry\_id | int | (10) | (PK) | AUTO\_INCREMENT |
| enquirer\_name | varchar | (50) | - | - |
| enquirer\_email | varchar | (100) | - | - |
| enquirer\_contact | varchar | (100) | - | - |
| enquirer\_subject | varchar | (100) | - | - |
| enquirer\_descr | varchar | (500) | - | - |
| inquiry\_received\_date | timestamp | - | - | - |
| inquiry\_updated\_date | timestamp | - | - | ON UPDATE CURRENT\_TIMESTAMP() |
| status | tinyint | (1) | - | - |

Table 9 Data dictionary of Inquiry table

Table of Home

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Data Type | Field Length | Constraint | Extra |
| home\_id | int | (20) | (PK) | AUTO\_INCREMENT |
| home\_name | varchar | (50) |  |  |
| cover\_img1 | text | - |  |  |
| location\_address | varchar | (200) |  |  |
| ava\_night\_price\_adult | float | - |  |  |
| lg\_desc | varchar | (1500) |  |  |
| home\_type | varchar | (100) |  |  |
| district | varchar | (100) |  |  |
| province | varchar | (100) |  |  |
| cancellation | tinyint | (1) |  |  |
| ava\_start\_date | date | - |  |  |
| ava\_end\_date | date | - |  |  |
| created\_date | timestamp | - |  |  |
| updated\_date | timestamp | - |  | ON UPDATE CURRENT\_TIMESTAMP() |
| status | tinyint | (1) |  |  |
| partner\_id | int | (20) | (FK) |  |
| rooms | int | (10) |  |  |
| max\_adults | int | (10) |  |  |
| max\_kids | int | (10) |  |  |
| ava\_night\_price\_kid | float | - |  |  |
| s\_time | time | - |  |  |
| e\_time | time | - |  |  |

Table 10 Data dictionary of home table

After drawing the relevant use cases, the business logic layer of the application was able to identified. Next the sequence diagram also aided to identify the relevant module attributes and methods of the classes. The following sequence diagram demonstrates about the TAMS which allows the administrator of the system to login using the provided credentials and manage all the interactions between the operations as shown in the diagram.

# **Chapter 6 implementation**

Introductory paragraph

Implementation is the carrying out, a method, or any design, idea, model, specification, and standard or for doing project. (E.g. firewall configurations, any configurations). Then if you want to include screenshot for the document. You can include screenshots.

# **Chapter 7 testing and verification**

You must include test plan and test cases for this task.

# Chapter 8 EVALUATION and CONCLUSION

You must include critically EVALUATION and CONCLUSION from your project. (Summaries the project and your solution in one or two paragraphs.

# References

Include a list of references cited in the report here. Either use the [numbered] or [name’date] convention

# Appendices

Interim Progress Reports

Company letter.

Progress approval form and Project commencement meeting sheet.