XHOVANA GJINAJ

GRADUATION PROJECT

2019

ANALYSIS, DESIGN AND IMPLEMENTATION OF A TRAVEL MANAGEMENT SYSTEM IN ALBANIA

GRADUATION PROJECT

XHOVANA GJINAJ

EPOKA UNIVERSITY

FACULTY OF ECONOMICS AND ADMINISTRATIVE SCIENCES

DEPARTMENT OF BUSINESS ADMINISTRATION/BUSINESS INFORMATICS PROGRAM

TIRANA, ALBANIA

JUNE 2019

ANALYSIS, DESIGN AND IMPLEMENTATION OF A TRAVEL MANAGEMENT SYSTEM IN ALBANIA

XHOVANA GJINAJ

Thesis submitted in Fulfillment of Requirement for the Degree of Bachelor's in Business Informatics

EPOKA UNIVERSITY

2019

APPROVAL PAGE

Student Name & Surname: Xhovana Gjinaj

Faculty: Faculty of Economics and Administrative Sciences

Department: Business Administration (Business Informatics Program)

Thesis Title: Analysis, Design and Implementation of a Travel Management System in Albania

Date of Defense: 24.06.2019

I certify that this final work satisfies all the requirements as a Graduation Project Thesis for the degree of Bachelor in Business Informatics.

……

Head of Department

This is to certify that I have read this final work and that in my opinion it is fully adequate, in scope and quality, requirements as a Graduation Project Thesis for the degree of Bachelor in Business Informatics.

…….

Supervisor

Examination Committee Members

Title / Name & Surname	Affiliation	Signature
1-		
2-		
3-		

DEDICATION

To my amazing family who has always supported me. Thank you for being my inspiration and motivation in life.

ANALYSIS, DESIGN AND IMPLEMENTATION OF A TRAVEL MANAGEMENT SYSTEM IN ALBANIA

ABSTRACT

Nowadays, tourism industry has taken an important consideration in the economy and is a fundamental source of development and growth for any country. Travel Agencies, that are a bridge between the travel opportunities and the customers, are continuously collecting and analyzing data in order to understand customer's needs and improve their performance to not only generate more profit, but also to make the best travel arrangements for tourists. However, with the constant increase in the foreign and domestic tourists in the last decade the collection, maintenance, distribution, update and analyzes of tourist data has become extremely difficult for travel agencies causing a lack of correct data and issues in management.

For these reasons, there is a need for an automation solution for the management of these travel agencies. Since technology is changing our daily life significantly, the usage of software solutions in travel agencies would create an effective and efficient environment that will improve their performance and what is more important, it will increase customer satisfaction significantly.

This paper suggests a software solution in the management of travel agencies that will radically improve the structure and operations of these businesses. Even though the concept of a travel agency business is relatively wide, this paper will take under consideration only the bus tours services that has had a major attention from tourists recently. The software is a web application that integrates a CRM in a travel management system, whose main purpose is the collection of data to achieve performance improvement, ease of decision- making process and the increase of communication between parties.

My thesis aims to bring for the first time an integrated platform that will be helpful to both travel agencies and customers.

Keywords: travel agency, travel management system, tourism, bus tour.

ANALIZA, DIZAJNI DHE IMPLEMENTIMI I NJE SYSTEMI MENAXHUES TE AGJESIVE TURISTIKE NE SHQIPERI

ABSTRAKT

Në ditët e sotme, industria e turizmit ka marrë një konsideratë të rëndësishme në ekonomi dhe është një burim themelor i zhvillimit dhe rritjes për çdo vend. Agjencitë e udhëtimit, që janë një urë lidhese midis mundësive të udhëtimit dhe klientëve, vazhdimisht mbledhin dhe analizojnë të dhëna për të kuptuar nevojat e klientit dhe për të përmirësuar performancën e tyre në menyrë qe jo vetëm të gjenerojne më shumë përfitime, por edhe për të ofrojnë shërbimin më të mirë te turistët. Megjithatë, me rritjen e vazhdueshme të turistëve të huaj dhe vendas, sidomos gjete dekadës së fundit mbledhja, mirëmbajtja, shpërndarja, azhornimi dhe analizimi i të dhënave turistike është bërë jashtëzakonisht e vështirë për agjencitë e udhëtimit duke shkaktuar mungesë të të dhënave të sakta dhe probleme në menaxhim.

Për këto arsye, ekziston një nevojë për një zgjidhje te automatizuar për menaxhimin e këtyre agjencive të udhëtimit. Meqenëse teknologjia po ndryshon ndjeshëm jetën tonë të përditshme, përdorimi i zgjidhjeve softuerike në agjencitë e udhëtimit do të krijonte një mjedis efektiv dhe efikas që do të përmirësonte ndjeshëm performancën e tyre dhe çka është më e rëndësishme, do të rriste ndjeshëm cilësinë e shërbimit të klientit.

Ky material sugjeron një aplikacion web si zgjidhje në menaxhimin e agjencive të udhëtimit që do të përmirësojë rrënjësisht strukturën dhe operacionet e këtyre bizneseve. Edhe pse koncepti i një agjensie të udhëtimit është relativisht i gjerë, ky dokument do të marrë në konsideratë vetëm shërbimet e tureve me autobusëve që kanë pasur një vëmendje të madhe nga turistët kohët e fundit. Softueri është një aplikacion web që integron një CRM në një sistem të menaxhimit të

udhëtimit, qëllimi kryesor i të cilit është grumbullimi i të dhënave për të arritur përmirësimin e performancës, lehtësinë e procesit të vendimmarrjes dhe rritjen e komunikimit midis palëve.

Teza ime synon të sjellë për herë të parë një platformë të integruar që do të jetë e dobishme për të dy palët, agjencitë e udhëtimit dhe klientët.

Keywords: agjensi turistike, agjensi turistike, sistemi menaxhimi, turizëm, ture me autobus.

ACKNOWLEDGEMENTS

There are many people for whom I would love to express my sincere gratitude for my journey at Epoka University, because they have helped me and made my Bachelor studies valuable, significant and unforgettable.

First of all, I would like to thank each professor, from whom I have learned throughout each semester, for giving me the basis and a wide background in both business and technology fields. Having the opportunity to learn from them over the years was intellectually rewarding and fulfilling to me.

I also want to thank my thesis supervisor, Professor Igli Hakarama, for all the advices, suggestions, his expertise and help provided in my graduation project started from the early stages. His advices have been a great help in creating and developing this thesis.

Many thanks to my graduate student friends who made these three years full of projects and exams unforgettable.

The last words of thanks go to my amazing family, for their endless support and encouragement throughout this long journey.

DECLARATION

I hereby declare that this graduation project, titled “ANALYSIS, DESIGN AND IMPLEMENTATION OF A TRAVEL MANAGEMENT SYSTEM IN ALBANIA”, is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that this thesis has not been previously or concurrently submitted for any other degree, at Epoka University or any other university or institution.

Xhovana Gjinaj

June 2019

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

ICT – Information Communication Technology

CRS – Computer Reservation System

STB – Smart Tourism Board

STAN – Singapore Tourism Analytics Network

TMS – Travel Management System

DDOS – Distributed Denial of Service

CRUD – Create, Read, Update, Delete

PHP – Hypertext Preprocessor

JSON – JavaScript Object Notation

HTML – Hypertext Markup Language

CSS – Cascading Style Sheet

CHAPTER 1

INTRODUCTION

Tourism is not only an income alternative to a country, but also creates more job opportunities and plays a significant role in economic activities by boosting development and growth. It goes beyond just hotels, flights and simple reservations, because it contributes in the creation of the country's brand value and identity. On the other hand, due to technological advancements the environment we live is changing rapidly and almost every process in our daily life is accomplished through different applications and the tourism industry has been affected significantly by this phenomenon.

The use of the term travel agency to describe the kind of business that offer tourism services to its customers dates back at the beginning of the 19th century. However, the origin of a travel agency takes place earlier in the history. The first travel agency, Cox & Kings Ltd, was established in 1758. Then, it changed dramatically its focus in operations and structure in 1970 where travel agencies created tours and paid a considerable attention to the development of aviation and other issues. (Cox and Kings, 2014)

A travel agency is defined as a medium between customer and travel agents and as a place where tours are created for different destinations. The main function of a travel agency is to act as a connector between tour packages and other services with the purpose of assisting every customer in booking travel to make the best travel arrangements possible. However, the concept of travel agencies has changed over the years to cope with the changes in the market.

In Albania the concept of travel agency is relatively new, due to economic, political and social problems that the country has experienced over the years. The first travel agencies is Albania were established after the year 2000 and were especially focused on the outdoor activities and

excursion around the country. The situation changed in 2009 with the Visa liberalization around Schengen countries, which enabled Albanian citizen to travel around most countries in Europe without applying for a visa, which had previously been a very tedious process in the first place.

Nowadays, there are 400 travel agencies currently operating in Albania and 15 out of them are considered large businesses. (Instat, 2018) As part of the Albanian culture is to book more in the travel agencies rather than through personal research online, travel agencies has a high importance for customers and are providing many services related to assisting customers in the travel arrangements. They offer a variety of services and assist their customers in every step of the booking process. Also, it is noticed that participation in tours is more preferable and travel agencies are highly profitable in the tour services.

According to Albanian Institute of Statistics, the movements of tourist in and out Albania have a high tendency to constantly grow over time, which is very positive for travel agencies. (Instat, 2018) Unfortunately, this current system suffers from a lack of communication between staff, customers, agents and managers. The main source of communication with all parties is Social Media, which arises a problem in efficiency and management, especially with the current tendency of the continuous increase in the tourists' bookings.

It is a very good point that Albania has faced a tremendous increase in tourism process during the last decade. Visa liberalization in 2019 has been a fundamental indicator that has caused this exponential increase in travelling and Albanian tourism industry. Besides the fact that this increase has been very beneficial for travel agencies, at the same time has raised some problems related to the spread of information and management that need an immediate solution.

The current tourism industry not only is experiencing a huge communication gap, but also offers some limitation that concerns the performance of this business. First, there is a main concern related the usage of spreadsheet software programs and manual data collection. It is very difficult and tedious to keep historical data and manual hours are required to generate reports and statistical analysis about customers and touring system.

Furthermore, booking process is mainly done offline, meaning that customers are required to be physically in the office in order to proceed with payments, bookings and other issues. In case any person needs any further information that is not found in the travel agency's website, he/she can only communicate via social media, phone or by going at the office. This process is tedious, non-convenient and causes problems to the customer, who spends a lot of time waiting, and to the travel agency, which cannot give the proper service to their customers, especially with the increasing number of interested people in tours and other services over time.

Having learned the main problems of the tourism industry in Albania, we can now analyze some of the advantages that a digitalized solution may offer. The use of a management software in the decision-making process would increase the efficiency of a travel agency. With a digitalized platform every travel agency can make a better online promotion, can have better statistics in customer's preferences and can develop a better and customized product. This will highly increase competitive advantage and customer satisfaction and will affect significantly the performance of this business.

Moreover, a digitalized solution will highly reduce file work and save huge amounts of time in booking and management of the travel agencies due to the integrated platform that will be established and the online booking management. For these reasons, I have decided to create a platform that will significantly improve the performance of the travel agencies in the Albanian market with the main focus in achieving competitive advantage and offer better, differentiated products for customers.

CHAPTER 2

LITERATURE REVIEW

Technological progress and tourism have been going in the same directions for years (Poon, 1993; Sheldon, 1997). Tourism has been affected and has changed remarkably from the advancements in technology. For instance, developments in the Information Communication Technologies (ICTs), which have been transforming tourism globally since the 1980s, have significantly changed the business structure, the strategic plans, the objectives and goals and also the travel business practices that companies follow. (Buhalis and Law, 2008) Obviously, the concept of travelling has changed from time to time.

This chapter aims to briefly summarize and provide an overview on how technology has been used in tourism industry, more particularly in travel agencies, and how different approaches have changed their business structure. Unfortunately, there are few alternatives that you can refer to as a possible solution in the Albanian market, because yet businesses use manual analysis and approaches. Therefore, the basis of this literature review are seeking to understand how foreign travel industries have benefit from technology and how useful can be this approaches be for the Albanian market.

This literature review begins with a brief history on the creation of travel agencies to gain an understanding on what drove the creation of travel agencies and how important they have been in tour organizations since 1758 until nowadays.

2.1 Origins of Travel Agency Business

Nowadays, we live in such an environment where everything is just one click ahead. But, have you ever imagined how everything started with tourism and when travel agencies were established for the first time? What would you think if I state that in 1534, explorer like Jacques Cartier, were marked as the first tourists in Canada? (Dawson, 2004) Apparently, for many people this fact would sound irrational and wrong, but the truth is that the concept of tourism dates very early in the history.

And with the evolution of tourism, travel agencies were developed as well. The first travel agency is said to be the British company Cox & Kings, opened in 1758. (Cox and Kings, 2014) At the beginning the company was offering some travel services only to its wealthy clients and was focused mainly in Indian tours and exploration. In 1878, Cox & King were the two main agents of many British personalities who wanted to travel overseas and in 1912 the agency marked a turning point, as it made a contract with Royal Air Force, a very prestigious air company and started offering flight service. Apparently, the company has changed its structure over these 260 years multiple times to cope with the market changes. What started as a business for wealthy clients, is nowadays operating in 22 countries and 4 continents offering a wide variety of services.

Even though Cox & Kings was the first established travel agency, the first modern travel agency is said to be established in the middle of the 19th century by Thomas Cook. In addition to developing package tours, he created a chain of travel agencies that were associated with the Midland Railway. This chain were beyond just selling their own tours to the customers, because they were representing other similar companies' tours as well. (Chand, 2012)

Meanwhile, the earliest travel agency in North America is established on July 4, 1887 by Walter T. Brownell and was called Brownell Travel. Brownell Travel started with an European tour, where ten people were led to Europe by sailing boats starting from New York to an archeological tour to Switzerland. Apparently, travelling back then doesn't seem as commonplace as nowadays especially due to the transportation issues.

Travel Agencies were widely spread after 1920s, as the developments of commercial aviation had started. At the same time, the operational structure changed as well, as these agencies started offering packages to the working-class clients, who wanted to find the best beach holidays. (Chand, 2012) This marked a turning point for travel agencies as they stopped operating for middle and upper class only and were accessible to a larger number of customers.

2.2 Travel Agencies in 21st Century

With general public access to the web, several airlines began to sell directly to passengers. As a consequence, airlines were not required to pay the commissions to travel agents on every ticket that they sold. Since 1997, travel agencies have lost their position as an intermediate between customer and airline services, due to the reduction in prices caused by the removal of these layers in the distributed network. However, travel agents continue to stay dominant in other areas like cruise vacations, where they represents 77% of bookings and recently in the bus tour services. (Holloway, 2016) The market size of travel agencies experienced a sharp decline in 2009, dropping from $17 billion to $14.3 billion.

The main reason that caused this decrease was the global economic crises of 2008-2009, which caused several impacts to international tourism in customers demand and directly affected the travel agencies. This period market the highest decline in travel sector employment and in the services that travel agencies offer. As a response, travel agencies strengthen their online presence by creating travel websites with information on travelling opportunities and booking process. Major online websites developed in that period were: Expedia, Voyages, Travelocity, CheapTickets, Priceline, CheapOair, and Hotwire. (Holloway, 2016) Some of these websites may be very familiar to you nowadays and probably you have used any of them.

Travel agencies started also using services of the computer reservations system companies such as: SABRE, Amadeus CRS, Galileo CRS and so on. These systems allowed for the first time to do online all the services of a travel agency such as: the online booking, ticket selling, car rental and so on. Some companies started integrating customers to their website by giving them the opportunity to leave comments and reviews and compare hotels and tours for free.

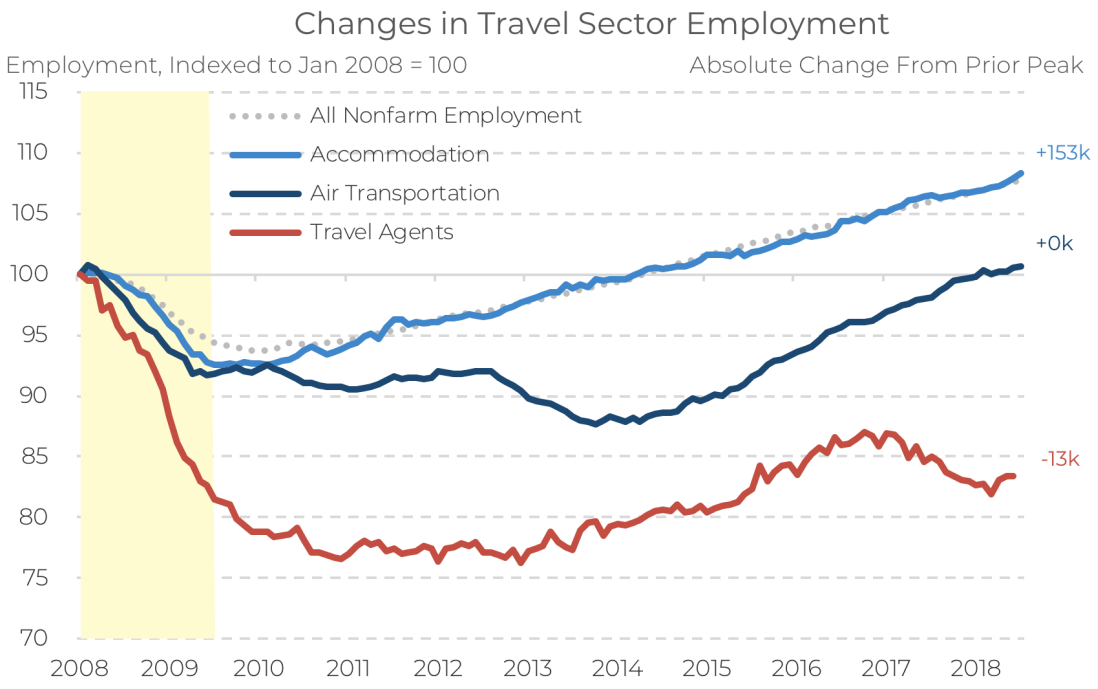

Figure 2. 1 Changes in Travel Sector Employment

2.3 E-Tourism

What occurred after 2009 with travel agencies is related to e-Tourism (Electronic Tourism), which is used to describe the digitalization process of tourism services and their distribution. According to a study on how tourism has changed during the past 20 years made by professor Dimitrios Buhalis, who is an expert in Strategic Management and e-Tourism, there are three main factors that have transformed the industry as the years have passed: the establishment of CRSs (Computer Reservations Systems) in 1970s, the GDSs (Global Distribution Systems) in 1980s and the development of the Internet in 1990s. (Buhalis, 2008).

The transformation has occurred mainly in the operational and strategic practices in this industry. Furthermore, with the technological evolution, the consumer behavior has changed as well. The continuous growth in technological progress, has increased the consumer expectations, which has caused the changes in different industries, including tourism.

The tourism agencies have been adjusted to technological advancement for many years now. Many people refer to e-Tourism (Electronic Tourism), to explain and describe the changes and the importance of the technology in this industry. Also, the increase usage of mobile applications and other important changes in the past years, have made a tremendous impact on the current tourism market situation. But how has e-Tourism concept changed over the years, especially after the development of Internet?

According to professor Buhalis, E-tourism is changing and transforming the market in three main areas: consumer behavior and demand dimension, technological innovation, and industry's functions. (Buhalis, 2008).

2.3.1 Consumer Behavior and Demand Dimension

With the evolution of Web and also with the creation of Social Media as a network where customers can take and observe information, we are dealing with a well-informed customer with higher expectations. Moreover, every tourist is different and has a variety of demands. As a result, e-tourism has been developed to increase customer satisfaction, enhance customer expectations and to deliver the best out of their product in some ways. E-Tourism has created a better purchasing environment for consumers, because they have higher access to a more reliable, accurate and valid information. Also, ICTs offer many tools to facilitate and make all the process of reservation faster and easier.

ICTs play an important role in all the steps of the buyer's decision process. Economically speaking, every customer will go to five main steps to purchase a product no matter if it is doing it offline or online. E-Tourism have remarkably facilitate the five steps of buyer's decision: need recognition, information search, evaluation of alternatives, purchase decision and post-purchase

decision, providing less time in planning and waiting. Moreover, programs have created the opportunity to gather customer's data and generate a personalized and customized product, which help travel agencies achieve customer's satisfaction and product differentiation.

2.3.2 Technological Innovation

The more complex the systems become, the more beneficial is to tourism industry, because the increasing complexity result in addition of extra features which empower innovation in the market. As the extra features of these system have increased, travel agencies have outperformed their objectives and plans and have increased their brand value and identity in the market. E-Tourism is spreading quickly as an integrated system of networked equipment and software, which enables effective communication for tourism organizations and destinations in three main areas: interoperability, web-site design and analysis and also modelling. (Buhalis, 2008) These areas create the possibilities to facilitate the work needed in tourism sector, gather data faster, access markets easily, and attract more visitors, while developing differentiated and innovative products.

2.3.3 Industry's Function

ICTs are not only automation of different processes, but also a necessity for any organization in defining their strategic management and operational structure. With the help of ICTs, travel agencies are working more efficiently and the organization structure have become less hierarchical. Also, one important feature that ICTs provide is online marketing, which lowers promotion costs and it is also more convenient and closer to customers.

Having known the benefits that e-Tourism has provided in the market, we can know understand the importance of implementing similar technologies in Albania with the main purpose of using customer demand, innovation and technology as a medium between consumer, travelling data and travel agencies. Furthermore, we will see a real example in how certain countries have benefited from ICTs solutions.

2.4 The Case of Singapore

Singapore has started a campaign called “Transforming Singapore through Technology”, which is an ongoing digital revolution, whose advancements in digital technologies aim to completely transform the way they live. They have created the concept of a Smart Nation, which main focus is on the representation of a leading economy that is powered completely by the digital innovation, where the Government gives to its citizen the best home possible and through technology responds to the changing needs. ("Smart Nation Singapore", 2019) Part of this revolution, is also STB, Singapore Tourism Board, whose main function is to develop multiple applications that facilitate the tourism sector.

Singapore Tourism Board (STB) is responsible for the creation of many applications that will transform, simplify and create a unique opportunity for ever tourist in Singapore and in the same time help agencies collect data in real time in order to improve decision-making process. Singapore is known as a massive tourism destination. It reached the highest number of visitors in 2017 with a record of 17.4 million visitors who spent more than $26.8 billion in expenditures. ("Smart Nation Singapore", 2019) With these data, it seems impossible to manage tourism industry in Singapore. In order to facilitate travelling process STAN was created, to deal with Big Data and increase tourism satisfaction. The Singapore Tourism Analytics Network (STAN) is a data analytics network that analyzes tourist movements to make important business decision in tourism and other industries.

The application collects tourist’s behavior data, such as spending, length of staying in hotels and so on. The program analyzes these data and transform them into important information that will help the business decision-making process. With this network, tourism agency can easily draw the insights and make better decisions on tourism management. This platform has been very successful, winning many prices including the award for Best Data at the Gov. Insider Innovation Awards during the recent Innovation Labs World global summit. ("Smart Nation Singapore", 2019)

2.4.1 Boosting hospitality and retail with tourism data from STAN

STAN's main results were not only in boosting hospitality, but also in the retail industry. The first one is understandable. However, how can a tourist management system affect the retail industry?

The program was designed in such a way that would help retailers maximize their profits and improve their marketing strategies through better targeting their audience. STAN collected tourist expenditure data from local telecommunications companies, and then analyzed and displayed these data for officials in an interactive, user-friendly manner. ("Smart Nation Singapore", 2019)

From the STAN network, retailers could draw insights and found out that Chinese and Indonesian tourists generally spend the most in retail when travelling in Singapore. What's more important, from the generated statistics it was found out that Chinese visitors generally spend more money when they stay on average 2-5 days, less than a week and when visiting Orchard Road, Marina Bay and Sentosa Harbor. Following these data, local retailers could then change their marketing plans and focuses more in these two markets and satisfy their expectations better. ("Smart Nation Singapore", 2019)

STAN also collects data related to hotels where tourists stay. The analysis has found out that approximately one in 10 tourists tends to change the hotel trip in Singapore, and most this switching hotels process is most likely to occur on the third day if they were in Singapore for a period shorter than five days. ("Smart Nation Singapore", 2019) The data also showed that a large majority of Japanese and South Korean tourists who switched hotels had switched to a better and more expensive hotel or an integrated resort. Hotels can use this insight in the management and marketing department to create a better accommodation or a promotion that will make a more attractive place to stay longer.

Furthermore, STB aims to leverage technology more effectively in order to enhance tourist's satisfaction, deliver quality experiences for all and more importantly support of businesses to share and exchange content. As we can see the outcome of the tourism digitalization is spread out in other industries as well. This means that they are contributing to each other.

There are many other destinations that are trying to adopt a smart city approach, due to the major advantages that this idea offers. Singapore is already there, but the list of destinations adopting a smart city approach is quickly multiplying:

- Malta has started the process of becoming a smart city island.
- Seven cities in the U.S. :Austin, Columbus, Denver, Kansas City, Pittsburgh, Portland and San Francisco are nominated as finalists in the Smart City Challenge
- Abu Dhabi's Masdar City is considered to be the world's most sustainable eco-neighborhood.
- India is trying to make 20 cities in the country follow Smart City practices.

Under these practices the structure of tourism industry will be more efficient and the country will benefit economically. Moreover, the concept of data collection to make important business decision is an important feature that can be used to my thesis related to booking process and customizing products. On the other hand, I strongly believe that Albania has all the potential to become a Smart Nation and by the digitalization of travel agencies, other sectors can benefit as well.

2.5 National Viewpoint the case of Albania

From a general viewpoint, I want to continue with an analysis on how the Albanian travel agencies have solved the problems in the tourism industry. Even though Albania is facing many issues related to tourism, there is noticed an increasing tendency from some specific travel agencies currently operating in Albania in regard of technological solutions to improve business performance.

During this research I have found one travel agency called Matias Travel and Tours, which has created an interactive system between the customers and the agency itself. As a customer you can register and log in their system, where all your historical data with that agency is found or the customers can just start a new reservation. This is a good strategic tool that has given Matias

Travel and Tours a highly competitive advantage and will help the company engage with tourists and creating a network of loyal customers.

On the other hand, Zenith Travel has created a feature in their website called “Create your own tour”, where customers can request a personalized and customized tour by only filling a form with their preferences. These are some changes that have driven from the increment of customer expectation and the great competition that exist between agencies in Albanian market.

Another important solution that has been given to a transportation problem is also ALB-Transfer. The airplane tickets in Albania are significantly high priced compared to other cities around Balkan that are near Albania. Therefore, what it is seen lately is a tendency for ticket purchases from cities like: Podgorica, Prishtina, Shkup over the direct flights from Tirana. One problem that was seen in this case was the distance from Albania and the custom that you have to pass, in order to catch the flight. This is an issue especially for tourists that do not have a personal car and the buses from Albania usually do not match with flights timetables. As a result, ALB-Transfer was created. A platform where you can enter and book your bus at the appropriate timetable, increasing this way the efficiency and flexibility of this issue.

These solutions are basic if we would compare to the western standards in technology. However, compared to the Albanian market situation these are a positive sign and a great indicator that tells the need of travel agencies to implement digital solutions to meet customer demand and outperform competitors.

CHAPTER 3

CASE STUDY: TOURISM INDUSTRY IN ALBANIA

In Albania, like in any other country, the tourism is a very important source of income. In 2009, with the Visa liberalization around Europe, the number of tourists increased significantly, which transformed the structure of travel business drastically. According to INSTAT, the entrance of foreign tourists in Albania have increased with 12% from 2013-2017 and their expenditures have raised on an average 8.5% for the same period. Meanwhile, Albanian tourists have preferred more going across Albania and this has increased by 7.2% in the period 2013-2017. (Instat, 2019) These data indicate that tourism industry has experienced a continuous growth over the years and is taking a great attention.

Albanian travel agencies offer a variety of services for the customers, such as bus tours, booking flights, booking hotels, car rental etc. Travel Agents are a bridge between customer and travel agency to discuss on booking, destination suggestions and to assist customers since in the beginning of the process and handle all the necessary operations. In other words, customers should worry only about following the correct time to arrive in the destination and for all the other things are done from the travel agency. Unfortunately, almost every agency prefers to do this booking process manually. From the research I have done, I have noticed that Social Media, especially Facebook, is the main source and channel of communication for different issues. On the other hand, Instagram is mainly used as a blog to share the company's main destinations and to attract customer into company’s services.

Furthermore, the websites are not interactive. They are used only to provide information on agency’s services and whenever a customer has a question, he/she should go at the travel agency or contact them through social media. Also, the collection, analysis and distribution of data is

done manually and/or through Excel software, which can become a problem in the near future with the increasing number of customers.

3.1 Organizational Structure and Services

According to Albanian Institute of Statistics, there are 400 travel agencies currently operating in Albania and 15 out of them are considered large businesses. (Instat, 2018) The organization of a travel agency in Albania is almost the same for any agency with very small differences.

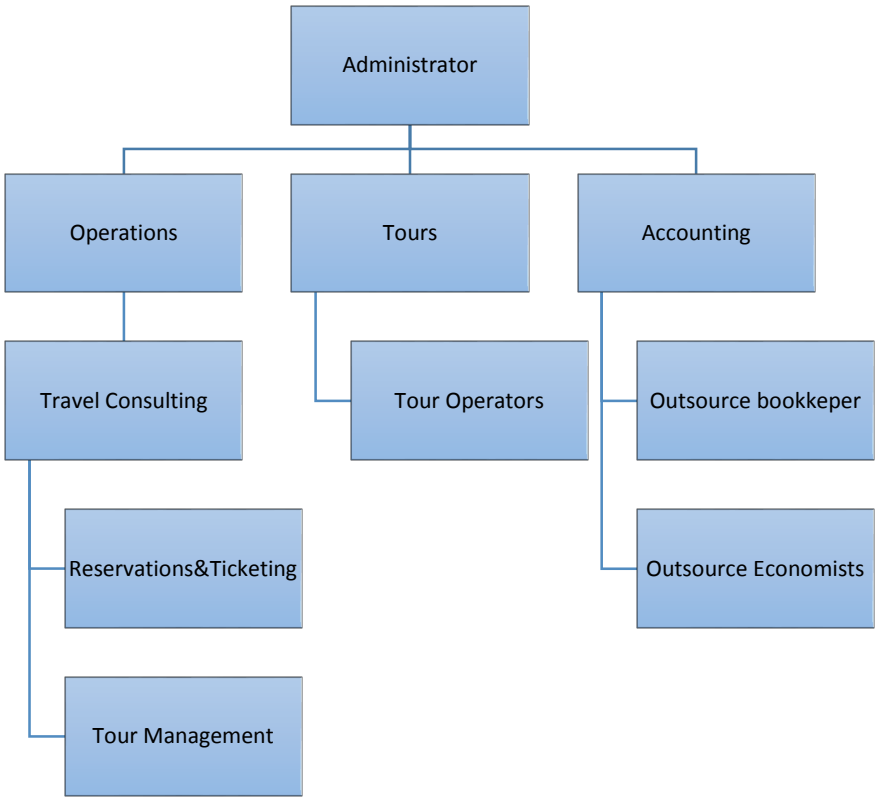

Figure 3.1 Travel Agency Organizational Structure

There is an administrator who is in charge of every operation of the business. He is being assisted by travel consultants, whose main function is to assist the customers in their travelling plans and manage the tours that the agency offers. Both administrator and travel consultants operate within travel agency's office. On the other hand, there are freelancer or employed tour operators and buses that are responsible for the ongoing tours and outsource accounting to deal with economic activity of the business.

Albania has faced a tremendous increase in tourism process during the last decade. Visa liberalization in 2019 was a fundamental indicator that caused an exponential increase in travelling and Albanian tourism industry. This increase has been very beneficial for travel agencies, but at the same time has raised some problems related to the spread of information and management.

3.2 Components of a Travel Agency

Tourism industry in Albania includes a wide variety of actors that face the problems listed below:

3.2.1 Information/Planning

There are two main sources to get information and to plan a travel: travel agency and individual research online. As part of the Albanian culture and the lack of credit/debit card usage in Albania travel planning are mainly through travel agencies. From the research done and the questionnaire sent to some travel agencies, it resulted that Social Media is the main medium of communication and plays a decisive role for both parties: customer and travel agency. They communicate, share reviews, plan the tours and market their customers in Social Media, where Facebook is mainly used to reach customers. In other words, travel agencies use this type of Social Media to collect and distribute information. Then, the information collected is saved manually in the Excel program, which increases the risk for incorrect data.

3.2.2 Accommodation

Accommodation is along with the planning of any trip, because tourists need a place to stay during their tour. Travel agencies must find and sign contracts with hotels and others accommodation types. This process is done prior to the tour creation. Each travel agency creates a chain of hotel suppliers for all the places that the company offers a specific tour.

3.2.3 Transportation

This paper seeks to analyze and find a solution for bus tours. The agency may have an inventory of its own buses. However, in our market the agencies prefer to outsource this as to lower the costs. Most of the time, there is a main supplier which provides the transportation to any travel agency. This way, a travel can lower the cost of investments, since it does not purchase and keep an inventory of buses.

3.2.4 Activities/Itinerary

Every agency is responsible for providing a detailed itinerary that will show for every customer all the activities included in the tour. Each tour is planned in detail, providing information in long and short breaks during the trip, time of departure and arrival, places to be visited and any other detail that a customer needs to know.

3.2.5 Tour Guide

Each tour is assigned a tour guide, who is responsible for the tour progress. It is a must for the tour guide to be certified. He/she shows people the places of interest, follows the itinerary planned by the office and should be very knowledgeable and entertaining, in order to create an interesting environment for customers. In Albania, travel agencies employee only part-time tour guides. This means that tour guides are not full time employers in a travel agencies. Instead, they work in several travel agencies and offer their guiding as a service for travel agencies.

These actors contribute in the development of the tours and are highly significant in achieving a good performance for a travel agency.

3.3 Business Requirements in Albania

Every travel agency has certain policies that must be followed in order to perform in accordance with Albanian rules and regulation on tourism industry. The program is being built based on the following business requirements:

1. Kid's Payment Policy: Usually kids under 3 years old do not have any fees for the tour. Also travel agencies deduct certain amounts of the price for the kids under 12 years old and over 12 years old a normal payment should be conducted.
2. Accommodation in single room has an extra fee that depends on the hotels you are staying.
3. A tour can depart only if at least 20 people have booked it.
4. If the tour will get cancelled from the travel agency, the customer should be informed 3 days in advance.
5. For reservation it is needed 50% of the book fee and the other 50% can be completed 5 days before departing.
6. Payments are non-refundable.
7. The agency does take any responsibility for the people who can't pass the custom for missing documents or other personal issues, which do not come as a result of the travel agency's representative.
8. Customers can cancel their booking at any time, but the payments they have completed would not be refunded.
9. If the customer is under 18 years old and he/she is travelling with one of his/her parents, he must have a proxy from the other parent who is not travelling with him/her to show full responsibility and trip approval.
10. If the customers is under 18 years and he/she is not travelling with one of his/her parents, he must have a proxy from another person, who must be blood related, that takes fully responsibility and accompanies the customers during travelling.

One thing to be noticed is that this Business Requirements are subject to change from one travel agency to another, especially the pricing policy which vary from many other indicators. These requirement would be really important in the construction of the system and the establishing of the system features.

3.4 Limitations of the current system

The current system in suffering mostly to the manual record keeping of data. This process is tedious and significantly concerns the management and decision-making process. It requires manual hours to generate statistics, analyze data, and make proper conclusions. Also, the booking process is mostly done offline, meaning that the customer is requires to make payments and reservation in the office, which creates a huge gap between customers and travel agency and also requires huge amount of time to make a simple reservation. As a result, I have decided to work on a software solution that will be described in detail in the following chapter.

CHAPTER 4

ANALYSIS AND DESIGN OF XHOTRAVEL

4.1 Product Description

According to INSTAT, from 2013 there have been 22.6 million Albanian people travelling outside Albania and this has had a tendency to increase more than 7.2% annually. Albanian tourists stay on average 7.8 nights travelling, especially in the third quarter of a year. (Instat, 2019) This data provide an overview on how important is improving tourism industry in order to enhance customer satisfaction, understand the demand better, have certified guides and what is more important this shown the necessity to solve the problems found in the Albanian market in the previous chapter.

The benefits from E-Tourism and the evolution of Singapore are two important examples presented in chapter 2 that represent how technology can shape the Albanian market in a very short time. Internet is revolutionizing all the aspect of the travelling process and an innovative approach for small and medium travel agencies is needed to outperform in this industry.

As a result, I have proposed a Travel Management System, which is a Web Application, as an innovative approach in managing the operations of a travel agency with an integrated CRM where clients can view and book different tours online. The main purpose of this app is to help travel agencies keep historical data, manage their functions more effectively and create an integrated system of all their operations and strategic decisions.

4.1.1 User Characteristics

XHOTRAVEL is designed to be a Travel Management System that will integrate a CRM for customers to book tours and will analyze data that will make any travel agency make better decisions. The program has four main actors: the administrator of the travel agency who has complete control over the system, the travel consular who is mainly responsible in tour management and reservations, tour guide who is responsible for assisting tour groups until the tour is over and the fourth actor is the customers who can register in the program and make any travel arrangements they would prefer. The system is based on the bases of the travel organizational structure presented in the third chapter of this paper (Figure 3.1).

4.1.1.1 Clients

Every client who wishes to purchase a tour from a travel agency can simply register and/or login in the system. The system shows his/her personal profile, historical data of the tours that he/she has previously booked in this agency. Also, he/she is shown every detail on the ongoing tours such as payments, tickets, and seats and so on. There is an extra feature added to client side, online payment that aims to encourage people more in the online paying process that will facilitate and increase reliability in the Albanian market. Furthermore, customers can cancel bookings according to company's business rules.

4.1.1.2 Tour Guides

Tour Guides are mainly concerned on the tour they are responsible for. Despite having a personal profile in the system, each tour operator can view details on the current tour including clients and itinerary details. This will help the tour guide keep track on objective that the travel agency wishes to fulfill during the tour.

4.1.1.3 Tour Consular

A Tour Consular is a person who work in the office and is mostly responsible for assisting customers in the purchase decision. Their view of the system is focused on the booking

management. They will have the complete information on the available tours and how the booking process has proceed.

4.1.1.4 Administrator

Administrator of a travel agency is the person who is responsible for every operations in and out the travel agency. As a result, he/she is going to have complete control over the system and manage every user, tour and resource that the travel agency possesses. An extra feature added to the administrator is the Online Tracking system, which aims to provide in real time information on current tour location and manage the itinerary of any ongoing tours, which will increase the tour performance significantly.

Figure 4.1 represents how the data flows among all four actors with the system, in order to create a better understanding of the system explained up to now.

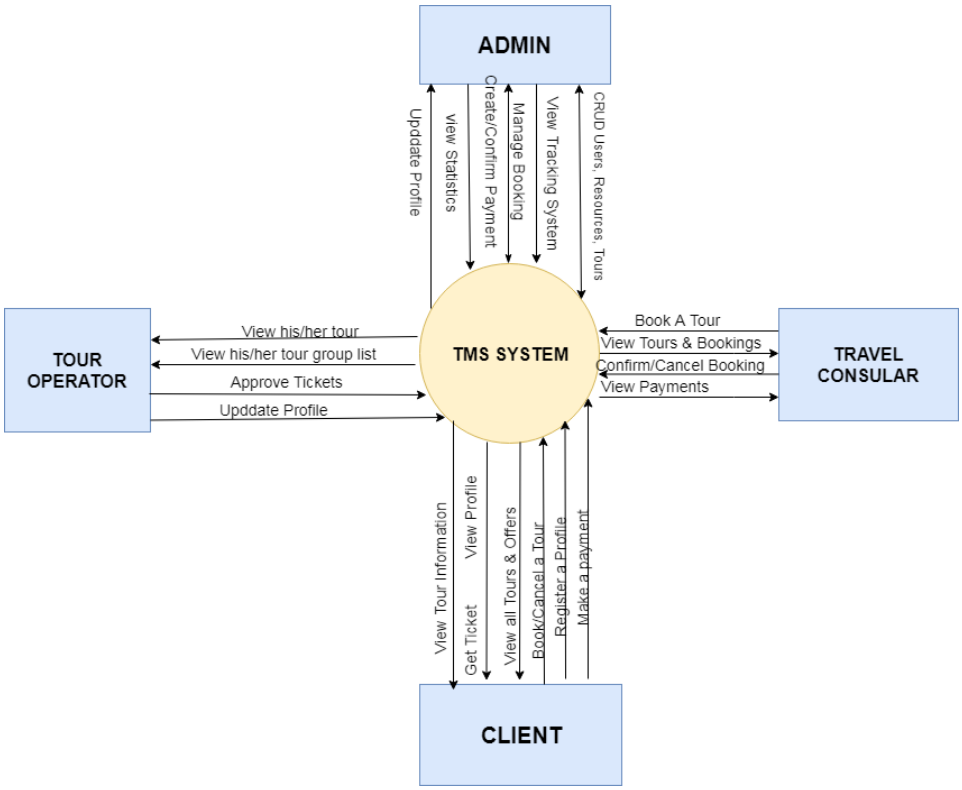

Figure 4.1 Data Flow Diagram Level

4.2 Software Requirement

The software is being built on both functional and non-functional requirements that explain in details the work that the software provides to its potential customers.

4.2.1 Functional Requirements

Functional Requirements are related to the technical functionality of the system and they are especially used to describe how the system will work. In this section it is explained the functionality of each actor involved in the system.

4.2.1.1 Administrator functionalities

The administrator can be logged into the system by using his/her username and password. He/she has all the privileged that the system offers. The administrator can create tour guides, customers, tours consular accounts. He/she can also view the user's accounts and their personal data. In case there is a problem with the data he/she can make necessary changes to it and/or delete not needed information. He can view all the reservations that are done and can make necessary changes to it. Also, he manages the resources of the travel agency by adding, removing and/or deleting data from buses, hotels and other resources that the travel agency possesses. The administrator can check the location of any ongoing tour and can view all the reports about customers, tours and reservations statistics.

4.2.1.2 Clients functionalities

Customers can start the program by logging into the system by their email and password. In case the customer does not have a profile in the system, he/she can register simply by completing a form with his/her personal information. In the moment he is logged in, every customer can view his personal profile and all the tours available from the travel agency. He/she can search and filter the tours to find the appropriate tour that satisfies his/her expectations. In the moment, the customer finds the desired tour he can continue with the booking and payment process.

When booking has finished, customer can get the ticket that is issued and also can reserve any of the available seats in the bus.

4.2.1.3 Tour Guide functionalities

A tour guide functionalities are very simple. After logging in the system by using username and password, he/she can view the tour itinerary, the clients who have booked the tour and the seats that are reserved for each customer. He/she can check the customer's ticket in the system to show that the customer has joined the group and is part of the tour.

4.2.1.4 Tour Consular functionalities

Tour Consular has similar functionalities to the administrator. He/she can log in with his/her username and password and is redirected to the dashboard, which is similar to the admin's dashboard. The tour consular can view available tours and reservation done for each tour. Also, he can book tour on behalf of any customer and at the same time can update and/or delete any reservation.

4.2.2 Non-Functional Requirements

Now that we have created an idea on how the system is going to work, we can continue with specifying the criteria for the system's operation.

4.2.2.1 Product Requirements

User Interface Requirements:

- XhoTravel is going to be a web-based application, which can be seen at any browser including Google, Mozilla, Safari, Internet Explorer.
- The application uses two main user interfaces: client interface, which is created on the basis of a booking system where each user not only can view tour posts, but also manages his/her bookings and report any issues to the travel agency, and administrator interface, which is

created to manage users, posts and statistics. The main objective is to create a user-friendly interface easy to understand and navigate.

- The user interface is created to be very consistent across all pages in navigability, content and design.
- The system must be usable without reading a printed guide. Therefore, the system should not have complex interfaces for any type of user. There would be different system modules in order to structure, simplify and ease the efficiency of the system. The modules would include: dashboard, settings, profile, tours, booking and reports module.
- The main page for every user would be a simple login page where each user is prompted to enter his/her username and password to enter in the system.
- Once the login is successful, the system will direct the user to the appropriate dashboard module, which visually will track, analyze and display key performance indicators of each module.
- Tours Interface is designed in such a way to include all necessary information that a customer may like to know about the tour and in the same time gives the possibility to book and pay for that specific tour.
- Administrator dashboard interface will show all the important information about the travel agency and will display the bookings, tours, data about the clients and some statistics generated from the bookings.
- The client profile interface will display the personal information that is provided by the user regarding personal details and touring history.
- Setting module will display a simple configuration page where each user can change his password.
- Statistics interface will show booking and customer preferences statistics that the travel agency can use in different reports and further analysis. The interface will show tables, pie charts and all the graphical data that will be generated by customer information.
- Register interface is going to be simple and easy to understand and will prompt the user to enter his/her correct information.
- View interface will generate information from the database to see the number of users and/or tours registered and their current information. Only the administrator of the system will be

able to see this kind of interface as he is the only user who can manage every step of the program.

Usability:

- Since it is a Web-App, it can be accessed only if the user is connected to internet via Wi-Fi, mobile network etc.
- The application would be highly responsive in both design and data generator or the client network, which will be integrated in the app.
- The application shall be built in such a way that is very easy to be updated and get adjusted quickly with these new arrangements.
- The application must proceed and manage the errors quickly.
- This web application would be simple and easy to use, learn and understand.
- In order to foster the user learning the system, a PDF manual would be included, providing necessary, step by step information to learn all type of users how to effectively use the system and achieve common tasks.
- The error messages would be clear, unambiguous and understandable for each user. Also, it will provide the necessary action to be taken in order to fix it.
- The web-app would be very efficient, meaning that each user can accomplish every task easily, quickly and with few or no user errors.
- The interface would be easy to learn and navigate, where every button, headings and help/error messages are very simple to understand.
- It will require a low workload as the interface is not demanding or frustrating.

Efficiency: XhoTravel is going to be saved in a web server. Therefore, the performance of this app is strongly determined by the user's internet connection strength, server hardware performance, the algorithm's efficiency on fetching the necessary data from the database, the number of active alumni that are accessing the web at the same time and on the operating system that is installed in the server. The software is web-based, therefore it requires a powerful server machine and high speed internet access in order to handle multiple users at the same time. Another performance requirement that effect efficiency is the storage space. Higher storage space means more user and bigger workspace per user so higher the storage, better the

performance. Expected number of simultaneous users should be at least 200 when the system is initially active. System should be able to deal with 400 users at the same time. Also, database of the system should handle at least a thousand of users at any periods.

- The maximum simultaneous user load: 200
- Per-user memory requirements: 2-4GB RAM, 200GB SSD Total storage.
- Expected application throughput: It is expected that the web application will be able to handle at least 50 requests per second, minimizing the throughput rate.

Dependability: We will divide the dependability requirements into five main components related to availability, reliability, monitoring, maintenance, and integrity.

Availability

- The application would be available 24/7, therefore you can access it any time.
- The application can be accessed in any geographical area.
- The application is available, only if users have internet access.

Reliability

- The application is expected to have a storage of at least 200GB SSD which will support the growing number of customers.
- Having a large storage to support data from more than a thousand customers and 8 GB of RAM will ensure that the web application will perform quickly and with minimum lagging times.
- Based on tested statistics, the management system will have a median failure rate over the one- month period across clients as 1, 47% and across servers as 1, 63%, which we expect to have in our system.

Monitoring

- The server will be able to trace each HTTP request to its original user request and will provide the required results in a fraction amount of time.
- The travel agency's administrator will monitor and regularly update the database with data on the system's users.
- The server will be responsible for keeping track on daily and monthly user activity in order to prepare for handling the increasing number of user requests and/or processes.

Maintenance

- The web application will be updated regularly in order to process all the requests in real-time.
- In case of a system crash, the server should redirect the user experiencing the crash into an error page showing the Error 404 standard response code.
- During a crash, the system should restart as soon as the problem occurs by re-configuring the server.

Integrity

- All the data is confidential and must be used only by the administrator of the travel agency.
- The web application must provide for its users an open and safe exchange platform that will facilitate communication between different modules.
- The administrator account has the main responsibility for adding new user data and maintaining the database.
- All users should provide personal credentials to log in into the system and should be authenticated before accessing their own profiles.

4.2.2.2 Organization Requirements

Environmental Requirements: XhoTravel will be compatible to each travel agency structure that was presented in previous chapters (Figure 3.1). It will be organized in such a way that will help the employee working within the office and those who work outside, or are outsource for the travel agency.

Operational Requirements: The Travel Management System will be a web-based platform that facilitates communication between the customers and the travel agencies, while maintaining a proper management system for the business. As such, this system should be able to allow all customers to manage their own information.

Development Requirements: The program is required to be built on the basis of what we have learned in university. Therefore, the following is required to be used in the development process.

Technologies to be used in client-side web development, that involves everything users see, will be:

- Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS). Bootstrap 4 framework will be used for managing HTML and CSS.
- JavaScript (JS), to make web pages interactive. We will be using jQuery library and ChartJS to generate graphs.
- Programming language: Simple PHP
- To store the data: MySQL database (relational database).

4.2.2.3 External Requirements

Regulatory Requirements: Privacy policies will be adopted in compliance with the provisions of the Law No. 9887, dated 10.03.2008 "On the Protection of Personal Data" and related sub-legal acts. The Privacy Policy describes the types of collected information as well as the way how this information will be used. Like most institutions and entities on the Internet, IP addresses of visitors to this web application are used to help diagnose problems with the main server and to administer the XhoTravel by identifying how the site is being used. IP addresses are not linked to anything personally identifiable. This means that user sessions will be tracked, but the users will remain anonymous.

Ethical Requirements: The personally-identifiable information voluntarily provided by users of XhoTravel, such as an email address, name, surname, phone number etc. will never be sold or traded to other businesses or non-profit organizations. At the same time, XhoTravel will provide to third parties personally-identifiable information of users to this web application if one or more of the following conditions apply:

- The administrator has received the consent of users to share the said information.
- The administrator is requested or is authorized to share the said information by the legislation in force, court orders or an act of a public or regulatory authority.

Legislative Requirements: Personal information of every user of this system will be subject to protection by the according regulations and legislative rules that are already being applied within the Albanian territory. The Commission for Personal Data Protection, which is operating in Albania, grants institutions, organizations and/or businesses to a license that allows them to handle personal and sensitive information regarding the users of an information system. According to the law No.9887, dated 10.03.2008, as amended with law No.48/2012, "On the Protection of Personal Data", the personal information of each user should be private and possible to be accessed only by the specified actors.

This web application will also enforce the latest update on the General Data Protection Regulation (GDPR) as it became enforceable on May 25, 2018 in EU (European Union) and EEA (European Economic Ares) countries.

4.3 Use Cases and Scenarios

4.3.1 Customers and Tour Consular

As stated earlier the system will be used by four main users: administrator who has complete control over the system, tour consular whose primary responsibility is on booking management and customer service, tour guides who are responsible for ongoing tours to destinations and the clients who have the possibility to view and book different tours.

To begin with, each client can register in the web application and through it he/she can view his/her historical touring experience within this agency. What is more important, he/she can view current tours and offers and can book any of them and then proceed to payment. In case the customers wishes to pay by cash he can continue with the cash purchase in the office. Customers can view all the touring information, tickets and the invoices they have from the agency.

An interesting key feature that is added to this application is the "Seat Reservation" that a client can make. He/she can view in real times possible available seat of the tour being booked and

can make the necessary arrangements. Also, each traveler would have his/her personal ticket that he/she can print and show to the respective tour guide.

The system is user-friendly, easy to use and very convenient. However, not every user would have the possibility to proceed with the booking process online. As a matter of fact, many people prefer offline booking. For these reason, tour consular would have the possibility to book, approve and cancel booking on behalf of each customer.

Every tour consular can view all tours, assist customers in their purchase decision and manage booking in real time through the system. They can also reserve the preferred seat by the customers and also view the booking done online by different customers.

Some possible use cases and scenarios of customers and tour consultant are:

- ✓ Register a Profile
  Every customer can create his/her personal account, where personal information and booking activities will be saved. To register each customer should complete a simple form and then he can easily enter the system and update any information.

- ✓ Book a Tour – Get a Ticket
  One important feature of this application is the online booking that will highly reduce the booking time each customer schedule for a travel arrangement with a travel agency. Any customer can search for the specific tour and when found the desired alternative he/she can continue to booking and payment procedures. Each booking would issue a ticket with payment and tour information.

- ✓ View My Tours
  Any customer will be displayed the historical tour experience that he/she has with this travel agency in his/her profile.

- ✓ View All Tours

Customers will be able to view all the current available tours in the system and make a search with any specific detail and/or filter the searching process in order to determine the appropriate tour he/she is looking for.

- ✓ Approve Bookings

  Once a customer has placed a booking, he/she is kindly requested to wait until a further approval by the representatives of the travel agency. In such a situation, tour consultant can manage booking and in case of any issues of the organization the tour consultant can inform the customers. Otherwise, the booking will successfully be accepted.

- ✓ Reserve a seat

  Any customer and/or tour consultant can reserve a seat for a specific booking in order to exclude the possibility of any undesired situation from customers before departure. Once the booking is being approved, customers can check and reserve from the available seats.

- ✓ Make Payment

  This software will try to solve an issue regarding payment methods and will implement an online paying method via PayPal and/or debit/credit card. As soon as the booking is being approved, online payments option is being given in case the customer prefers to make an online purchase rather than offline. Offline payment is an option as well.

- ✓ Cancel Booking

  Any customers can cancel his/her booking at any time conform to the business regulation and policies on cancellation from the travel agency. Travel Consular can check in real time any cancellation taken place from any specific person.

4.3.2 Administrator and Tour Guides

Each administrator can register a new tour guide in the system, who in most cases in outsource and certified guide to whom tours are assigned according to his/her availability. A tour guide

does not have many functions in the system. However, the task that he should followed are the key determinant of the customer satisfaction and tour performance. Each Tour Guide can view his/ her current tour group lists with their tickets and seat reservations attached. Also, he can view tours details such as: itinerary, breaks, hotel information etc. Anytime a problem occurs he can immediately report in to the agency.

On the other hand, the administrator main concern is whether the tour objectives are being reached or not. He can check in real time the system to see how the tour is performing, whether there is any problem or not and check online tour location.

Some possible use cases and scenarios of administrator and tour guides are:

- ➔ View Tour Clients

  Administrator will assign a list with client who have booked a specific tour and deliver it t the tour guide who can check it 24h before the departure. The list will contain information regarding clients who are participating to a certain tour. The tour guide is going to use this list for ticket and seat checking of the customers, while the administrator will manage the whole process from the system.

- ➔ View Tour Details

  This use case covers an important feature of travelling that is travel itinerary. Administrator will provide a detailed itinerary to be followed by the tour guide. This itinerary will become active 24h before the departure to the travel guide who can view it anytime through the system.

- ➔ Report An Issue

  Tour Guides can reports any problem happening during the tour at the system and immediately the administrator will receive a notification explaining the issue that is

happening. The system covers only the notification part of the process and does not proceed with any action opportunities for any involved party.

- ➔ Manage Issues

  Administrator is the actor involved in managing issues received by the tour guides. As stated earlier, the system shows only the informative part of the system and the administrator can delete, update and view the issues, without taking any further step in the system.

- ➔ Track Tour

  Once the tour has departure the administrator can check in real time the tour location in the system to check whether the itinerary is followed properly. This use case provides an important extra features of the system.

- ➔ Check Ticket

  Tour Guide can check the customer's ticket before departing in order to inform the administrator the people that are part of the tour and those who did not show up, even though they have made a booking. The administrator can check in real time the system to see whether the tour is going according to the plans.

4.3.3 Administrator and Tour Consular

People who work in the office, administrator and tour consular, perform the basics functions of the system starting from the tour creation, customer service, booking management and decision-making processes. To help the travel agency with the decision making processes, the system is designed to have a wide statistical analysis on the historical data regarding booking and customer information, which can help the business develop customized and differentiated product.

Some possible use cases and scenarios of administrator and tour consular are:

- View Available Tours

  While administrator is responsible for creating the tour and packages that the agency offer, tour consular can view at any time the available tours that the agency is offering, in order to make any arrangements for a specific customer who wishes a book a tour at this travel agency.

- Manage Booking

  Both travel consular and the administrator can view and manage the reservations of a particular customer. They can add, delete or update a certain reservation according to the situation.

- Confirm/Make Payments

  Any customer is offered to pay offline/online and both travel consular and administrator assist in the offline payment. The can register or delete any payment at any time. They simple select the cash payment method in the system and submit the amount being paid.

- Reserve a Tour

  Anytime the customer wishes to make a booking offline, the tour consular is responsible for entering the data in the system and make the reservation for them.

- View Statistics

  The system will automatically generate statistics based on the information that will be entered in the database and the administrator and tour consular can view them in real time in order to improve decision making process. This feature is very important for the travel agency, as it significantly improves the business performance and help in generating a differentiated product.

4.3.4 Travel Management System

The system is designed with the main purpose of facilitating travel agency's management. Each actor contributes in increasing the efficiency and performance of the travel agency. Figure 4.2 shows an overview of the system main use cases that aim to enrich agency's performance.

Figure 4.2 Use Cases of the Travel Management System

4.4 Activity Diagrams

From a general point of view, when a client enters the system he has two main options: login or create a new account. Each customer can register by simply completing a form with his/her personal information and login by entering email and password. For tour guide and consular users that can only login by using a username/ password as their profiles are created only by the admin. Administrators will give a username and a random generating password that is preferred to be changed by tour consular and tour guide as soon they receive it. After login is finished, each user is redirected to his/her dashboard and from there he can take any necessary action. The overall system usage is simple and understanding and there are few steps for each operation to be completed. This section aims to provide some basic information on the work flow regarding the main use cases of the system. We will see the necessary steps to be taken by each actor in booking process, seat reservation and online tracking.

An activity diagram is a way of representing the flow of control for executing a particular use case. It is a behavioral diagram as it depicts the behavior of a specific system. Each use case that we have described previously can be shown as an Activity Diagram, where all the workflow from the starting point to end will be represented.

4.4.1 Booking Process

The booking process is not complex in nature and in the organization in the system. Each customer can select any tours from the available list at any time and start the booking procedure. The system itself will check whether the tour is valid or not and prompt the user to enter his/her personal information and payment details. After any necessary validation is done, the travel agency representative (admin/ tour consular) will view the booking request and will confirm or reject it. Immediately, the confirmation message will be sent to the customer. As stated in the business requirement the booking can be cancelled by the administrator in case there is no satisfying attendance (less than 20 people are not permitted to make the tour). Therefore, the customers should wait for a confirmation response by the administrator before continuing to the

payment procedure of the system. Any detail will be shown to the customer. Figure 4.3 represents the flow of booking a tour.

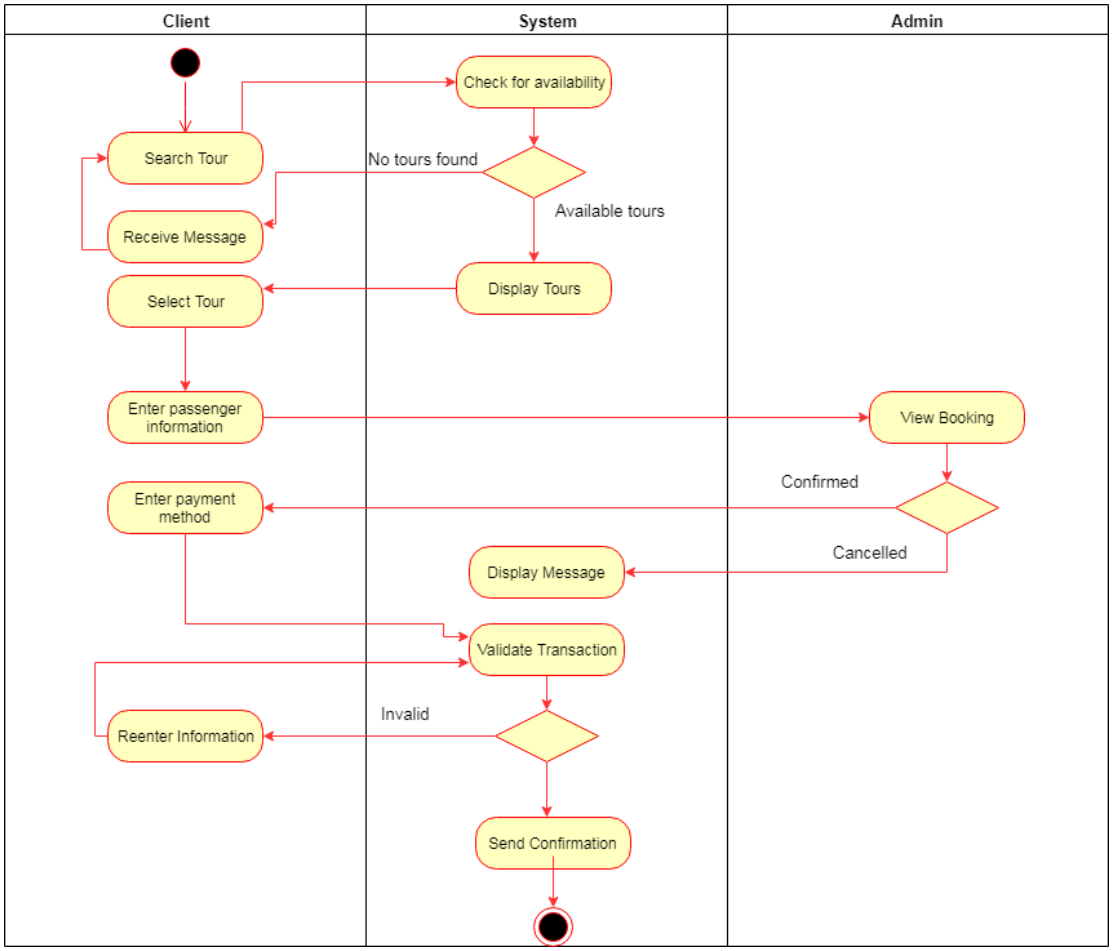

Figure 4.3 Booking a Tour Activity Diagram

4.4.2 Reserve a seat

Customers will be able to reserve a seat, or get the necessary information regarding seat arrangements through the system. Reserving a seat is very simple. First, the customer should select the tour and after being validated from the system the customer is shown a list with the available seats, where he can select one or more seats. This feature will avoid any problem related to the seat distribution that can occur before tour, because everything will be transparent.

Customers can check which seat is available or not and can reserve a seat of his own. This will reduce any inconvenient moment that can occur before departing and also increases customer satisfaction.

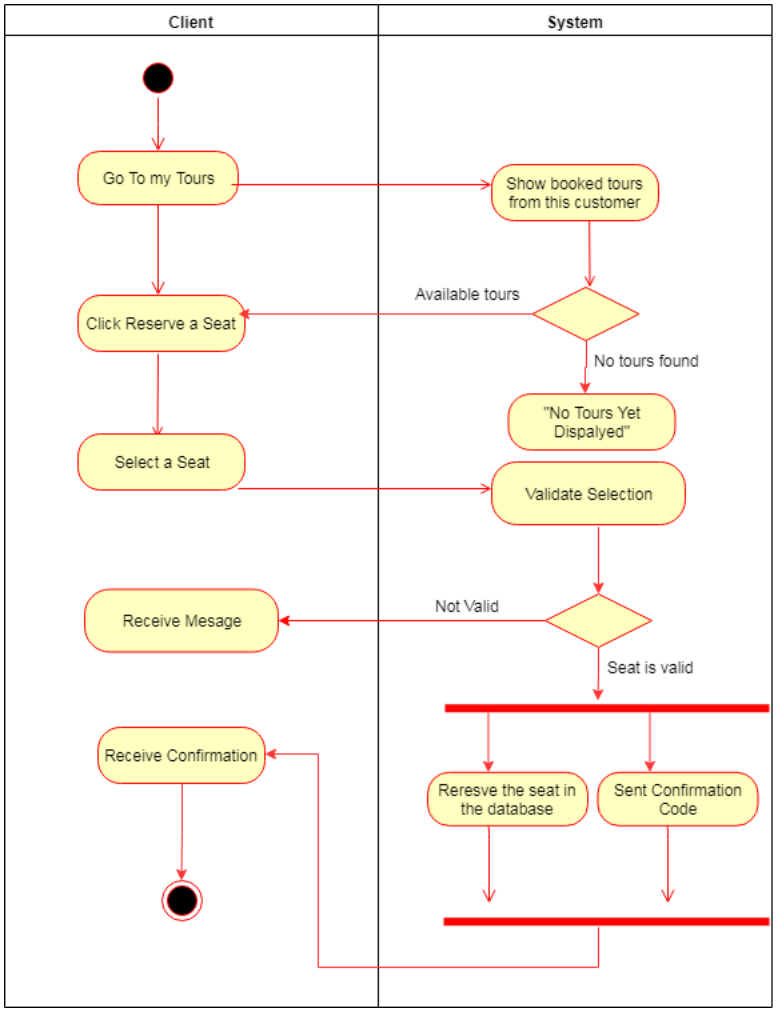

Figure 4.4 Reserve a Seat Activity Diagram

4.4.3 Online Tracking

Another important feature that directly affect tour performance is the online tracking. One main issue regarding ongoing tour is the unknown information on how the tour is performing and whether is it sticking to the plan that the administrator arranged at the beginning. Administrator of the travel agency can check in real time the location of an ongoing tour and understand if the itinerary is being followed properly, or if there is any technical or other issue. This is a very

important feature that makes the tour system fault intolerant and keeps the administrator and the travel agency in general well informed regarding ongoing tours.

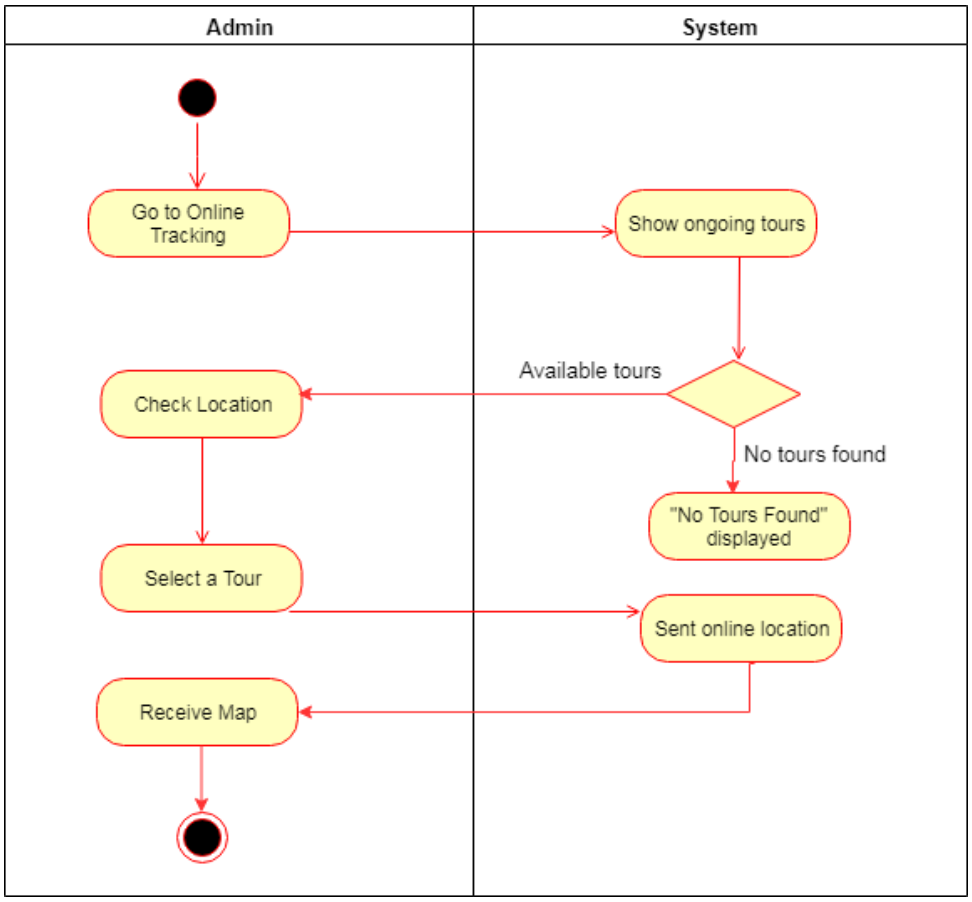

Figure 4.5 Online tracking Activity Diagram

4.5 Sequence Diagrams

A sequence diagram simply depicts interaction between objects in a sequential. It provides information on the order in which these interactions take place and describes what order and how the objects in a system function. Every use case of the system has a specific order on how the object function. We will explain in detail two of them: booking process and seat reservation, because they involve many interactions among actors and the system itself.

4.5.1 Booking Process

Booking process start in the moment when any user in the customer real start searching for any specific tour. He/she can check any specific tour, get necessary information and after deciding on the preferred tour and completing the booking form, he/she should wait for a confirmation from admin and/or tour consular and then proceed with the payment process. The process start with the tour search and ends with a final response from the system showing the state of the validation, whether the booking is confirmed or not.

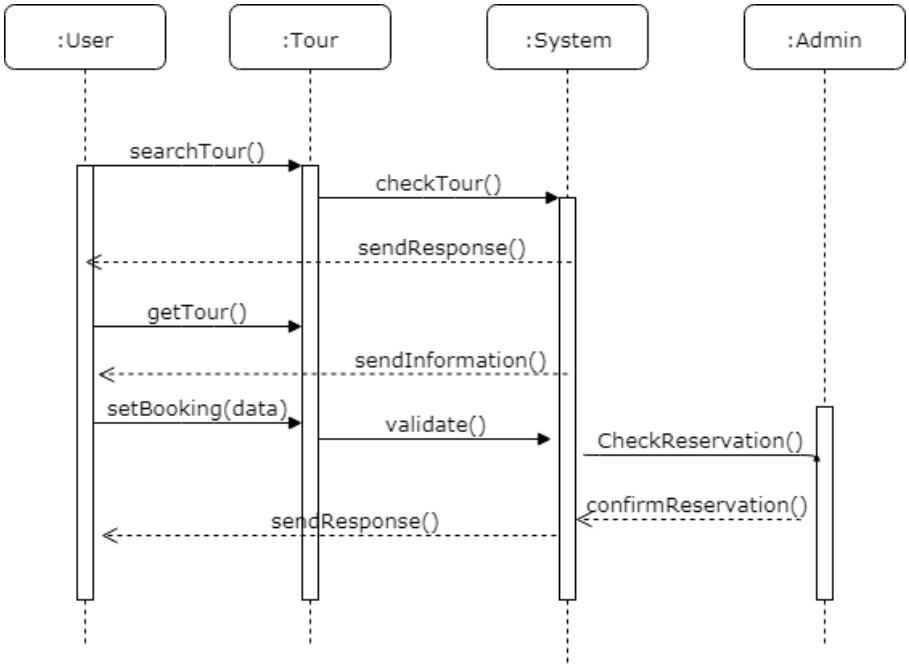

Figure 4.6 Booking Process Sequence Diagram

4.5.2 Reserve a seat

It is impossible to reserve a seat in a non-existing booking. Therefore, the customers should have previously booked a tours and get this tour booking confirmation in order to reserve a seat on his own. He/she should firstly get the tour on whom they would make any reservation and after choosing among the available tours it should wait for a confirmation response from the system. The process starts with getting the tours information and ends with a final response from the system showing whether your seat was successfully reserved or not.

Figure 4.7 gives the view on how the user, seat and system interact with each other in order to reserve a seat for a customer.

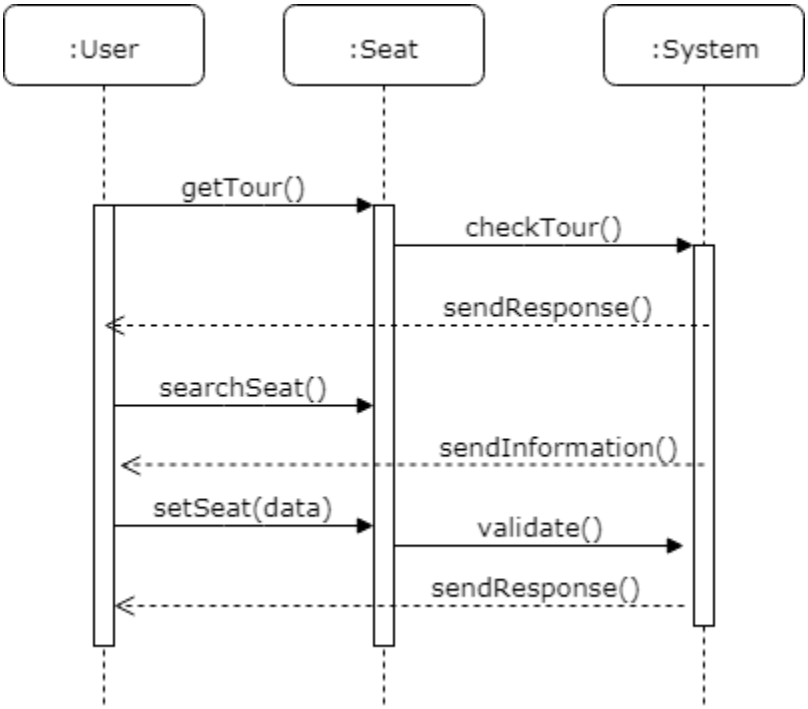

Figure 4.7 Reserve a Seat Sequence Diagram

4.6 Structural Design

The system will integrate some main objects, which will represent certain situation from the real-world. Some of the main object are: tour, payment, ticket, admin, customer, tour agent, map, booking and so on. Figure 4.8 shows the class diagram of this system. It gives a static view of the system, while describing all types of object that are related with each other.

XhoTravel system is divided into 11 main classes that have certain relationships with each other. A tour guide class can be used to register, update, delete and view certain tour guides, while hotel and bus class are designing as object to handle operations regarding contracts that the travel agency has, or to show what the company possesses for the tours. All these classes are related to the main tour class which is designed in such a way that will handle any operation on

the tours starting with the creation and then the tour management and then associate it with the booking system as each tour can be booked by any customer. One important method that the tour class contains is the getLocation() methods, which will display in real time the current location of any ongoing tours.

Booking Class has relationship with many classes, such as tour, customers, staff and payment. Each booking can be done by either a tour consular or a customers and is related to a specific tour. Also, each booking is related to a specific done by a customer either online or offline. Beside some basic methods of creating, editing and deleting, booking class has all the necessary methods that will show the relationship among other classes.

To continue with, the seat class is designed in such a way that will hold the reservation that a customer will make at any time. The class is associated with the customer class and the methods are mostly related to seat reservation and reservation management.

Customer is the center point of the system, therefore it is a very important object in the system. It is associated with the booking class and the seat class and it exhibits all create, view, delete, update functions for a booking process.

Staff Class is related to the tour consular actor and together with the customer is related to the booking class. As we have stated previously, customer can book online or offline and the tour consular is responsible for assisting the customer in the offline procedure of the booking by doing all the operations on behalf of the customers and is designed similarly to the customer with some specific changes.

Ticket Class is the object that issues a ticket containing all the booking information and is related with the payment class that handles all the operations regarding tour payments. Picture 4.8 shows what I have described until now. The class diagram provides explains in details all the classes together with their attributes, methods and relationships among variables.

Figure 4.8 shows an overview of the system class diagram which represents all the details explained in this part.

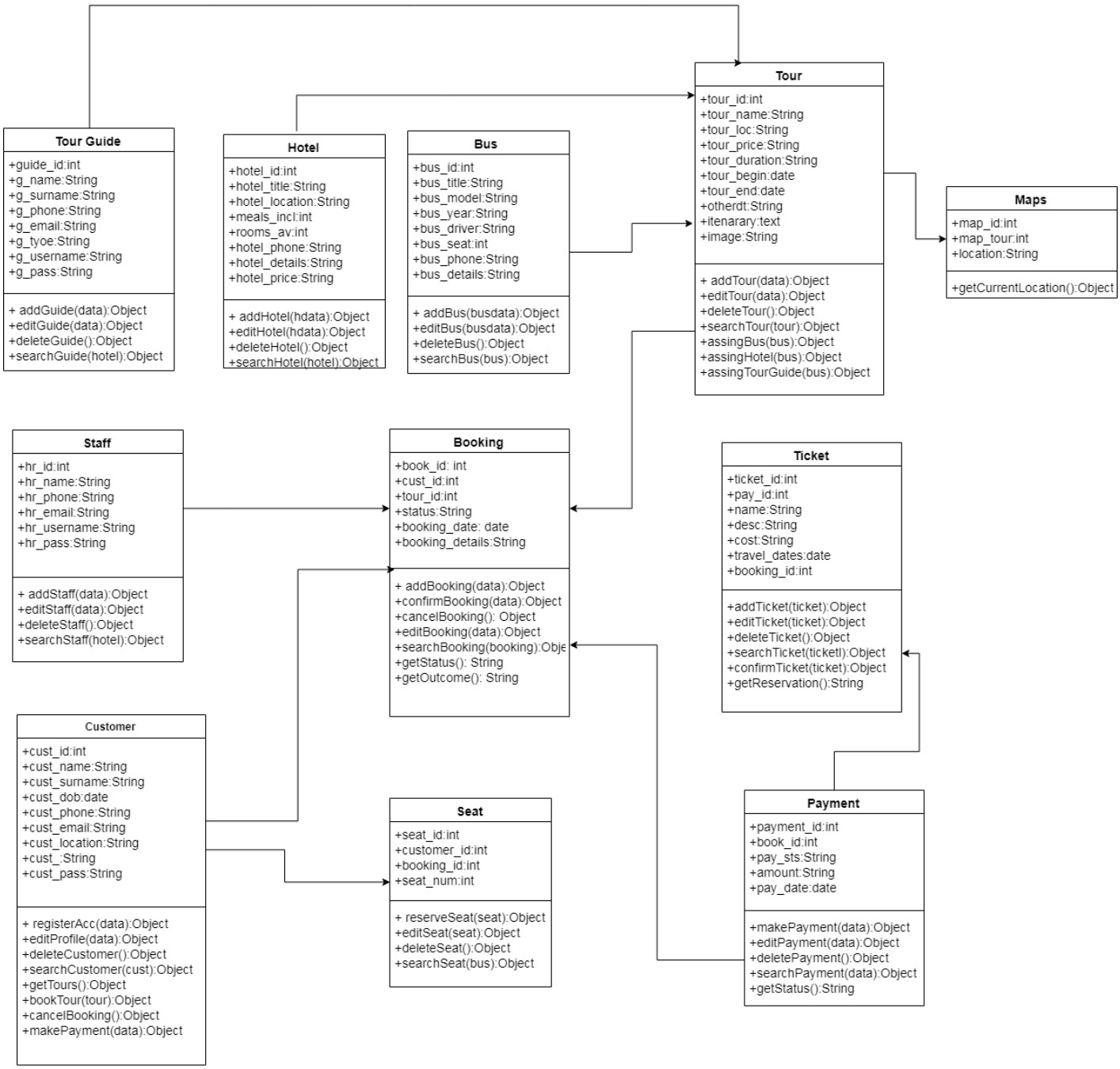

Figure 4.8 Class Diagram of the System

4.6.1 Relationships among entities

The system will contain 16 entities with their appropriate attributes. In order to create a better understanding on how the entities till relate to each other you can check the Entity Relationship Diagram in Appendix B. All the entities will satisfy certain relationships and whenever we have a relationship many to many a pivot table is created in order to normalize the table in the third level. Possible relationships among entities are: one to many, one to one and many to many.

Relationships that exist in the system are as follow:

- ✓ Admin creates many tours, buses, hotels and each tour, bus, hotel is assigned to only one admin.
- ✓ Each client has many bookings, and each booking is assigned to only one client.
- ✓ Each client has many tickets, and each ticket belongs to only one customer.
- ✓ Client has many tour memories and each tour memory belongs to only one client.
- ✓ Each client selects only one seat and each seat is reserved for only one customer.
- ✓ Tour Guide can view only one list at a time (the current list) and each list can be views only by the responsible tour guide.
- ✓ One booking has many payments and each payments is done for one booking,
- ✓ Each payment issues one ticket and only one tickets belongs to a payment.

4.6.2 Component Diagram

A component diagram is used to describe the organization and wiring of physical components in the system. Figure 4.9 shows a component diagram, which give all the components that will be implementing in order to create our system. The main modules of XhoTravel would be the travel agency, which involves the tracking system, customers, booking, tour guide and tours module. These modules will be secure using session and cookies and will have database access through a database connection. The main component of the system will be the system admin who has complete control over the XhoTravel system.

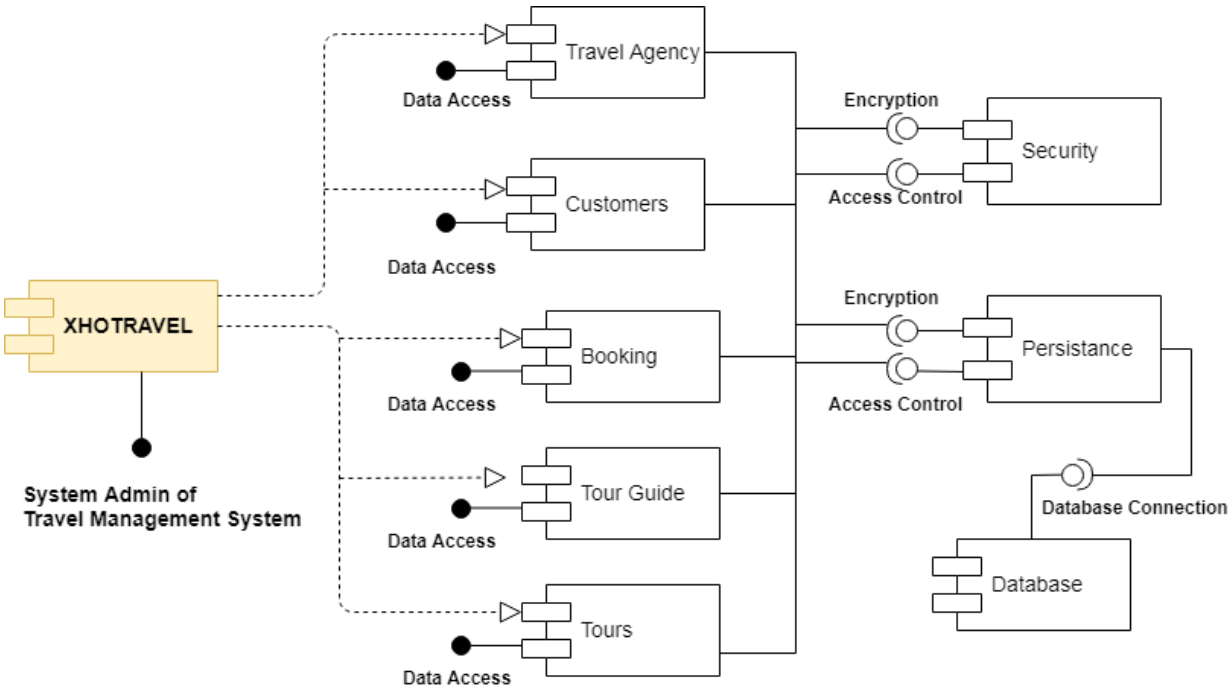

Figure 4.9 Component Diagram of the System

CHAPTER 5

IMPLEMENTATION

XHOTRAVEL Management System is designed as a dynamic Web Application that utilizes an integrated system to help in management of travel agencies. While brainstorming on the potential and useful technologies that can be used to build such an interactive system, I decided to combine the client-side and the front-side systems of the software with traditional but extremely reliable technologies as provided in the next section

5.1 Technologies Used

5.1.1. Client-Side Programming (Front-end)

Technologies to be used in client-side web development, that involves everything users see on their screens, are:

- Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS). Bootstrap 4 framework will be used for managing HTML and CSS.
- JavaScript (JS), to make web pages interactive. We will be using jQuery library and ChartJS to generate graphs.
- JSON format will be used to implement the Online Tracking System.

5.2.2. Server-Side Programming (Back-end)

To generate a connection with our MySQL database and to set the logical functions underlying our system we are using the following technologies:

- Programming language: Simple PHP
- To store the data: MySQL database (relational database).
- Finally, a web application needs a server to handle requests from clients' computers. The application is going to be saved initially into a personal and student-dedicated server which is part of the large Epoka Server: *stud-proj.epoka.edu.al*

As a standard web application, our Travel Management System will take advantage of the HTTP protocol to establish a connection of the client with the travel agency.

5.2 Database.

The database used for this project is MySql, which is an open source relational database management, known for persistence, flexibility to changes and easy access in different browsers. The database of XhoTravel consists of 16 tables related to each other by using foreign keys. Each table has a unique key identified a row, also known as the primary key. The primary key for each table is in auto incremented integer number specified as table's identification number (id).

One of the main tables is the booking table which contains information about the tour being booked, the person who make this reservation and the booking status. It has book_id as primary key and it is related to other tables by using foreign keys. The table also saved the booking date to show the date in which the tour was booked. It is related with the payment table that saves the payment information that the customer has done.

Another important table is the customers table which saves all personal information that the customer has entered in his/her personal profile. The password is encrypted. The primary key of the table is cust_id.

Other tables: buses, hotels, tour_guides save information on the human and physical resources that the business uses when creating and organizing a tour. They are specifically related with the services table, a table used to allocate the resources on a specific tour booked by a certain number of people.

Figure 5.1 shows the relational database schema and provides all the information on the tables and the relationships that exist among them.

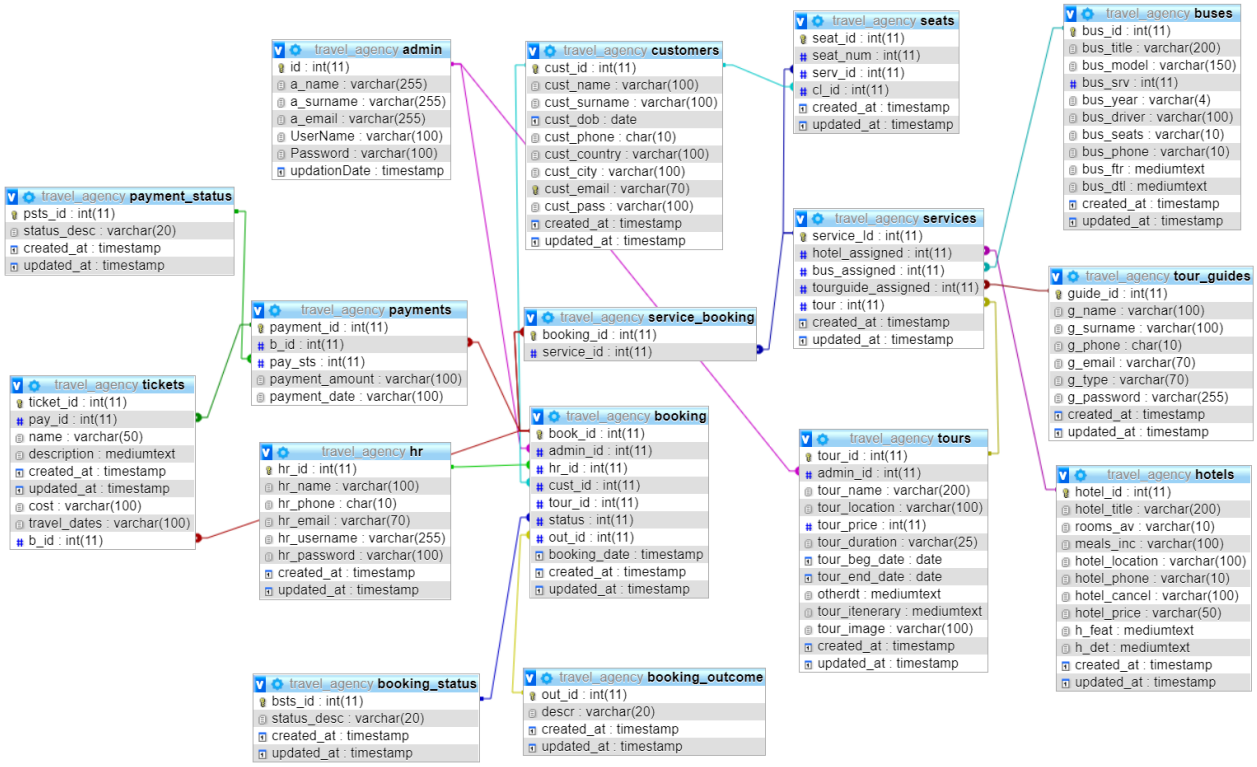

Figure 5.1 Database Relational Schema

5.3 Website Screenshots

This section provides some of the main screenshot in order to create a general view on how the application work and is displayed to each user. You can check for more screenshots of XhoTravel Appendix A.

5.3.1 Online Tracking

One of the main features of this program is the online tracking system that will help travel agencies collect information of how the tour is going and whether the itinerary is properly followed or not. The administrator will be shown a list with all the ongoing tours that have departure recently. He can click in the check here section in the table to see the current location of that specific tour.

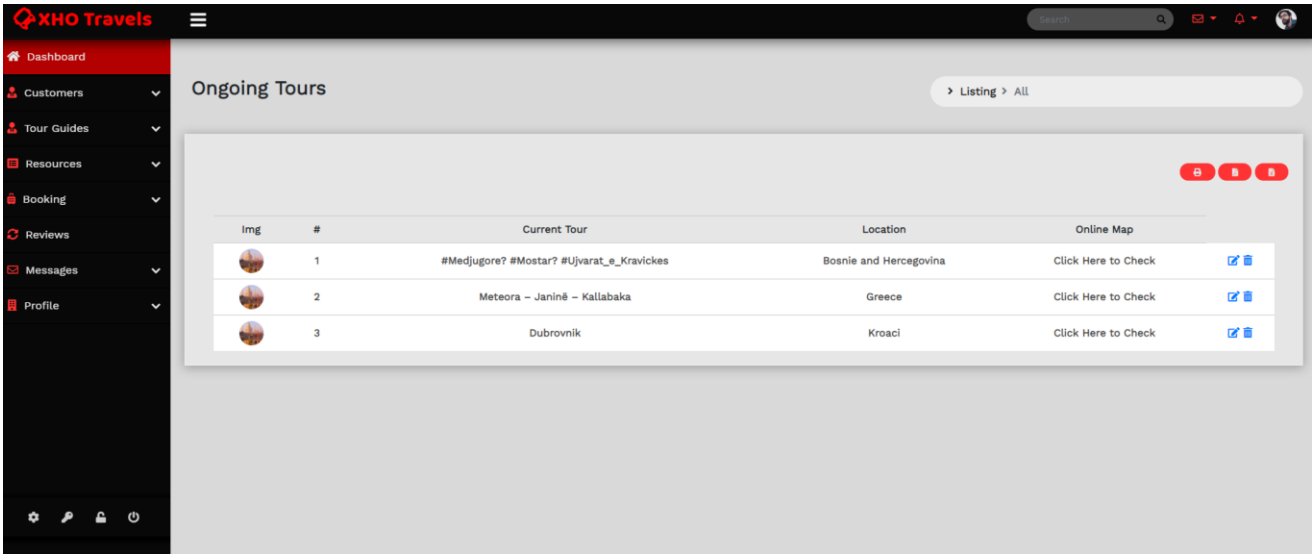

Figure 5. 2 Ongoing Tours

In the moment administrator clicks the online map, he/she will be redirected to the online tracking page that will show the map with the current tour location. This is implement with JSON technology. This feature is innovative and helps the administrator in understanding how tour is proceeding in real time.

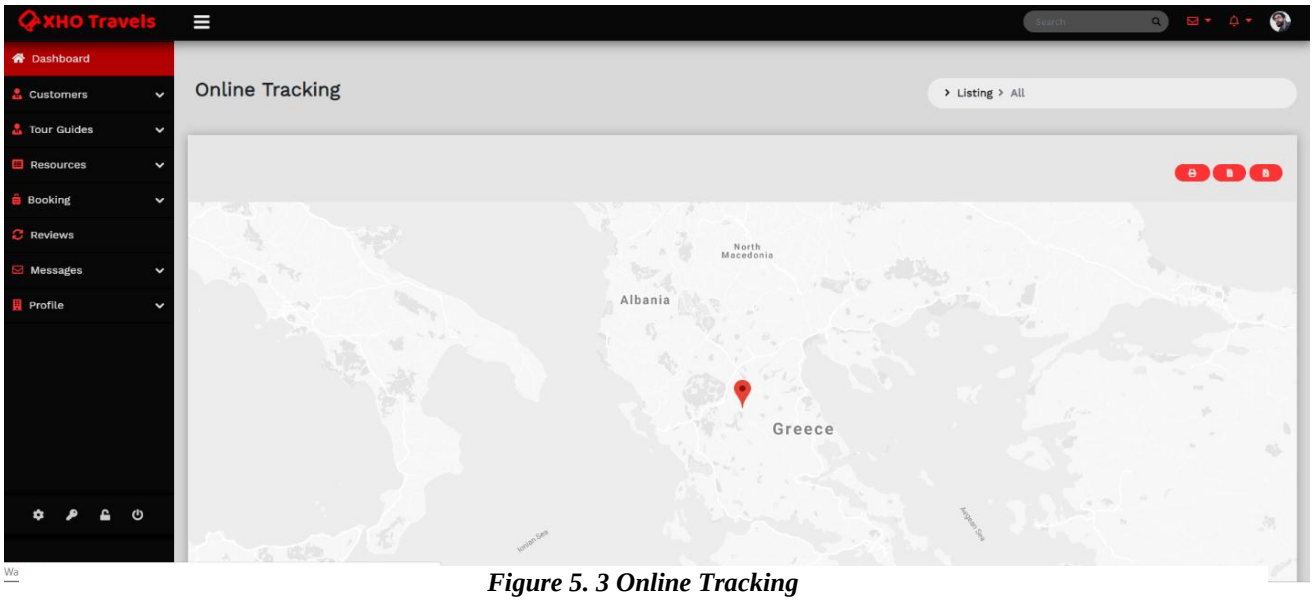

Figure 5. 3 Online Tracking

5.3.2 Manage Tours

Administrator can create, view, update and delete information regarding tours, buses, hotels, customers and bookings. All the resources and users are shown to administrator in a tabular form as shown in Figure 5.4 and from there he can make necessary updates and/or delete.

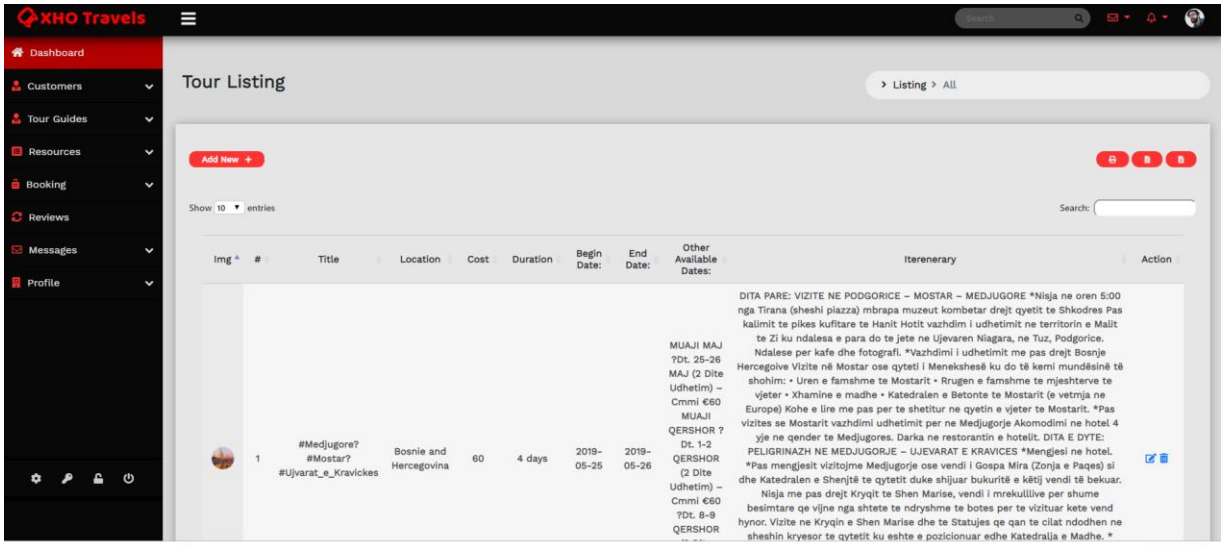

Figure 5.4 Tour Listing

On the other hand, the administrator can create a new resource or user by simply completing a form with necessary information and immediately the data will be saved in the database and displayed in the system. The form is shown in Figure 5.5.

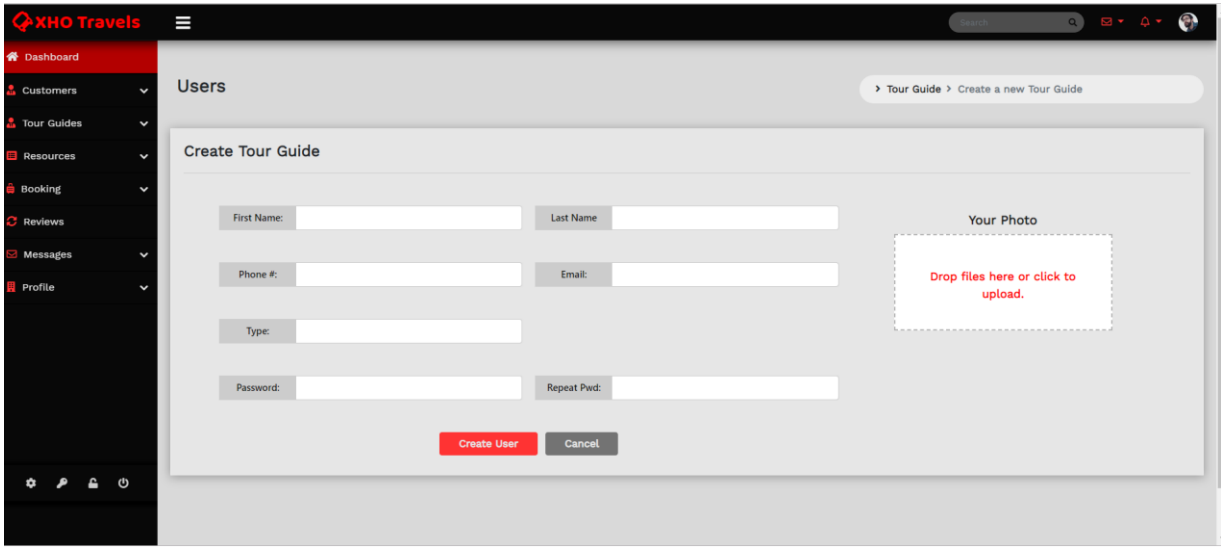

Figure 5.5 Create a Tour Guide Form

5.3.3 Manage Bookings

Administrator and/or tour consular can manage in real time the bookings. The bookings are shown to them in a tabular form and from there they can make any changes. They can approve, cancel and/or make a payment on behalf of a certain customer. In the moment a booking is finished, it will be displayed automatically in the system and administrator and/or tour consular will receive a notification regarding the booking and the customer name who completed it

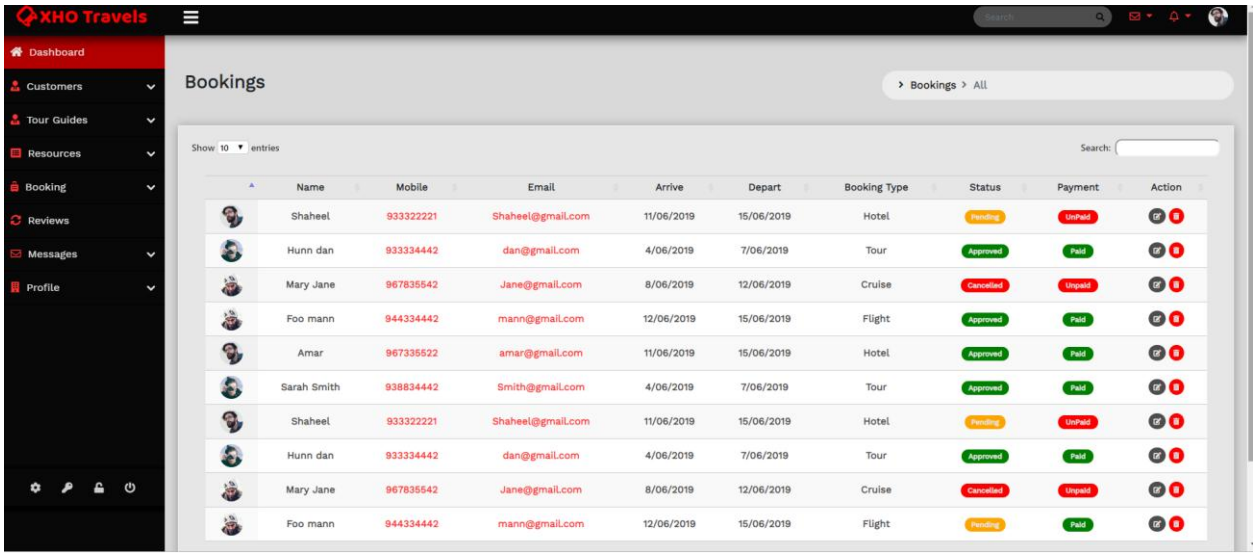

Figure 5.6 Manage Booking

5.3.4 Customer Booking Process and Reserve a Seat

Each customer will have the possibility to book, pay and reserve a seat regarding a specific tour from the system. Figure 5.7 represents an overview on how this process is done. First, the customer should select a tour from the available list of tours and click on the view more. Then, he/she will be redirected to a page that has all the tour details regarding itinerary, available seats left on the left there is the booking options. They can complete the form in order to make any booking regarding that specific tour.

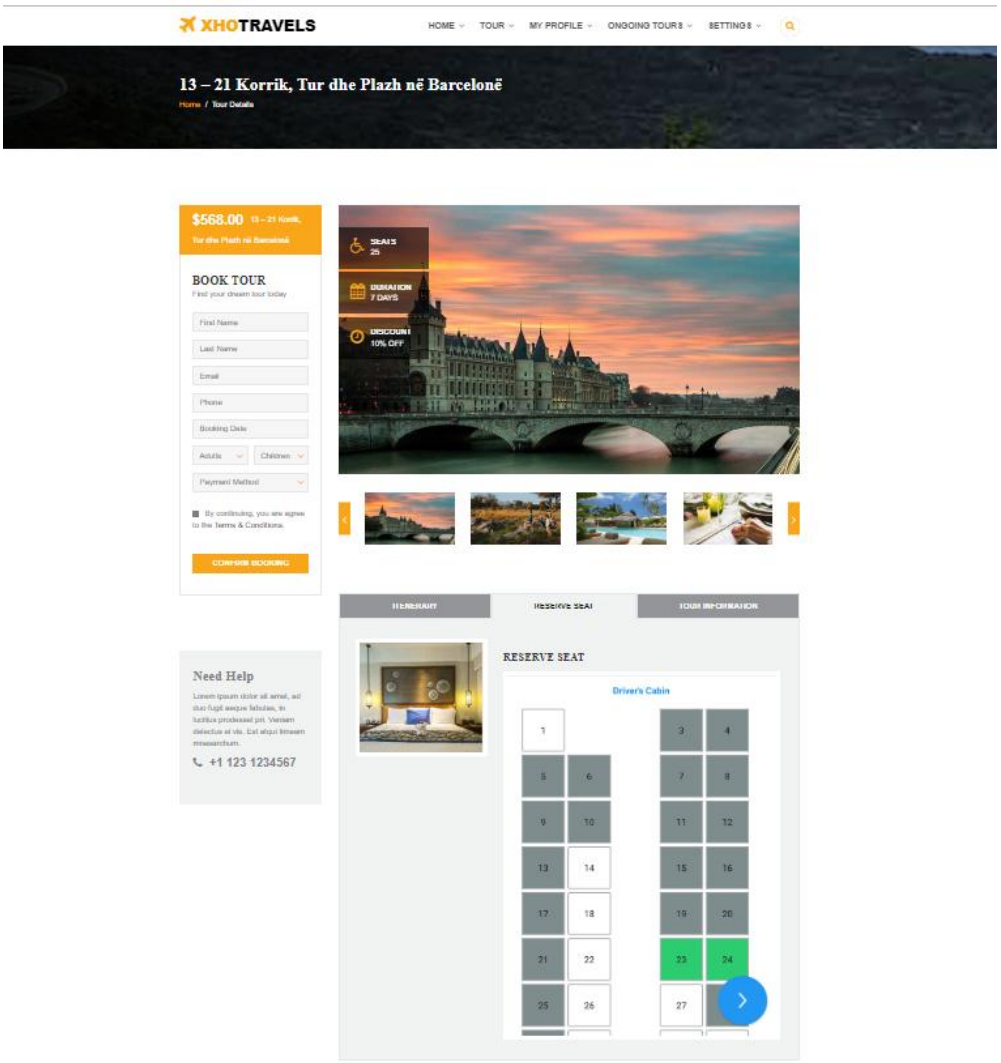

Figure 5.7 Booking Process

5.4 Deployment Diagram

All the components are deployed into the hardware. The system can be accessed by any user through a personal computer or any other device where you can use a browser. It the browser you will be shown with the interface of the system and you can make any request to work on the software data. The software will send a HTTP/HTTPS request to the server and to transport it will use TCP/IP protocol. The request will directly be sent to the the web server in which the program will be implemented and the web server will request data from the database server that will check the database and return a query which after being validated will be shown to the user's interface. The application implements a client-server architecture as shown in the Figure 5.2.

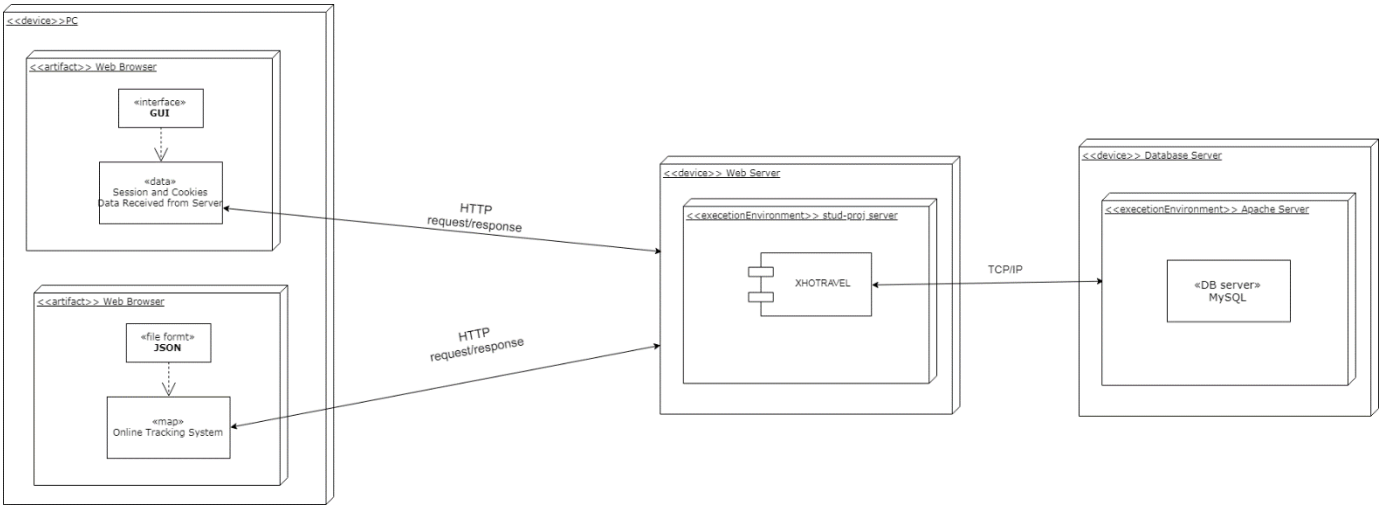

Figure 5.8 Deployment Diagram of the System

5.5 Implementation Barriers of the Model.

When analyzing a new solution for a certain market, we should be aware of the resistance to change that our product is going to face in the market. First, there is the limited knowledge and lack of awareness in this field that will make the market highly resistance to change their way of operating in the market. Other than that, the system has a high cost of initial investment and cost of maintenance, which are some economic barrier that this idea will face. However, this

system will significantly improve travelling process and make the overall performance of travel agencies more efficient. Therefore, the implementation of this software will require to handle the high resistance to change that the market will offer. Furthermore, Albania hasn't reached the phase where technology is matured in the market. Sometimes, businesses do not have the idea how important is to maintain the product update with the business rules and regulations. Some other businesses refuse to spend a lot of money in different technological solutions. These are some of the barriers that the product may experience while trying to implement it.

CHAPTER 6

CONCLUSION AND FUTURE WORK

Tourism activity includes a wide set of services and is a fundamental source of development for a country. This sector can generate a high income for a country, while at the same time creating a brand value for that certain state. On the other hand we saw travel agencies as a distributor of services that tourism sector offers to customers.

Travel agencies have experience a radical change since their creation in 1758. At the beginning they were serving only to medium and upper class of people. From time to time, travel agencies were affected by changes in technology and they changed their scope and operations fundamentally until nowadays, when we are experiencing a digitalized travel agency with a considerable online presence, which is solving its problems through digital solutions.

Electronic tourism is changing travel agencies operation in 3 main directions: the understand customer behavior and demand better, which help in delivering a differentiated product, they include extra features and innovate by using technology and the third component is the fact that electronic tourism is increasing the efficiency in the company's structure. One real example of the benefits from E-Tourism is Singapore, which is completely transforming tourism through digital evolution and is following the practices of the Smart Nation.

Smart Nation concept determine that a country can be improved only if it uses digital innovation. Albania can be a potential Smart Nation and deliver many technological solutions that will help

travel agencies in their performance. In Albania there are more than 400 travel agencies and they all have almost the same problem, so a digitalized solution would help them in increasing the efficiency. There is a lack of communication between parties, which has caused serious issues in the management of this businesses. The operations are mostly done offline and the data is usually saved in spreadsheet software, which makes all the process tedious. These problems arises especially with the important fact that the number of tourists is constantly increasing over time. This implies that an immediate solutions should be taken in order to improve the performance of travel agencies.

I suggest the creation of an integrated platform that will help businesses improve their performance while maintaining the proper relationships with their customers. Therefore, I suggest the usage of XhoTravel, which is a web application that will help business in four main areas: manage the resources of a travel agency, create strong relationships with customers, keep track of tours and create professional relations with all the components in the organizational structure of every travel agency.

XHOTRAVEL management system aims to facilitate travel agency's operations management through a simple digital and innovative solution that puts customer as a center point of reference. The system helps in reducing file work and save huge amounts of time in each operations that the travel agency performs on a daily basis.

Furthermore, the system's database when maintained properly, is very efficient in record keeping and information generations from the data. The whole systems offers quicker access of information to administrator which can significantly help him/her in the decision-making process.

XHOTRAVEL offers an online system available at any time by any user, which will remarkably reduce the time on planning. Being a fully integrated system, it does not only shorten time, but

also help in reducing the communication gap that currently exist between customer, travel agency and tour guides.

However, this software is only the beginning of a continuous process that must occur in the near future. First, the tour guide should have a mobile application which will facilitate the tracking system in real time and the communication with the administrator. Also, there exits many other features that the system can implement in order to achieve competitive advantage.

As the first law in the Software Engineering states "No matter where you are in the system life cycle, the system will change, and the desire to change it will persist throughout the life cycle" (Bersoff et al, 1980). There will always be available room for improvement as the business requirements, structure and customer's needs will change. The most important thing, is to always cope with the changes and make the necessary adjustments.

REFERENCES AND BIBLOGRAPHY

Buhalis, P., & P. (2008, January 17). Progress in tourism management: Twenty years on and 10 years after the internet: The state of e-Tourism research, Retrieved from https://www.academia.edu/164763/Progress_in_tourism_management_Twenty_years_on_and_10_years_after_the_internet_The_state_of_eTourism_research

Buhalis, P., Leung, D., & Law, R. (n.d.). E-Tourism: Critical Information and Communication Technologies for Tourism Destinations. Retrieved from https://www.academia.edu/896008/eTourism_Critical_Information_and_Communication_Technologies_for_Tourism_Destinations

Chand, M., (2012) Travel Agency Management: An Introductory Text, Anmol Publication Pvt. Ltd., New Delhi

Cox&Kings. (2014). About us History. Retrieved from http://www.coxandkings.co.uk/aboutus-history

Dawson, Michael. (2004). *Selling British Columbia: Tourism and consumer culture, 1890-1970*. Vancouver, BC: UBC Press.

Holloway, J.C., (2016) The Business of Tourism, Prentice Hall, London.

Instituti i Statistikave. (2019). Retrieved from http://www.instat.gov.al/

O'Connor, P. (1999). Electronic Information Distribution in Tourism & Hospitality, Wallingford: CAB.

Porter, M., (2001). Strategy and the Internet, Harvard Business Review, 79(3), 63-78.

Smart Nation Singapore. (2019). Retrieved from https://www.smartnation.sg/

Sheldon, P. (1997), Tourism Information Technologies, CAB, Oxford.

Tourism Market System Analysis- November 2014.pdf. (2019). Retrieved from https://drive.google.com/file/d/1nJ5KDEMzvD6I4fiXsd8fj8tI8qi3YZfv/view

APPENDIX A: Software Screenshots

Customer Module

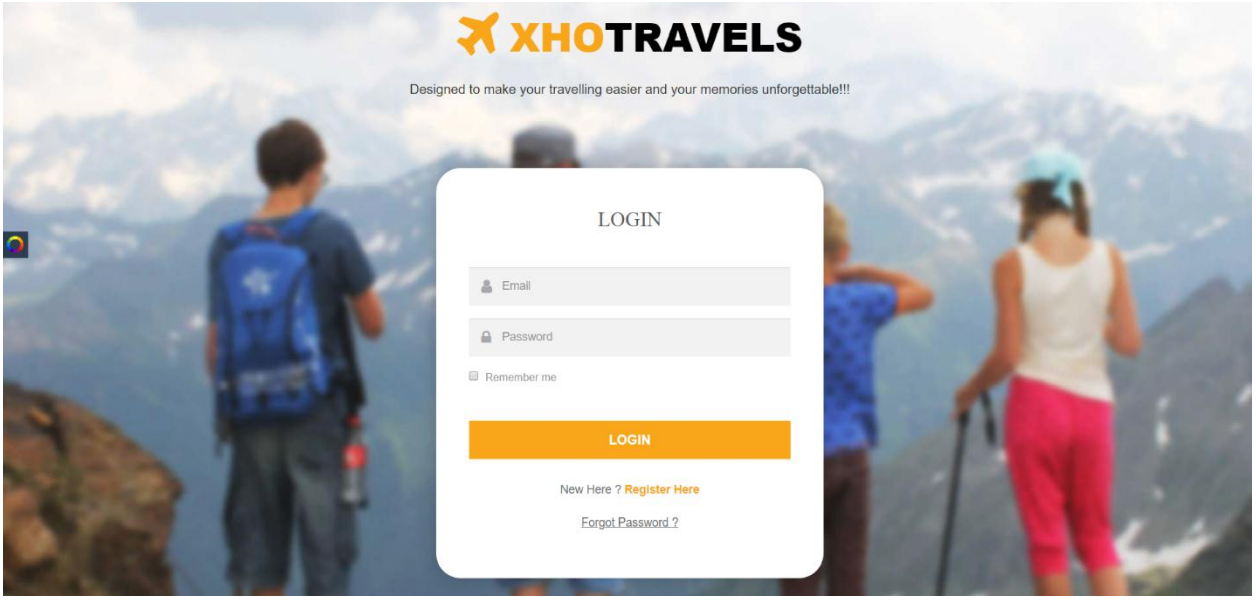

Figure 1 Customer Login

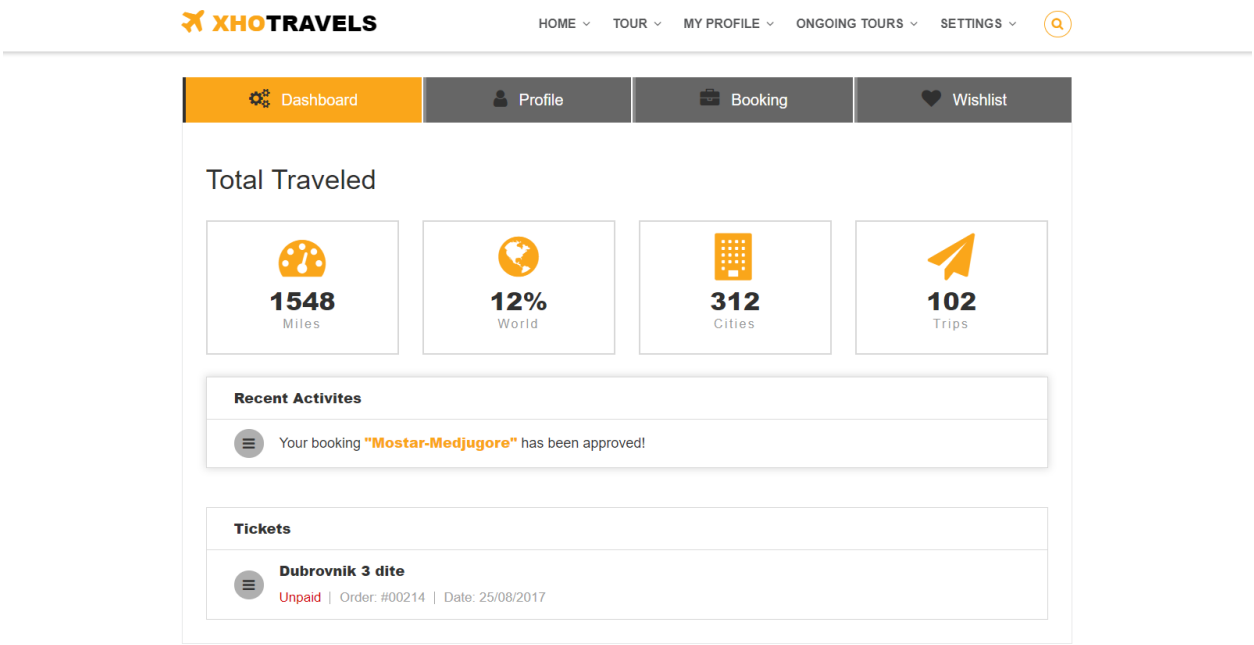

Figure 2 Customer Dashboard

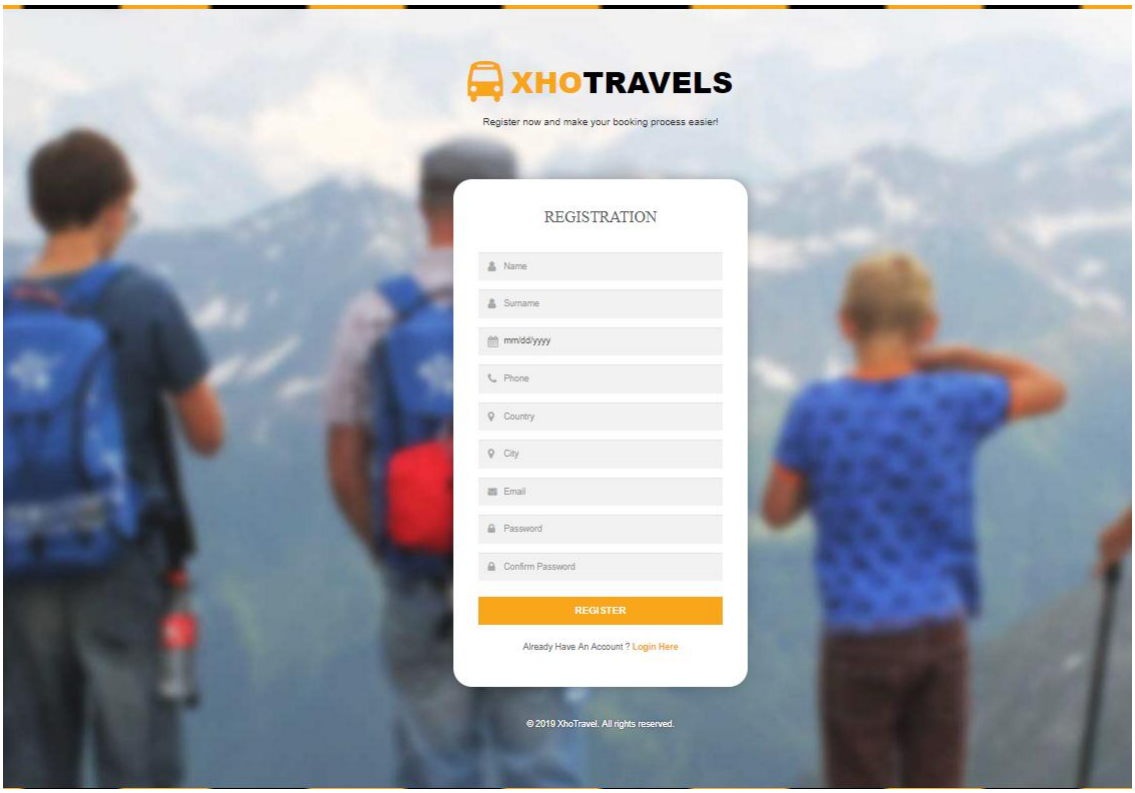

Figure 3 Customer Register

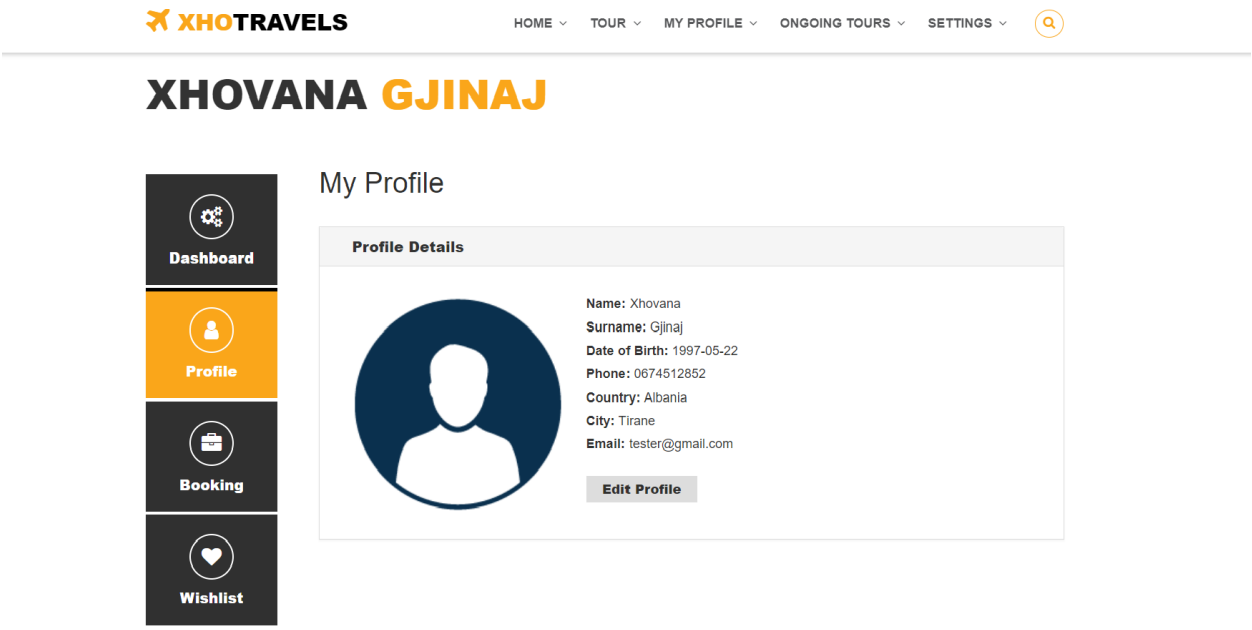

Figure 4 Customer Profile

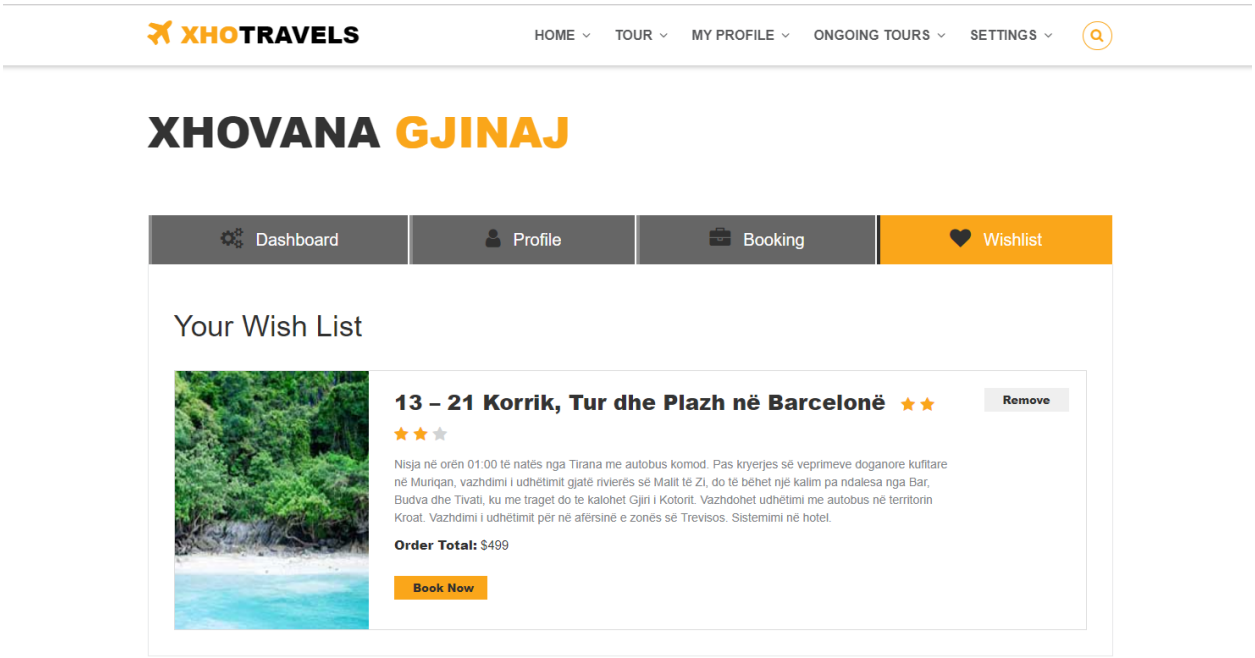

Figure 5 Customer Wishlist

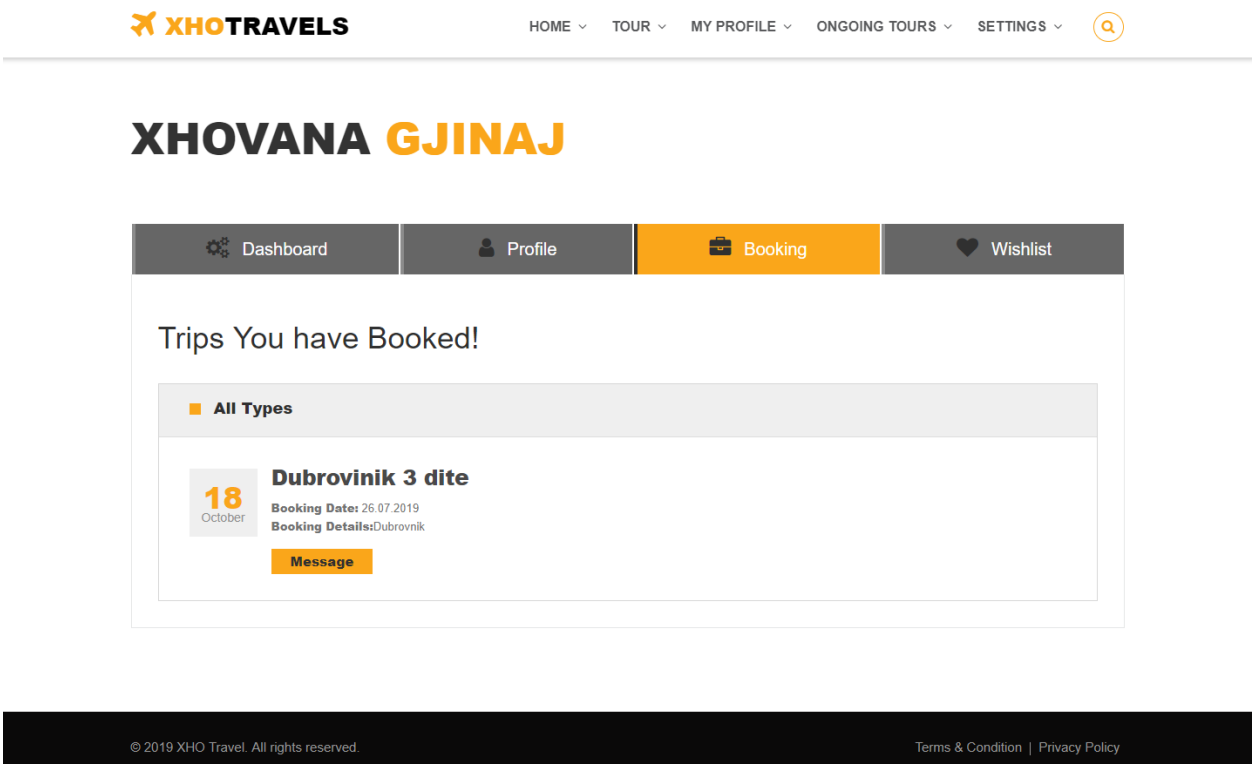

Figure 6 Customer Bookings

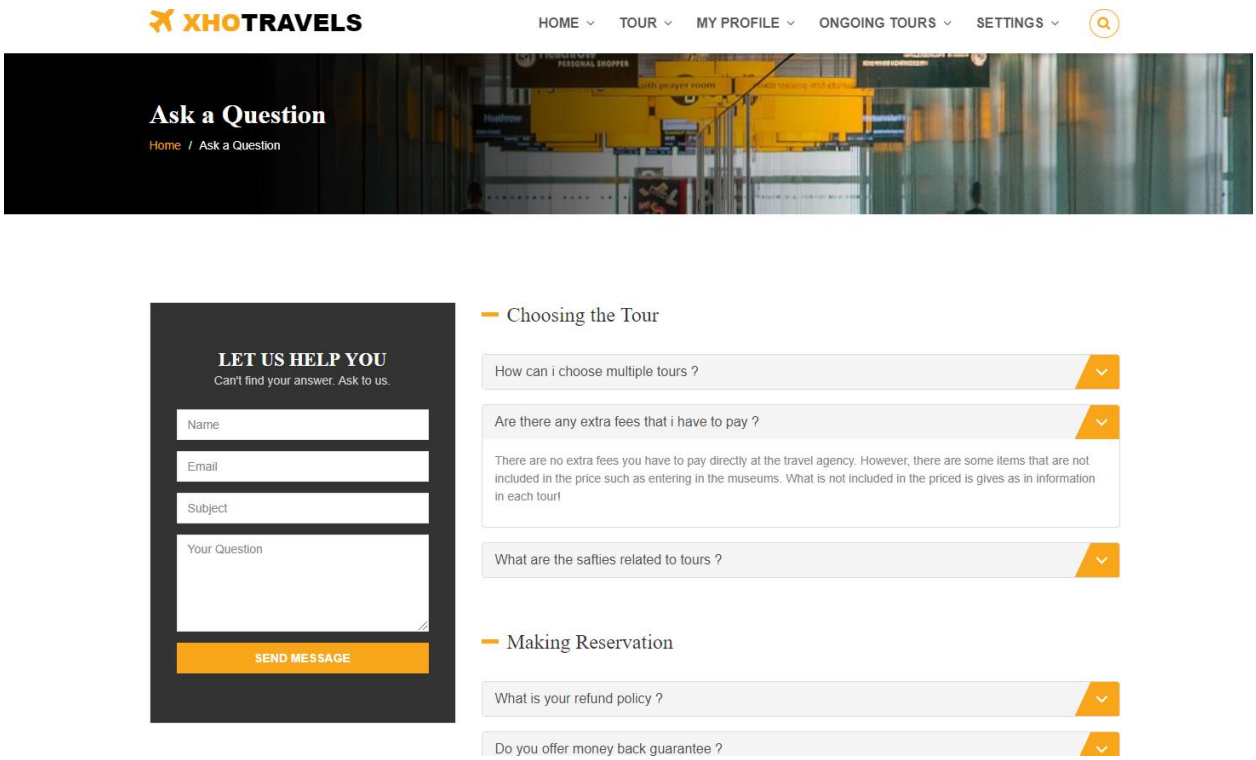

Figure 7 Report an Issue

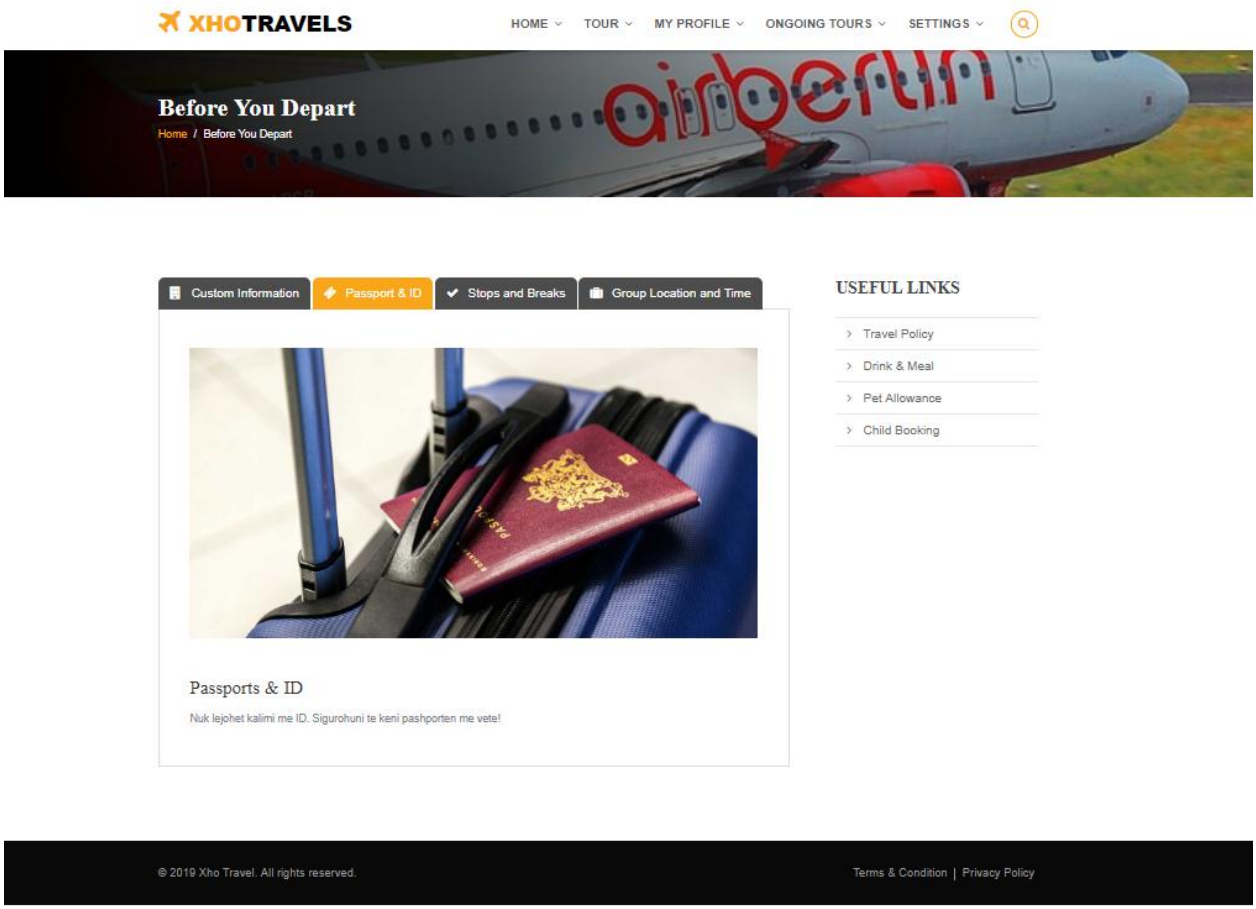

Figure 8 Before Depart Information

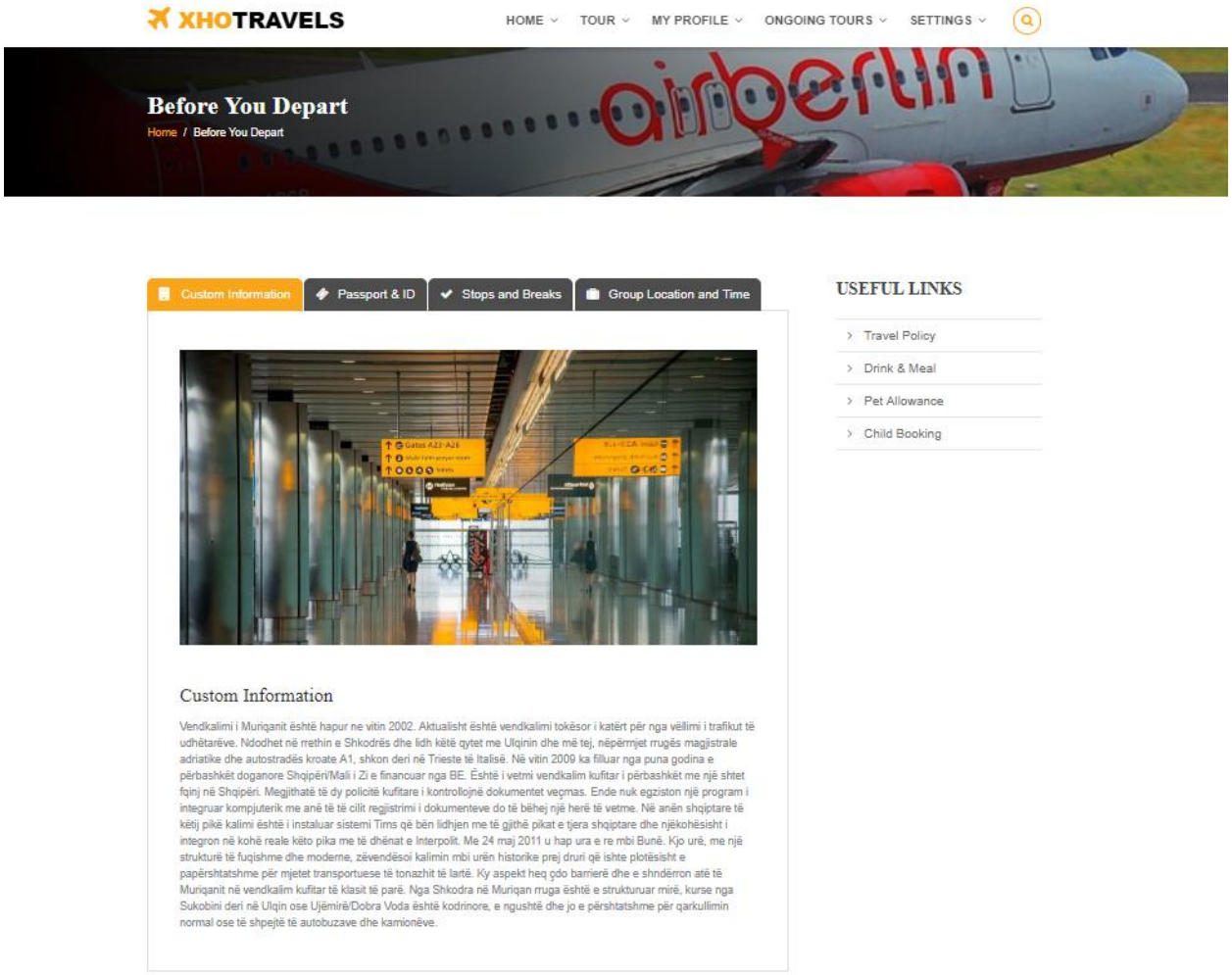

Figure 9 Before Depart Information

Admin Module

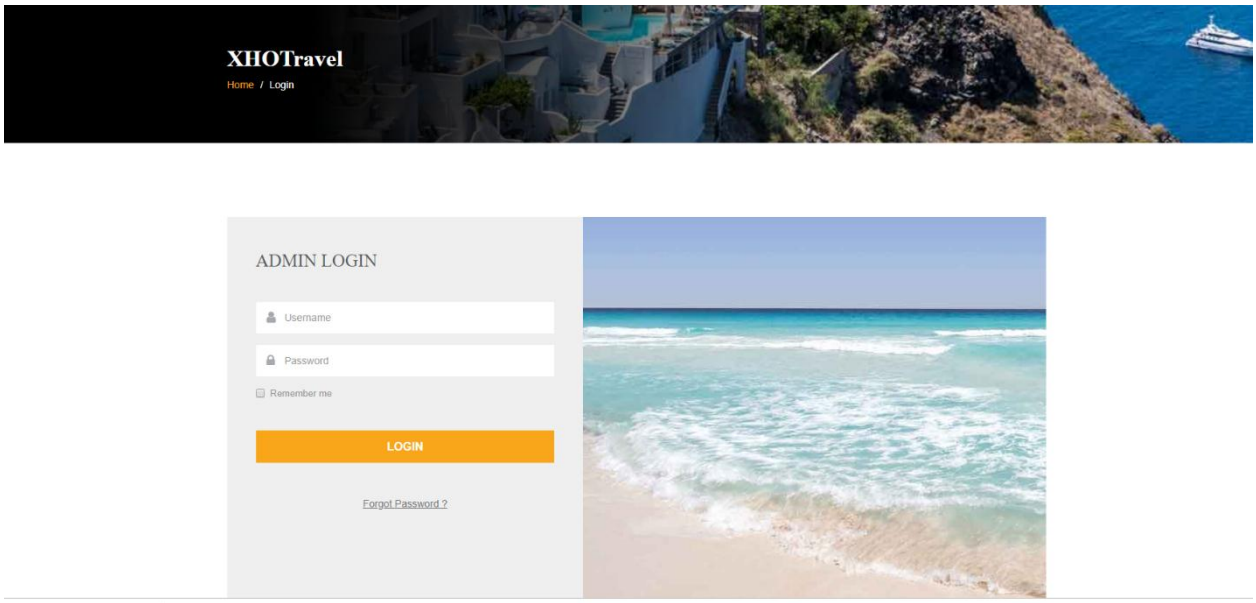

Figure 10 Admin Login

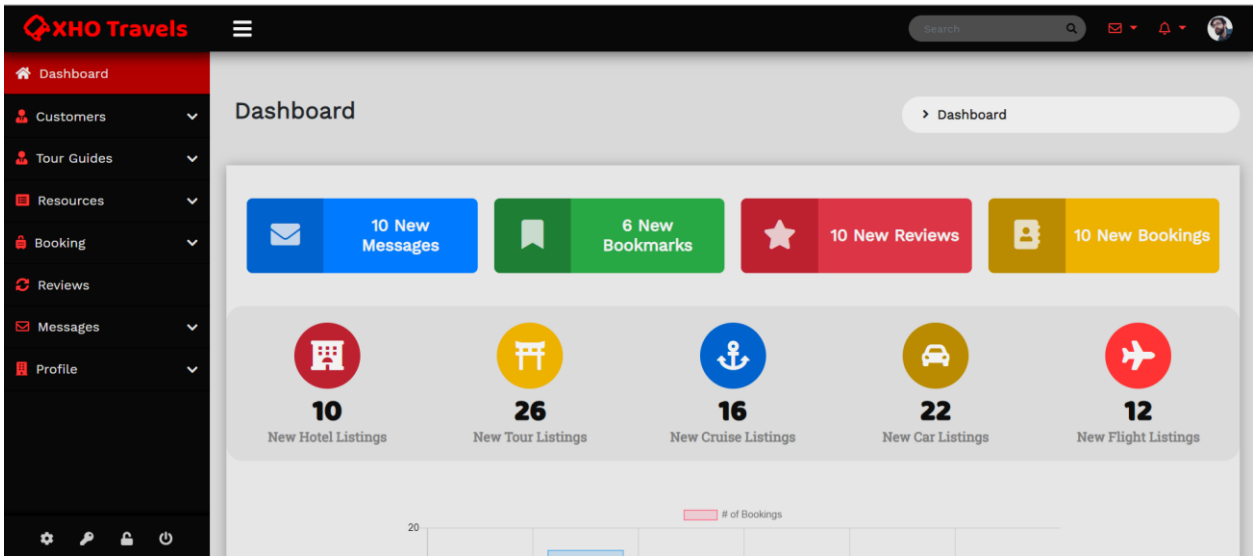

Figure 11 Admin Dashboard

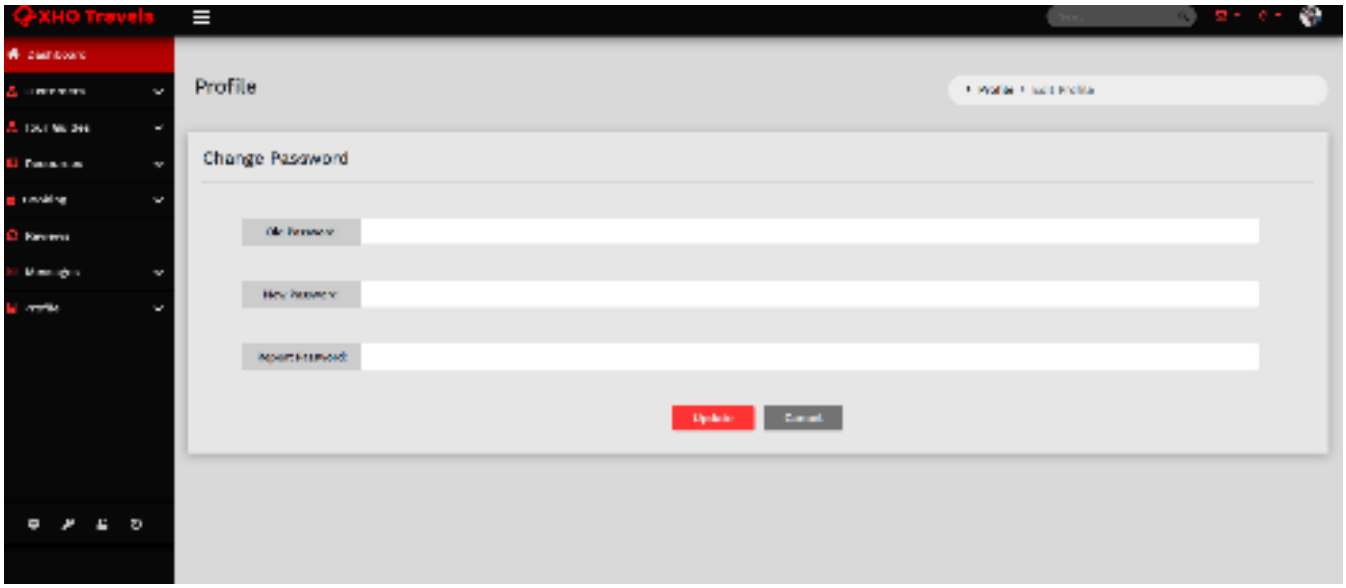

Figure 12 Admin Change Password

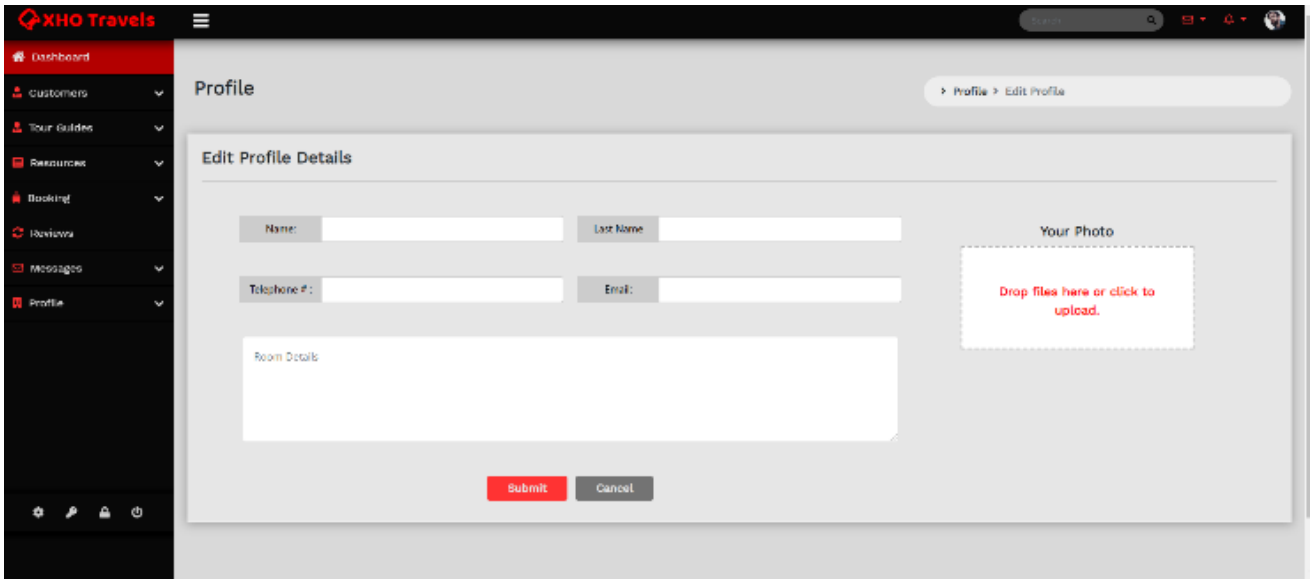

Figure 13 Admin Edit Profile

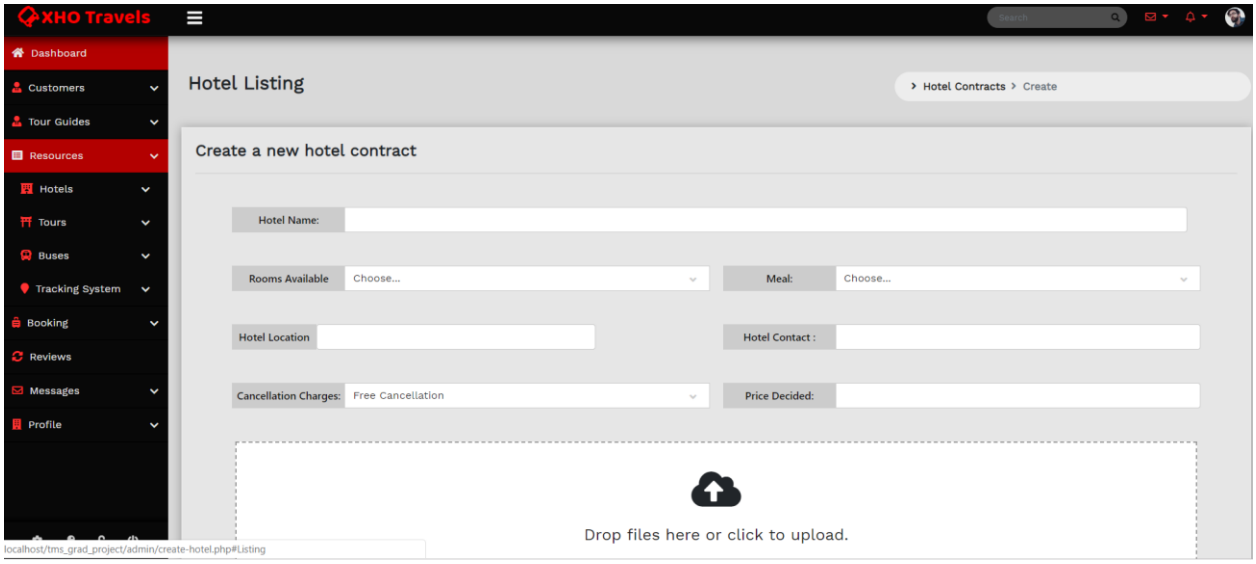

Figure 14 Create Hotel Resource

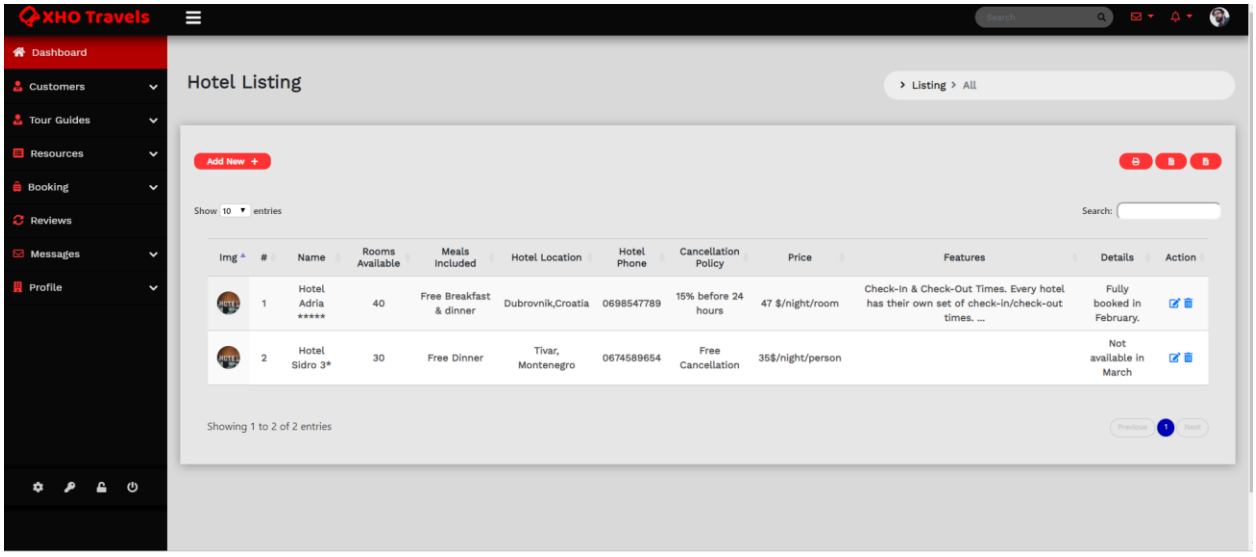

Figure 15 Hotel Listing

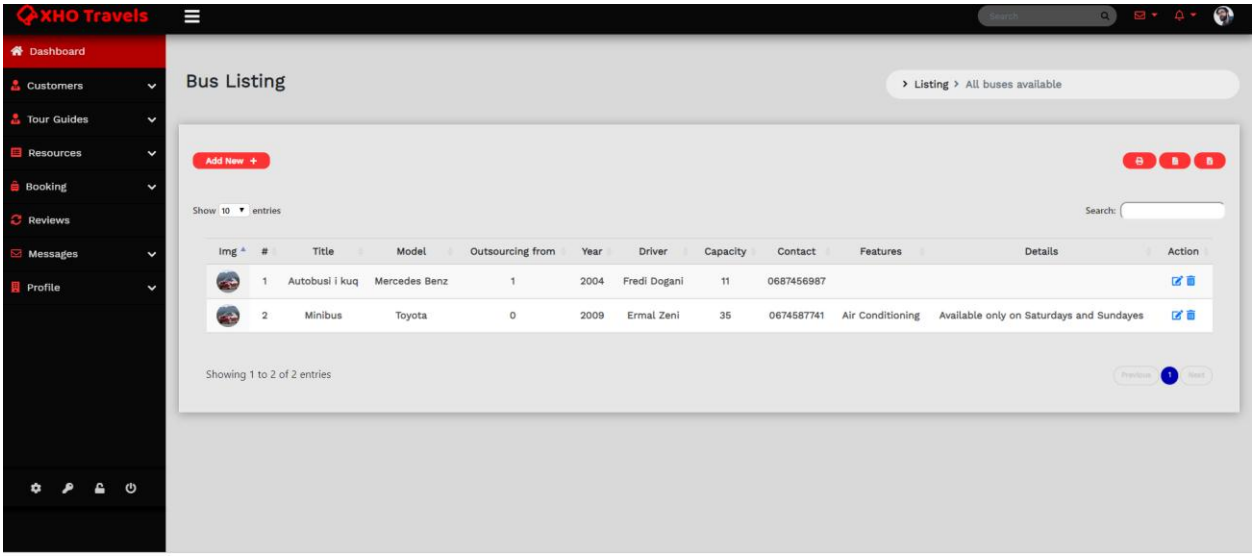

Figure 16 Buses List

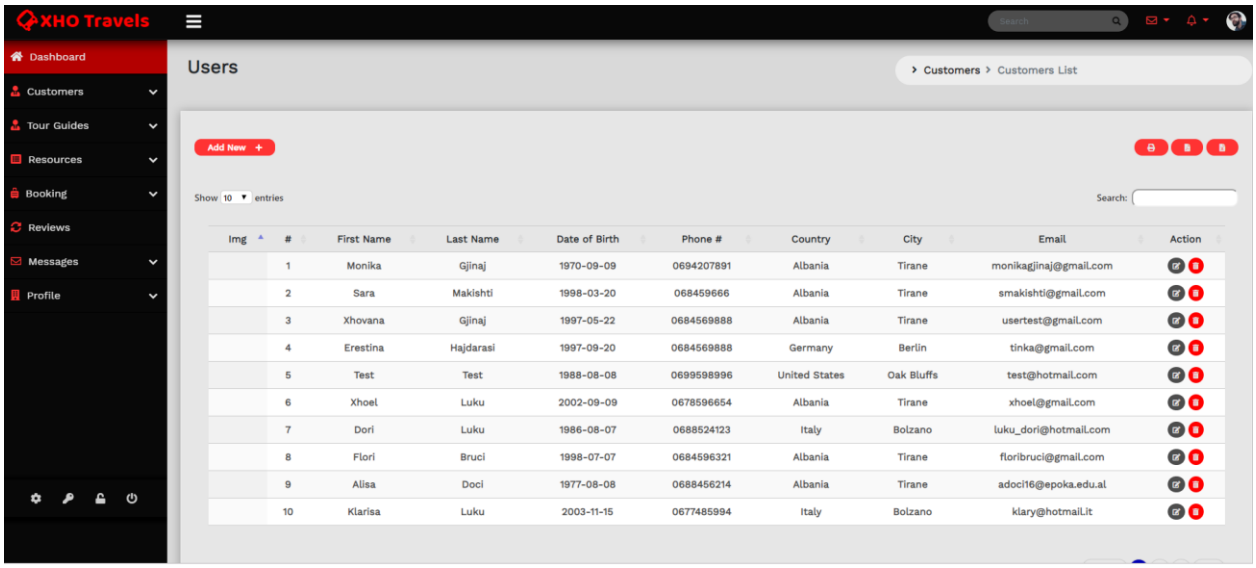

Figure 17 Customers List

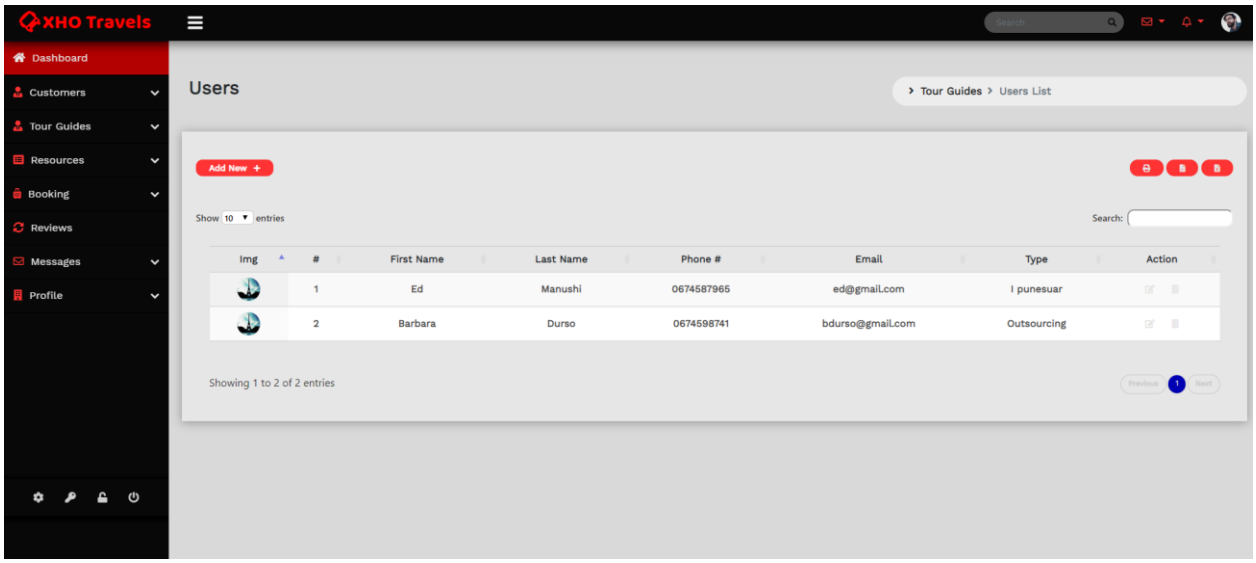

Figure 18 Tour Guide List

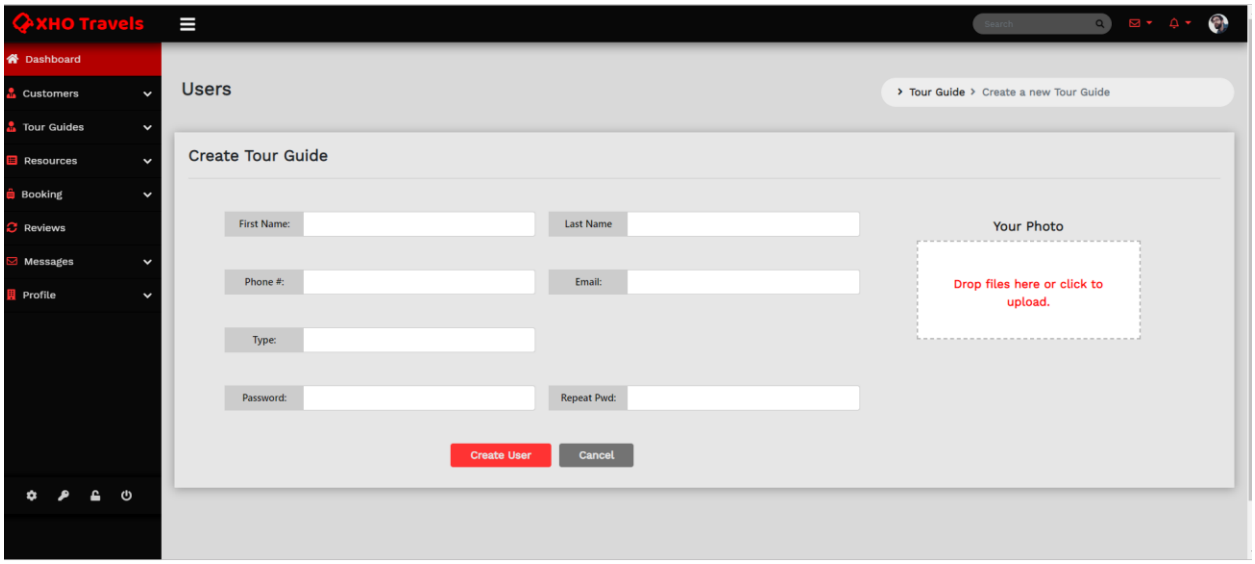

Figure 19 Add a New Profile

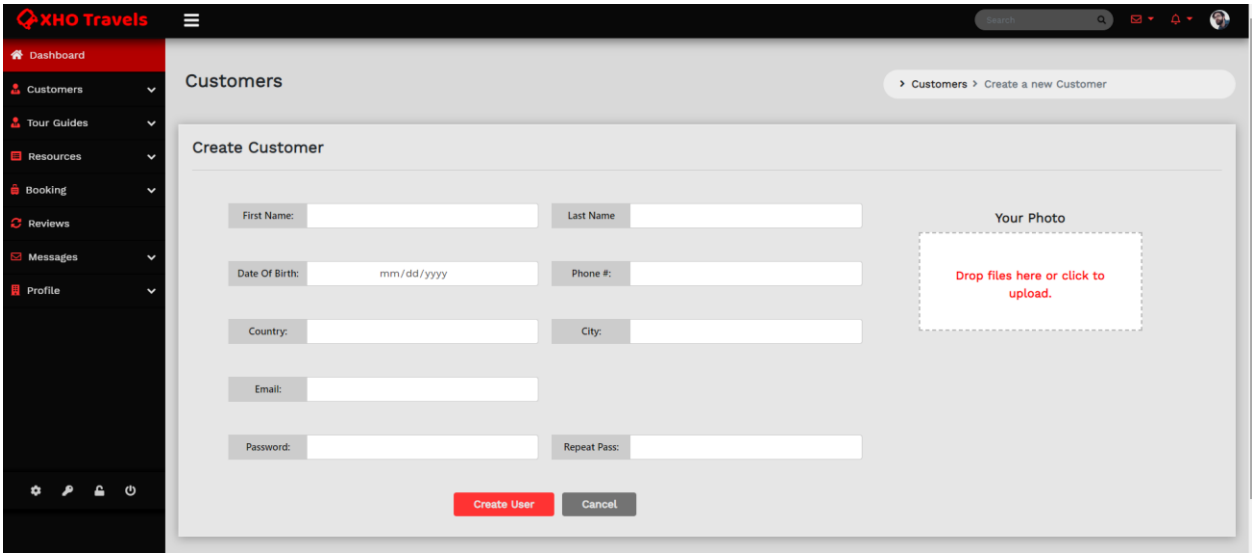

Figure 20 Create a New Customer Profile

Travel Guide Module

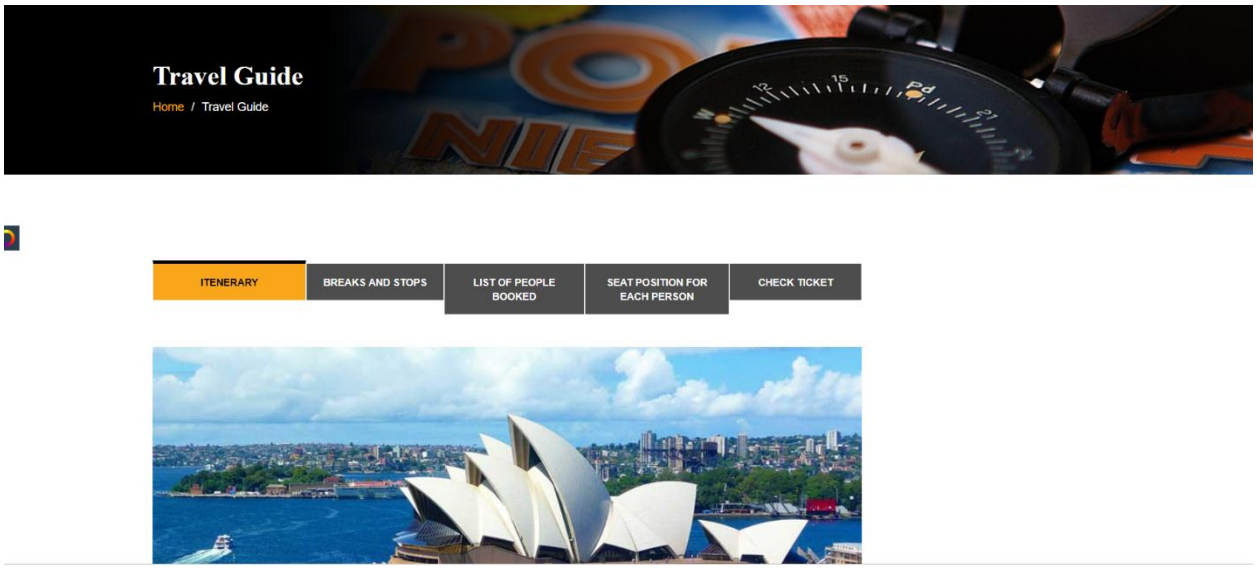

Figure 21Travel Guide Dashboard

APPENDIX B: Entity Relationship Diagram