Web Based Tourism Management System for Tour and Travel Marketplace

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Abstract

The continuous past showed progressively noticeable energy for recommender methodologies. The Tourism Management System, which is aimed the tourism opportunity for travelling all the areas which client wants, furthermore it is increasing many travels for efficiency technique and well security way to travel the whole country independently, In current days there are many travel packages existing in various web-sites to practically every one of the spots over the world. A client thinks that it's hard to look for the best package as he/she needs to peruse various sites, contact many trip specialists and soon which is a repetitive procedure and is tedious. There should be a system where the user should find the best package on the Internet with a single click. To address this issue, we embrace the Travel Package Recommendation System which offers the best package among the various packages that are on the web. This venture will assist vacationers with suggesting the best Travel Package among all the packages bargains on the web. On different requests of a vacationer that is, a client will choose a movement package for a specific spot dependent on the proposals are given by the past clients who been involved with the package.

Java is a powerful programming language, For the Front end development, the most popular JavaScript framework like Angular 7, there some helpful language such as HTML, JavaScript, Typescript, CSS, etc. has been selected as a programming language to develop this Online System, the Bootstrap framework has been used to develop the attractive user interface and Visual Studio has been used as IDE. Apache webserver and MYSQL Workbench were chosen as the database designing tool to design the database and run the system. Structured software development methodology was identified as the most suitable development methodology for system development.

At last, the Development procedure, where the proposed system was tested by various methods and toward the end, the robotized Tourism the management system was effectively introduced to keep running in the help of satisfying their authoritative objectives.

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Chapter 1: Introduction

1.1 Introduction

Our Travel marketplace is one platform where we'll acquire all travel agents and making them bid for tourist packages and there is a capacity to advance their tour package. In the current situation, agents try to market their tour packages through SEO even though those do not value for the money. But with this travel marketplace platform, agents have to create money's worth tour packages to compete with other agents and attract tourists that enable more benefits for the tourist. On the other hand, travel agents get more opportunities with a satisfied customer base which develop tourism in Sri Lanka. All the data/ information can be stored for a longer period with easy accessing. Simply this designed system can perform all operations related to traveling.

1.2 Motivation

In an ideal situation, as experienced the methods used to respond to travel requests and provide travel services to staff, though functional, appeared to have many attributes that could be automated, improved and lead to less aggravation, therefore, such a case is hard and less accurate, a time-consuming task. The new system will provide better efficiency with their process and automate the process which will ease the procedure between clients and stakeholders.

1.3 Objectives and Scope of the system

Tour and Travel Marketplace would play a vital role in planning the perfect trip and support travel service for tourists visiting Sri Lanka. The main aim of this project is to help the tourists to manage their Itinerary. It makes all operations of the tourists easy, efficient and accurate. The Guest can create an itinerary, after that agents can Bid a one or more created itinerary handling requests and providing services for the guest located a different part of the various cities, Different modules, Activities, hotel, Transport, etc. Typically, when this process is done manually by Tourists, it takes a lot of wasting time and a lot of cost wasting process. In those cases, tourists want to find a way to do this process easily. In that case, our System has supported to solve their problems for which including for the itinerary creating and more. Guest-only must create the itinerary then other processes will automatically be done by the system. Furthermore, registered agents are motivated, and this is to make them competitive among the agents. Systems have been incorporated in this project to handle different parts and sector for including Sri Lanka Travel Market Place. I hope this system will be very useful and can do a lot of duties for Sri Lanka tourism field. The Tour Service System is a web-based application, the objective of this project is to develop a system that automates the process and activities a tourist, the reason for existing is to plan a system utilizing which one can play out all tasks identified with traveling. Below I mentioned what are the function via the system,

Manage Client (Guest) Details

- This function helps to manage details of client such as client criteria (Itinerary, Agents, Testimonial, Payment), and other details

Manage Agent Details

- This function helps to manage details of Agents such as agent task's in project, and mange for included for agent processes

Manage Admin Details

- In this function help to manage certain process including for the admin such as, Admin must approval/confirmation of the Created itineraries and before those are published in the system platform furthermore Can view All information reports given system such as agents, client, payment, itineraries, etc.

Manage Itinerary Details

- The System provide to facilities to manage itineraries and published itineraries

Manage Notification/Alert Details

- In this function it allows to manage notification alert such as notification for the registered agents for bid for created itinerary

Receiving alert process for the Agents

- In this part when the visitor makes a schedule when It will be distributed in the stage through our administrator. At this time give a caution/Notification for think about a there have been distributed another agenda in their stage.

Agent Ranking Handling

- In this essential convenience will permit can give rank for the agents, by give a rate, by giving a remark, therefore give rate for the specialist at that point will consequently orchestrating the positioning by their positioning

Trending itinerary Handling

- In this criteria system will permit inclines their schedules additionally when give a rate for a finished agenda, those are in the system, in this usefulness, Guest can pick made or a finished agenda for their visit venture it will prefer standpoint and trust full due to those are appraised by past visitors.

Bidding Process

- In this process who will published an itinerary then it will can bid by authorized agent. The bidding process is startup when client create an itinerary and it publish through

agent's platform. furthermore, can give rate for the bidding itinerary also during this bidding process can give a time range for this bidding situation for the agents, this will be counting the time after published to the platform.

Manage Payment Details

- In this criteria Payment will happen when the Once an itinerary created by Guests, also when Agent registration happens, also such as Can make Payment in online View reports for the last payment, create a report when make payment with client and agents, Generate report with respect to the payment

1.4 Problems

- Client can not have any about there visiting places and via they want visit,
- Client concerning about the security for there tour then our system will give best security for them.
- There is no process for validating and verifying the data being entered.
- The most common way of recording data is done through paper-based system that is very time wasting and it will be impact when some calculation cases.
- There is no appropriate instrument to ascertain the costs, for example, negligible money expenses and making reports and so forth. Which costs more opportunity to accomplish it.
- There is no systematic way to payments. The creating system will automatically give security for these criterions.

Chapter 2: Analysis

2.1 Introduction

This section will think the certainties which are important to build up the System which was picked up by reality discovering procedures and furthermore this part incorporates about depiction of the assessment of archives, the present framework/downsides of the current framework, existing comparative framework, functional requirements, non-functional requirements and approach for the proposed System. This chapter discuss about data collection techniques which are used to gather facts and all relevant information of the existing manual system process with its drawbacks functional and non-functional requirements

2.2 Fact Finding Techniques

Actuality finding is the procedure of accumulation of information and data-dependent on strategies which contain testing of existing reports, investigate, perception, polls, interviews, prototyping, and joint prerequisites arranging. This necessity examination can be taken to distinguish examination, archiving and breaking down prerequisites of the framework. [1]

To accomplish the procedure of the present framework, the accompanying certainty discovering methods were for the most part utilized,

1. Interviews
2. Inspection of Sampling and Documents
3. Observations.

2.2.1 Interviews

An Interview is a significant information gathering strategy as in this the expert straightforwardly contacts system and the potential client of the proposed system. "An interview is an immediate up close and personal endeavor to acquire dependable and substantial measures as verbal reactions from at least one respondent. It is a discussion where the jobs of the questioner and the respondent change ceaselessly."

2.2.2 Inspection of sampling and documents

When we are gathering requirements using sampling and documentation, it would help to get a clear idea about the system. We selected some sampling documents such as bills,

2.2.3 Observation

“In this technique, system analyst participates in the organization, studies the flow of documents, applies the existing system, and interacts with the users. Observation can be a useful technique when the system analyst has user point of view. Sampling technique called work sampling is useful for observation. By using this technique, system analyst can know how employees spend their days.”
Through observation it could be understood about the overall process of purchasing, storing and selling their products.

2.3 Existing System Study

The procedure which at present going on the organization is completely manual framework work with paper-based way. Because of that, there is no better method to entomb the interface between sub frameworks.

In that case, their security for the is low and when there has many itinerary managing is it bit tough.in that case, we decide to build an automated system for the given manual system also Show data of the current existing framework through a top-level use case outline.

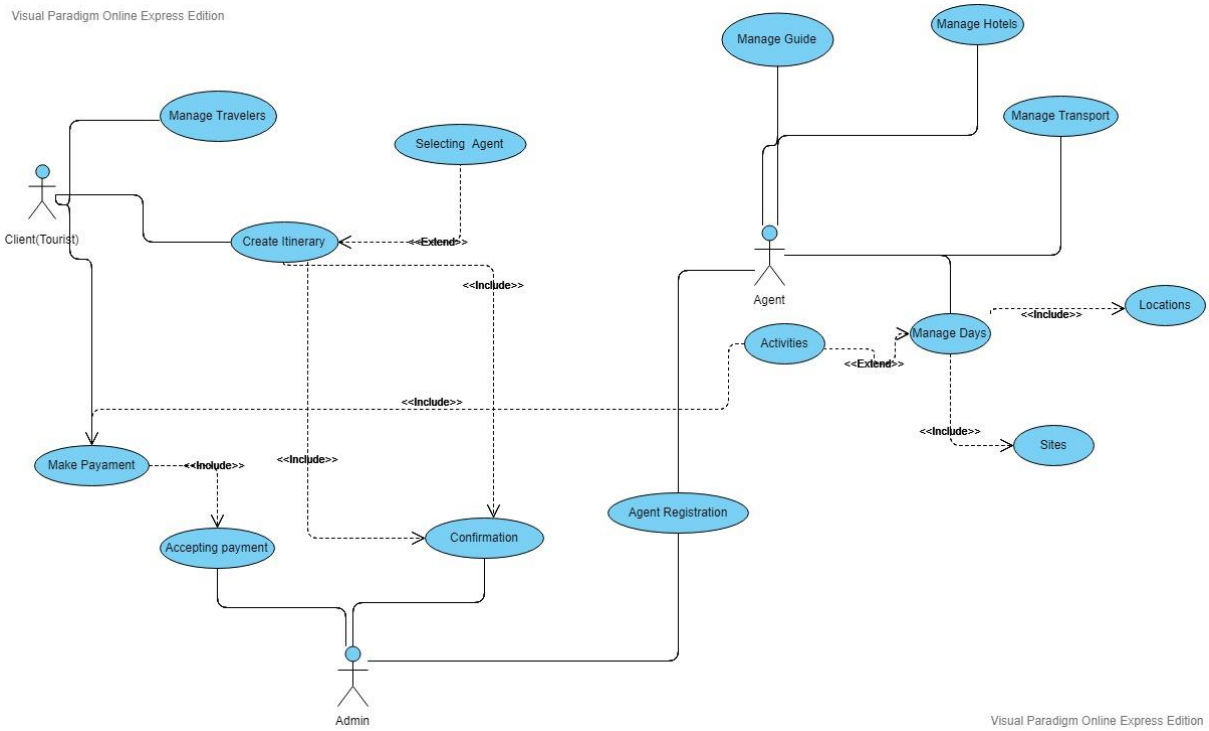

Figure 2.1

Itinerary Managing

When a Tourist arrives, he must fill an itinerary for he/she manage their tour.

Payment Management

After finishing the itinerary, client must meet the admin, give the itinerary card and he/she will get the invoice for the tour

Agent Registration

At the point when an Agents arrives, he needs to fill a structure and provide for the person who talked with him.

Transport/Location/Hotel/Days/Guide Managing

When Client make their Itinerary and make those payment correctly then Agent must fully involve for manage those transport, location, hotels etc.,

2.4 Drawbacks of the existing System

- Critical calculations are done manually.
- Complex monitoring of business progress.
- Inflexibility of finding details of Clients and the agent
- There are no proper ways of taking backups of the important information, such as details of Itinerary creation and Client payment details.
- Generating reports which are related to Payment with the existing data is time consuming and since there is a lack of graphical representation.
- Misplacing valuable files and documents causing wastage of company resources and time.

2.5 Existing Similar Systems

It was chosen to complete an investigation on comparative System before the begin improvement.

Booking.com (home page)

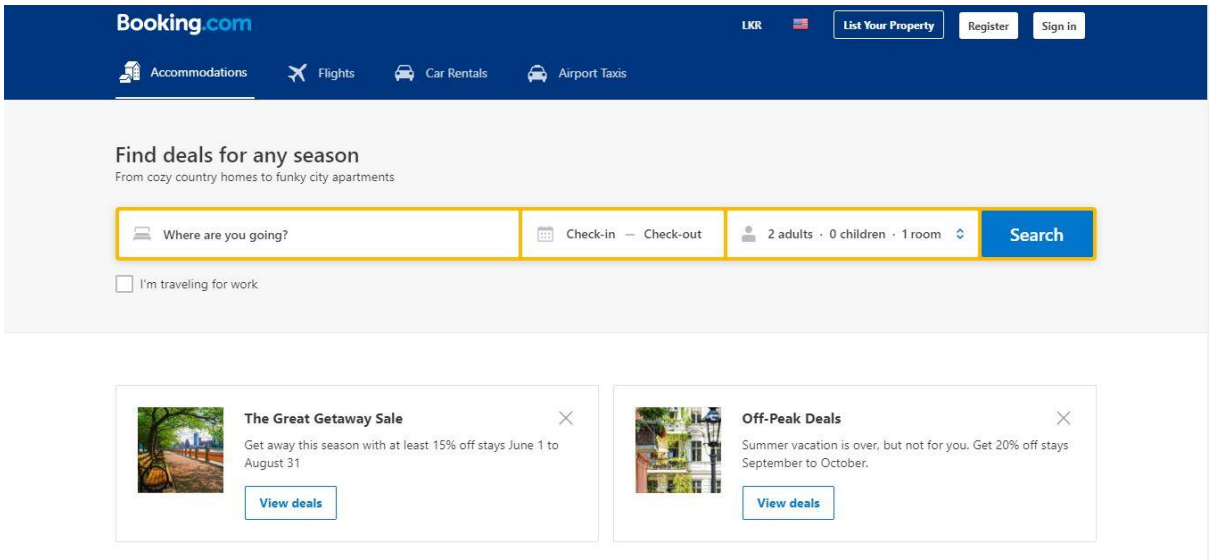

Figure 2.2

Similar Web (Home page)

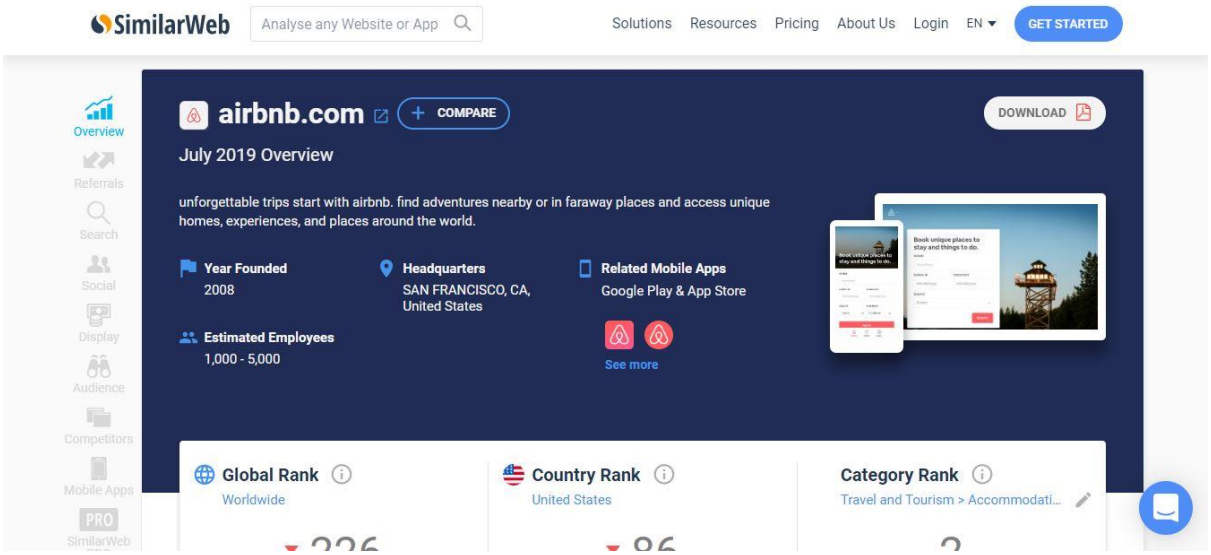

Figure 2.3

Airbnb (home page)

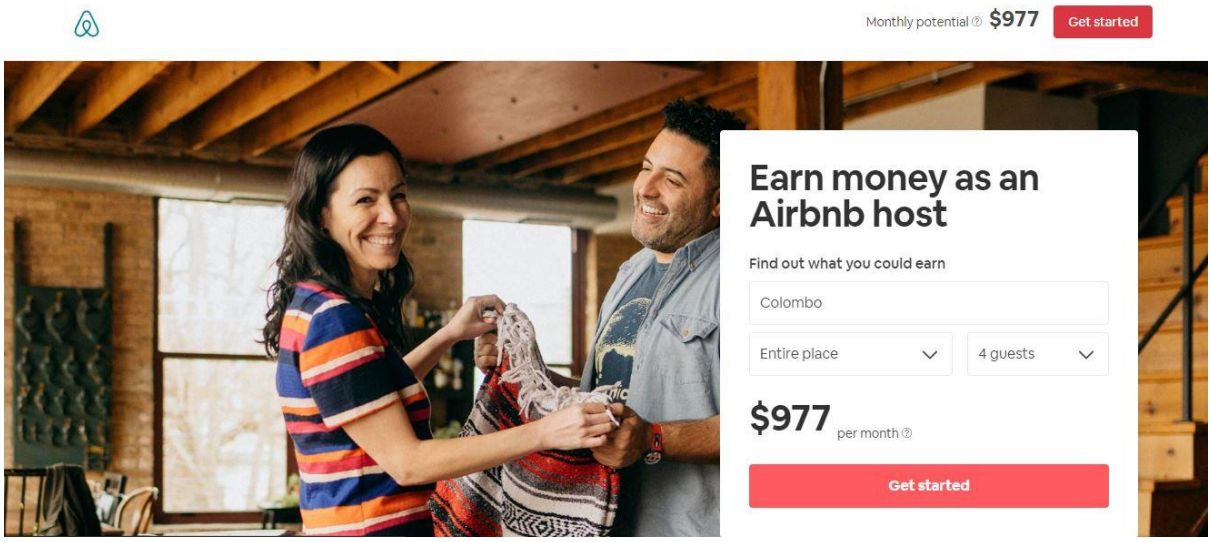

Figure 2.4

2.6 Functional Requirements

Functional requirements describe the functionalities, which are provided by the system. “A functional requirement defines a function of a system or its component. A function is described as a set of inputs, the behavior, and outputs. Functional requirements may be calculations, technical details, data manipulation and processing and other specific functionality that define what a system is supposed to accomplish.” [3]

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Reports generation

- Generate reports, which is relevant payments some details etc.

2.7 Non-Functional Requirement

"A non-functional requirement is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors. Broadly, functional requirements define what a system is supposed to do, and non-functional requirements define how a system is supposed to be." [2]

Usability

The System ought to have a reliable look that incorporates appropriate design and stream, mistake messages, simple menu route, looking through alternatives, and graphical UIs and so on.

At the proposed System there are numerous information channel alternative, for example, stock things, provider installments, client orders and so forth.

Reliability

It is the capacity of a thing to play out a required capacity under expressed conditions for a predetermined period. It might likewise show the capacity to work at a predefined moment or recess of time.

Availability

The clients ought to have the option to collaborate with this system whenever. The approved clients can get to the proposed system all the while. The openness of more than one client simultaneously is another benefit in the system.

Security

Security requirements are incorporated into a system to guarantee:

- Unauthorized access to the framework and its information isn't permitted.
- Ensure the respectability of the framework from unplanned or malevolent harm.

For a model access authorization for the system, information may just be changed by the system's executive or approved client.

2.8 The System Development methodology

Our system has been developed based on Rational Unified Process (RUP) development methodology (Figure 2.2). RUP is an iterative and object-oriented development framework.

- **Inception:** The basic objective is to scope the system adequately as an explanation behind affirming starting costing and spending plans. In this stage, the business case which consolidates business setting, accomplishment factors (foreseen revenue, publicize affirmation, etc.), and cash related figure are set up. To enhance the business case, a basic use case model, adventure plan, starting peril evaluation and errand depiction (the inside endeavor necessities, prerequisites and key features) are created.

- **Elaboration phase:** The basic objective is to direct the key risk things perceived by analysis up to the completion of this stage. The elaboration stage is the spot the endeavor starts to work out as intended. In this stage, the issue of room examination is made, and the plan of the endeavor gets its principal structure.

- **Construction phase:** The primary objective is to build the software system. In this phase, the focus is on the development of components and other features of the system. This is the phase when the bulk of the coding takes place. In larger projects, several construction iterations may be developed to divide the use cases into manageable segments that produce demonstrable prototypes.

- **Transition phase:** The primary objective is to 'transit' the system from development into production, making it available to and understood by the end user. The activities of this phase include training the end users and maintainers and beta testing the system to validate it against the end users' expectations. The product is also checked against the quality level set in the Inception phase. [4]

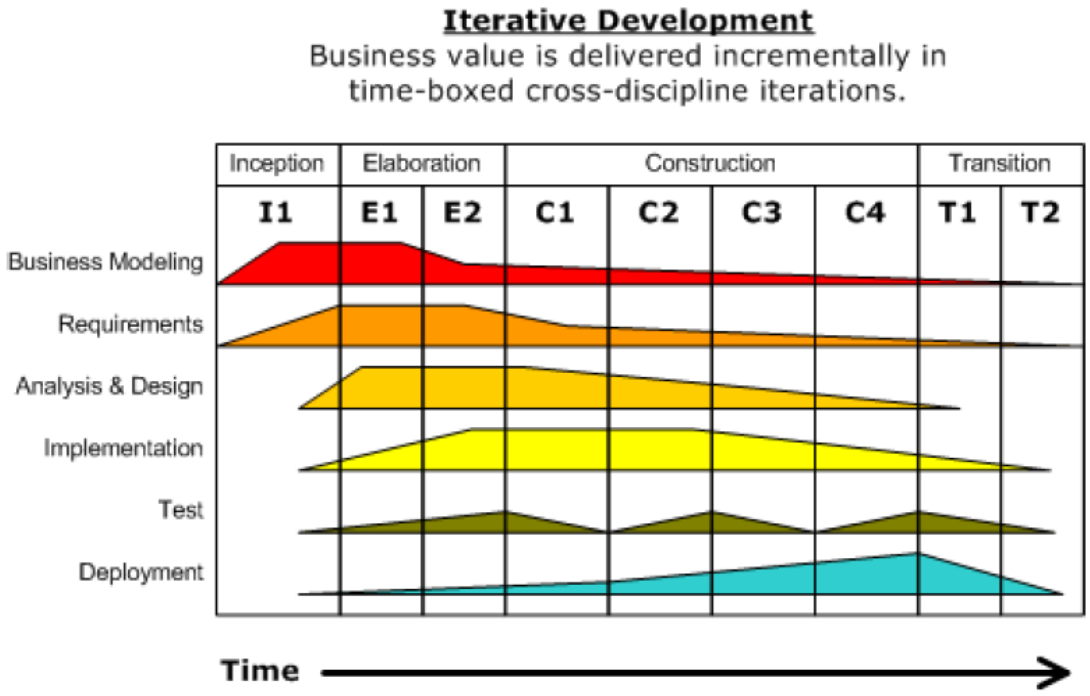

Figure 2.2 RUP Phase Model

Chapter 3: Design

3.1 Introduction

This stage is centered around the design of the framework. It is begun with the deliverable of the requirements gathering phase and maps them into architecture. The architecture is the deliverable of this stage. The structure archive depicts the best approach to actualize the prerequisites and "how" it was created. Subtleties on PC programming dialects and situations, machines, bundles, application design, conveyed design layering, memory size, stage, calculations, information structures, worldwide sort definitions, interfaces, and numerous other building subtleties are built up. The plan may incorporate the utilization of existing segments.

In here it chooses the best answer for the execution in the elective arrangements. Organized investigation and plan ideas are depicted with the organized structure methods which were utilized to plan the product. Database configuration is portrayed with a database chart and the UI configuration is delineated in test interfaces.

3.2 Comparison of Alternative Solution to the System

There are different solutions to implement the proposed system such as web-based applications, stand-alone applications, distributed applications or mobile applications. It was decided to select the best solutions after evaluating the features of those applications.

- **"Stand-alone Applications** do not necessarily require network connection to function and that is not a part of some bundled software. It is a separate computer process that runs independently" [5]. Proposed system should have network connection due to smooth functioning between several clients.

- **Mobile Application** is a Computer program intended to keep running on cell phones, tablet PCs, and other cell phones. Cell phones have a working framework and versatile applications can keep running on them. A versatile application can't be incorporated for the proposed framework as it doesn't coordinate with their normal work
- **"Web based Application** is a software package that can be accessed through the web browser. The software and database reside on a central server rather than being installed on the desktop system and is accessed over a network." [6] This application also has no big deal with the proposed system as there are no online customers.

3.3 Justification for the Selected Design Strategy

Tourism Management System for the client was implemented as web solution instead of stand-alone application due to the followings,

- The web-based solution diminishes the expense of introducing the system for every individual's work area, it likewise diminishes the equipment cost of the organization. This arrangement is stage free, so it keeps running in any internet browser.
- Web based software provides better communication and coordination due to the usage of online approach.it facilitates to use the system despite the time and location. Therefore, more it's very user familiar better than the standalone application

- Web based software solutions are easy to maintain than stand-alone application which is cost effective very time consuming.

3.4 Relevant pseudo codes

In this *Figure 3.1* shows the context level Routing concept pseudo code on the system, below you see that

```
import { NavbarComponent } from './navbar/navbar.component';
import { CarouselComponent } from './carousel/carousel.component';

import { LoginComponent } from './login/login.component';
import { NotfoundComponent } from './notfound/notfound.component';

const routes: Routes = [

  {path: '', redirectTo: '/Home', pathMatch: 'full' },
  {path: 'Gallery', component: GalleryComponent},
  {path: 'BookNow', component: BooknowComponent},
  {path: 'Login', component: LoginComponent},
  {path: 'Home', component: CarouselComponent},
  {path: 'About', component: AboutComponent},
  {path: 'Trends', component: TrendsComponent},
  {path: 'Contact', component: AppComponent},
  {path: '404', component: NotfoundComponent},
  {path: '**', redirectTo: '/404'},


```

Figure 3.2:

Also *Figure 3.2* below you can see the Some Configuration.ts, written codes for the system, this will help to identify some title, description etc. located on the configuration.ts

```
src > app > configuration.ts > ...
export const configuration = {
    header : {
        heading : 'Los Angeles',
        introtext : 'We had such a great time in Tour with us'
      },
};

```

Figure 3.2

3.5 Object oriented design

It was decided to visually model the proposed system using OOD approach. “Object- oriented design is the process of planning a system of interacting objects for the purpose of solving a software problem. It is one approach to software design [9].”

3.5.1 Unified modeling language diagrams

“The Unified Modelling Language (UML) is a general-purpose modelling language in the field of software engineering, which is designed to provide a standard way to visualize the design of a system [10]”. The following illustrated UML diagrams were helped to understand the different processes of the system more clearly

3.5.2 Use-case diagram for the system

Below you can see the current system Use case diagram. *Figure 3.3*

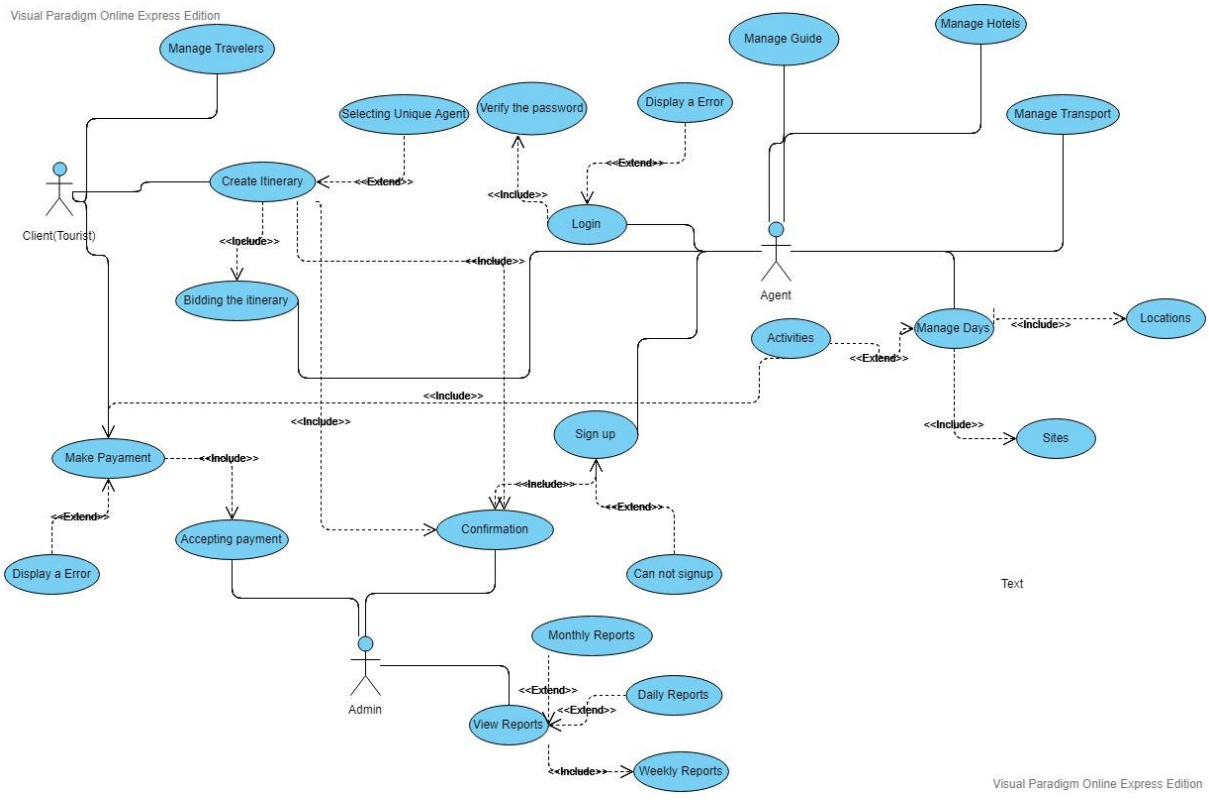

Figure 3.3

3.5.3 ER diagram for the system

Below you can see the current system ER case diagram. *Figure 3.4*

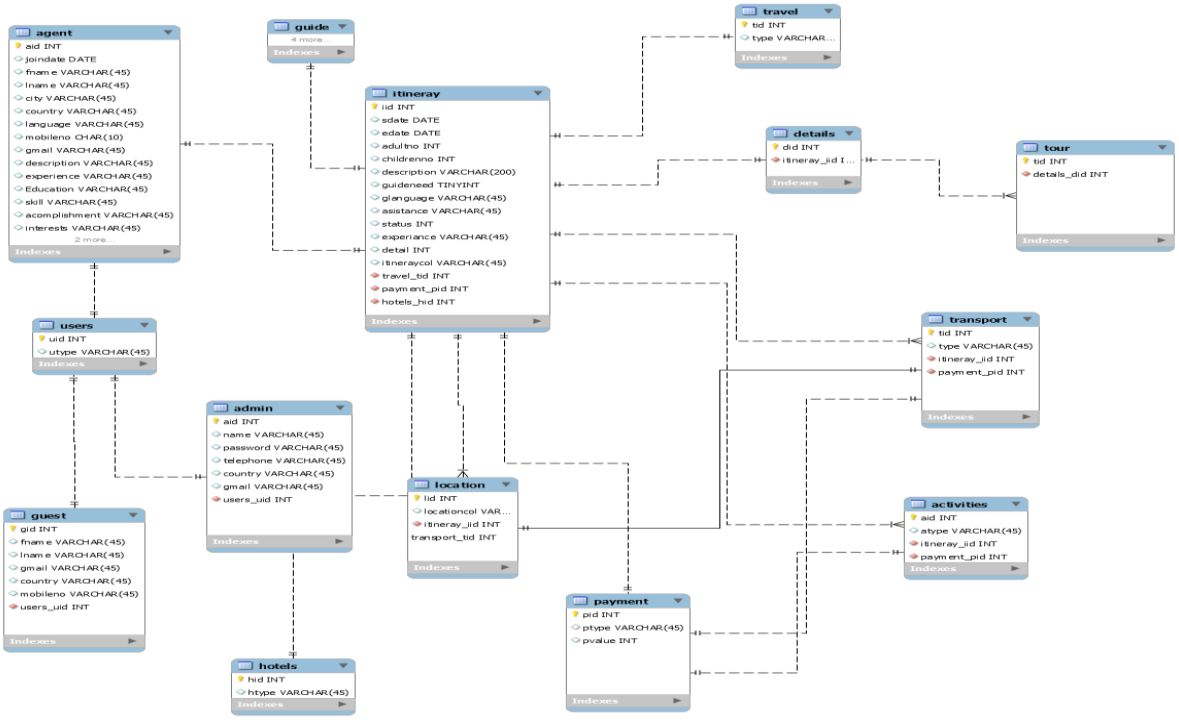

Figure 3.4

3.5.4 Sequence Diagram for Login Process

The sequence of the login process of the proposed system is shown in Figure 3.5.

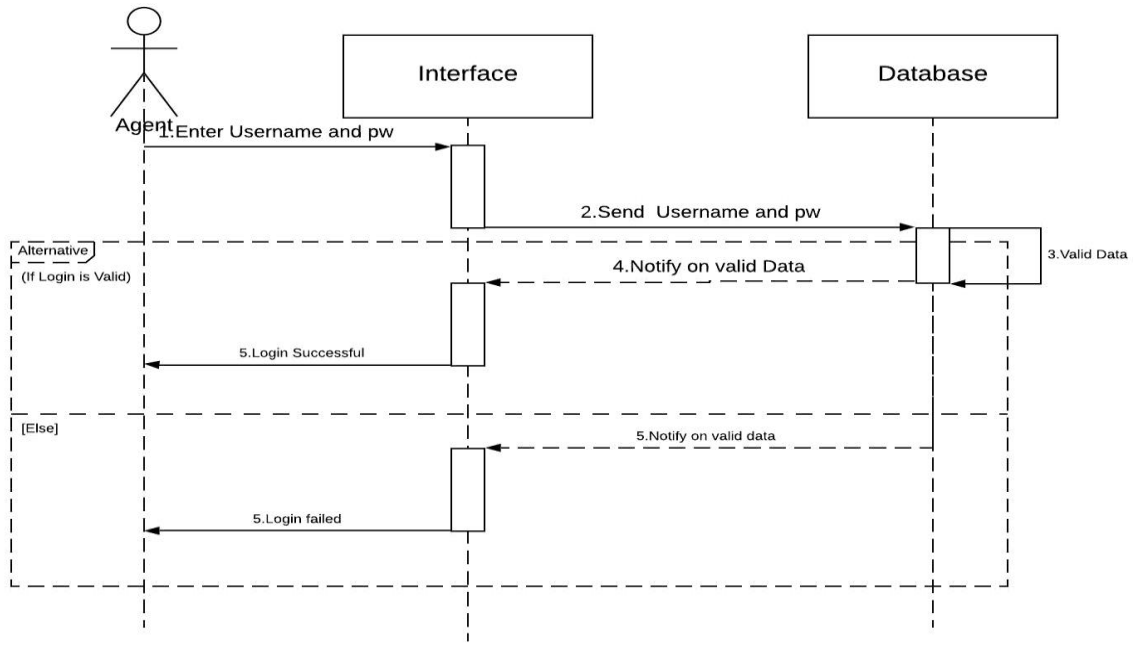

Figure 3.5

3.6 User Interface Design

"User interface design (UI) or user interface engineering is the design of user interfaces for machines and software, such as computers, home appliances, mobile devices, and other electronic devices, with the focus on maximizing the user experience. The goal of user interface design is to make the user's interaction as simple and efficient as possible, in terms of accomplishing user goals." [8]

In this sub section, the Home Interface of the proposed system, Login interface Figure 3.6 and Figure 3.7 are shown accordingly.

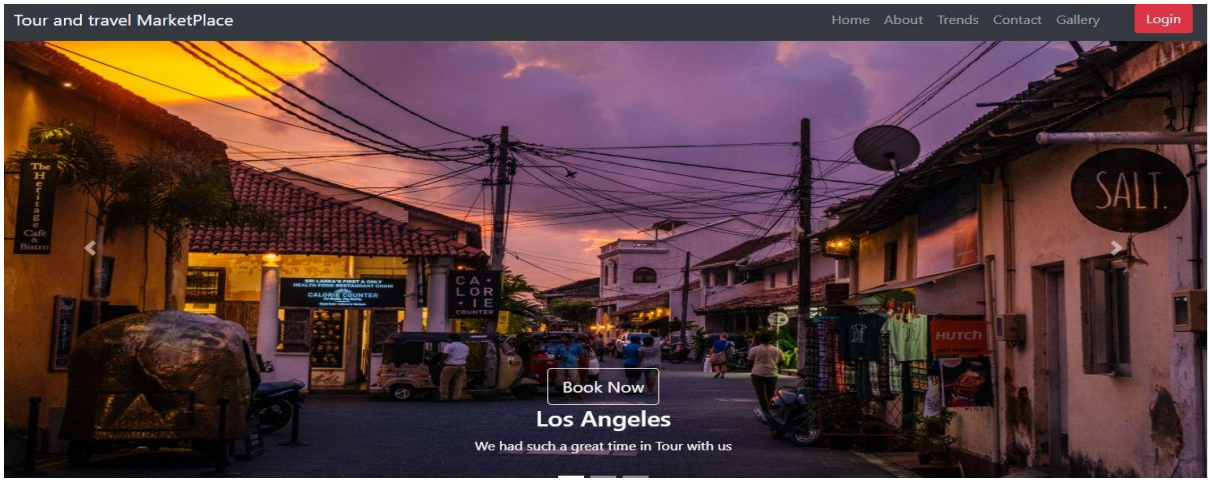

Figure 3.4

The login interface of the system is given by figure 3.4. In this login interface, the substantial agent can access to the framework and others can't. Thusly, by structuring this interface, an agent can undoubtedly distinguish about the login process. Disregard secret word can be utilized to reestablish the secret key.

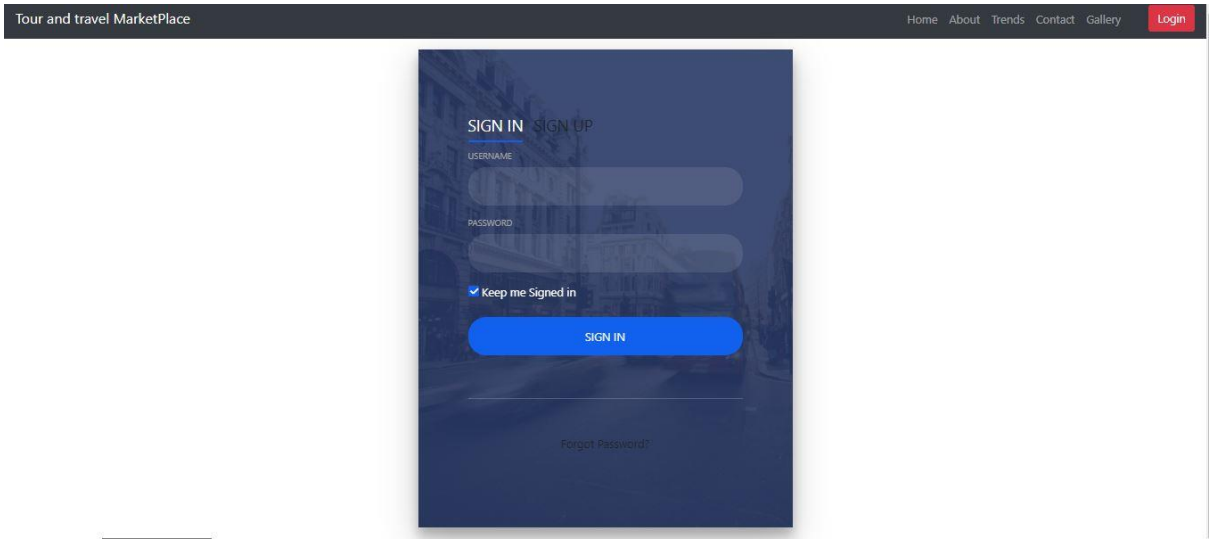

Figure 3.4

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[4] https://en.wikipedia.org/wiki/Systems_design

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[8] https://en.wikipedia.org/wiki/User_interface_design.