Software design description for Travel sales company

Mohamed Saed, Mahmoud Mostafa Fahmy heidar, Dannel Maged, Karim Ali

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Contents

SDD Version	Date	Reason for Change
1.0	12-April-2020	SDD First version's specifications are defined
1.2	30-may-2020	Updated
1.3	5-june-2020	Updated requrement matrix
1.4	6-june-2020	Added sequence diagrams
1.5	12-june-2020	requrement matrix re-written
1.6	13-june-2020	Final

Table 1: Document version history

GitHub: https://github.com/mesho3620/Software-Engineer-Project

1 Introduction

1.1 Overview

This document was created according to the ieee 1016-2009 SDD standard [51609], [Som15]. Our system mainly facilitates booking and reservation method to it's user.We have packages that includes check-in/ check-out dates ,hotel name it's level , program and costs. The tourist should choose / request for a suitable package OR he can give the agency the specifications of the trip he wants,Then it offers him with suitable package for him. there is staff who can edit ,delete and read the packages

1.2 Scope

This system aims to make reservation and booking journeys much easier as in Misr travel company depends on mails to make their trips,The tourist sends mail that includes the details of the trip that he wants then it forwards the mail back to the tourist with the acceptance of his request or refusing it.By this system we will improve booking or reservation process and we will get closer to the tourists.

1.3 Purpose

The main purpose of this Software design description document is to illustrate and outline the requirements to make booking system for tourism that mainly allows the tourist to book or choose the suitable package for him,That package includes the place of the hotel , duration , the level of the hotel type of the reservation and activities. Travel agencies can also reserve packages for tourists if they request for that . then travel agencies either accept the request or reject it. This document will provide a fulfilled and detailed description about each stage done in this system Along with a full illustration for each stage interfaces, software requirements

and development process.And mentioning what difficulties have we faced during development and how we fixed it.

1.4 Intended audience

The intended audience for this system are tourists all over the world and anyone enjoy travelling .

1.5 Definitions and Acronyms

Term	Definition
Software Design Document (SDD)	Used as the primary medium for communicating software design information.
Design Entity	An element of a design that is structurally and functionally distinct from other elements.
Design rationale	Information capturing the reasoning of the designer that led to the system as designed, including design options, trade-offs considered, decisions made, and the justifications of those decisions. .
UI	Useri interface
MVC	Model View Controller

2 Project Overview

our proposed system is a web application that allows the tourist to reserve or book his trip . firstly he should make an account and enter his name , country and his information. then the system displays or review for him the packages with all details , Tourist can see and reserve packages. there are agencies who can requests for package. Packages contains place , name , level of the hotel, duration of the trip and rating. we have admin who technically controls everything in the system , admin can edit department and every department has employees. Staff can add and view packages , Also can view requests and reservations.

2.1 Project Scope

This system aims to make reservation and booking journeys much easier as in Misr travel company depends on mails to make their trip. The tourist sends mail that includes the details of the trip that he wants. Our system helps the user to make his trip easier and without any delays in reservation time, once the tourist chooses request his package , we answer with acceptance or rejection .

2.2 Goals and objectives

our goal from this system for tourism promotion and also make easy ways and methods for the tourist to book his trip , by using specific features that saves time and achieve Guaranteed successful in reservations.

3 Context Overview

The database shall be filled by the admin who sets the departments, staff, agencies and also he can add hotels, packages and edit or delete any of them, he also sets the staff everyone to his department. The staff shall be able add, edit or delete packages and hotels and also respond to requests that are assigned to their department. The agencies shall be able create their own costume package request for the company to make for them. The tourist shall be able to view the packages and choose from them and make a request for the staff to confirm on them, also they shall be able to view their pre-made reservations

4 System Architecture Design

4.1 Architecture design

For the architecture design, the system was designed in a way that insures the MVC

4.1.1 Logical Architecture

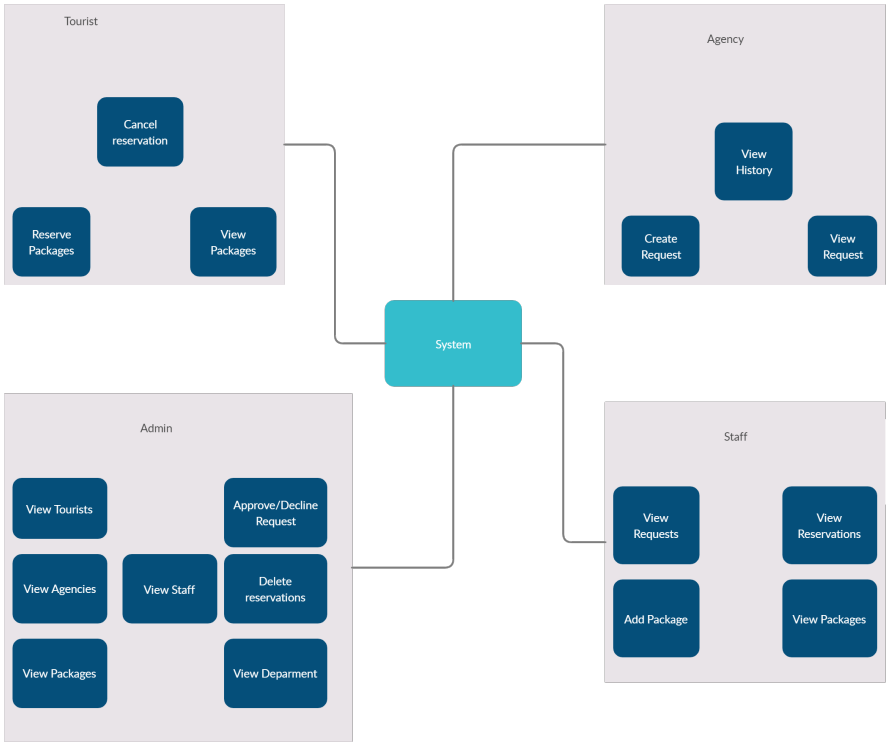

Figure 1: Architecture design

Tourist module: here the tourist can reserve and view packages or view his already made reservations.

Agency module: here the agency can create a new request for a package they want Misr travel to make for them, view their already made requests, or view their history of requests.

Admin module: here the admin can view the accounts of staff, tourists, agencies and the pre-made packages that are on the system, also they can approve or decline any request, delete reservations, and view the departments that are on the .

Staff module: here the staff can view requests, packages, and reservations that are on the system, also they can create a new package

4.1.2 Software Architecture

The main design pattern that we used to design the system was the MVC Model: which is the data access layer view; which is the presentation layer controller which is the controlling layer

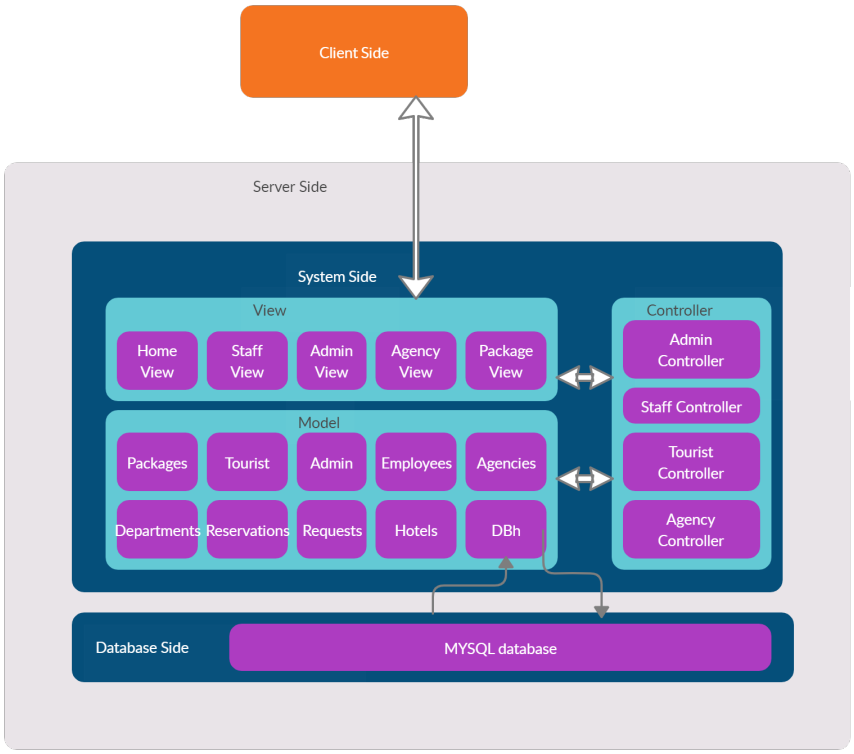

Figure 2: Software architecture

Model layer: This layer contains all the functional methods that deals with the database directly.

Controller layer: this layer got all files which deal with the model and the view layer. this layer is considered a mid layer between the model layer and the view layer.

View layer: this layer displays the application and it deals with the UI and the front-end.

4.2 Decomposition description

4.2.1 Class diagram

This is the class diagram 3 implements the MVC design pattern which is used in the system to separate the application's view from the model by interacting via the controller.

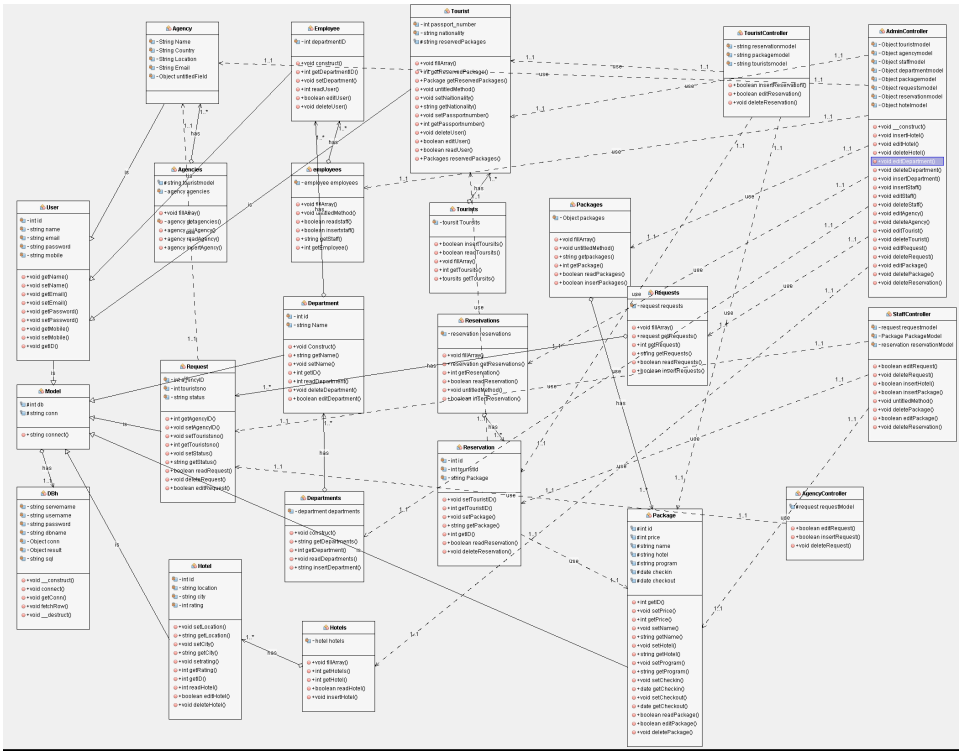

Figure 3: Class diagram

4.2.2 Activity Diagram

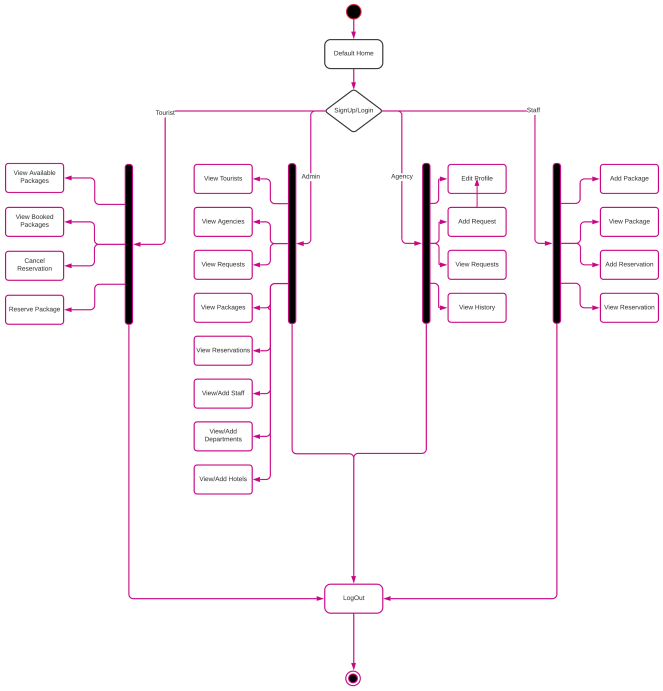

Figure 4: Activity Diagram

4.2.3 Sequence Diagrams

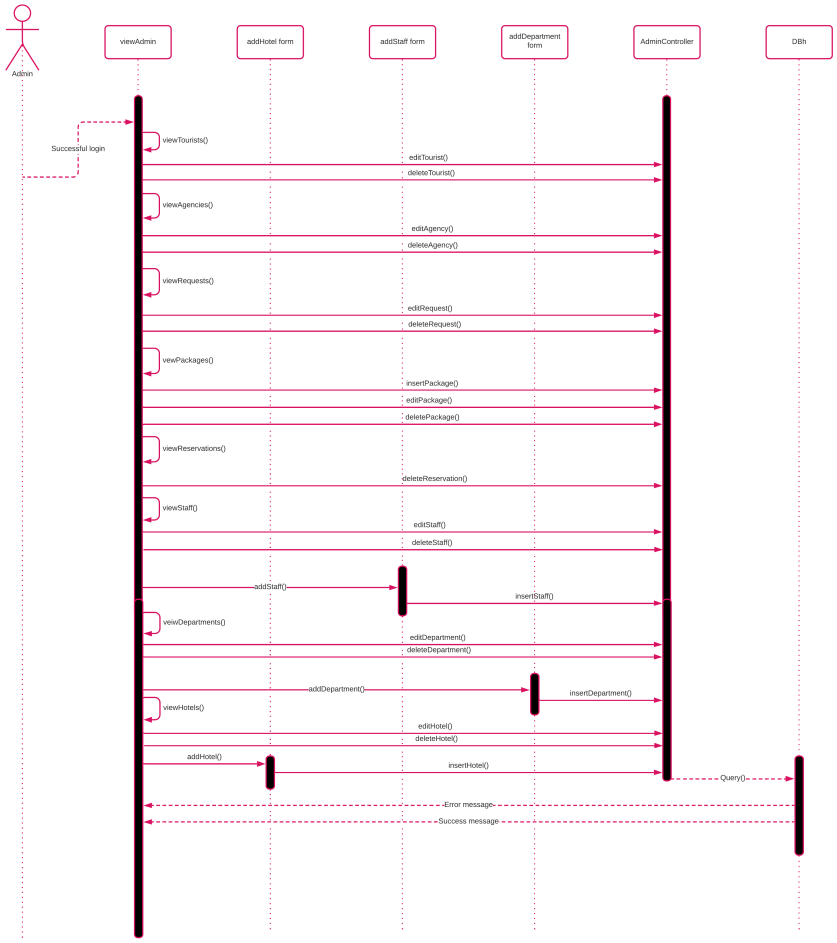

Figure 5: Admin module

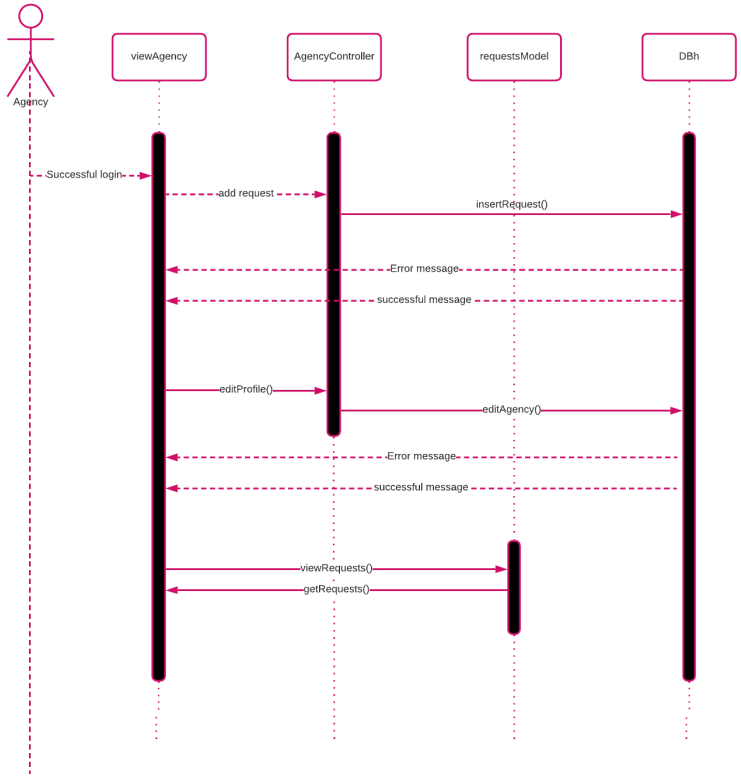

Figure 6: Agency module

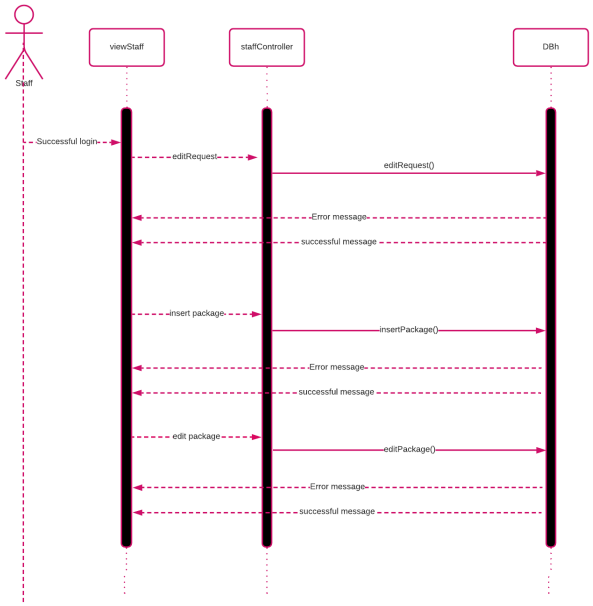

Figure 7: staff module

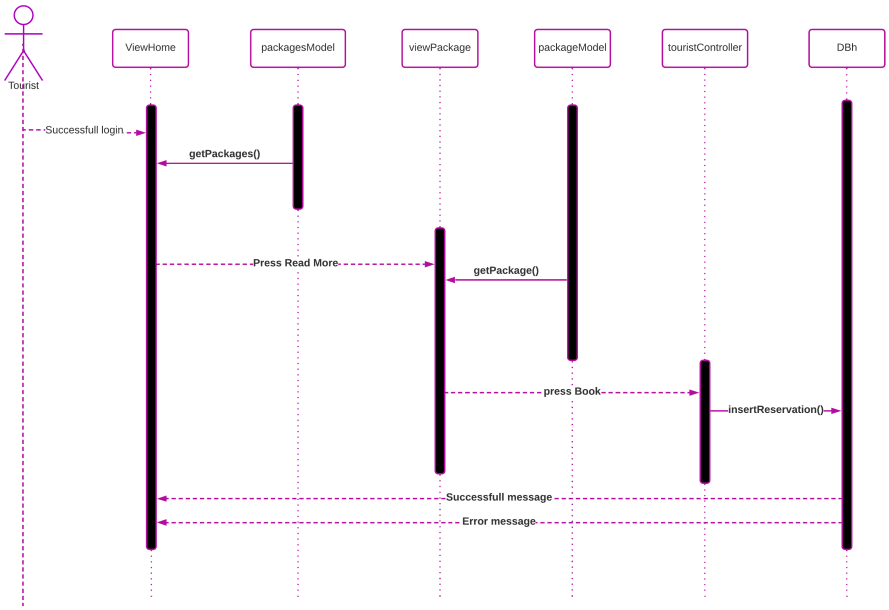

Figure 8: Tourist module

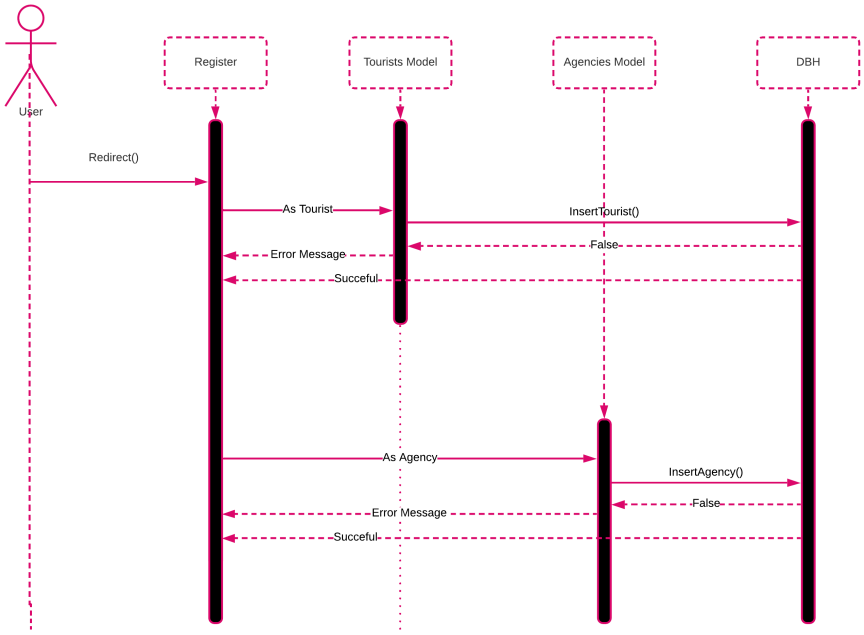

Figure 9: Sign Up module

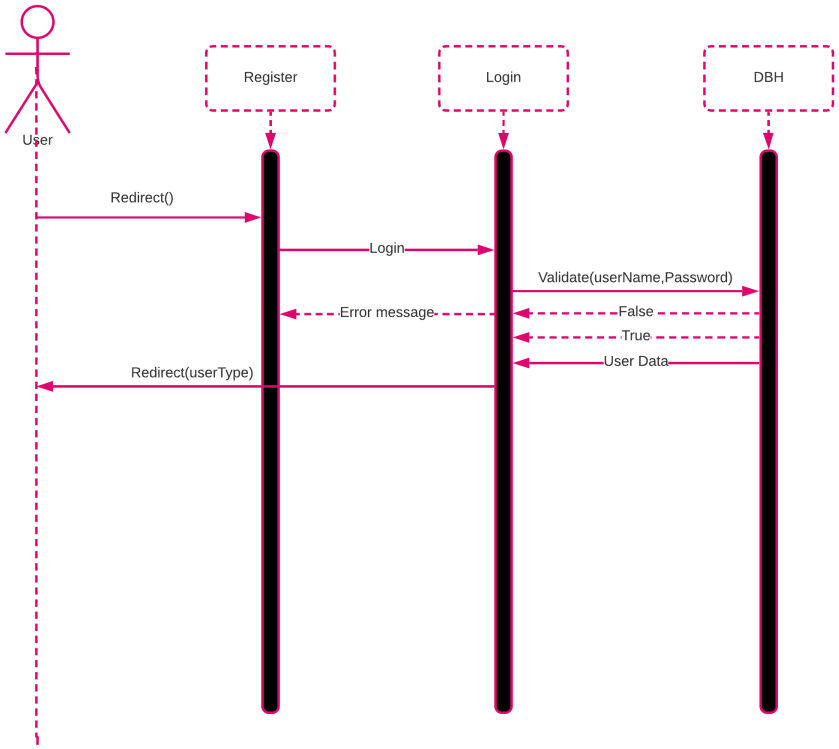

Figure 10: Login module

4.3 Design Rationale

As mentioned previously, we have used Model-View-Controller (MVC) as our architecture as it helped us separate the functionality and data of our system from the presentation. So, we can easily make modifications, re-use and optimize functionality part as it is our core. Also the software we are developing efficiency and accuracy is a very important aspect of it so it will be very sensitive with data so this should be developed in a very accurate and efficient way.

4.4 Algorithm viewpoint

In this system we used the linear search algorithm for the search function that is used to search for packages according to location and price range. since the number of available packages is limited and small to be considered Big data we decided to use the linear search algorithm

5 Data Design

5.1 Data Description

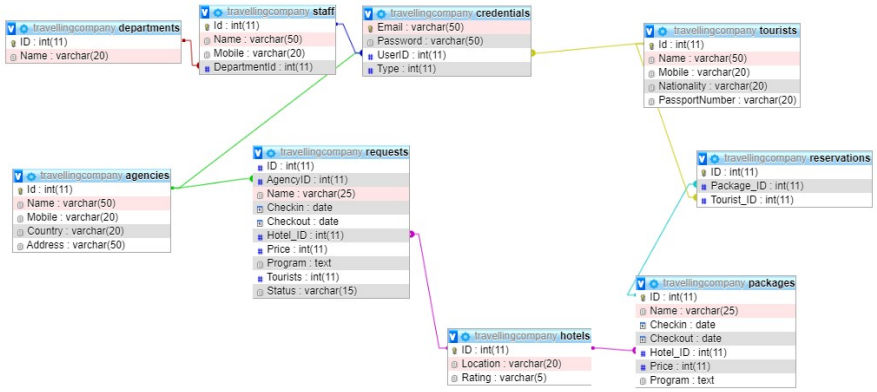

Figure 11: Database schema

5.2 Database design description

departments	stores the department id and name
staff	stores the id,name, mobile, department id of the staff
credentials	stores email,password, user id and the user type for all the users
requests	stores all the requests' data sent by the agencies
hotels	stores the id, location and the rating of hotels
tourist	stores the id, name, mobile, nationality and passport number of the tourists
packages	stores id, name, check in, check out, hotel id, price and the program of the package
reservations	stores the id, package id and the tourist id for every reservation
agencies	stores the id, name, mobile, country and the address of the agencies

6 Human Interface Design

6.1 User Interface overview

1-creating package (staff) Here the staff put the details of the package and the dates and the program so that it would be available for tourists then they finalize the details by pressing on the Add button 16

2-requesting package (agency) Here the agency put the details of the package they wants and the dates and the program so that the company provide it for them then they finalize the details by pressing on the Save button 15

3-reserving package Here the user chooses their check in and out dates and see the program then they press on Book button 13

4-canceling reservations Here the user views their reservation and if they want to cancel they press on Cancel Reservation button 14

5-package Here the user views the package and its price and if he is interested he presses the Read More button to see its full details 12

6.2 Screen Images

6.2.1 Tourist interface

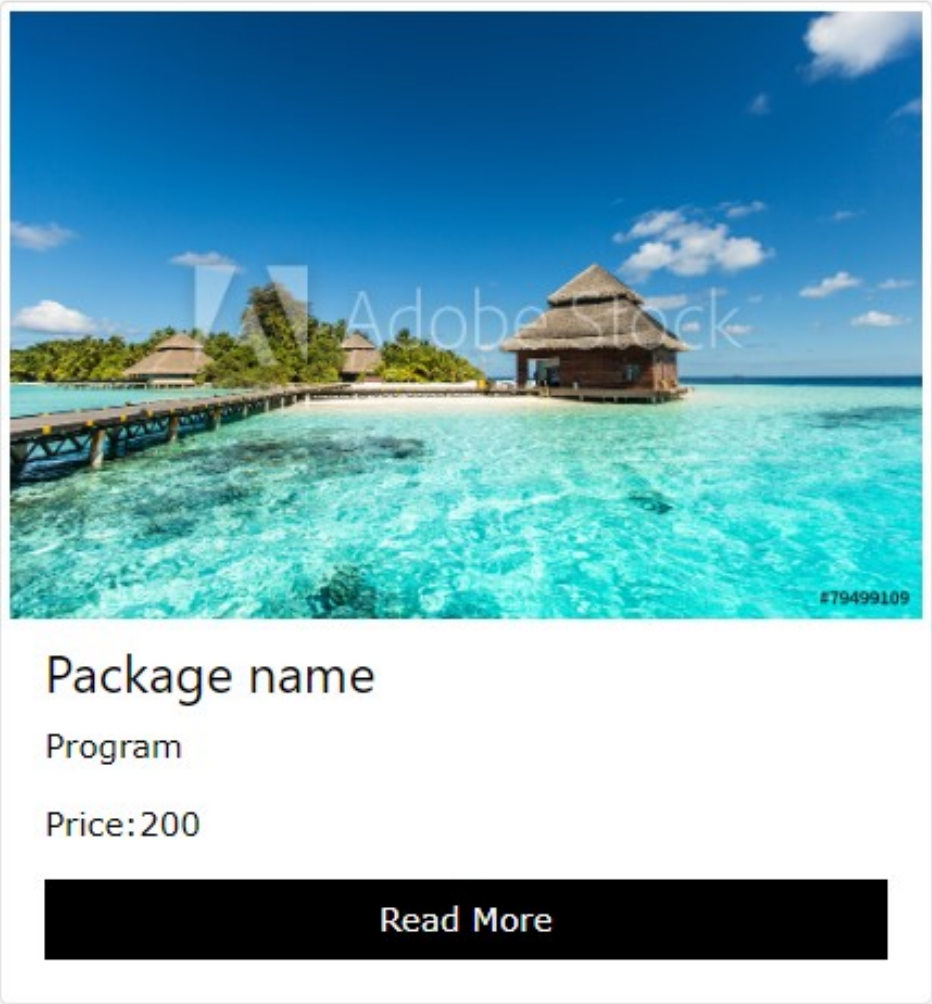

Figure 12: Package display

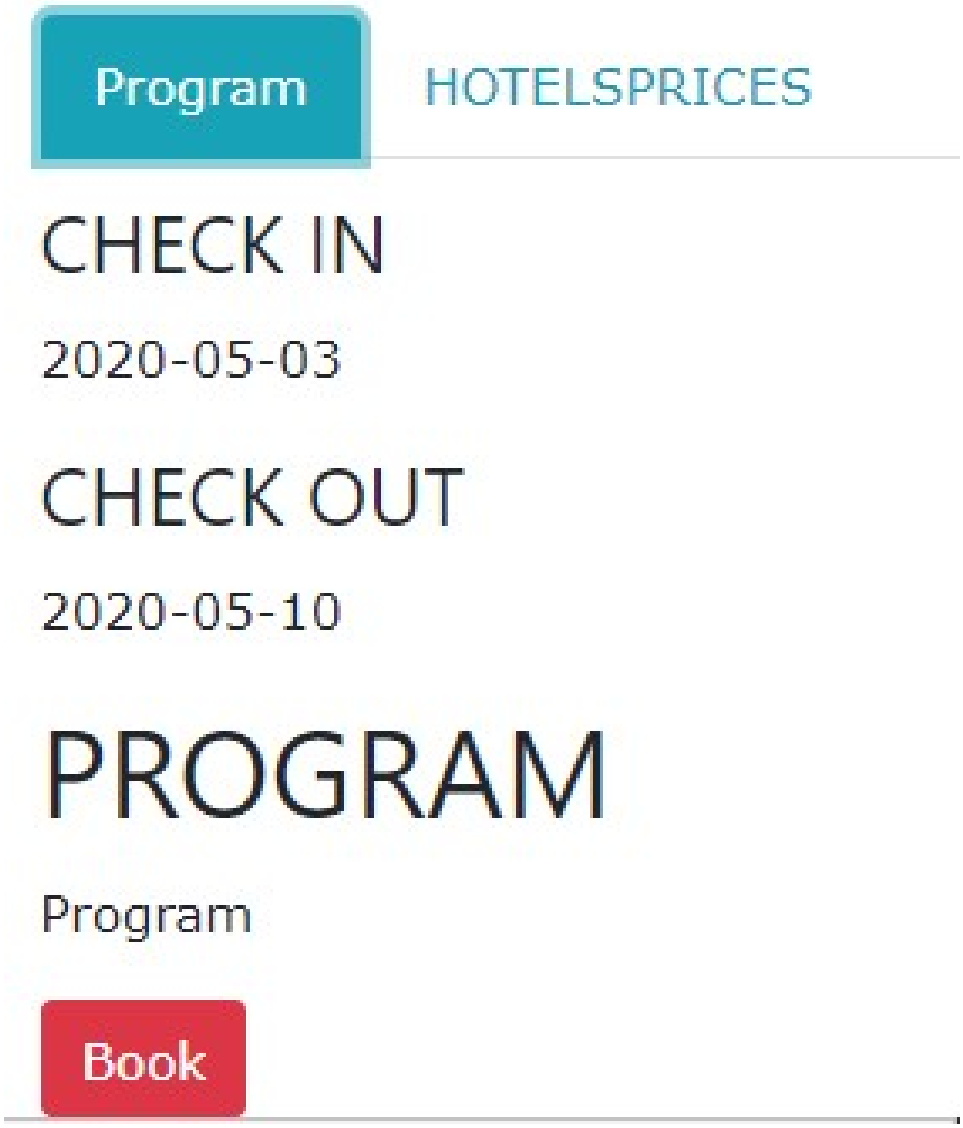

Figure 13: Reserve package

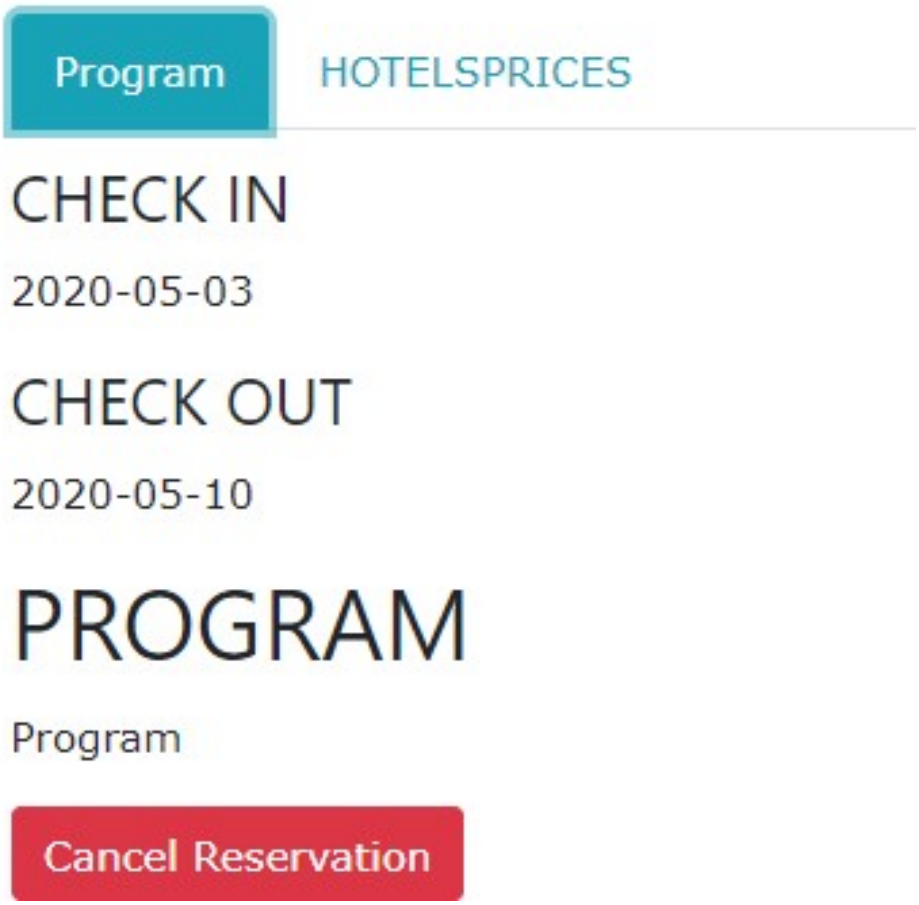

Figure 14: Reserved package

6.2.2 Agency interface

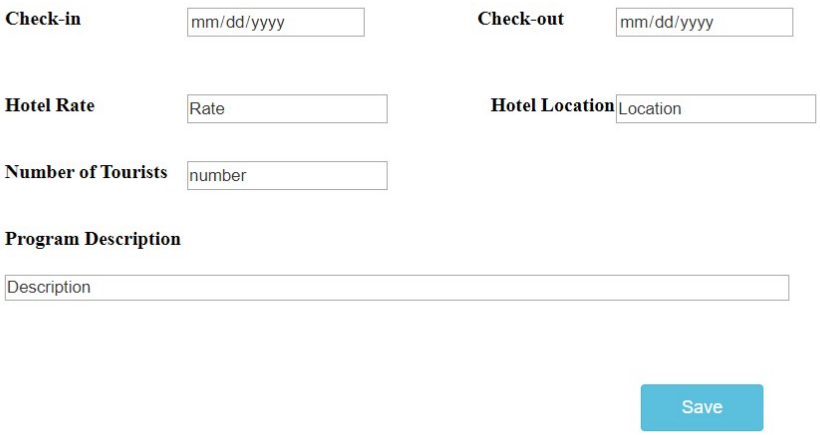

Figure 15: Package request form

6.2.3 staff interface

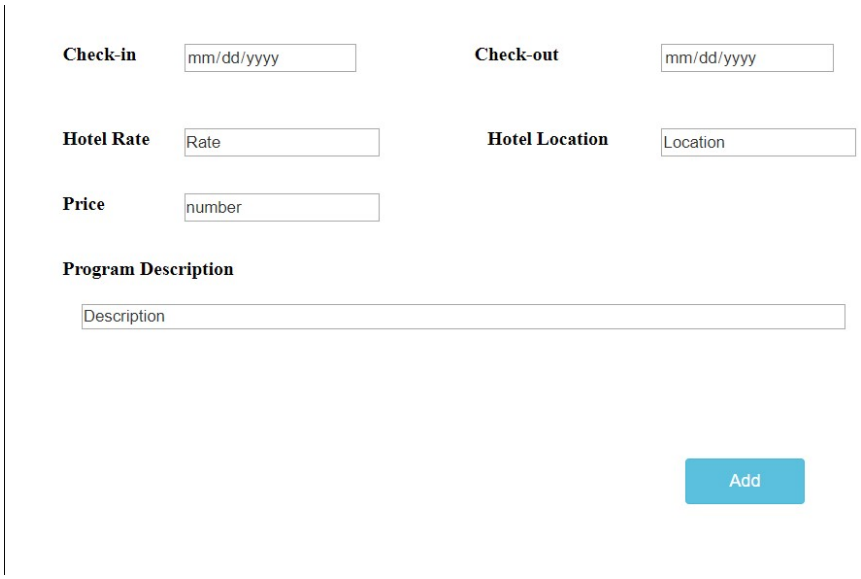

Figure 16: Package creation

7 Requirements Matrix

ID	Customer needs / Assumptions	Functional requirements	Specifications	status
RM00	Hotel name should not be defined to avoid the problem of availability	FR00	only define the hotel city, location and rating	Completed
RM01		FR01	edit existing hotel's location, city, rating	Completed
RM02		FR02	delete hotels	Completed
RM03		FR03	insert department's name	Completed
RM04		FR04	delete department	Completed
RM05	admin should create staff's account	FR05	create staff members' account	Completed
RM06		FR06	delete account for staff	Completed
RM07		FR07	delete account for agencies	Completed
RM08		FR08	delete tourist acounts	Completed
RM09		FR09	deletes package requests	Completed
RM10		FR10	delete packages	Completed
RM11		FR11	delete reservation	
RM12	staff should be able to edit requests' status and price	FR15	edit Package requests if accepted	Completed
RM13		FR16	delete Package requests	Completed
RM14	Staff members shall be able to add new packages	FR17	add new packages	Completed
RM15		FR18	delete tourists' reservations	Completed
RM16	Agencies should only makes requests by creating packages and wait for response	FR13	add new package requests	Completed
RM17	Agency should only be able to change their email, password, mobile and address	FR12	edit profile	Completed
RM18		FR14	delete their own package requests	Completed
RM19	tourists can only reserve from packages created by staff members	FR19	make new resrvation	Completed
RM20		FR20	delete their reservations	Completed
RM21	Tourists shall only be able to change their email, password and mobile number	FR21	edit profile	Completed
RM22		FR22	filter available packages	Completed
RM23	only agencies and tourists shall sign up from the signup page	FR23	signup	Completed
RM24	All user types should log into their account from the same page	FR24	Login	Completed

8 Appendices

8.1 MVC

This software uses MVC design pattern in which the application is divided into 3 parts. The model which the one connected to the database in which the data is stored so that it retrieves and fills the data The view which the user interface that the normal user views as the application and interact with The controller is the code that connects the model with the view so that the user can view the retrieved data [gee18]

References

[51609] Ieee standard for information technology–systems design–software design descriptions. *IEEE STD 1016-2009*, pages 1–35, 2009.

[gee18] Mvc design pattern, Feb 2018.

[Som15] Ian Sommerville. Software engineering. 10th. In *Book Software Engineering. 10th, Series Software Engineering*. Addison-Wesley, 2015.