

WEB APPLICATION ON APARTMENT RENTAL SYSTEM

BY

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of
Bachelor of Science in Computer Science and Engineering

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APPROVAL

This Project titled “**Web Application On Apartment Rental System**”, submitted by Shadia Sultana (ID: 172-25-600) to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of M.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 12-12-2018.

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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **MD.Zahid Hasan, Assistant Professor, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree.

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ABSTRACT

The aim of this project was to produce an interactive web application on home, restaurant and experience rental & booking for vacation and tourism. It is a C2C platform that will connect hosts and guests around the world. It is developed in order to help those visitors choose paid to remain in the home of a common individual they didn't beforehand know. I have used PHP, Laravel Framework, MySQL and HTML, CSS, Javascript to complete this project. This application has three parts - admin panel, host panel, and customer panel. Admin panel is for maintaining all information and system settings. Host and customer panel deals with all sorts of features completing registration, adding home/experience/restaurants and booking them. This web application is fully responsive, so that users can browse this application from his/her laptop, desktop, multimedia phone and tab. This project's functionalities are very easy to operate.

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CHAPTER 1: Introduction

1.1 Introduction

A huge number of travelers around the globe choose to stay in a traditional hotel, hostel, or bed-and-breakfast (B&B) every night. A few tourists decide not to remain in a conventional travel industry convenience foundation, but instead paid to remain in the home of a customary individual they didn't beforehand know. Sometimes hotels get so expensive or there are some places like in rural areas where hotels are rare. In these cases normal people can rent their places for tourists to stay in exchange of money. In this way they can earn extra money or it can be a major income source for people in rural areas. They can also rent experiences and restaurants to the tourists.

1.2 Motivation

The fundamental point of this project is to associate individuals hoping to lease their homes with individuals who are searching for housing. It will profit the two hosts and visitors. Hosts get the opportunity to meet individuals from around the globe while profiting, and tourists/guests can regularly remain for not exactly the expense of a hotel room.

1.3 Objectives

The main objectives of this project are-

- Provide cheaper accommodation service
- Accommodation in rural areas
- Experiences rental while travelling
- Getting restaurant recommendations from individuals truly up to date

1.4 Expected Outcome

Expected outcome of this project is an interactive web application on home, restaurant and experience rental & booking for vacation and tourism. Where travelers will be able to find their desired place to stay in their preferred price range, find unique experiences while stay in that place and they will also be able to find best restaurants around their staying zone recommended by local people. There will be an easy to use payment method integrated to pay without any hassles.

1.5 Report Layout

This report is divided into 6 chapters. Chapter 1 contains introduction, motivation, objectives and expected outcome. Next in chapter 2 I presented related works of this project, comparative studies, scope of problems and challenges. From chapter 3 to 5 the main software engineering

parts are presented. Requirement specification is available in chapter 3, Software design specification in chapter 4 and implementation and testing in chapter 5 will give a thorough specification of the development process. Conclusion and future scope is included in chapter 6. That follows references and appendix.

CHAPTER 2: Background

2.1 Introduction

Tourism is one of the fastest growing and single largest industries in the world. Numerous nations on the planet rely on the travel industry as a principle wellspring of outside trade profit. Step by step Bangladesh is turning into a hot travel goal for voyagers around the globe. A few visitors decide not to remain in a customary the travel industry convenience foundation, but instead paid to remain in the living arrangement of a normal individual they didn't already know. Decide on something way more exceptional than a faintly lit stay with a soft extra large bed or some exhausting beige covers and striped backdrop. What about a nation estate, an open space. What's more is that frequently, over the potential reserve funds, you'll additionally have the capacity to get nearby inhabitants contribution on things, for example, sights to look at and awesome spots to chow down at.

2.2 Related Works

Get-away rental and friendliness benefit have seen amazing development over the previous years in the travel industry step by step. Each industry has some dimension of rivalry. The equivalent applies to this industry.

Airbnb, Homeaway Network, Booking.com and Tripadvisor's flipkey include all give chances to advantageously offer transient rentals from your home. Airbnb is one of the biggest transient rental administrations right now advertised. There are 500,000 remains booked every month, There are in excess of 4 million Airbnb contributions over the world![1]. The site doesn't charge rental proprietors a Visa expense or membership expense, and the booking expense is 3 percent. Airbnb charges an administration expense for explorers, running from 0-20 percent of the booking subtotal. Booking.com offers a comparative administration, with more than 5.4 million properties in 228 nations. With Booking.com, there's no explorer charge. Rental proprietors pay a 3 percent charge card expense and a 15 percent booking expense, however there's no membership expense. Expedia claims a few get-away rental organizations: Homeaway Family, VRBO, VacationRentals.com and Homelidays. They handle in excess of 2 million rentals crosswise over in 190 nations.

2.3 Comparative Studies

In Bangladeshi rural areas people doesn't even know about this type of businesses. My main concern is to build a more user friendly system for these rural people where hotels/motels are rare. This will let them earn extra amount of money.

2.4 Scope of the Problem

Getting honest reviews is always an issue. Host and guest needs to act honestly. Otherwise this type of service is near to impossible. Perhaps the biggest risk for hosts is that their property will get damaged.

2.5 Challenges

This type of project needs plenty of time to complete. That why the biggest challenge I have faced is time management issue. Starting from requirement analysis to implementation and testing it took a huge amount of time. And being a only developer it gets even tougher.

CHAPTER 3: Requirement Specification

3.1 Business Process Modeling

The business process model of this project is presented below. In this project hosts add room and profile into homex. Visitors(tourists) requests for rooms, if a certain room meets their expectation they books the room.

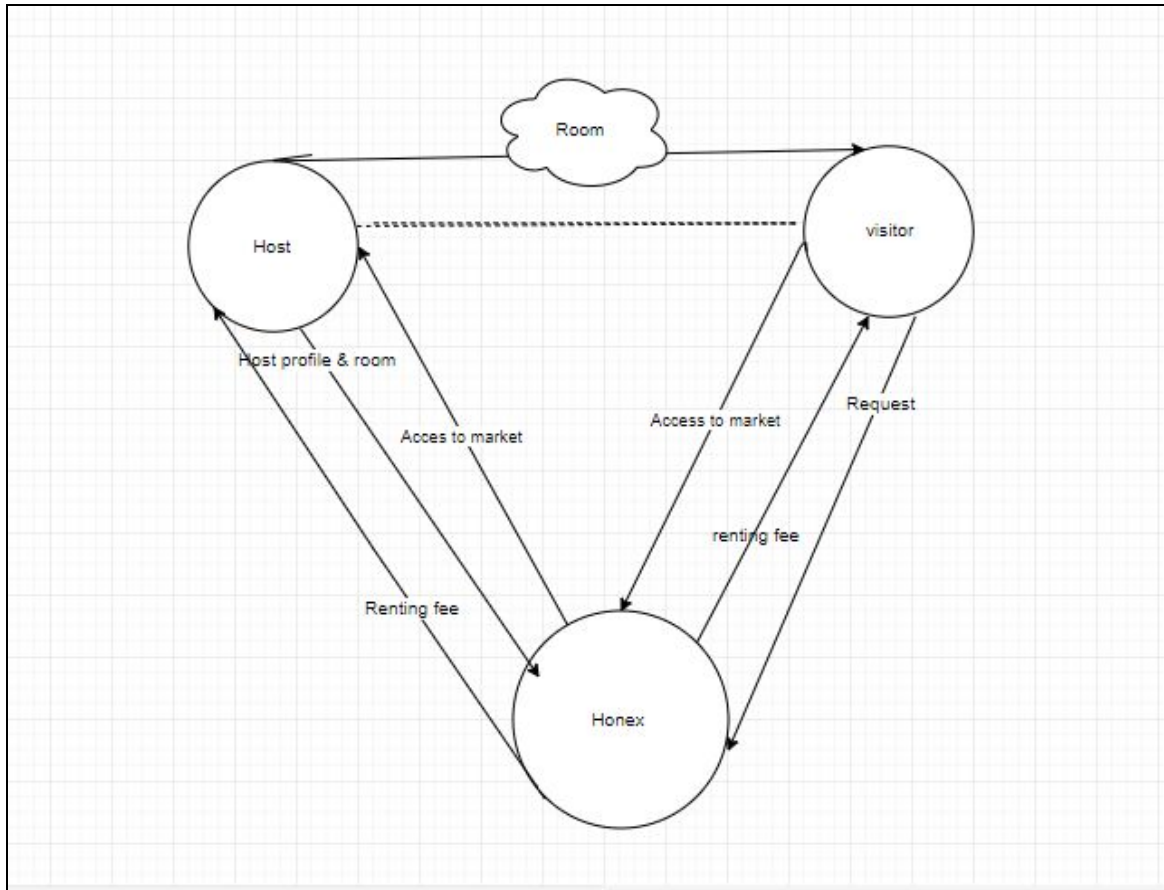


Fig 3.1: Business Process Modeling

3.2 Requirement Collection and Analysis

For it is essential to recognize the necessities required for the undertaking and to plan the modules so that every one of the requests are met. A few stages require an exhaustive examination of the essential needs. It will hope to fulfill for the clients and the issues will be encountered. Only then the creation would be sufficient to give a superior execution.

3.3 Use Case Modeling and Description

Below is the use case model of the project.

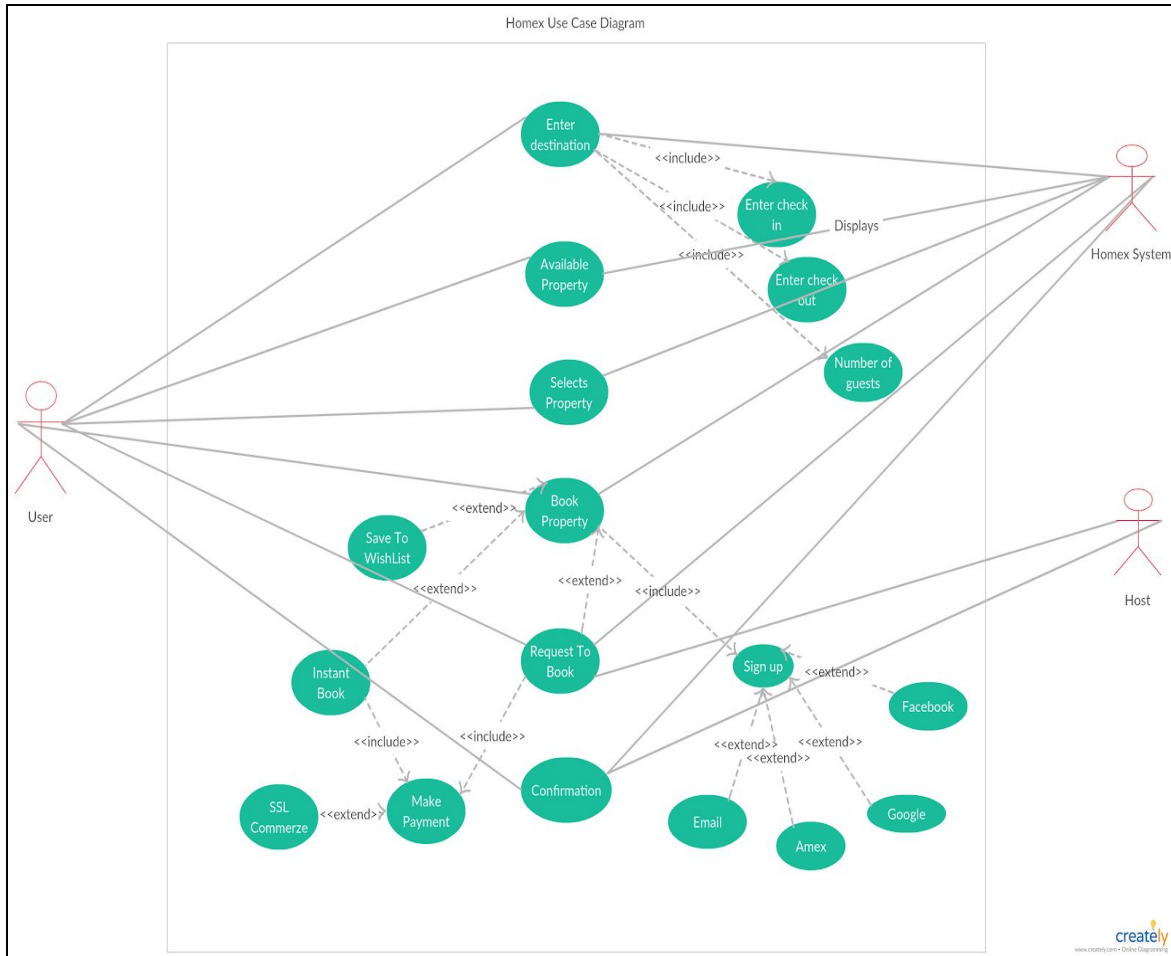


Fig 3.3: Use Case Model

3.4 Class Diagram

Class Diagram is used in modeling of the object-oriented system because it is the only UML image, which can be directly mapped to object-oriented languages. It is known as a structural diagram. Bellow is the Class diagram of my project.

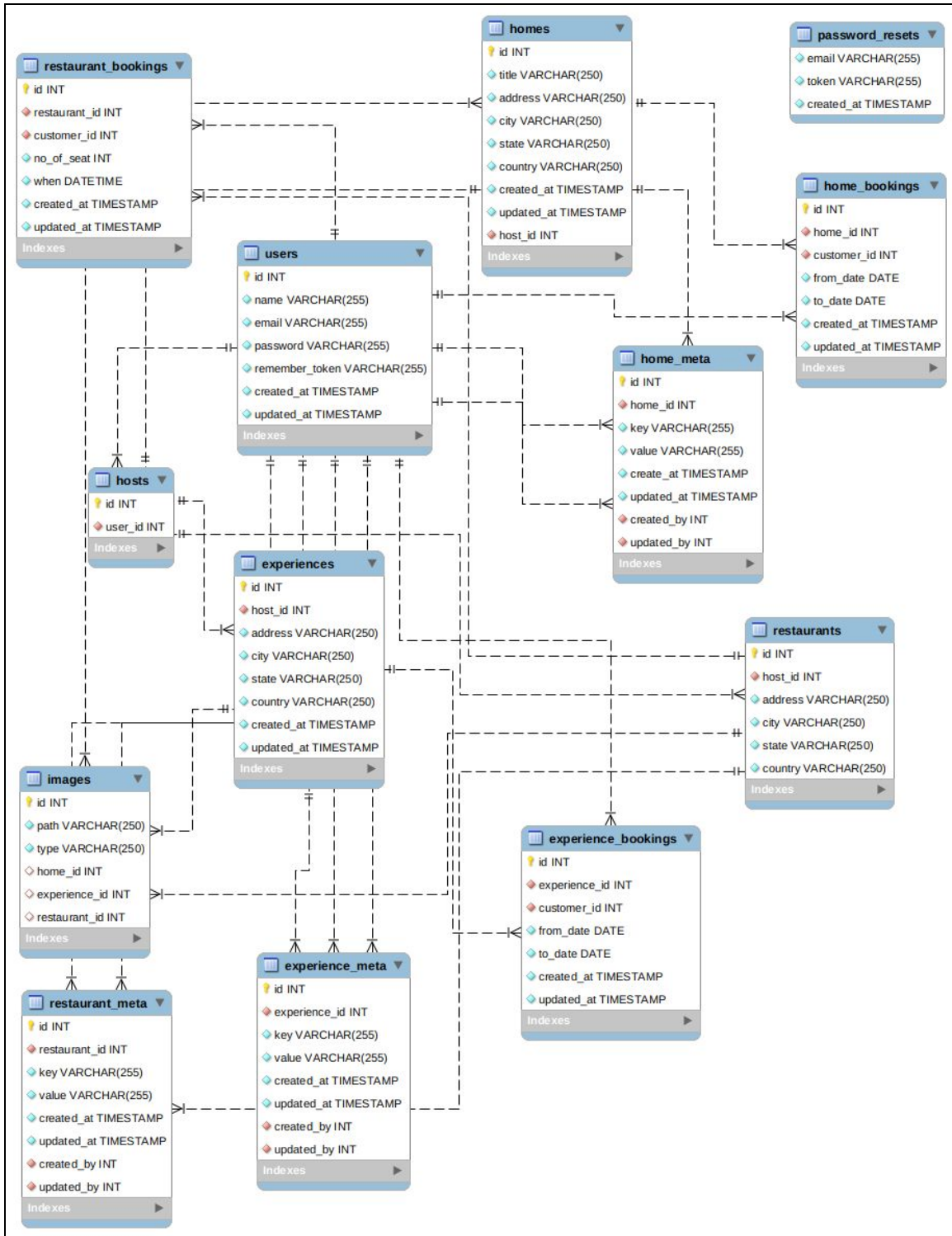


Fig 3.4: Class Diagram

3.5 Design Requirements

Design Requirements for the User-

- Add budget.
- Show nearby Place.
- Show weather condition.
- Understanding guest's need
- Design, test, and iterate
- Educating our hosts
- Continuing the conversation

CHAPTER 4: Design Specification

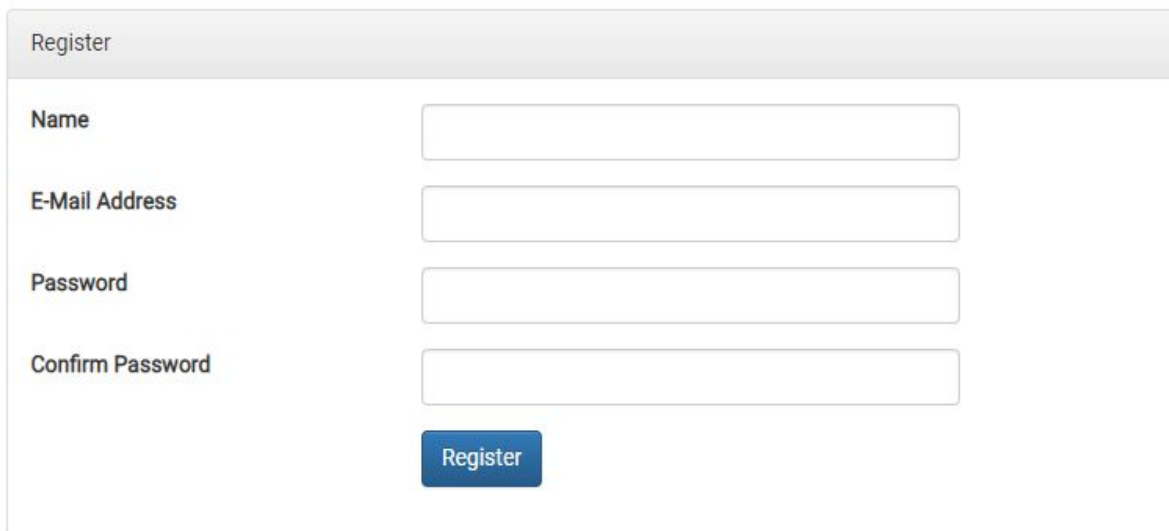
4.1 Front-end Design

For designing front-end I have used-

1. HTML for building the structure
2. CSS3 for styling purpose
3. Bootstrap a css framework
4. Javascript for scripting

First things first, visiting the website will show you the home page. It contains search, and recommended home, experience and restaurants list and link to show all.

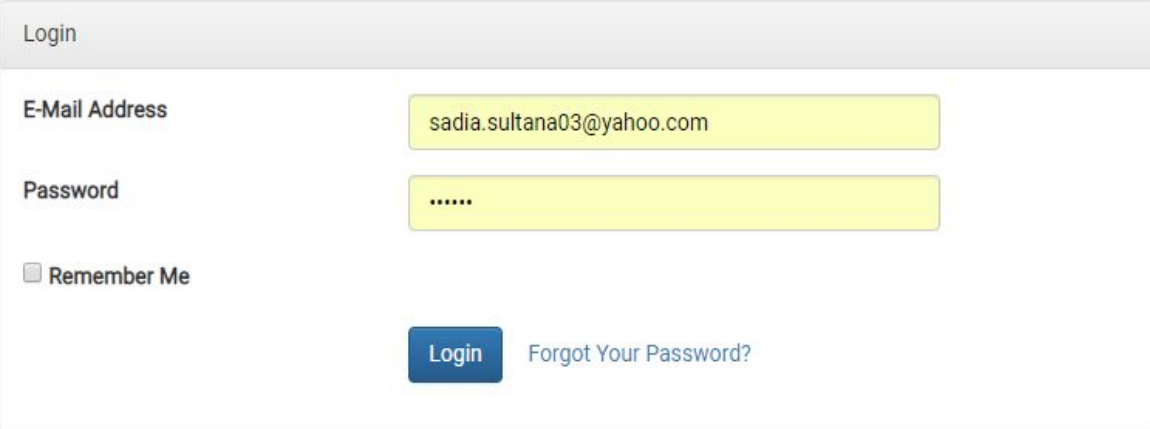
To become a host or to book a home, experience or restaurant one must be a registered user of the site.



The image shows a registration form titled "Register". It contains four input fields: "Name", "E-Mail Address", "Password", and "Confirm Password". Below the fields is a blue "Register" button.

Fig 4.1.2: Registration page

If a user is registered he must be logged in-



The image shows a login form with a grey header containing the word "Login". Below the header, there are three input fields: "E-Mail Address" containing "sadia.sultana03@yahoo.com", "Password" containing ".....", and a checkbox labeled "Remember Me" which is unchecked. At the bottom of the form, there is a blue "Login" button and a link that says "Forgot Your Password?".

Fig 4.1.3: Login page

On top of homepage there is a search bar. It lets users to search home, experience and restaurants by place. It follows a 3 links to individual pages of home, restaurant and experience. Recommended home, experience and restaurant comes after it. Below these there are 3 different rows for best experiences, unique homes and restaurants for visitor. Experience row shows best experiences. Home & restaurants rows shows unique homes & restaurants.

The footer section is same for all pages. It has link to FAQ, Terms of use, Contacts and Career page. It also has projects facebook, twitter, google+ and twitter links.

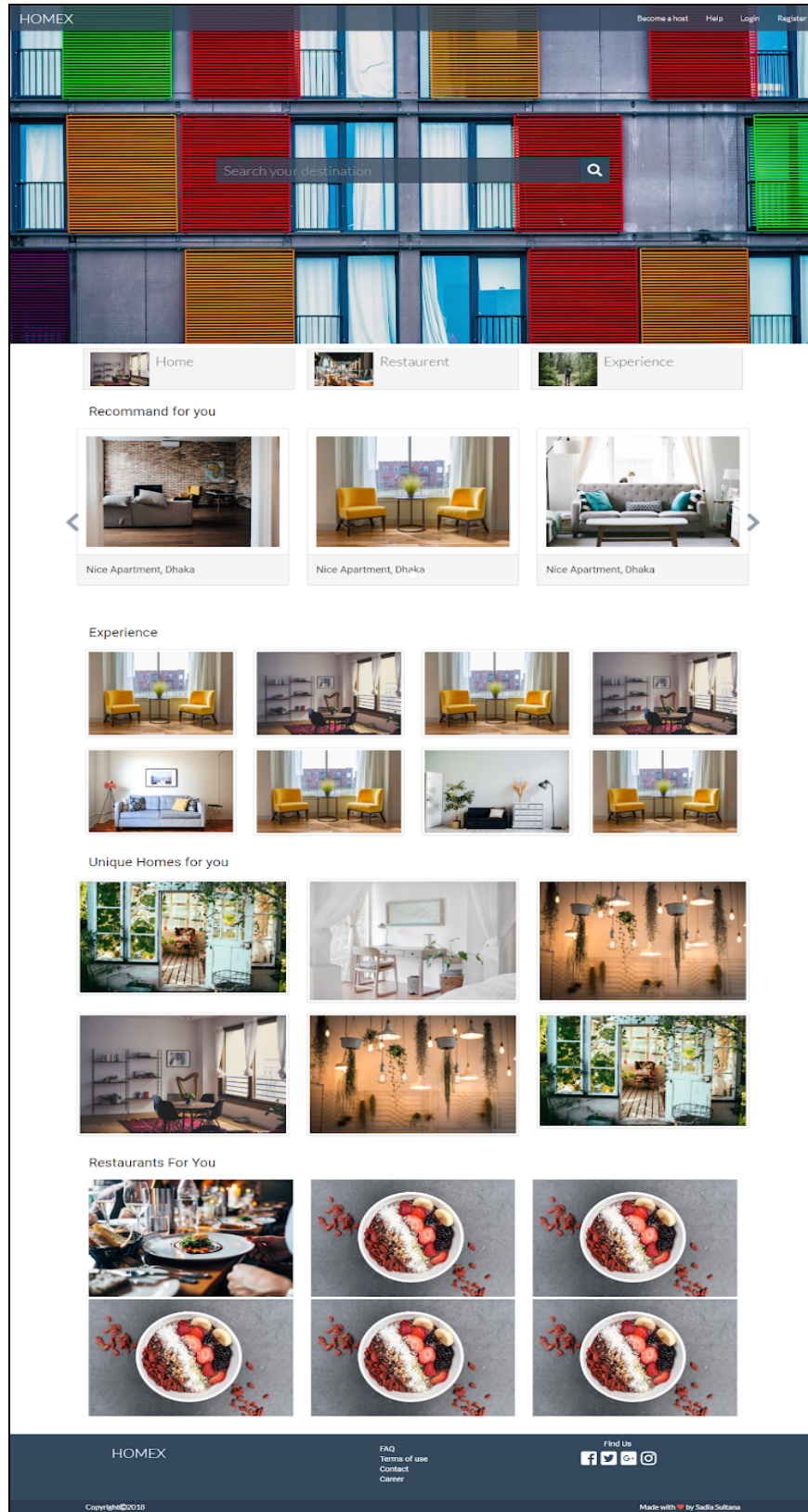


Fig 4.1.1: Homepage

User can search home depends on their needs and view it-

HOMEX Become a host Help

Nokkhottrobari

Bungalow at Gazipur
231 happy guests

\$73 Per night
[Book now](#)

November 2018						
Su	Mo	Tu	We	Th	Fr	Sa
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	1
2	3	4	5	6	7	8

Sadia, your host

Take a scenic drive through the historic Hollywood Hills from a Spanish Colonial Revival guesthouse that's minutes from the Sunset Strip. Marble countertops, imported tiles, vintage furnishings, and original artwork create a crisp, yet eclectic feel.

3 guests 1 bedroom 1 bed 1 bath

Tour your apartment

Bedroom

Dinning Room

Living Room

Bathroom

Amenities

Self check-in

Free parking on premises

Full kitchen

Wifi

TV

Bathroom essentials

Bedroom comforts

Swimming Pool

Coffee maker

Mini Library

Hot water

Heating

Location

Kapasia, Gazipur, Bangladesh

Map Satellite

Nokkhoto Bari.

Nigar Plaza, 4th floor,
 house #52/B, Road #02, Sector #03,
 Uttara,Dhaka-1230 Bangladesh

Dhaka

HOMEX

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FAQ
 Terms of use
 Contact
 Career

Find Us

Made with by Sadia Sultana

Fig 4.1.4: Single Home page

This page shows all the information of the home and a calendar that shows the available date. Important informations like price, place and calendar are kept on top so that visitor can learn the these info at a glance. This page also has information like location map, amenities provided by host and the photos of home.

If user likes the property they can go to booking page and book the page.

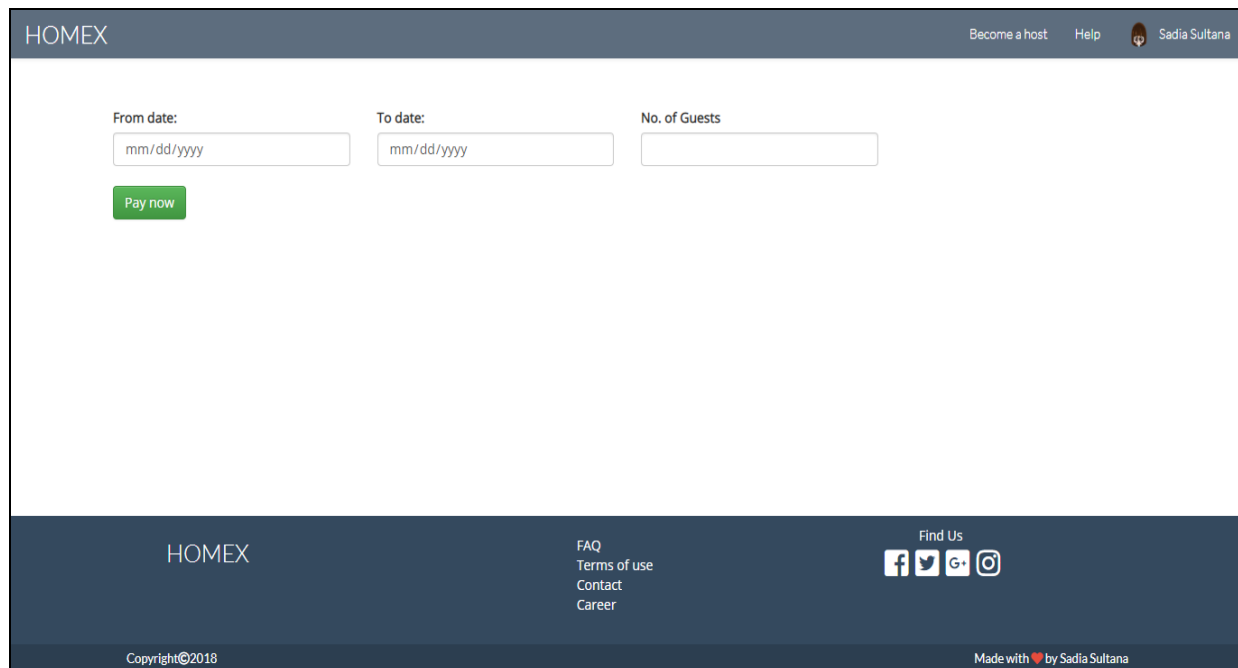


Fig 4.1.5: Booking page

If a user wants to visits a restaurants page system will show him the restaurants page like below. It contains price, location and photos.

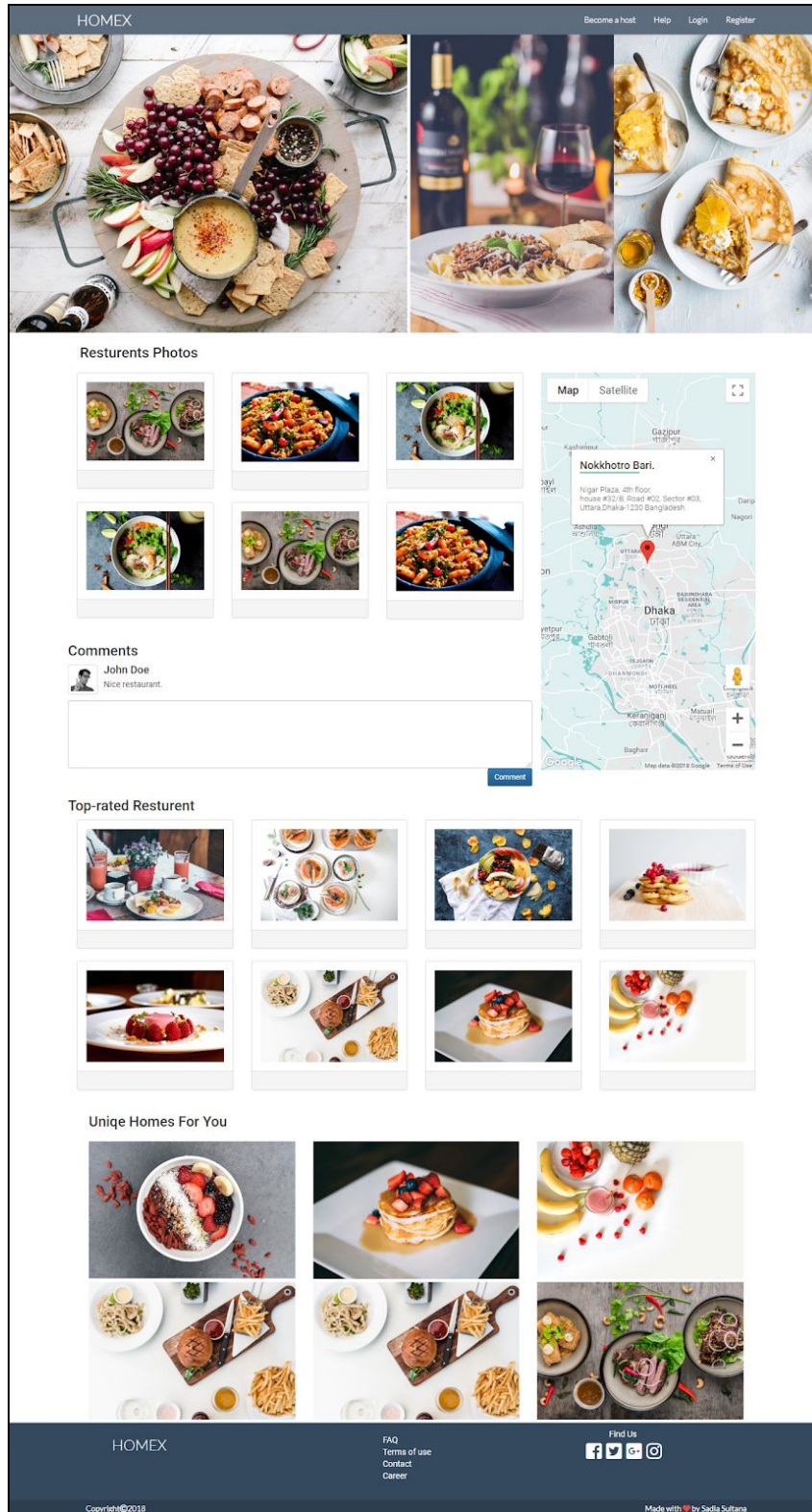


Fig 4.1.6: Restaurant page

If user finds a home perfect for him he can instant book the home or can request a book to the host on a available date. Then the user will be redirected to payment page for advance payment. I have used Bangladesh's first payment gateway SSL Commerze as a payment method.

4.2 Back-end Design

For back-end design purpose I have used-

1. PHP
2. Laravel a php framework
3. Mysql as database

4.3 Interaction Design and UX

“**Interaction Design** (IXD) defines the structure and behavior of interactive systems. From computers to mobile devices to appliances and beyond, Interaction Designers strive to create meaningful relationships between people and the products and services that they use. Our practices evolve with the world” — IXDA

4.4 Implementation Requirements

Requirements-

- A laptop or desktop computer with apache server installed
- Network connection
- Mysql database
- Editor such as Sublime text or Phpstorm

CHAPTER 5: Implementation and Testing

5.1 Implementation of Database

Database is a key requirement for storing data. Without data this project is nothing. I have used MySQL for storing data. MySQL is an open source relational database management system (RDBMS)[3]. As I have used laravel framework for developing this project, I used laravel's migration feature for database management. Migrations are like adaptation control for databases, enabling group to effectively alter and share the application's database construction. Migrations are regularly matched with Laravel's pattern developer to effectively fabricate your application's database outline. In the event that you have ever needed to advise a partner to physically add a section to their nearby database composition, you've confronted the issue that database movements understand^[2].

I have use phpmyadmin for managing data of the database. PhpMyAdmin is a free and open source organization device for MySQL and MariaDB[4]. As a convenient web application composed essentially in PHP, it has turned out to be a standout amongst the most mainstream MySQL administration tools, particularly for web facilitating administrations.

5.2 Implementation of Front-end Design

To design front end I have used HTML, CSS and Bootstrap. HTML stands for Hyper Text Markup Language which is used to build the skeleton of the web page. CSS stands for Cascading Style Sheets which is used to style the skeleton. To make this job easier I have used Bootstrap front-end framework, which is free and open-source for designing websites and web applications. To maximize user experiences I have used Javascript & JQuery for animation.

5.3 Implementation of Interactions

In this type of web application where everything depends on data and calculation, just a front end is useless without connecting with a functional back end. As I have mentioned earlier that I have used Laravel, Laravel has a great tools named Blade. Blade is a simple, yet powerful templating engine. It makes it easy to present data into front end.

5.4 Testing Implementation

Writing tests for an application is a great software development practice. Frequently, it is the main coding undertaking to be performed before building the highlights of an application. As the main coding errand, tests are at first written to fall flat since we have no code to fulfill the necessities of the test. When our tests fall flat, we would then be able to manufacture our application to finish our tests. This training guarantees our code meets determined programming

necessities. It additionally fills in as a guide while broadening our application or while refactoring. This training is regularly known as "Test-driven Development" (TDD).

5.5 Test Results and Reports

I have inspected how to compose tests for applications and what ought to be tried. I analyzed how to set up our improvement condition for testing our application so information isn't imperiled. I composed tests for an example application to perceive how testing functions. I saw how to utilize distinctive affirmations to guarantee our application restores the correct information.

There are as yet various types of tests I didn't consider. These tests end up important with expanding intricacy of our application. At the fundamental dimension, what I have taken a gander at would guarantee our application works fine.

CHAPTER 6: Conclusion and Future Scope

6.1 Discussion and Conclusion

Vacation rental system is becoming a trend nowadays. Because of it's win-win situation for both host & guest people are becoming attracted to it. In this project I tried to produce a interactive system for those people to give more user friendly site than current market competitors. I had to complete it with minimal resource and time. Otherwise it would have been more attractive and sophisticated.

6.2 Scope for Further Developments

There are lot of scope for further developments available of this project. We can integrate Google place API. It will let users to get know new places even if there is no accommodation available. I have a plan to go live with this project. That's why I will gather some interested people to run this in limited environment. Every project needs a good amount of money to operate and to go big. I will have to approach potential capital investors for funding to make this a successful vacation rental and hospitality service system.

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