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Home Away From Home

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HOME AWAY FROM HOME

By

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M.Tech, Osmania University, 2017

GRADUATE CAPSTONE SEMINAR PROJECT

Submitted in partial fulfillment of the requirements

For the Degree of Master of Science,

With a Major in Computer Science

Governors State University
University Park, IL 60484

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ABSTRACT

Home away from home is an e-commerce application for short stays of homes or apartments. It allows property owners to advertise and lease them for a short period of time. It has three different account types: one for e-commerce admin, second for owner who wants to lease his/her property and third for someone who wants to rent a property. The functionalities of this application include uploading photos, setting preferences, auditing, property listings, bookings, payment processing, post-rental ratings, surveys and web mapping. The renter can search for properties based on ratings and reviews, property owner can manage property reservation, e-commerce admin specifies authority and restrictions on the users.

The main goal of this application is to make the job easy allowing everyone to perform quick transactions like for the Owner to manage the property details, Customer to quickly get good deals followed by easy checkout and Administrator to manage properties and financial details. Many such functionalities have been embedded to explore, book and travel benefitting the user.

Table of Content

1 Project Description

Home Away From Home is an online rental website that caters to the needs of people who are planning for short vacations. The properties on this website are listed by actual Owners. The user can sign up and have a look at all the properties listed on the website and book home. Additional feature available for the customer is to pay online in advance for reservation confirmation.

The Home Page welcomes the user with a fresh look allowing them to register on the website. The Home Page includes a property search option, vacation start and end dates, no. of guests and search option to list out the available property. And the 3 main entities Admin, Owner and Customer need to register on the website for hands approach and successful transactions.

1.1 Competitive Information

Home Away from Home is an online website used for home rental where the people can find their perfect vacation home. Compared to other websites like Airbnb, Expedia, bookings.com home away from home offers better services in terms of pricing and location. It has user friendly navigation bar.

1.2 Relationship to Other Applications/Projects

While comparing with other websites you can see the login steps and payment will take long to execute their booking for rental, with in less span of time in our project you can see the login user will be able to do the transaction and booking, ease of navigation and account creation when compared with other rental services. There are such a variety of uses like our project, yet the significant relationship is making a Home Away from Home.

1.3 Assumptions and Dependencies

These are the assumptions which are made for the safe functioning and implementation of the project.
- We primarily designed our project to be user-friendly with good user navigation.
- Proper authentication is used in the project to ensure no intruders can access the sensitive data.

1.4 Future Enhancements

Our future enhancements include secure payment gateway so that customers pay through third party websites by using this service there increase in confidentiality point of purpose from customer view. There are other enhancements that include smart reviews, implementing technology for providing loyalty points for customers.
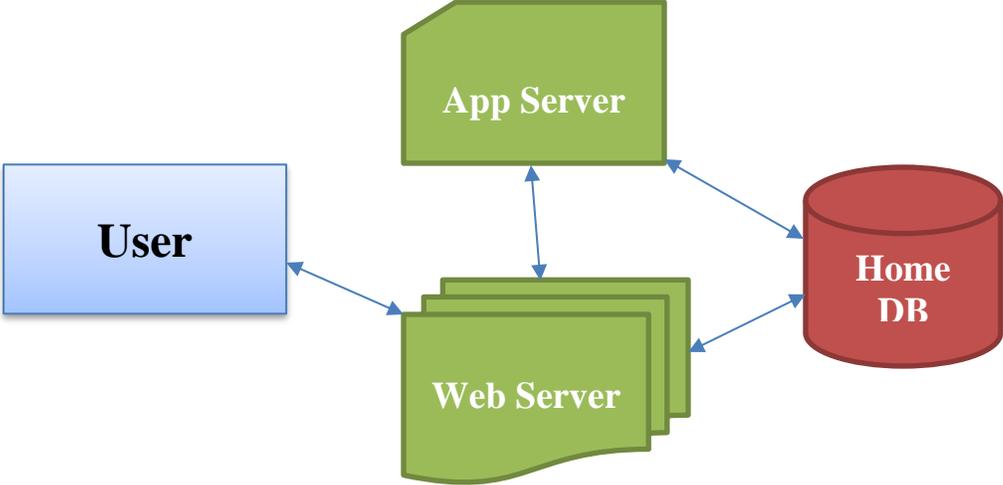
1.5 Definitions and Acronyms

Not Applicable
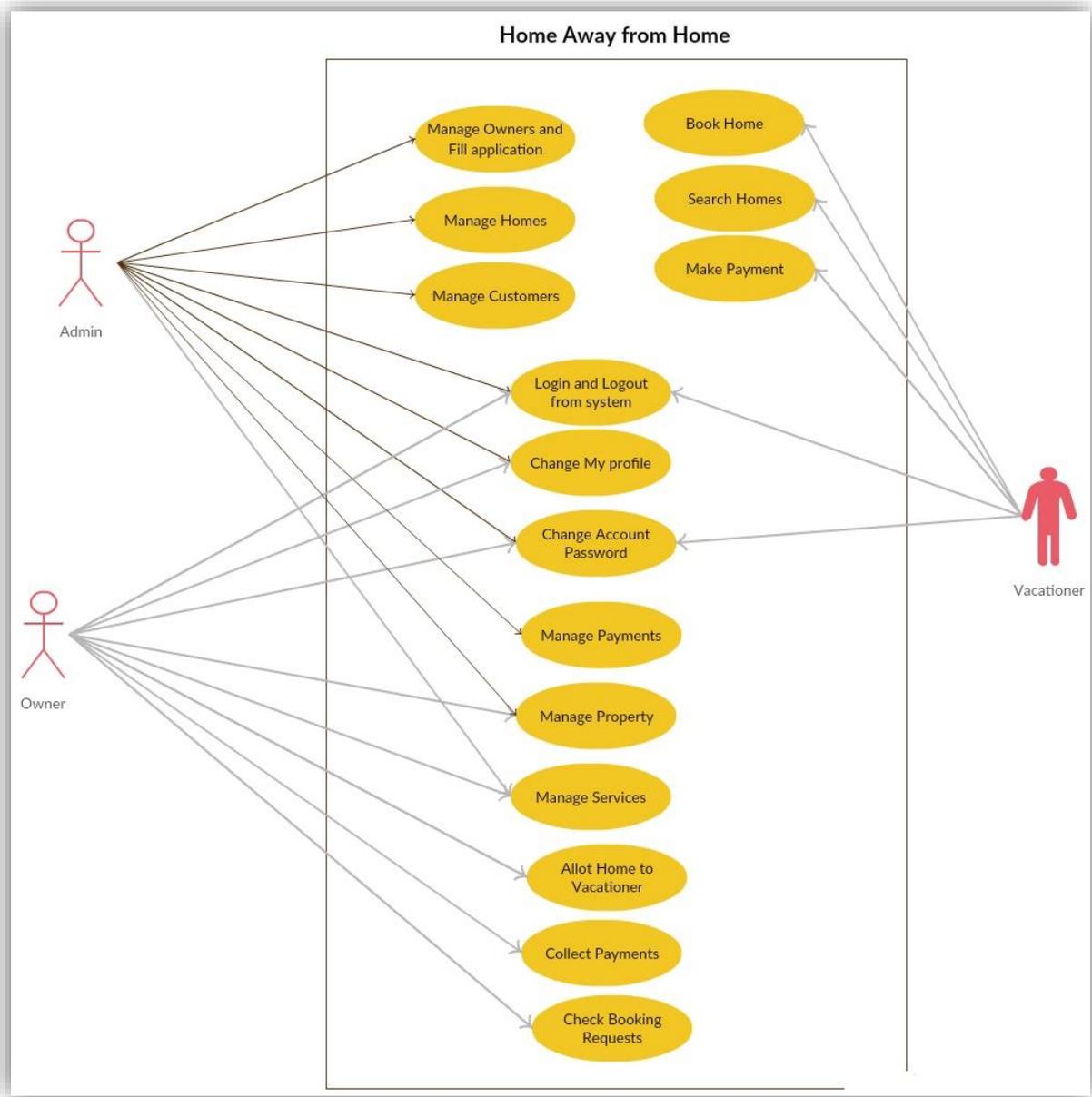
2 Project Technical Description

This project was built on Django-Web Framework and code was written in python. Database is an in-built Django Sqlite3 and tools and libraries versions are briefly written in ReadMe.md File.

Front End work was coded using Bootstrap classes and HTML5. Connection between web pages are done using response library and CRUD operations using serializers in Django Rest Framework.

2.1 Application Architecture

App Server

User

Web Server

Home DB

2.1.1 Use Case Diagram

Home Away from Home

- Manage Owners and Fill application
- Manage Homes
- Manage Customers
- Book Home
- Search Homes
- Make Payment
- Login and Logout from system
- Change My profile
- Change Account Password
- Manage Payments
- Manage Property
- Manage Services
- Allot Home to Vacationer
- Collect Payments
- Check Booking Requests

Admin

Owner

Vacationer

2.1.2 Sequence Diagrams
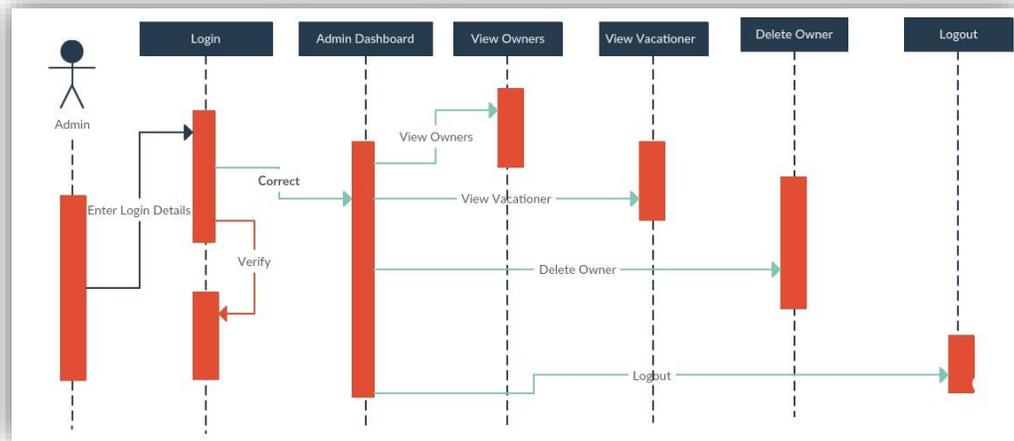
Figure 1 Admin Sequence Diagram
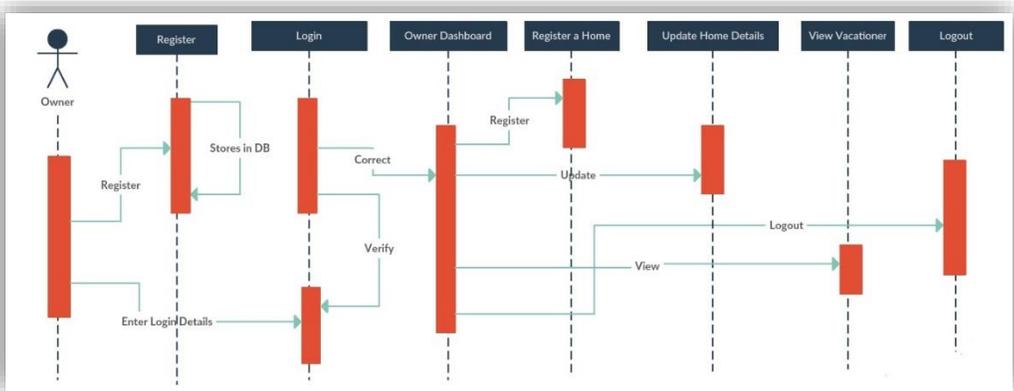
Figure 2 Property Owner Sequence Diagram
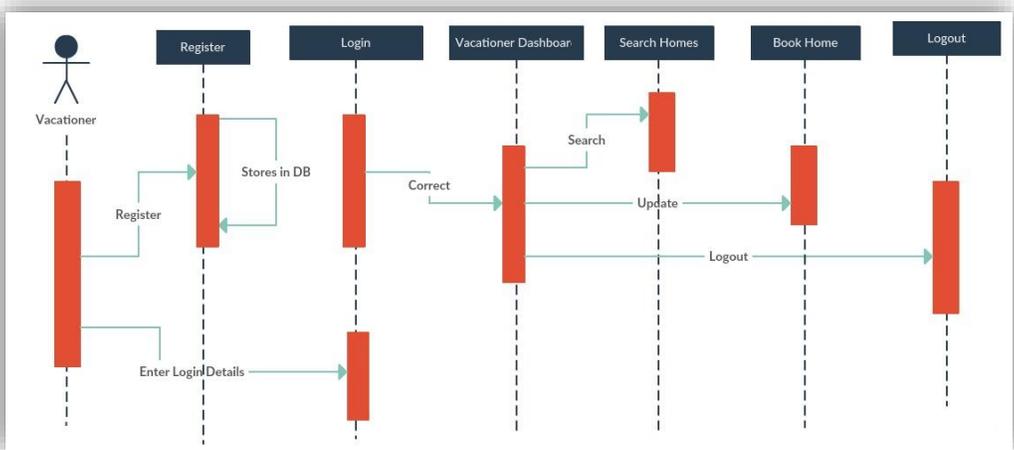
Figure 3 Renter Sequence Diagram

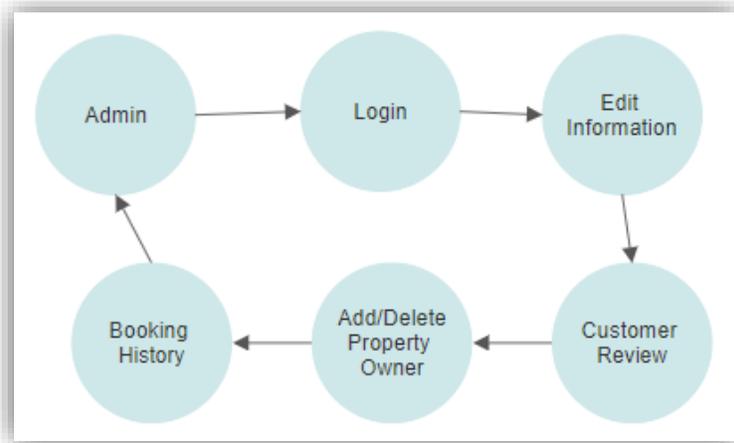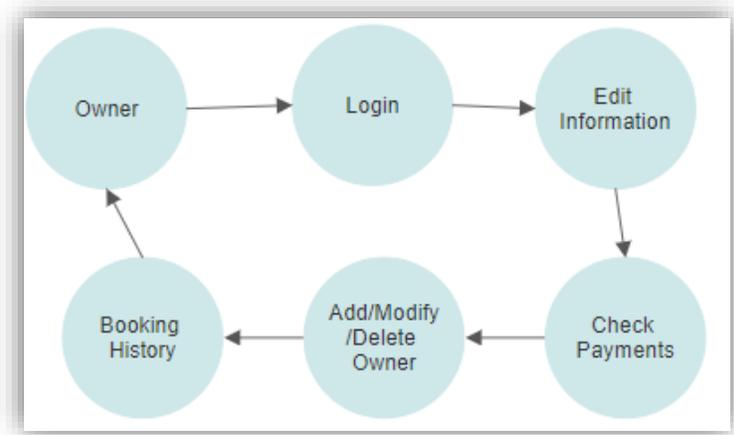## 2.2   Application Information flows

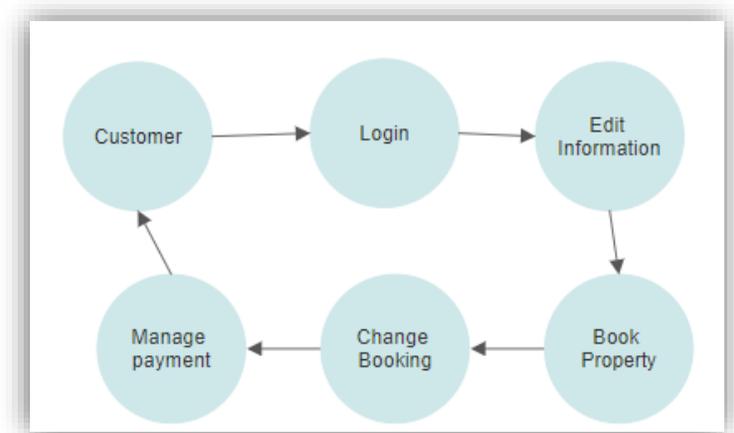*Figure 4 Admin Flow*

Figure 5 Owner Flow

Figure 6 User Flow

- Login Page is a centralized authentication for all users of application.
- Database stores all the login information of all the users in the backend.
- Admin can edit all the information.
- Owners registration can be done by admin only they cannot sign up as a renter.
- Renter can sign up using basic information and continue the booking process.
- All the booking history of certain owner for his registered properties can be viewed in owners home page under bookings history.

2.3 Interactions with other Projects (if Any)

Not Applicable

2.4 Capabilities

Home away from home web application is a user-friendly application. The main aim here is to help customer book their reservations below are the capabilities identified.
Three users Admin, Owner, and Customer.
- User Sign in and Sign Up.
- Ability for the Owner to add a property, images, and facility details.
- Admin can make changes for both Owner and Customer.
- Ability for the customer to search for a stay location wise for a limited time.
- To help the customer book a property for a stay.
- To help the customer review and comment on the property about their facilities.

2.5 Risk Assessment and Management

The main risk is identified with the amount of data which would be stored on everyday basis. The reason behind the risk is that the project will be available across the globe and reservations are processed 24/7. This will lead to excess of Data for which the storage space will be identified every month to overcome this issue. Next one for providing proper customer service, secure transactions and storing user data is a huge task to keep them safe. Involving the help from a third-party site is to act as a gateway for all the transactions will be initiated and proper guidelines would be set up for the smooth process. A plan that would be set up to control the data flow and proper measures should be initiated to have the data safe. The way data is maintained will fetch an end user with better results, having multiple backup or storage and timely assessing.

3 Project Requirements

3.1 Identification of Requirements

3.1.1 Functional Requirements
- Property Listing- Owner showcases his property by uploading photos and other details like rooms size.
- Uploading photos- Owner, renter can upload and view photos.
- Setting preferences- Owner, Renter can set preferences on reservation.
- Auditing- Owner can keep track of his earnings.

- Bookings- Owner can see the bookings done in a particular time period
- Payment processing- Renter can reserve the property by paying online.
- Post-rental ratings-Renter can post ratings.
- Surveys- Renter can comment and let others know how a property is.
- Mapping-Renter can view the location of property on map.

3.1.2 Non-functional Requirements
- Reliability- Accuracy and availability
- Usability- Accessibility and consistency
- Portability- Can be used on mobile device.
- Confidentiality- User information is secured

3.2 Operations, Administration, Maintenance and Provisioning (OAM&P)

Features in Home Away from Home web application has three entities for registering Admin, Owner, and Customer all the registering entities have login and logout. Owner can add a property, add images to the property. Customer can make reservation as per availability and customers can review on the property about the facility owner can add up a comment below the customers review for customer satisfaction.

3.3 Security and Fraud Prevention

Security Identifier is required for the data which stores the data every day. Password reset will be requested to the customers every 90 days, for successful transactions and there is excess is data in which the data storage space will be identified every month to overcome the issues. Security for customer from fraud prevention is also maintained for secure transaction and storing the data from fraud is a huge task to keep them safe. A plan will be initiated to control the data flow for proper measures that would be initiated to keep the data safe.

3.4 Release and Transition Plan

Not Applicable

4 Project Design Description

The following activities will be available in current project.
- Admin/Owner/Renter login and logout.
- Admin has the capabilities to provide the authentication to Owner and Rental logins.
- Renters and owner's username and password and email address can only visible to administrator.
- Reviews of properties booked by renter himself can be given.
- Signup account option is available for new users.
- Once admin is logged in, he can see how accounts are created in Owners tab and Renters tab.
- Owners tab consists of options like add property, update password, reviews of his properties.
- Renters tab consists of options like search property, booking history, update password, review his booking.
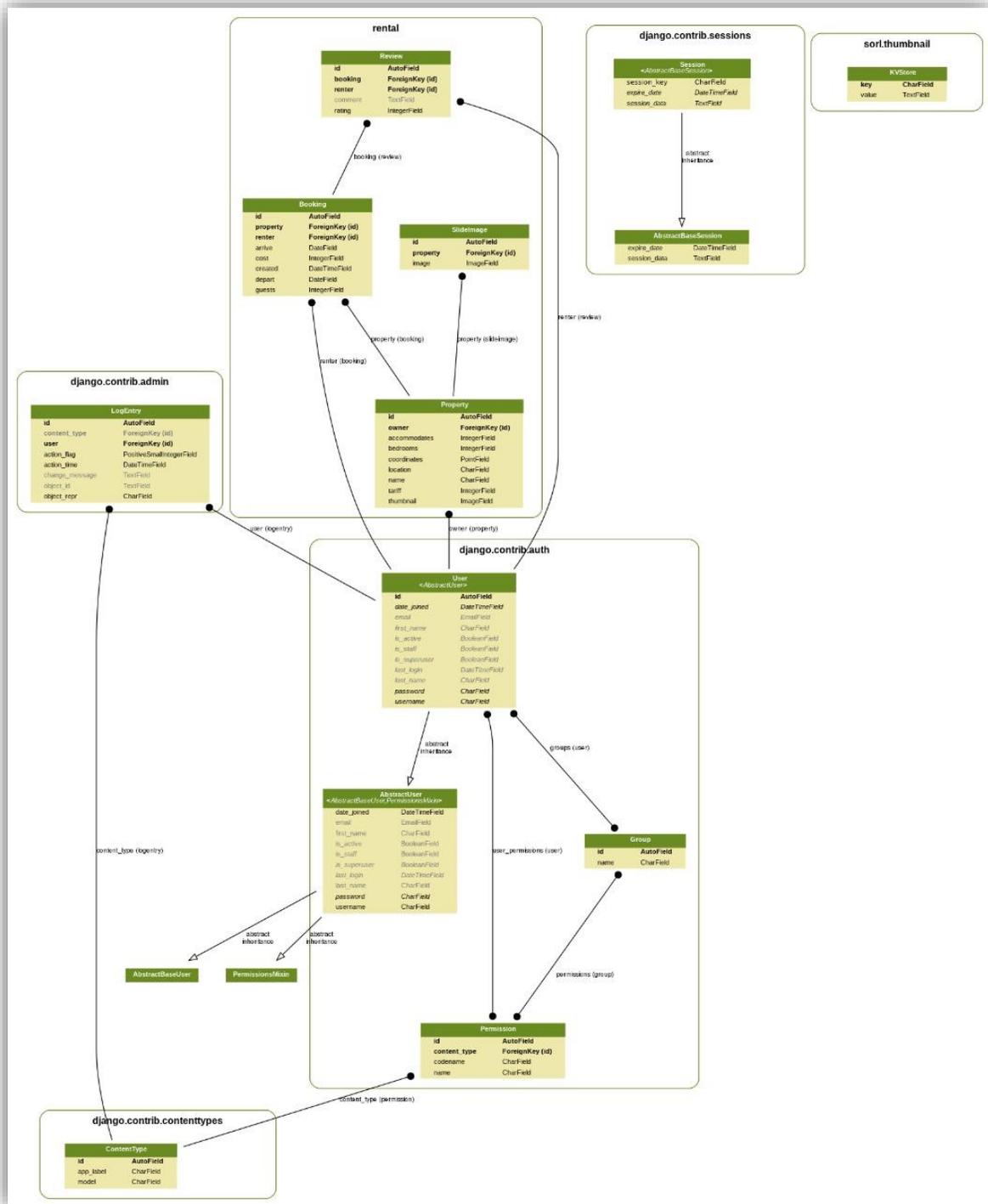
4.1 Database Design
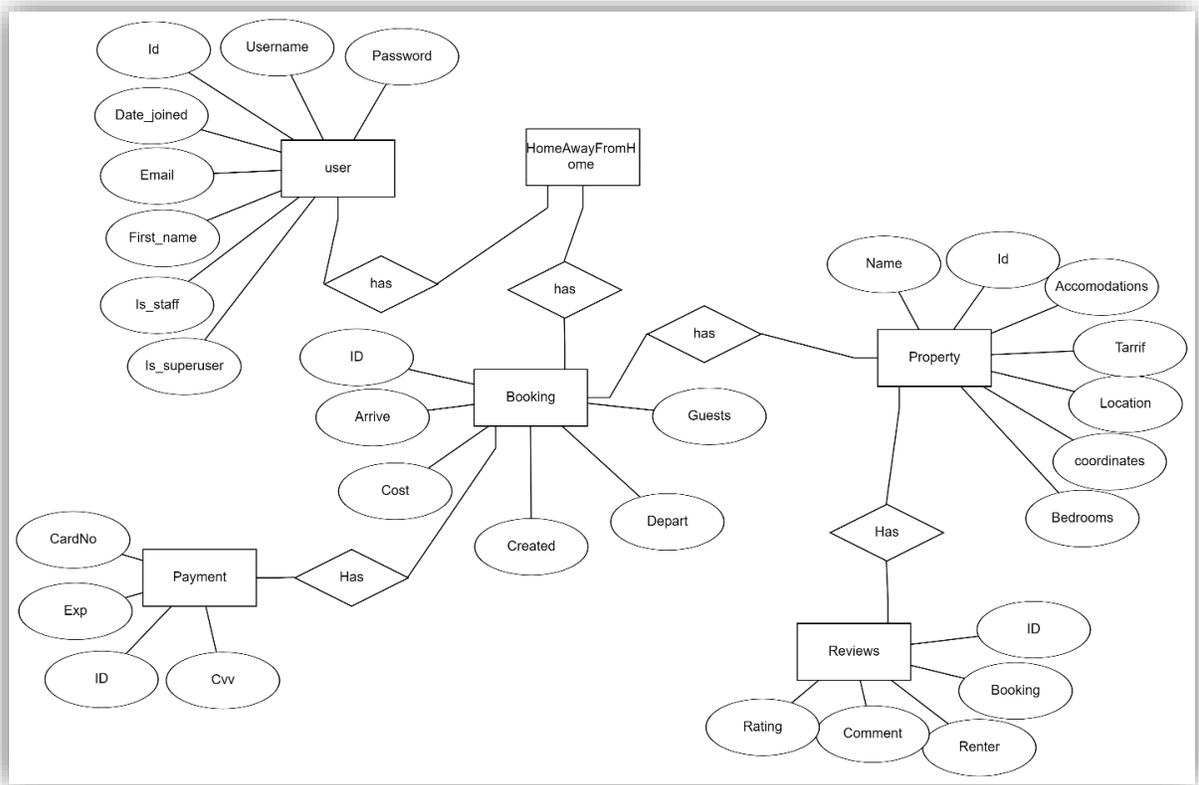

Figure 7 Relational Schema Diagram

Figure 8 ER Relational Diagram

5   Internal/external Interface Impacts and Specification

No Impacts

6   Design Units Impacts

6.1   Functional Area A/Design Unit A

6.1.1   Functional Overview

a) Home Away from Home has three types of users that are Renters, Owners and Admin. To login the user should have a User id and Password.
b) If the user doesn't have a User id and password, he can create a new account by clicking on sign up button.
c) The website Admin monitors the Owners and Renters. Admin can delete/change users, delete/modify property and manage credential related issues.
d) Renter can book any property available by just selecting option Book. The property will be added to his booking history. Booking can only be done when renter is logged in with his credentials.

e) Renter can provide review of the property after he visited the property. This review will be useful for another user while he is searching for property.
f) Owners can add new property or make changes to existing property, add new images of the property.

6.1.2 Impacts

No Impacts

6.1.3 Requirements

6.1.3.1 Functional Requirements

- Property Listing- Owner showcases his property by uploading photos and other details like rooms size.
- Uploading photos- Owner, renter can upload and view photos.
- Setting preferences- Owner, Renter can set preferences on reservation.
- Auditing- Owner can keep track of his earnings.
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- Surveys- Renter can comment and let others know how a property is.
- Mapping-Renter can view the location of property on map.

6.1.3.2 Non-functional Requirements

- Reliability- Accuracy and availability
- Usability- Accessibility and consistency
- Portability- Can be used on mobile device.
- Confidentiality- User information is secured

7 Open Issues

No Open Issues

8 Acknowledgements

This Project is created and developed with our own knowledge and documented by ourselves. I really appreciate our professor Alex Liu who helped us in completing this whole project.

9 References

For Django Rest Framework
https://www.django-rest-framework.org/

For Bootstrap
https://www.w3schools.com/bootstrap/

10 Appendices

Screenshots

Figure #1 (Admin Home Page)
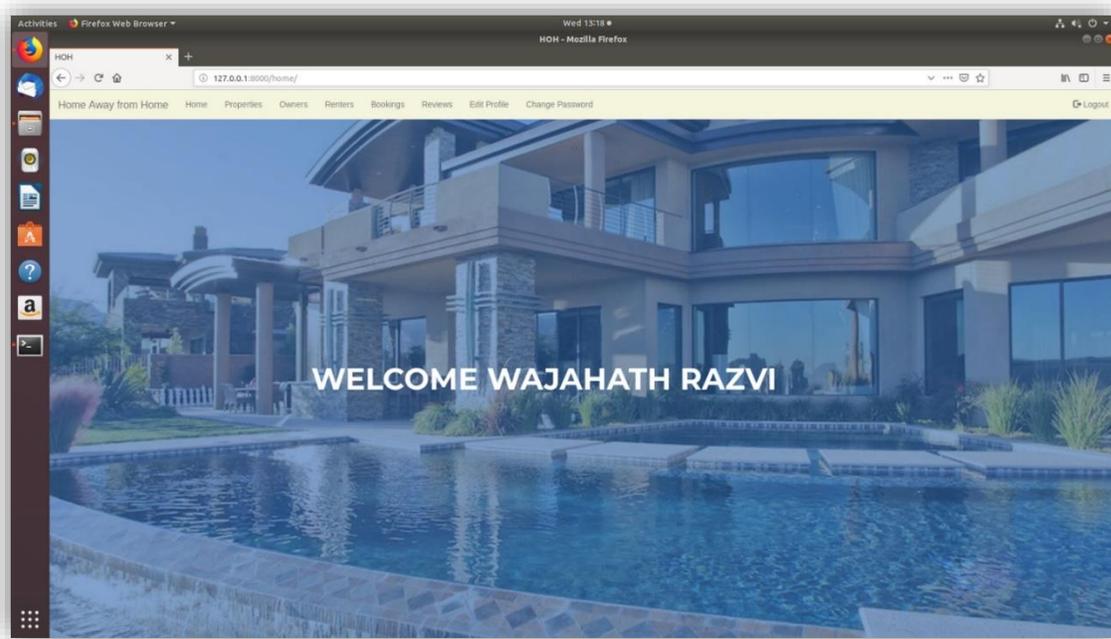
Figure #2 (Admin Booking List)

Figure #3 (Admin Owner Add)
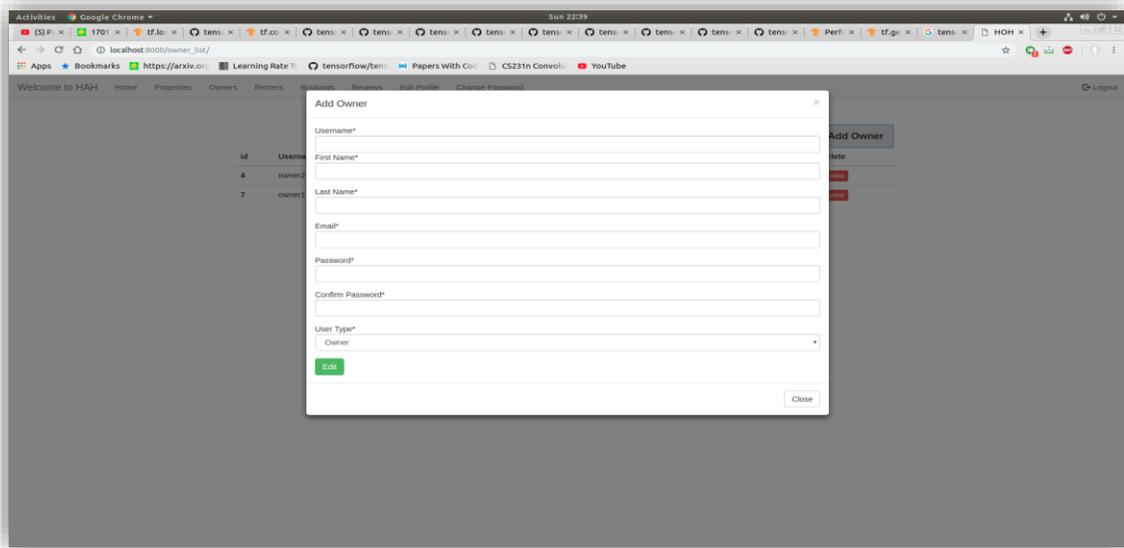
Figure #4 (Admin Owner Edit)
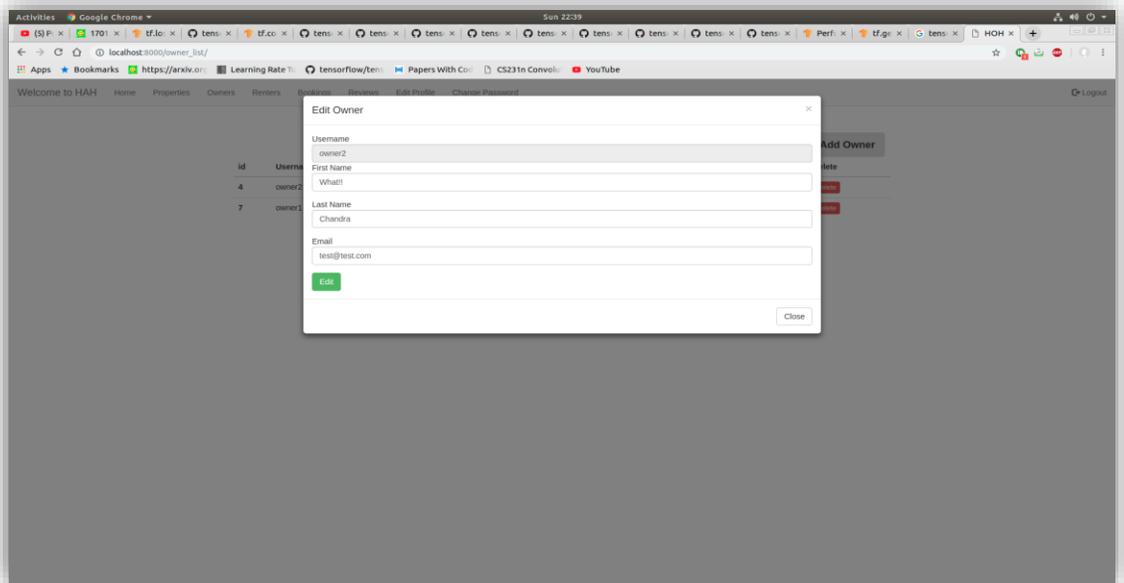
Figure #5 (Admin Owner List)
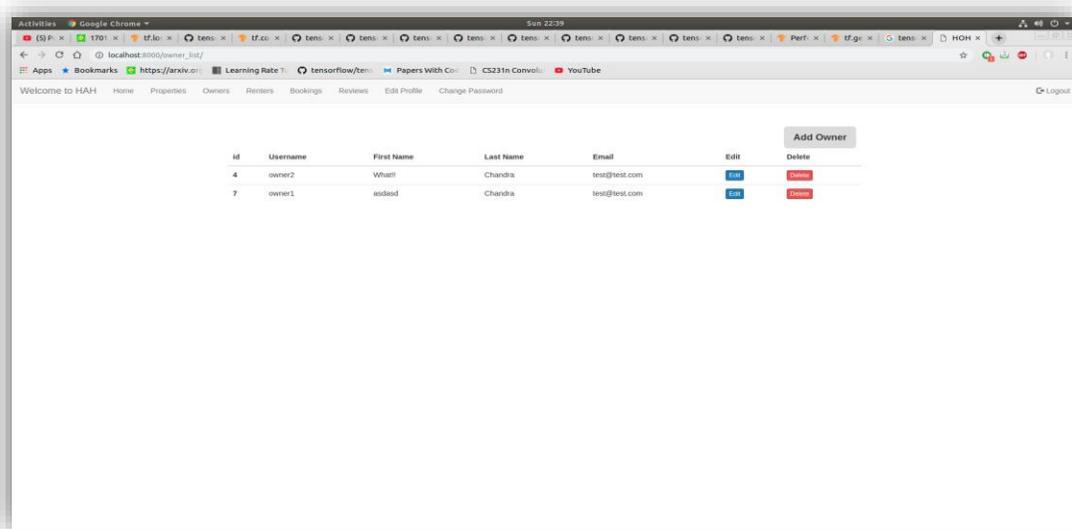
Figure #6 (Admin Property Details)
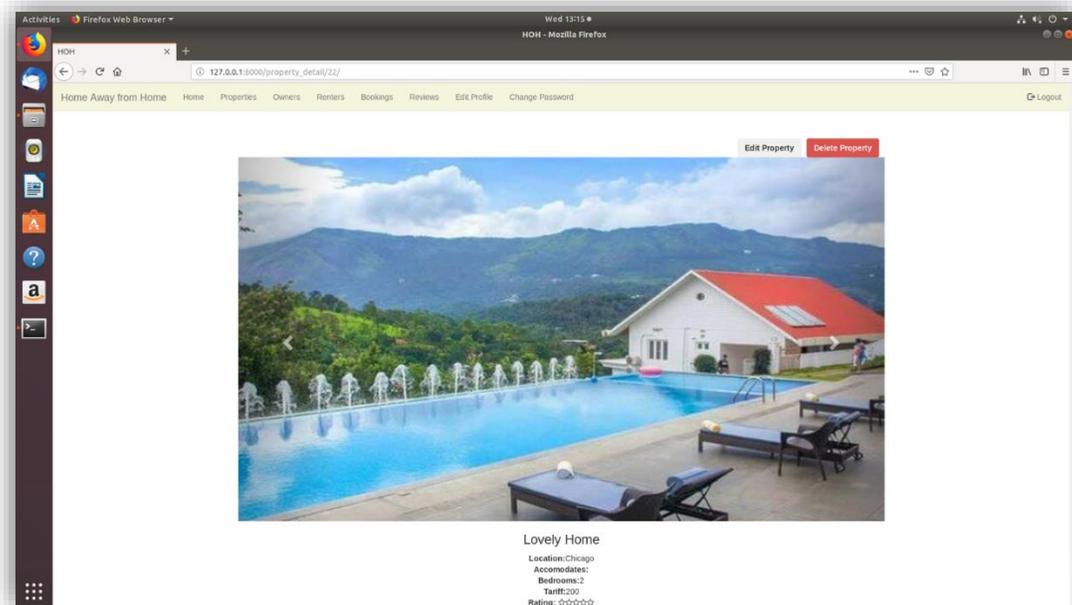
Figure #7 (Admin Property List)
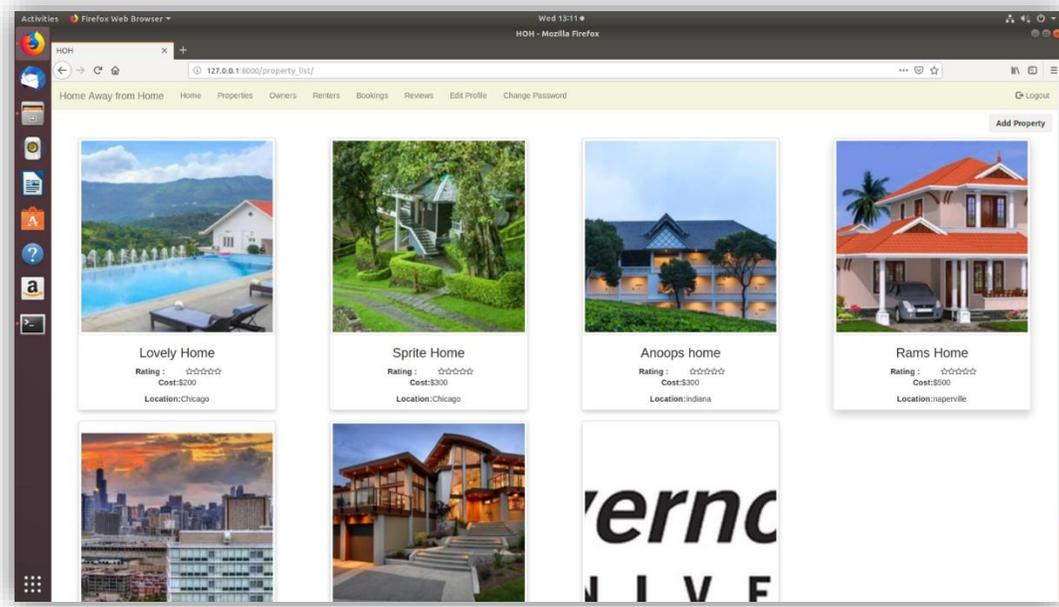
Figure #8 (Admin Property Edit)
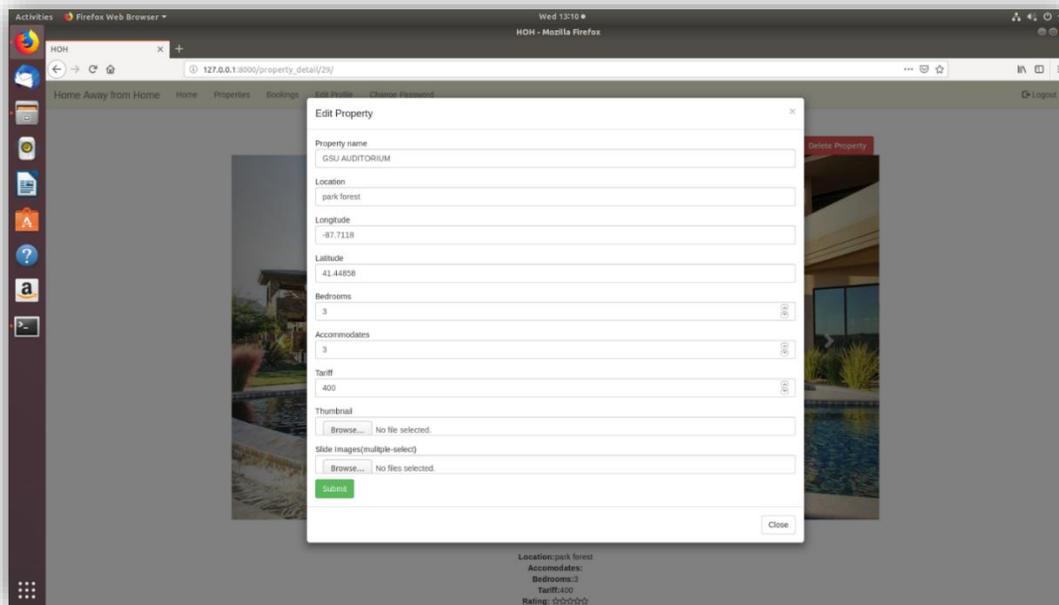
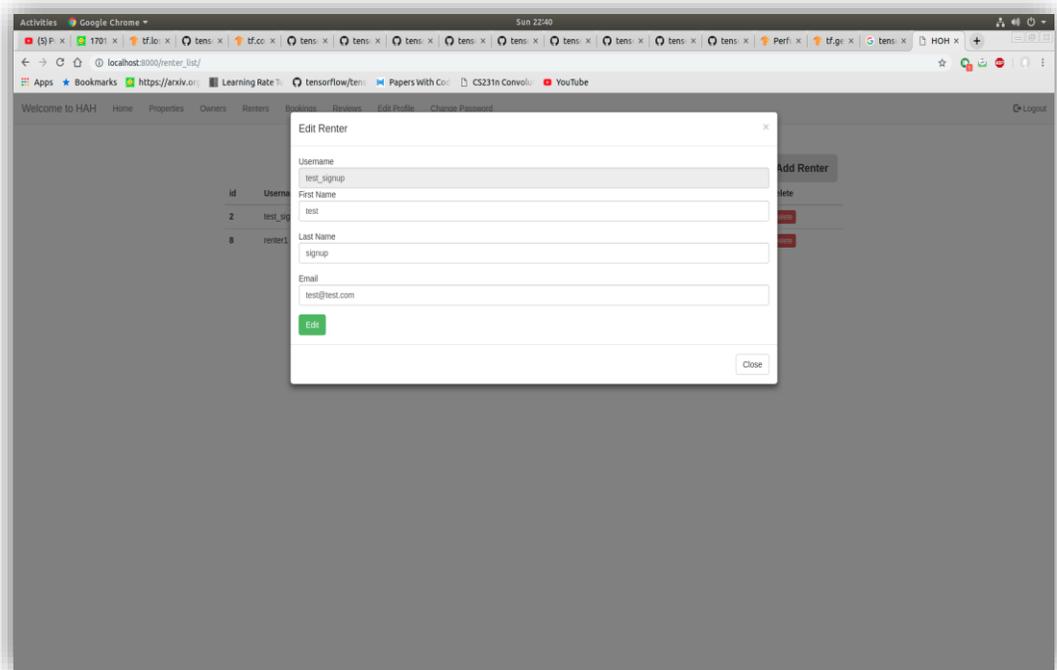*Figure #9 (Admin Renter Add)*
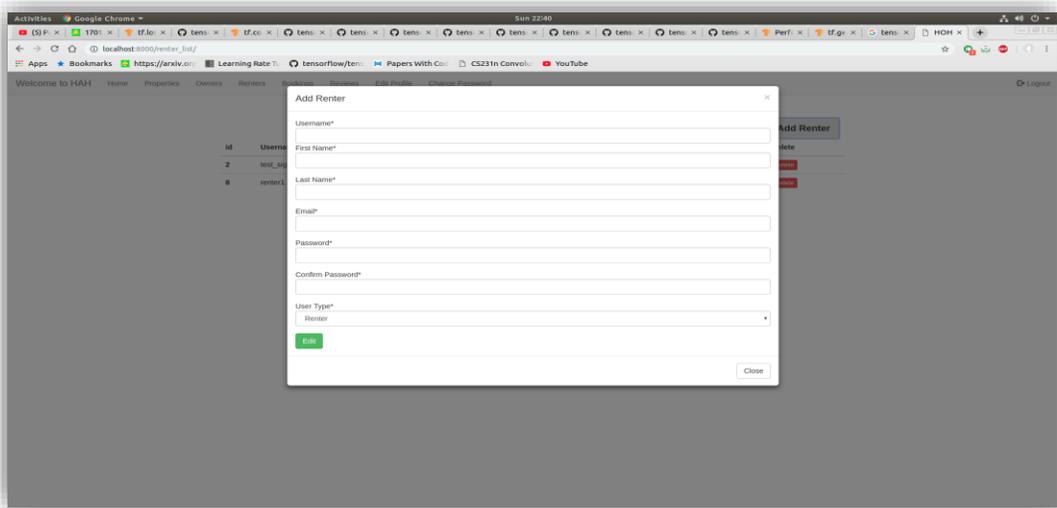
Figure #10 (Admin Renter Edit)

Figure #11 (Admin Renter List)
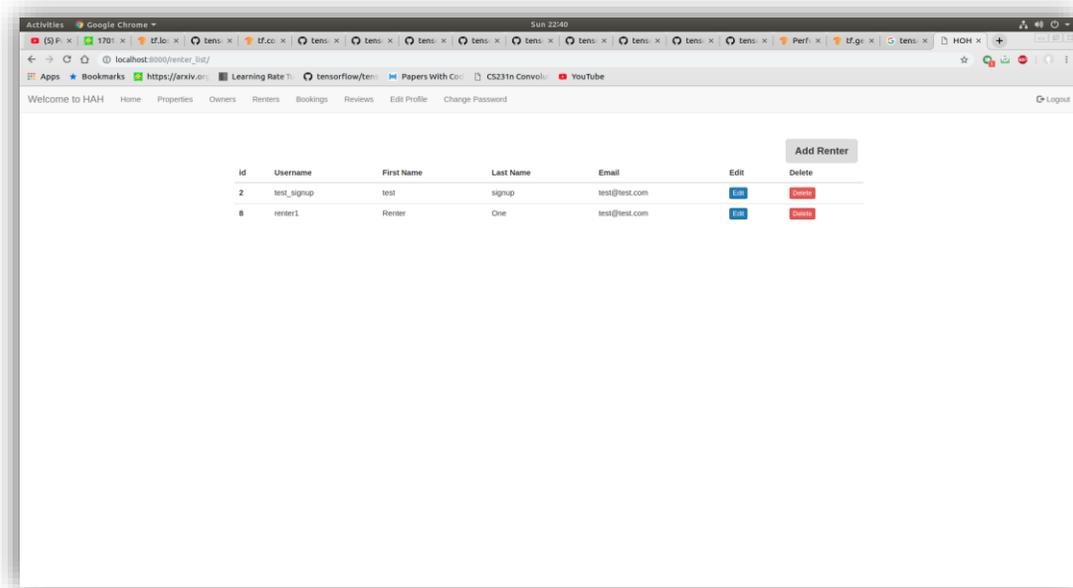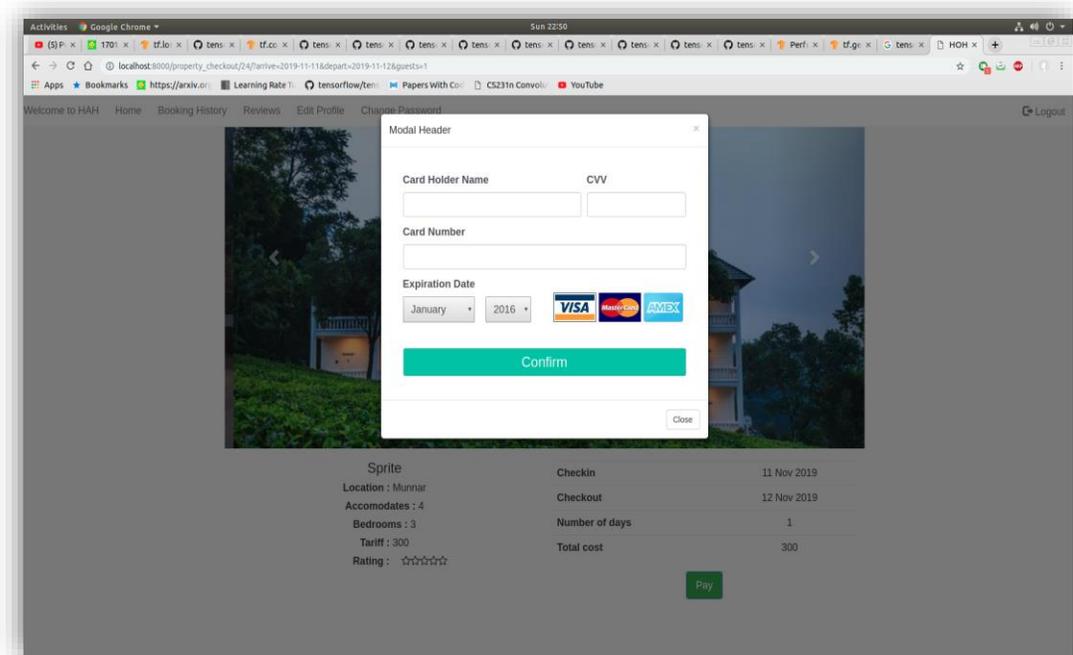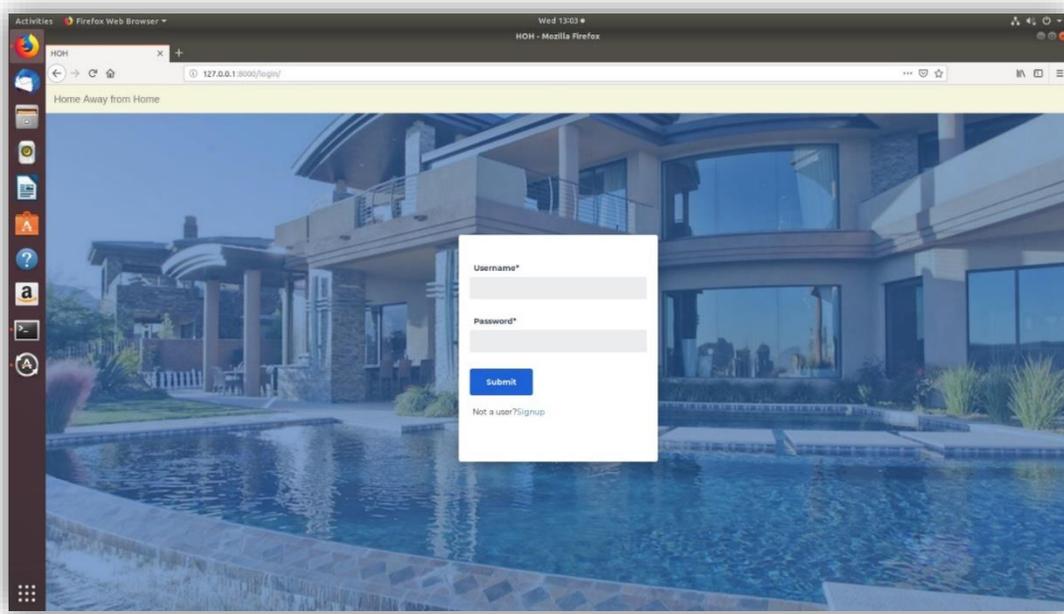

Figure #12 (Card Form)

Figure #13 (Login Page)

Figure #14 (Owner Property Add List)
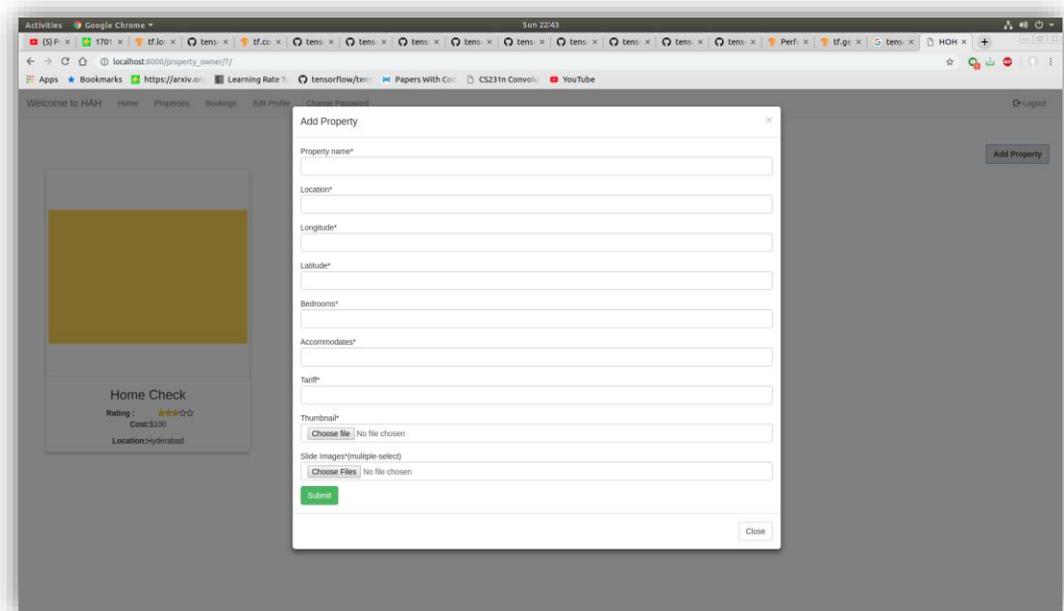
Figure #15 (Owner Booking List)
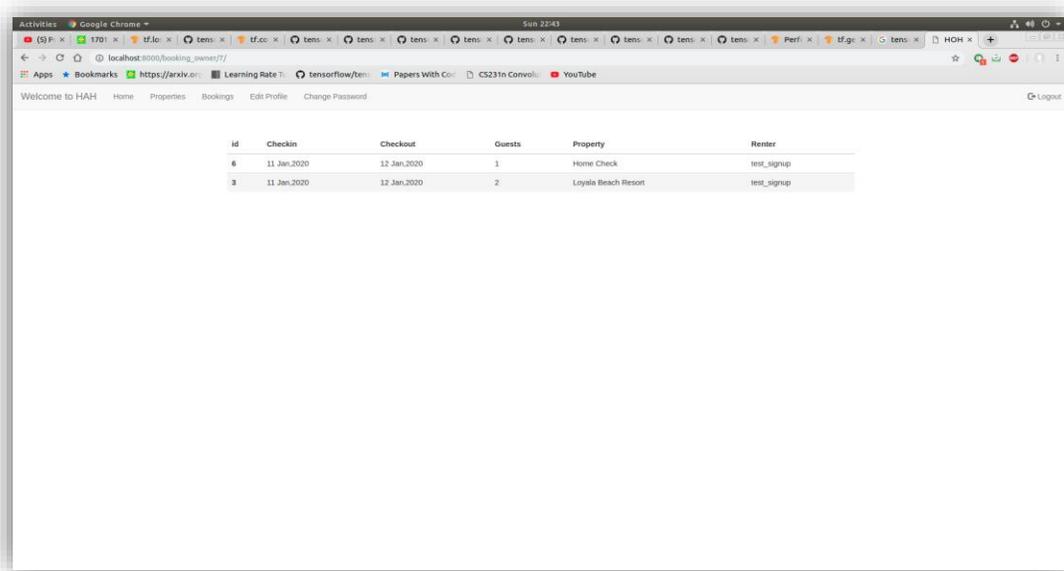
Figure #16 (Owner Home)
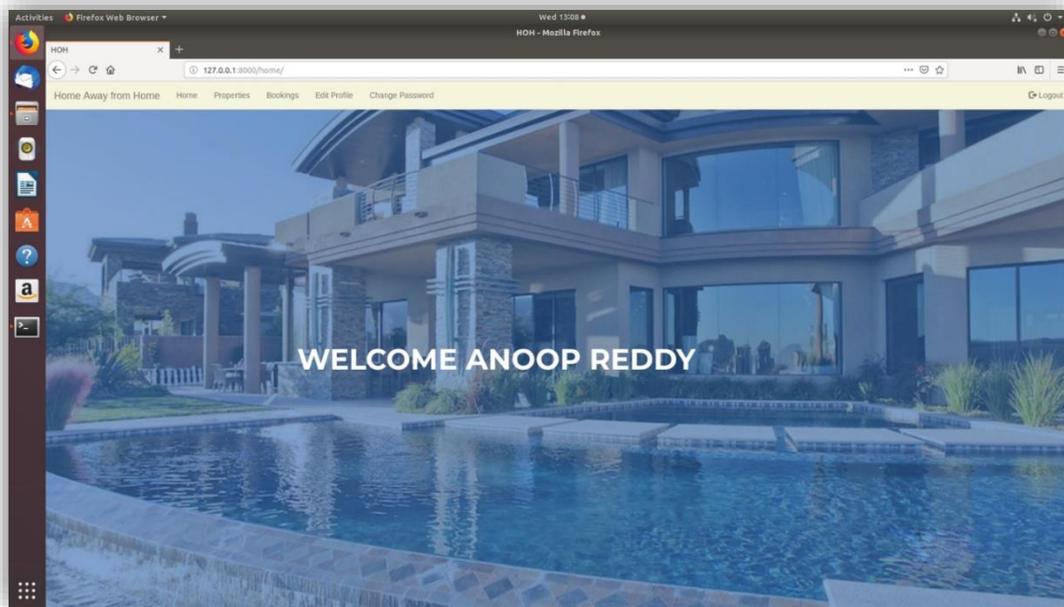
Figure #17 (Owner Property Detail)
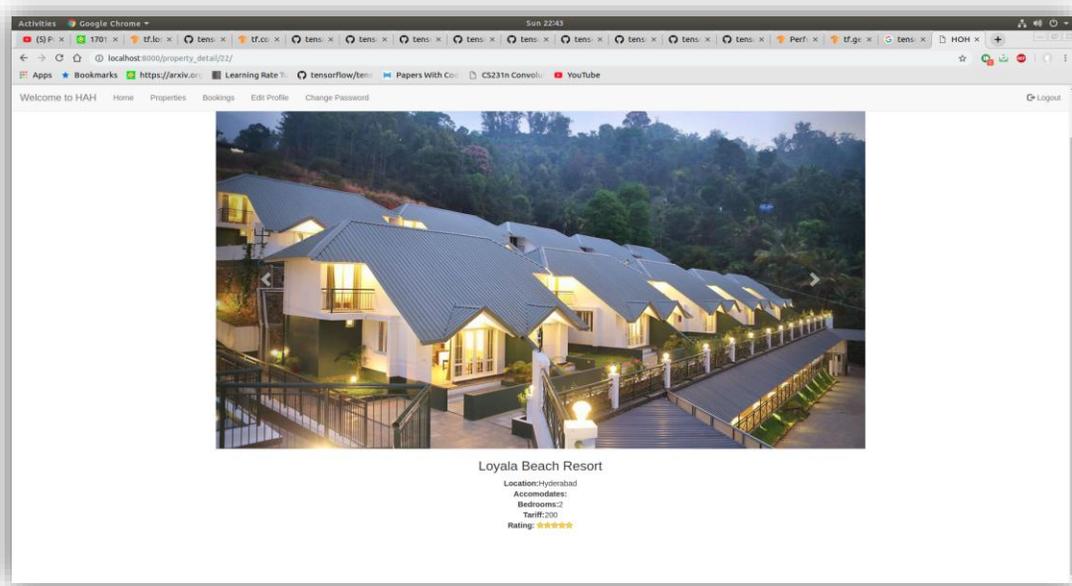
Figure #18 (Owner Property List)
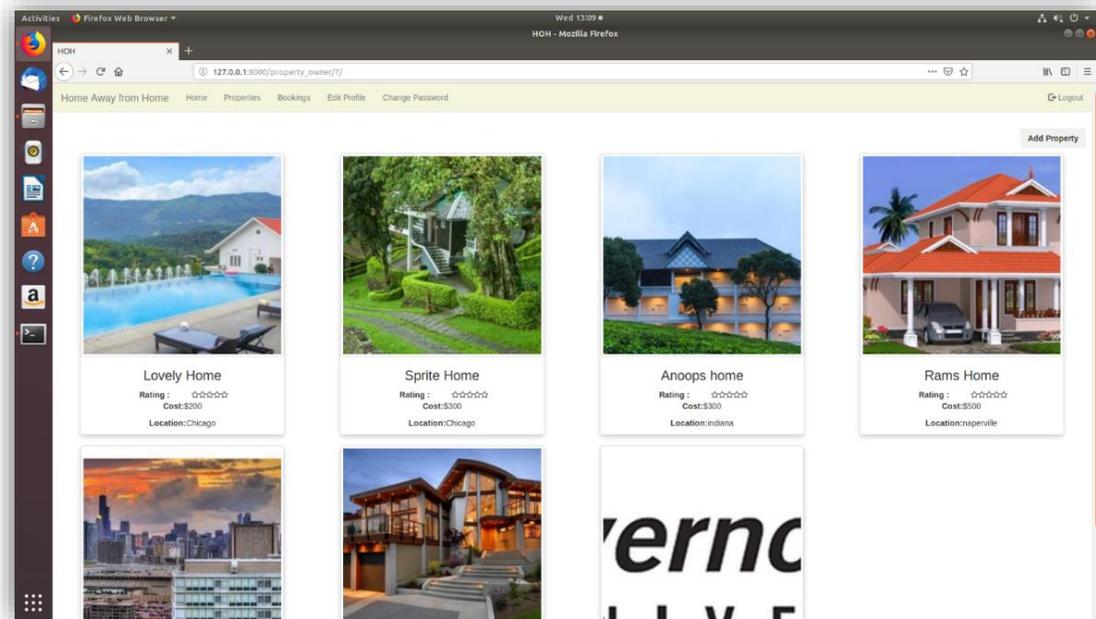
Figure #19 (Renter Booking History)

Figure #20 (Renter Checkout Page)

Figure #21 (Renter Home Page)
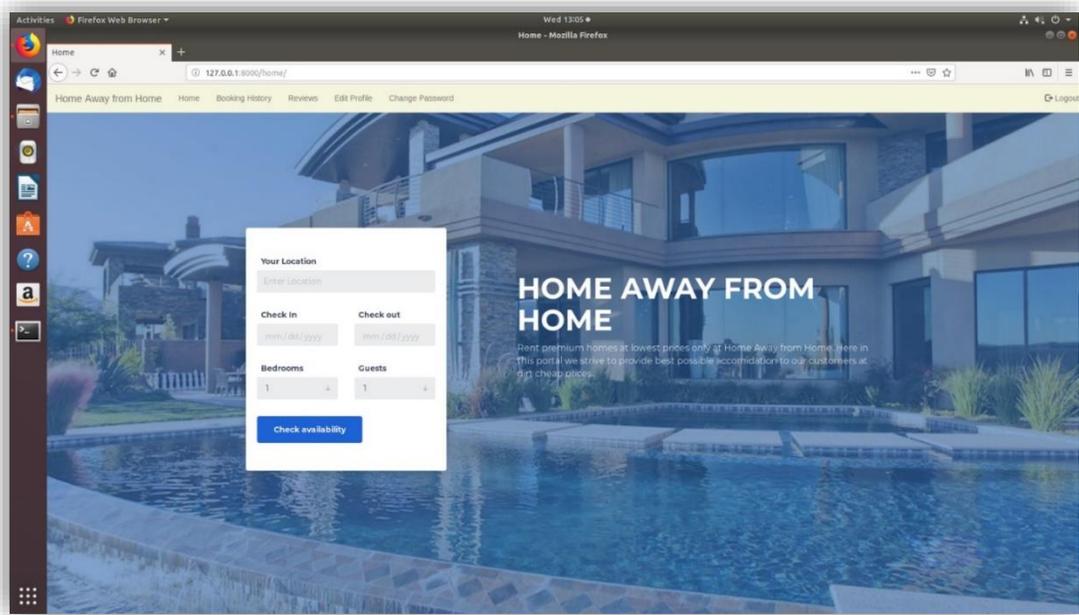
Figure #22 (Renter Property Edit)
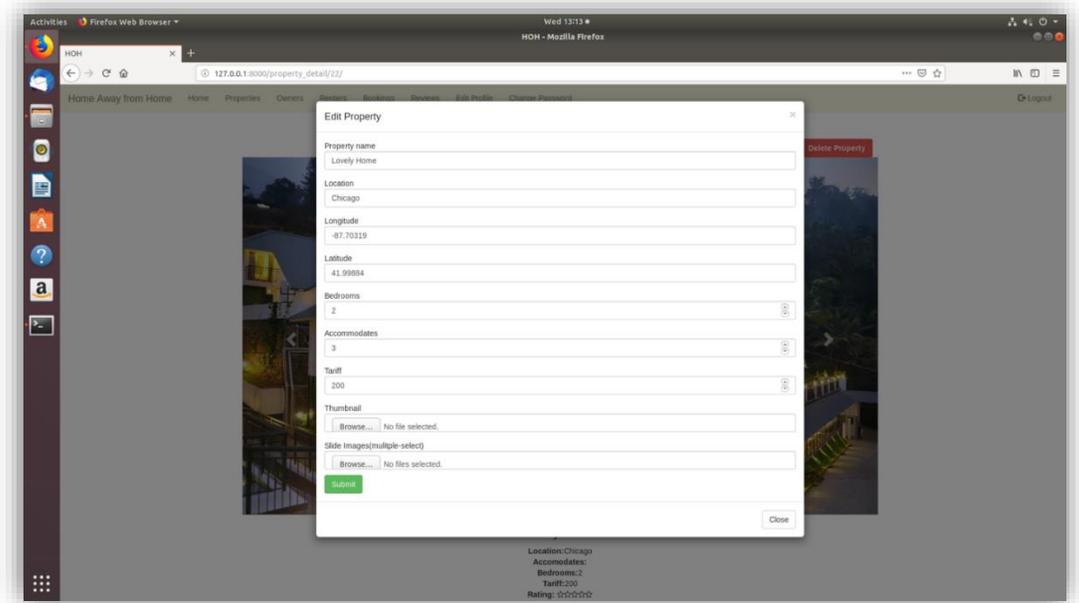
Figure #23 (Renter Review Form)
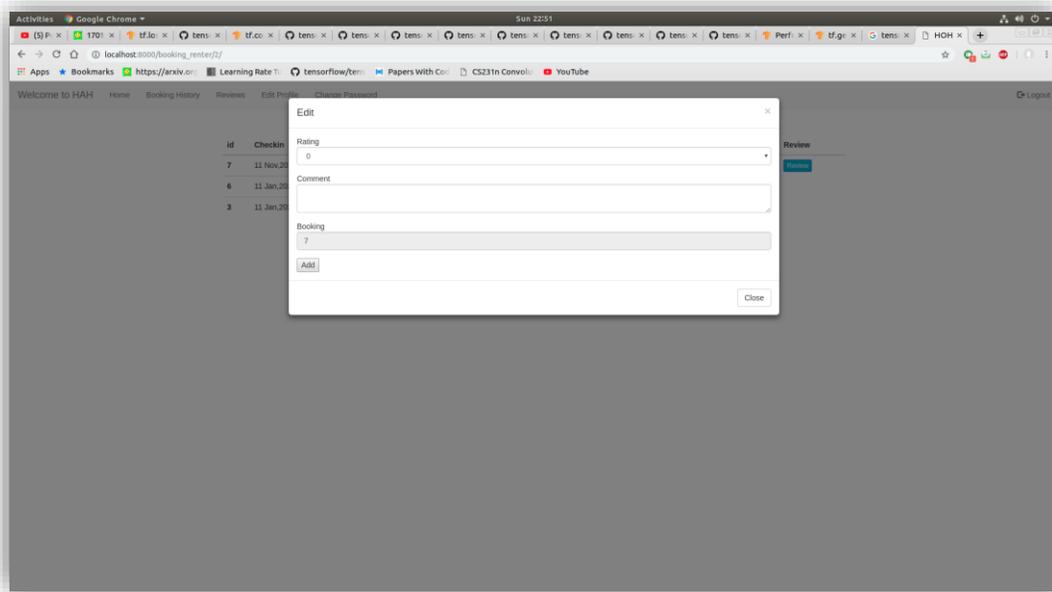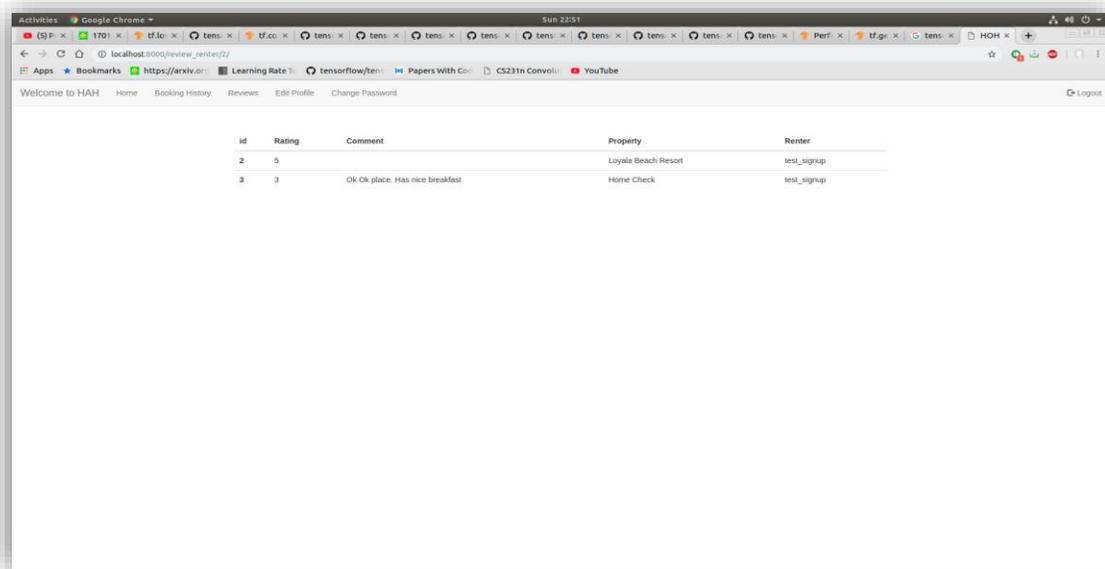
Figure #24 (Renter Review List)
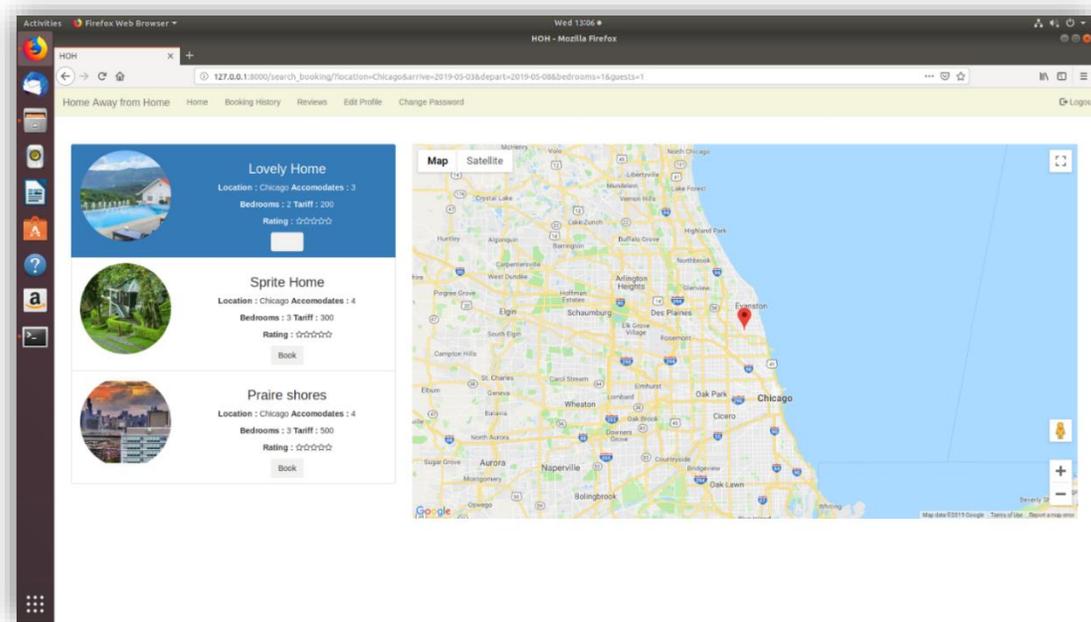
Figure #25 (Renter Search Results)
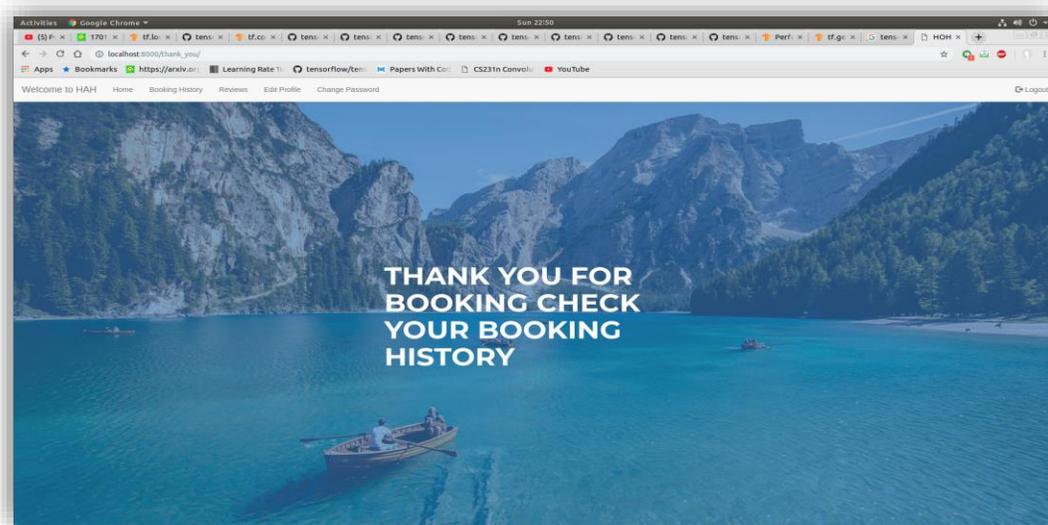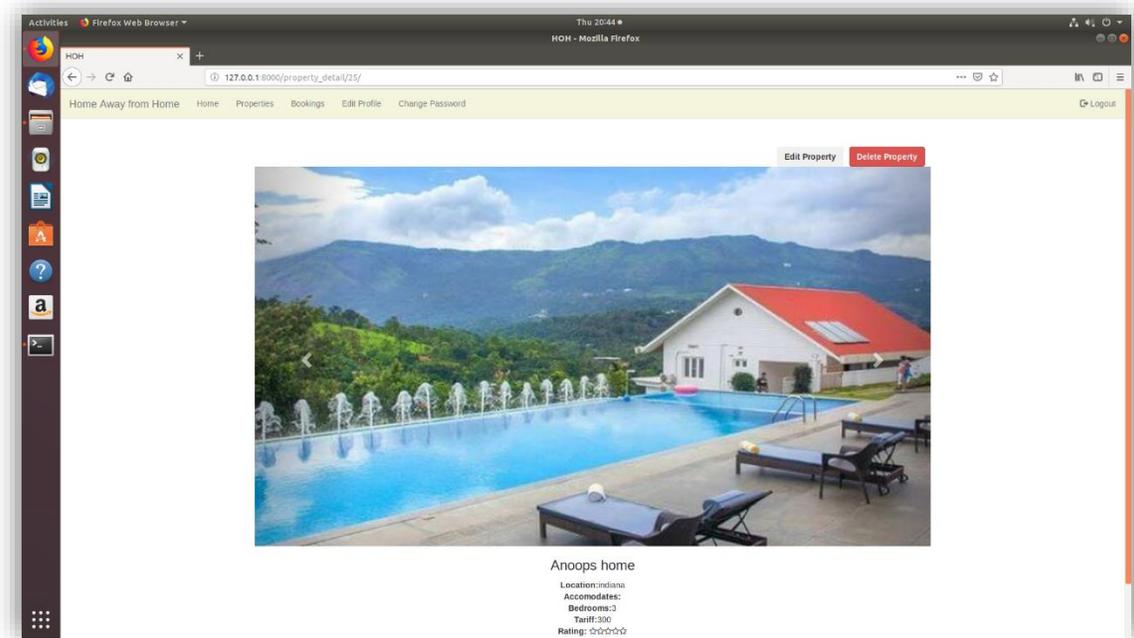

Figure #26 (Thank You Page)

Figure #27 (User Change Password Form)

Figure #28 (User Change Profile)