VIT®

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

Real estate buying and selling webapp named Homeland

CSE3001 – Software Engineering

Faculty name – Prof. Gayathri A

SLOT- F2

Submitted by
GONTLA BHARGAVA SAI SATHVIK
18BCI0087

Abstract

We have created a web app named Homeland where people can buy and sell flats online with 100+ designs. They can be able to customize their homes as per their requirement by contacting to the designers online. They can also able to share their views. We are also going to provide them the refer and earn option and many more features including real time customer care feature. Till now we came to see that people are spending lots of time in buying flats or any piece of land. Many brokers are involved in intermediate steps of buying a flat or a piece of land and they are asking for large amount of money for fixing any deal. In addition to this many local people think that these online things are fraud and hard to use. Therefore we have decided to start a small start-up named Homeland which is going to solve this issue at local level. We hope in future we will be able to make it up to national as well as international level.

Introduction

In this project we have created a website named Homeland where people can buy and sell flats online with 100+ designs.

In frontend of this website we have used HTML5,CSS3,Bootstrap 4,Javascript,Jquery UI and in backend I have used Mustache, Node.js,Postgresql.

We are using the above technologies as a frontend part because page loading will be faster when we use these technologies and they are robust, scalable and consist of wide range of designing items.

We are using Express.js and Mustache because when we use because they will be helpful in reducing http requests as maximum as possible which make our webapp faster. Reason behind the use of Node.js is,it consist of huge number of modules which will be helpful for making a robust as well scalable.

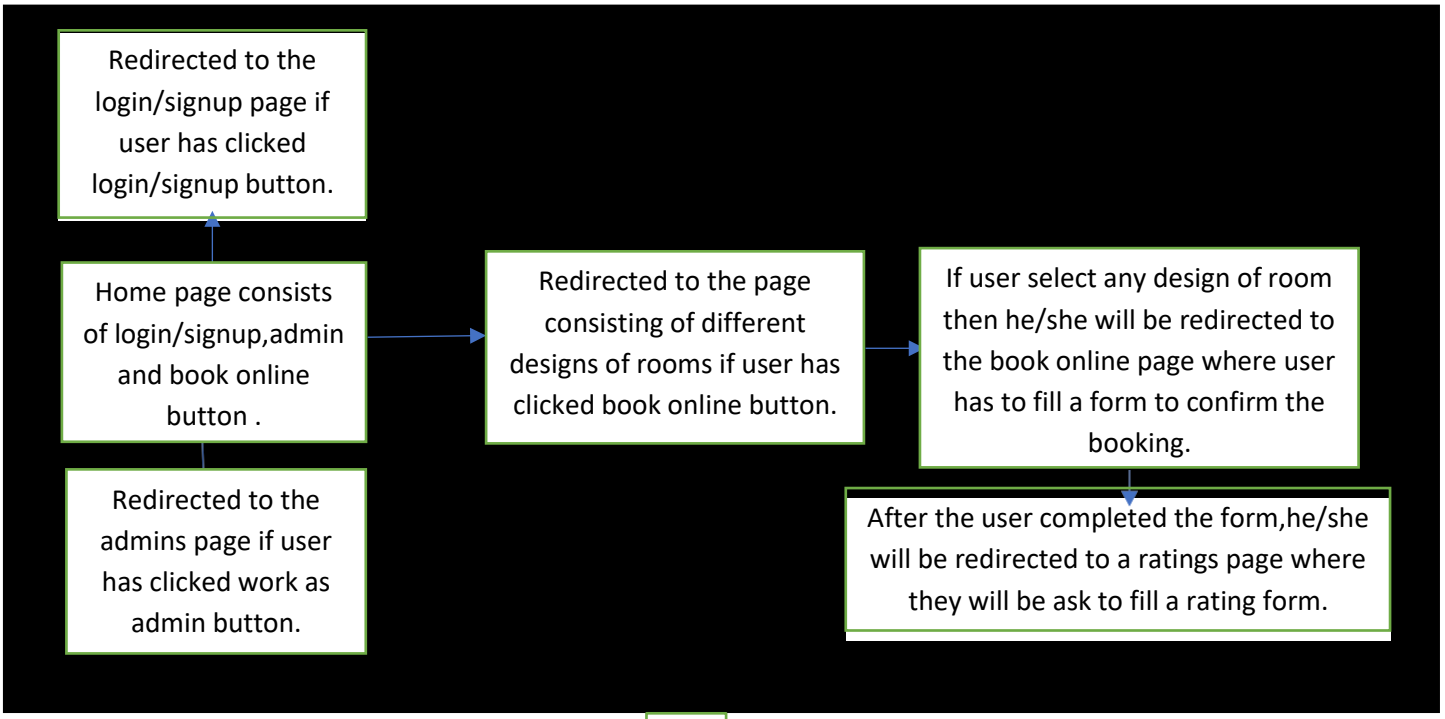
The prime reason behind the use of PostgreSql is deployments will be cost efficient when we use it.One example is heroku.We all know the Heroku is used to deploy any web app and it is giving the free use of postgresql database and for the other database it is charging the money.

Problem statement

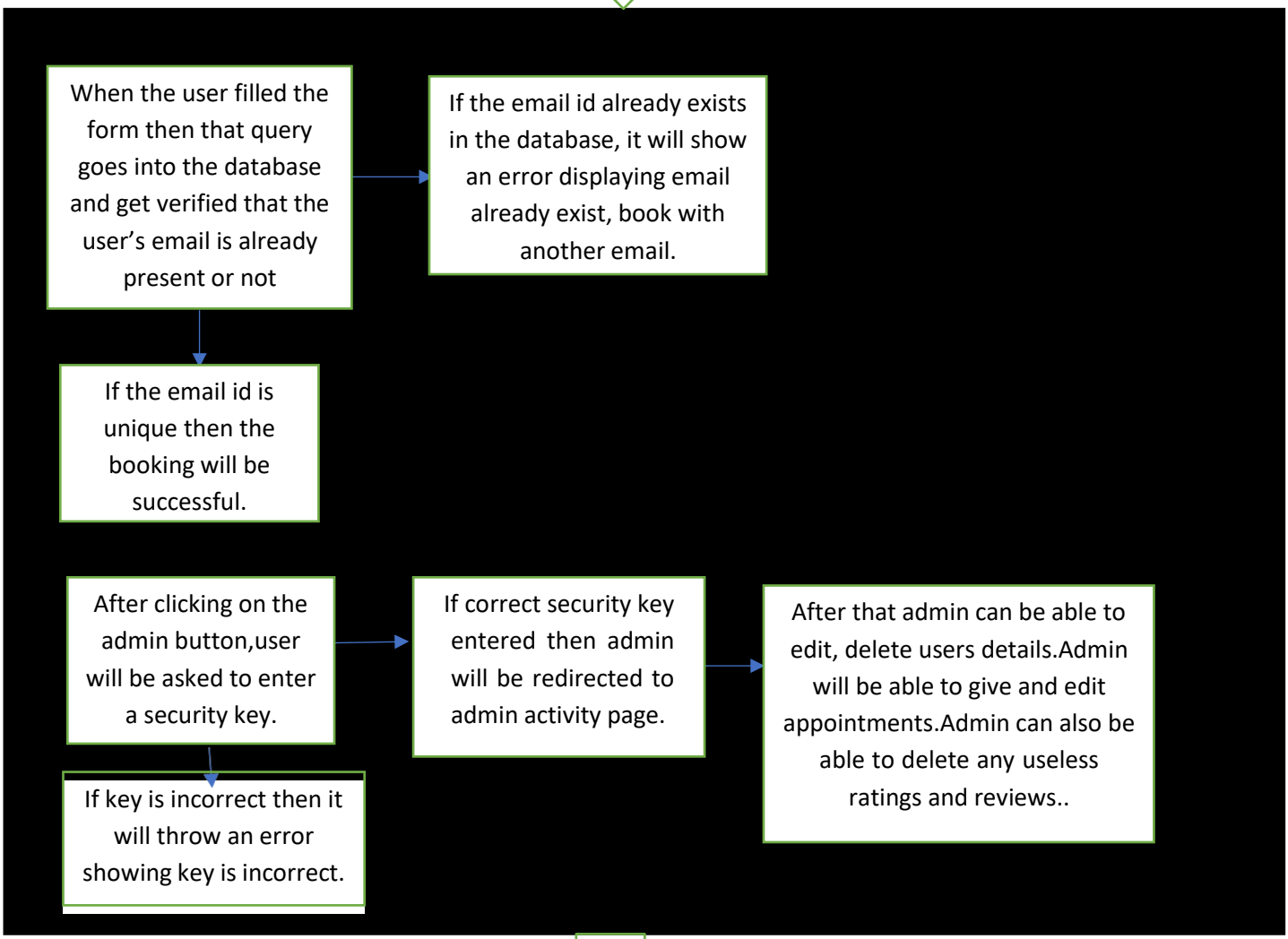
Till now there is no any website in market which can allow people to buy and sell flats at semi-rural level.All the available websites are operating in big cities. Till now we came to see that people are spending lots of time in buying flats or any piece of land. Many brokers are involved in intermediate steps of buying a flat or a piece of land and they are asking for large amount of money for fixing any deal. In addition to this many local people think that these online things are fraud and hard to use. Therefore for the solution of this problem we have decided to start a small start-up named Homeland which is going to solve this issue at local level. We hope in future we will be able to make it up to national as well as international level.

Architecture Diagram

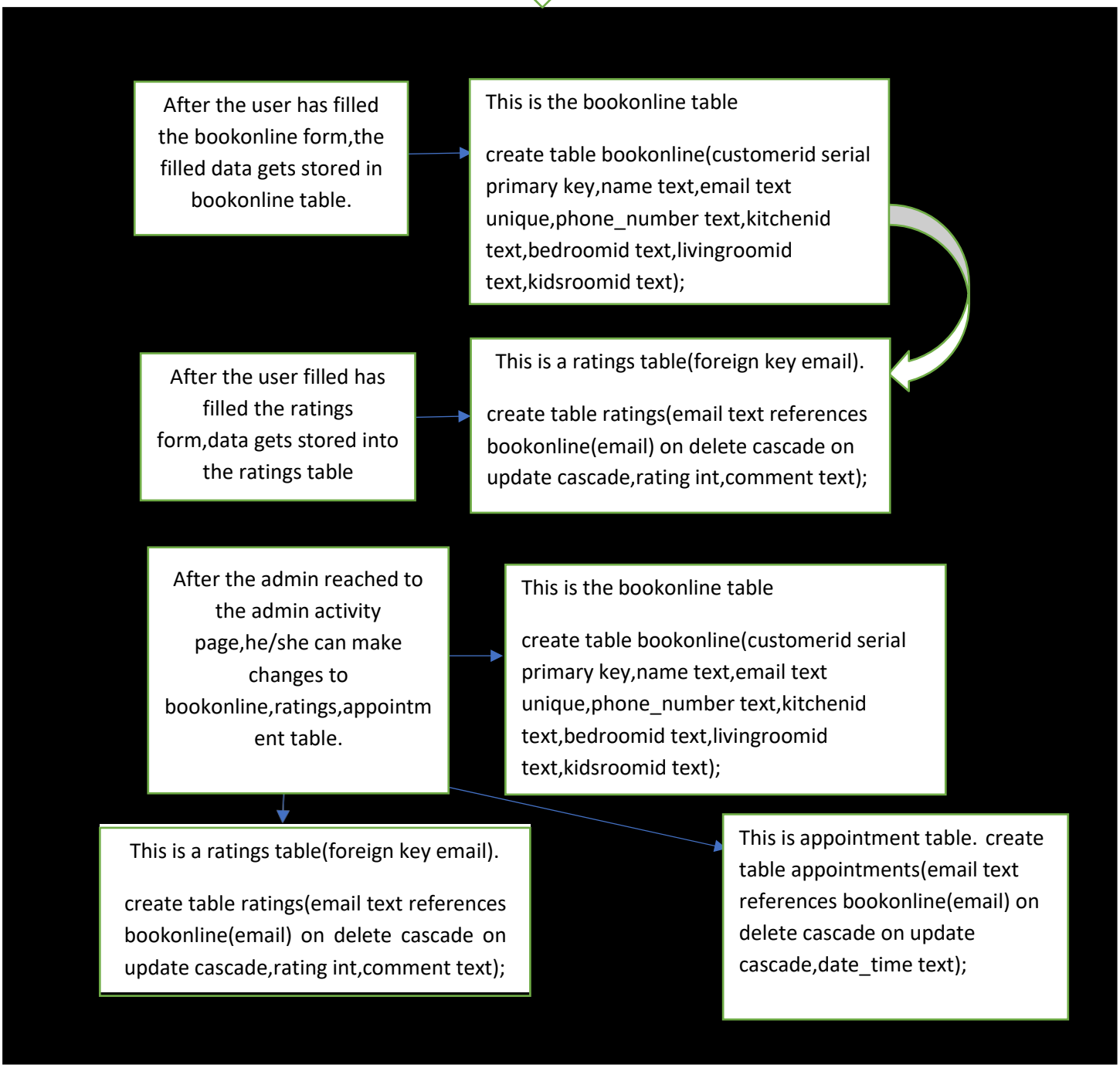
The architecture diagram is a three tier architecture namely the presentation tier, the middle tier and the data tier.



The above layer is a presentation layer.



The above layer is a middle layer



The above layer is a data layer.

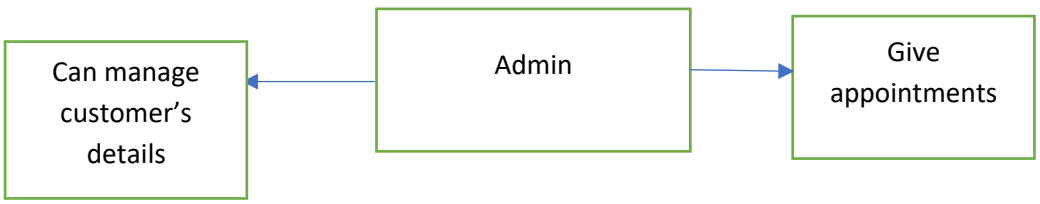
Description of the architecture diagram

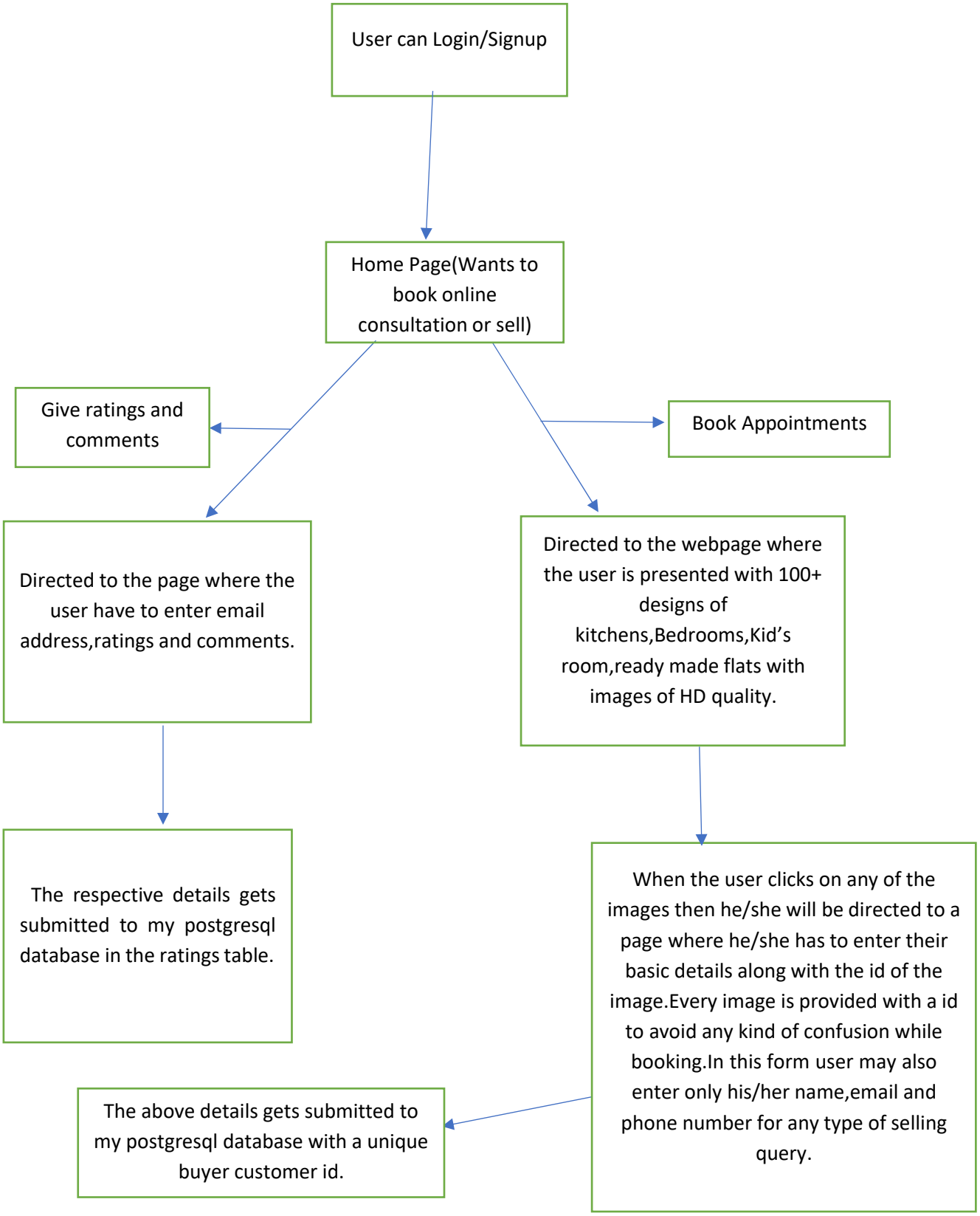
In the presentation layer the technology that we have used is HTML5,CSS3,Bootstrap4,Javascript,jQuery.

In the middle layer the technology that we have used is Node.js.This layer is actually connecting the presentation layer with the data layer.

In the data layer the database that we have used is Postgresql.The reason behind this is that it provides money efficient deployments.

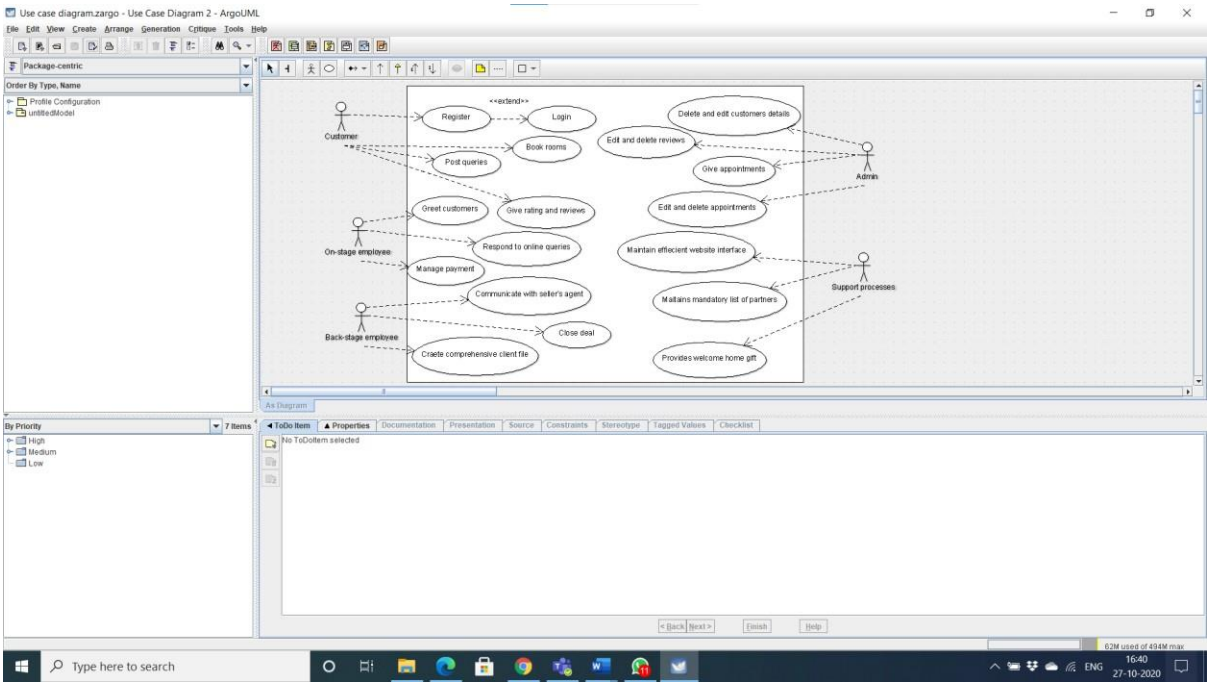
Flow diagram to explain the working architecture of the project.

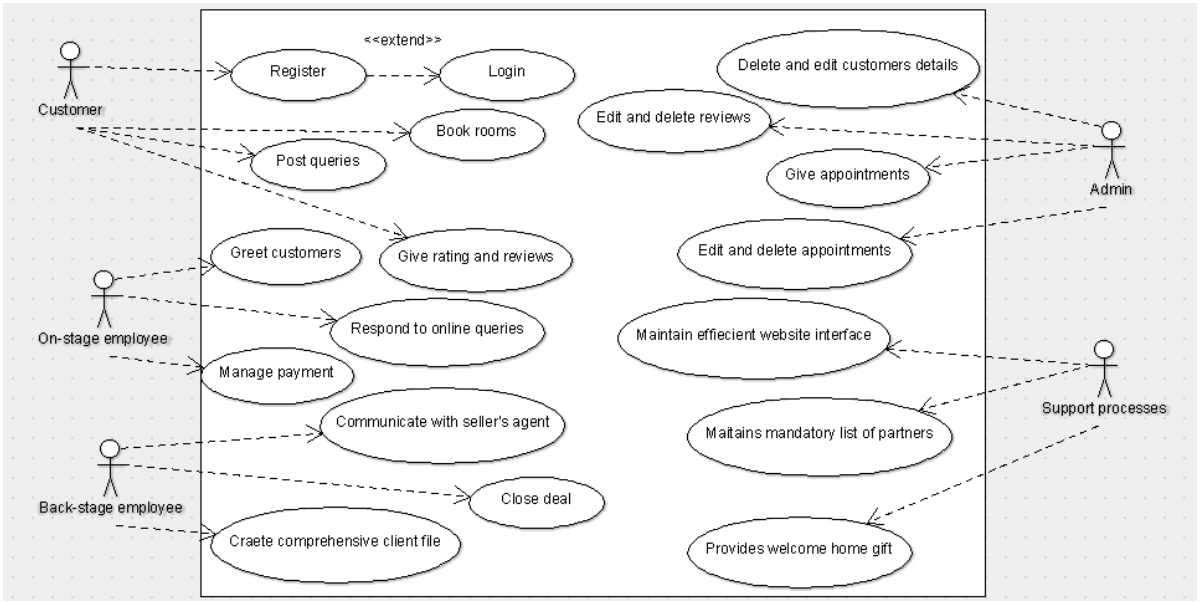



User can Login/Signup
Home Page(Wants to book online consultation or sell)
Give ratings and comments
Book Appointments
Directed to the page where the user have to enter email address,ratings and comments.
Directed to the webpage where the user is presented with 100+ designs of kitchens,Bedrooms,Kid's room,ready made flats with images of HD quality.
The respective details gets submitted to my postgresql database in the ratings table.
When the user clicks on any of the images then he/she will be directed to a page where he/she has to enter their basic details along with the id of the image.Every image is provided with a id to avoid any kind of confusion while booking.In this form user may also enter only his/her name,email and phone number for any type of selling query.
The above details gets submitted to my postgresql database with a unique buyer customer id.

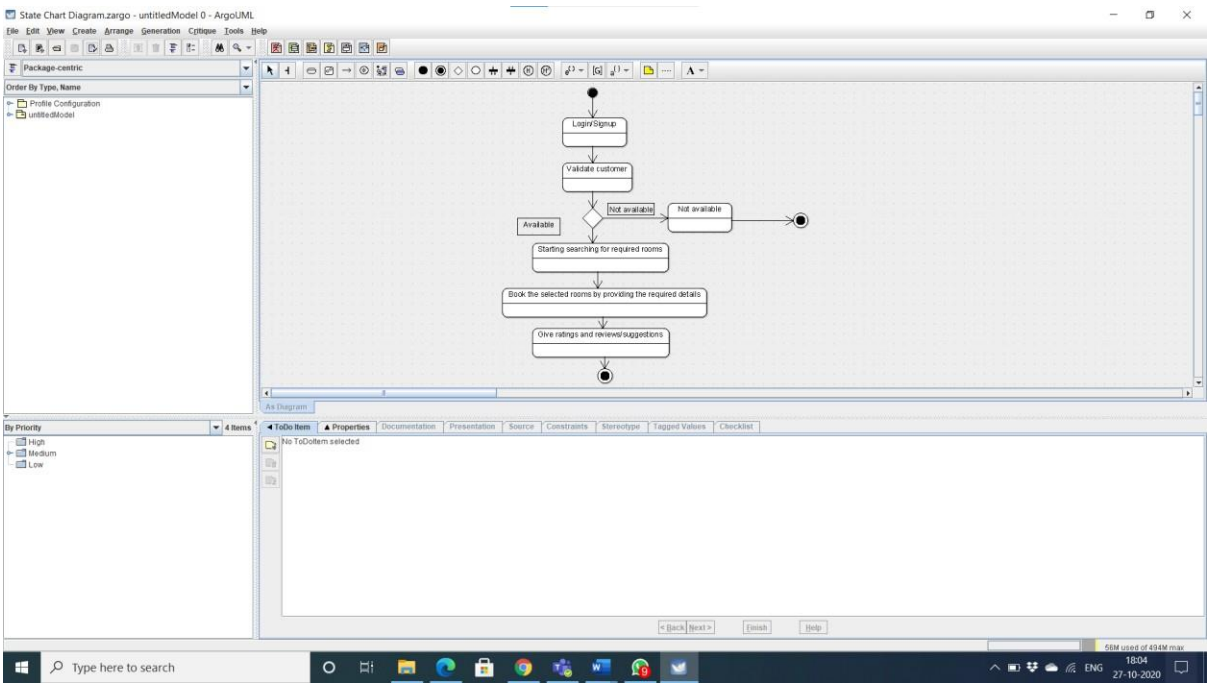
Different UML diagrams drawn with the help of ArgoUML software.

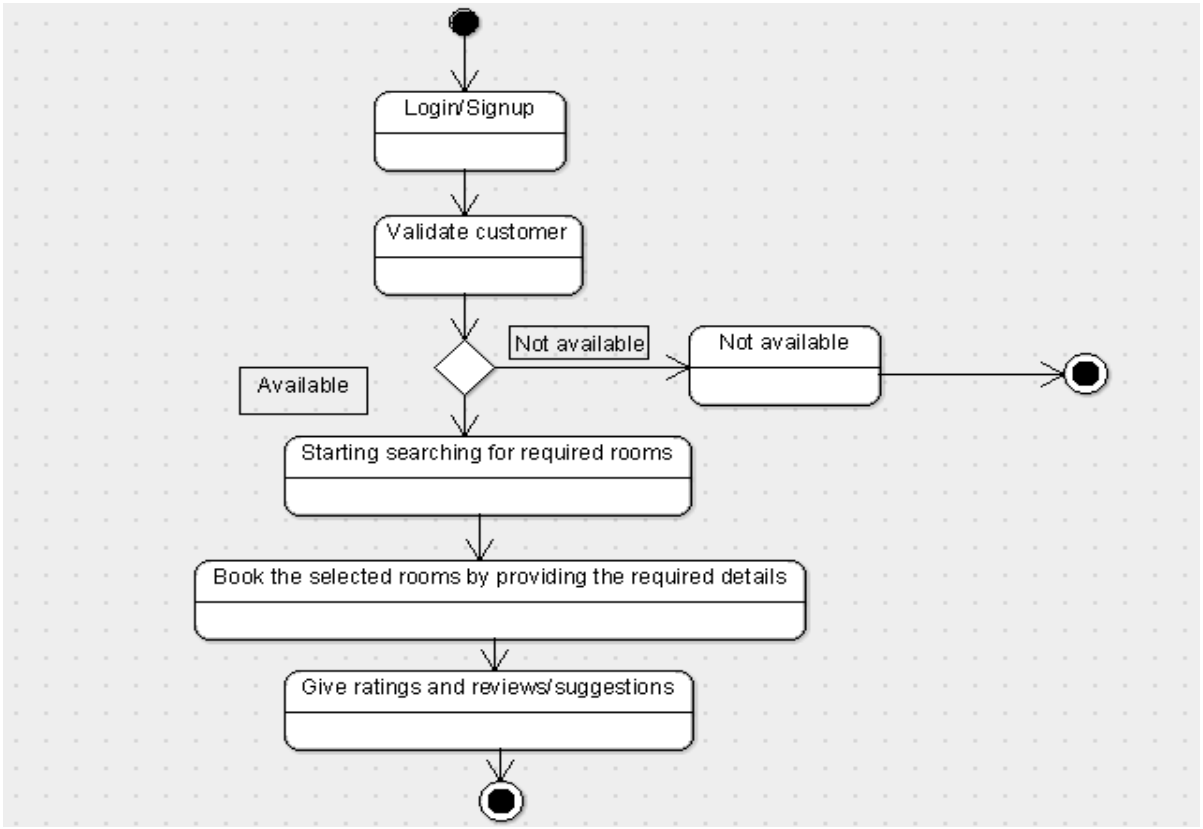
Use case diagram to show the interaction of customer,admin,on-stage employee,back-stage employee and support processes with the system



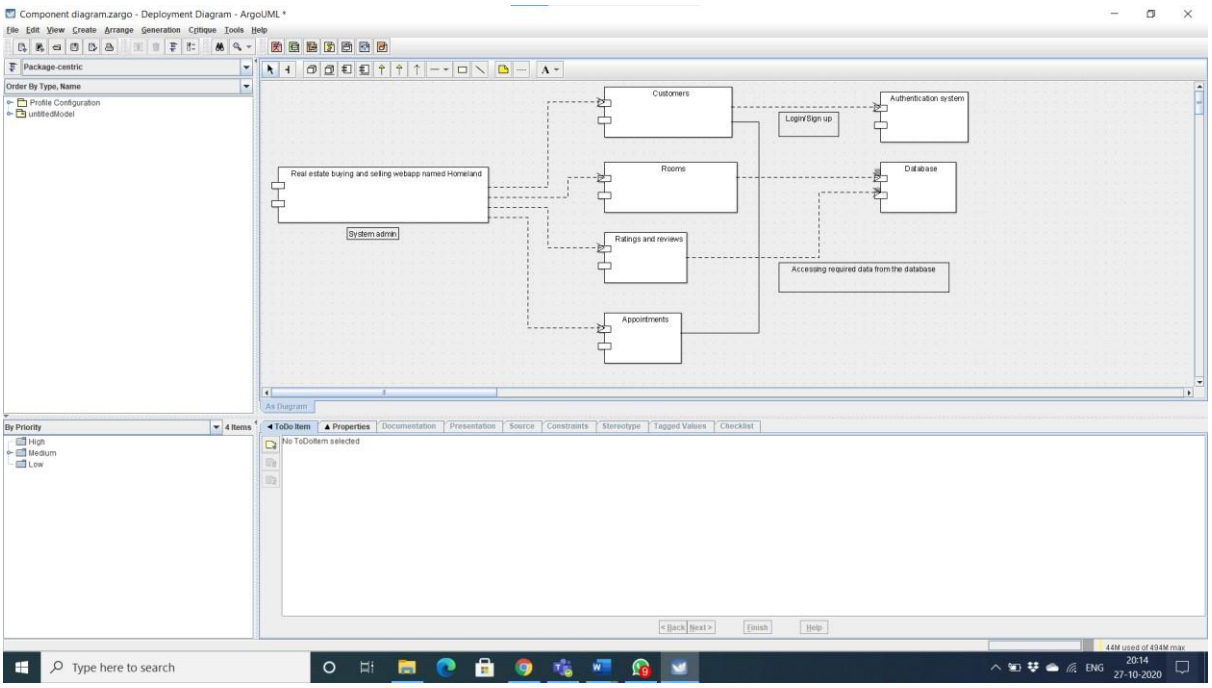


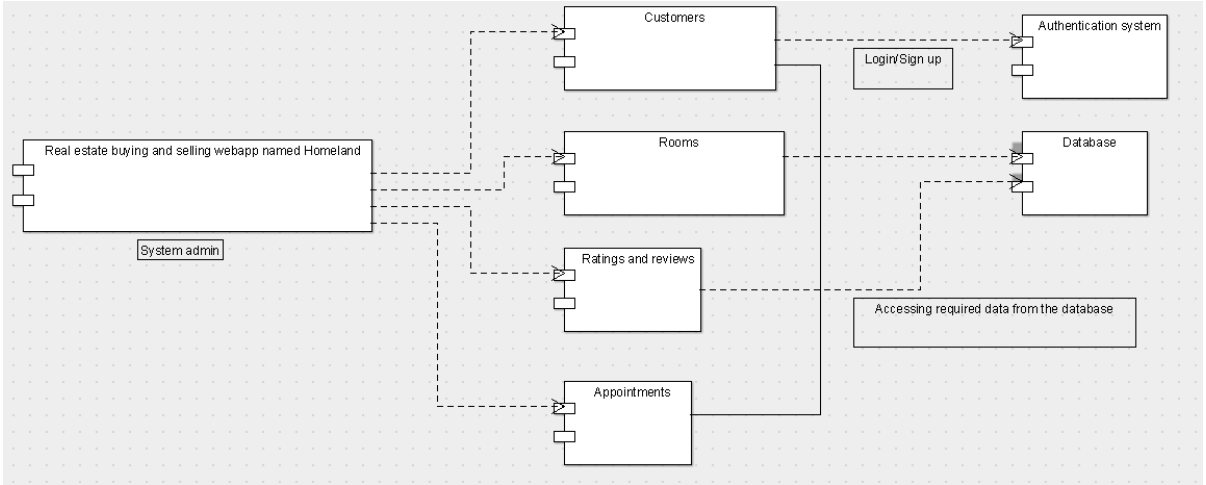
State chart diagram to show the login/signup and booking process





Component diagram to show the connection between different components of the project such as customers,rooms,ratingand reviews,appointments,database authentication system and system admin.

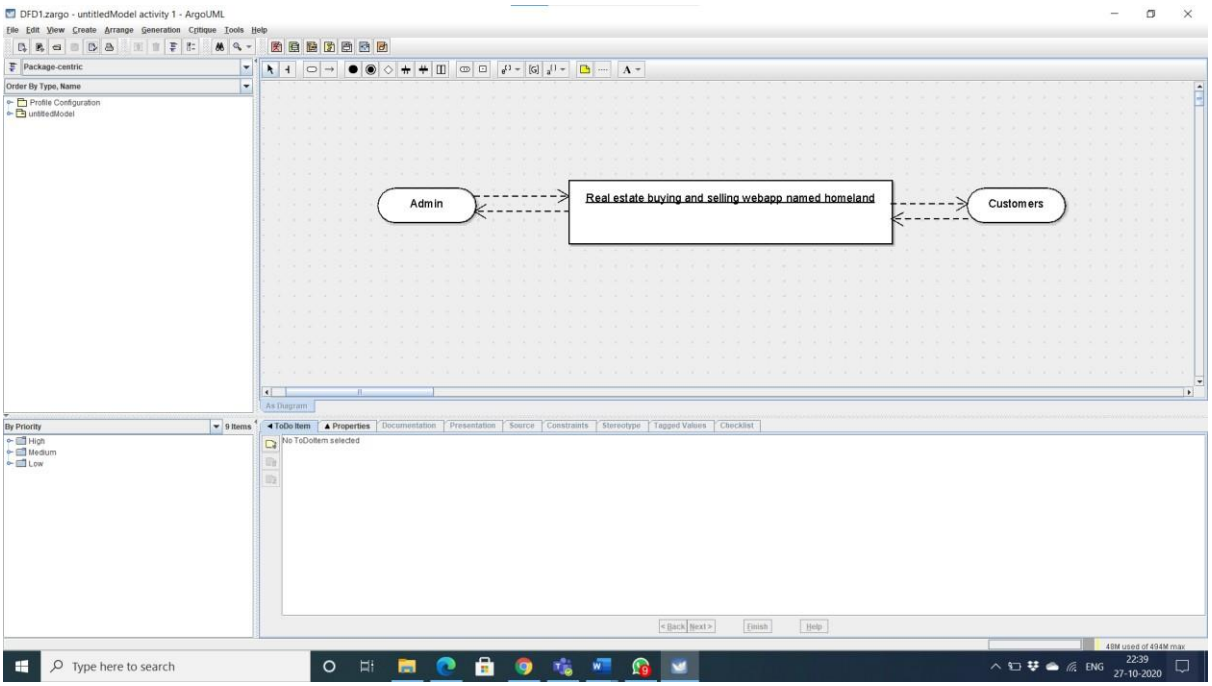




Data-flow diagram

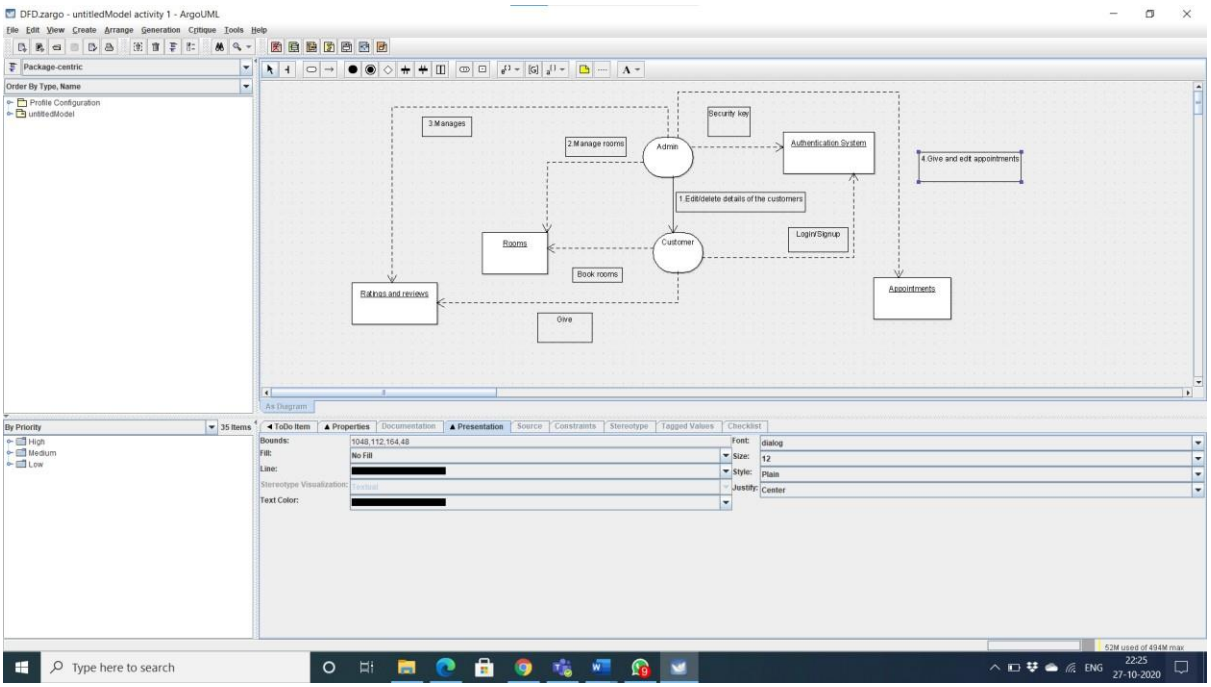
Level-0:

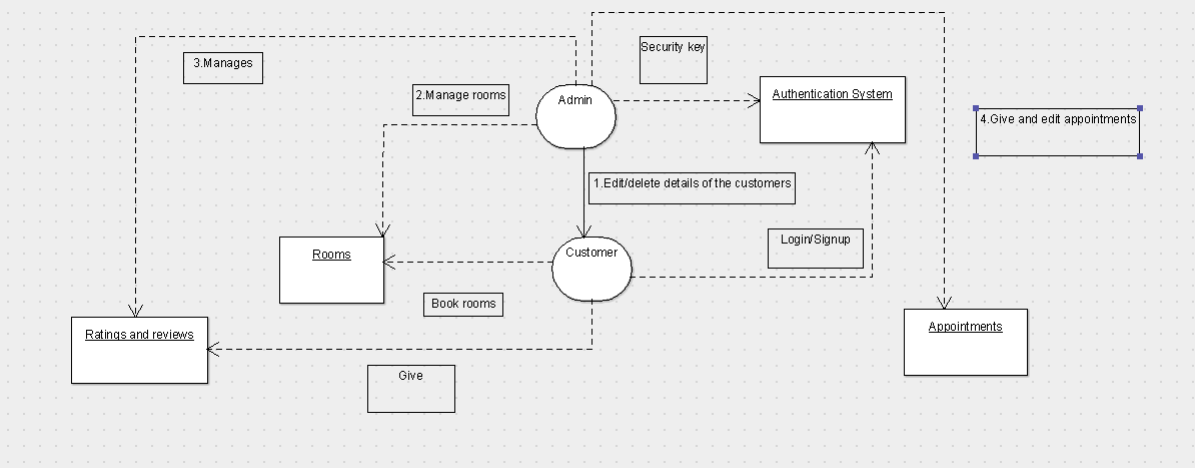
DFD to show data flow between admin and customers.



Level-1:

DFD to show the data flow between customers,rooms,rating and reviews,appointments,database and authentication system and admin.





Modules description

- Rooms
- Login/signup
- Customer module
- Admin

Dependent Modules:

Here the Login module is dependent on user authentication

Independent modules:

- Customer module
- Admin module
- Rooms module

Inter-Process Dependencies:

As described earlier the two main processes are the Customer and admin processes. These are the process are dependent on each other. As the admin give the appointments to the customers and the customers buy the rooms or get information about it.

Description

User Interfaces

The design in this project contains two sides; they are ADMIN side, CUSTOMER side. ADMIN side contains or has the privileges of login,managing records, providing rules and managing reports,give appointments,edit or delete reviews.CUSTOMER side contains the options to register, login,book rooms,give ratings and reviews,ask any query.

Hardware Interfaces

The hardware interfaces that we are used in this project include web server,operating systems and network band. Apart from these for

stroking the database we also used external hard disk for checking the working of synchronization, we also used another monitor.

Software Interfaces

The software interfaces that we are used in this project includes HTML5,CSS3,Bootstrap4,Javascropt,jQuery,Mustache ,Node.js, Microsoft Visual studio text editor. For creating the database, we have used Postgresql.

We have coded HTML5,CSS3,Bootstrap4,Javascript,jQuery in Visual studio text editor.Scripts related with Node.js are coded in the Microsoft visual studio. We have managed the database by using the Postgresql.

Communications Interfaces

The communication interfaces that we are used in this project are Simple HTTP server for loading the files and images to show on the web page. The customer's details like phone number and email address are used for the communication purposes. To communicate with the customers we will use both mobile number and e-mail address that they have entered while filling the booking form.

Admin Module:

Purpose: Help customers for better booking and appointment experience

Input: Give appointments

Processing: Edit and delete customers details as per their requirements

Output: Suitable appointments are available to the customers.

Customer module:

Purpose: Help customers to buy and sell the rooms.It also helps in giving reviews and ratings as well as asking queries.

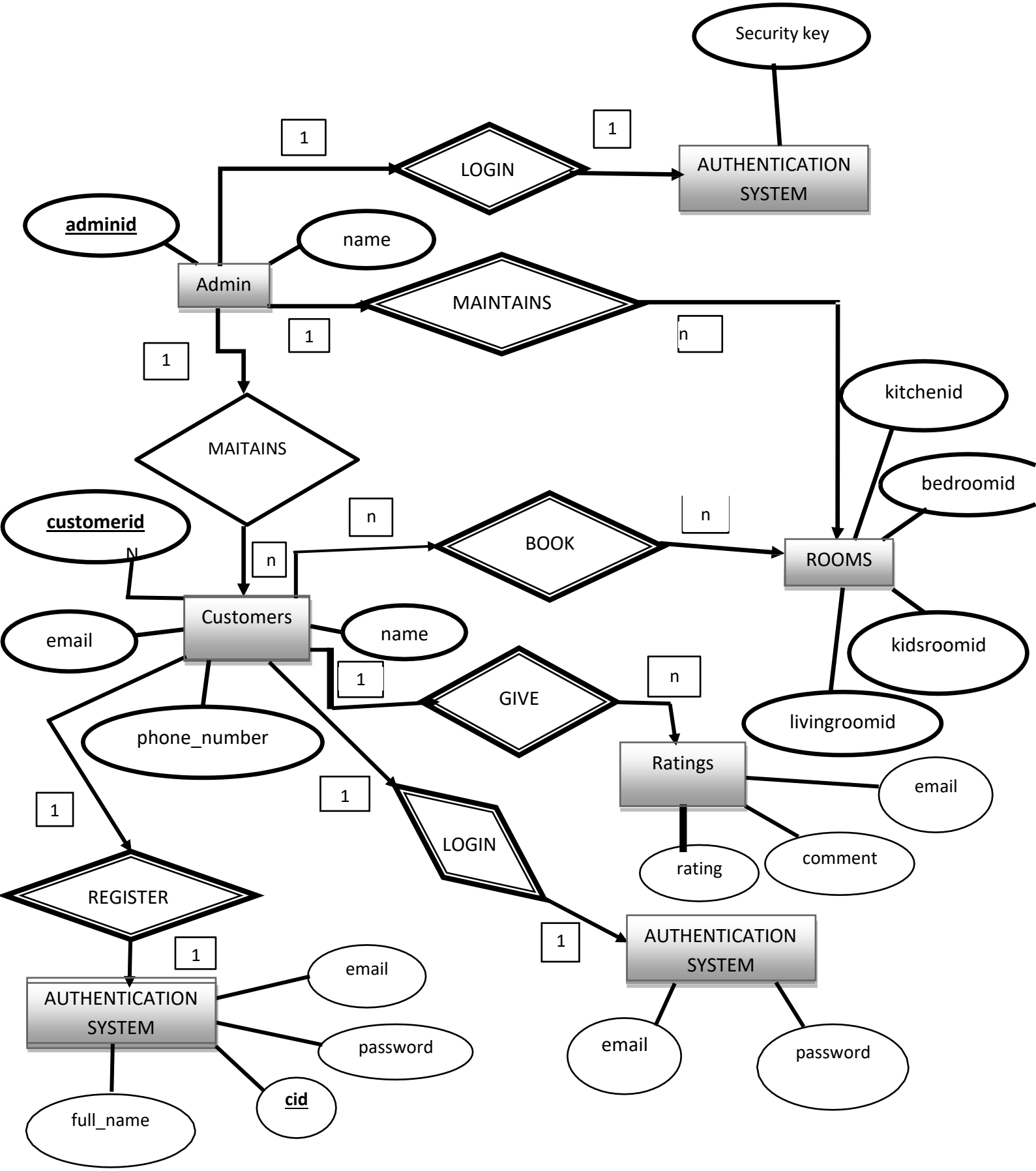
Input: For Login (email and password). For signing up (full name, email, password)

Processing: Open account based on username and password.

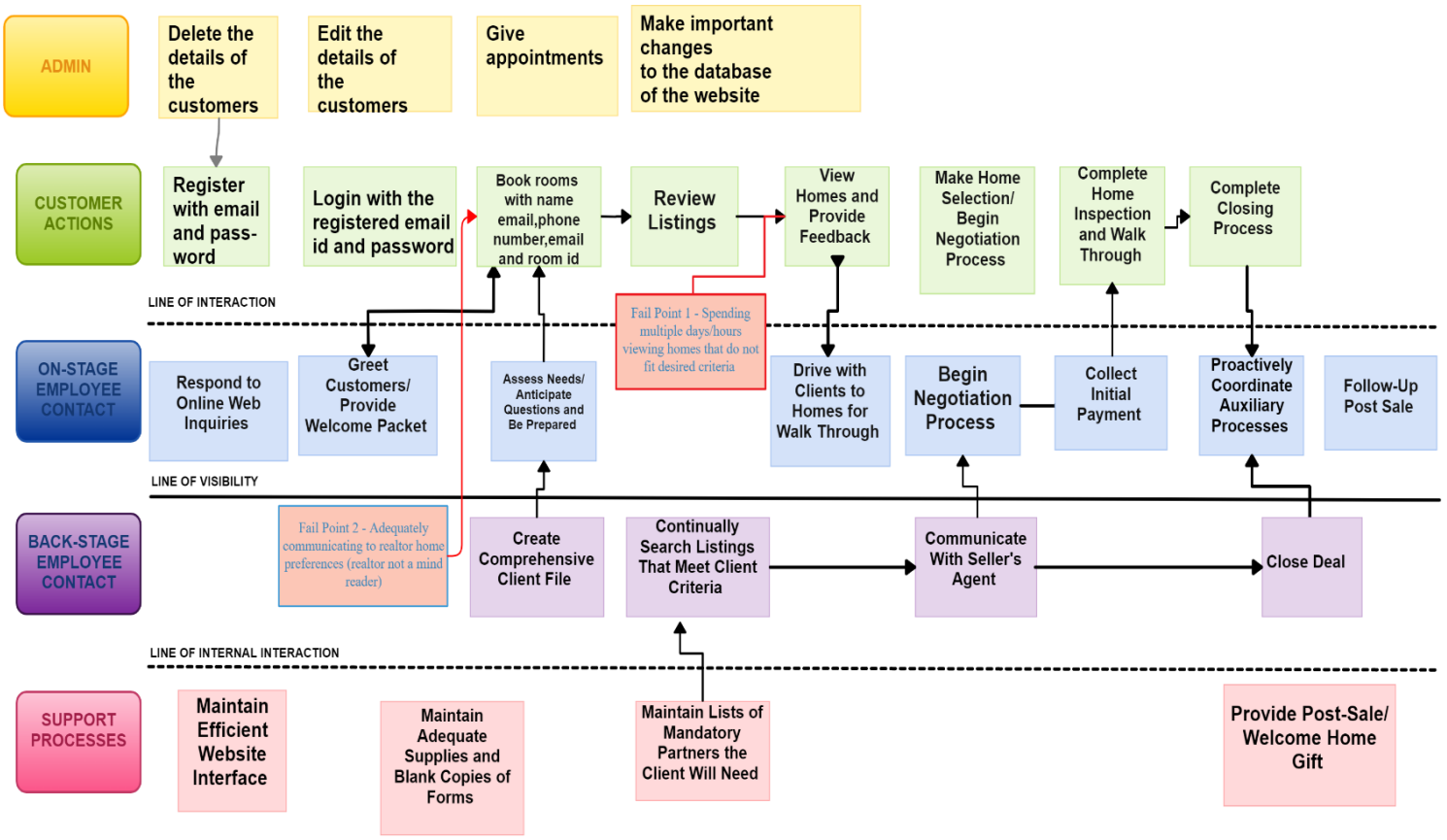
Output: Access to personal account and can buy and sell rooms.

Design Methodology

ENTITY RELATIONSHIP DIAGRAM (ERD):



Work breakdown structure



Description of Work breakdown structure

Admin

Admin can be able to edit or delete customers details.He/She can be able to give and edit appointments.In addition to this admin can also have a control over ratings and reviews.So,he/she can be able to delete any kind of useless reviews.

Customers

Customers can be able to login and signup on the website.They can make book rooms according to their choice.They can also give ratings and reviews and post their queries.

On-stage employee

On-stage employee can respond to online queries,greet the customers and provide them a welcome packet.He/she can drive customers to homes for walk through. On-stage employee can also collects the payments.

Back-stage employee

Back-stage employee can create client file, continuously search listings that meet the clients criteria.He/she can communicate with Seller's agent as well. Back-stage employee also has the right to close any deal.

Support Processes

This part includes the group of employees who are responsible for maintaining an efficient website interface.They are also responsible for maintaining list of mandatory partners that clients will need.They can also provide post-sale or welcome home gift.They are also responsible for maintaining adequate supplies and blank copies of forms.

Literature review

1] INTERNATIONAL REAL ESTATE REVIEW, 2019 Vol. 22 No. 2: pp. 131 – 167

This paper uses the DID method to test the asymmetric effects of the concurrent ownership policies in Singapore on private housing

investors and public housing upgraders (owners). Unlike other cooling measures introduced

between 2009 and 2015 that are applied with less discrimination across the private housing market, the concurrent ownership policies generate “exclusionary” effects that prohibit private investors from buying in the (resale) public housing market. The policies do not, however, prevent public housing owners from upgrading to the private housing market.

2] Real estate's knowledge and device-based decision support system, Edmundas Kazimieras Zavadskas,Artūras Kaklauskas &Audrius Banaitis

Major KDDSS -RE functions include creating and maintaining customer's personalized real estate objectives, preferences, and evaluation criteria; participation of various stakeholders (buyers, sellers, brokers, etc.) in joint determination of criteria (criteria system, values and weights) defining real estate; market signalling, provide device-based data about indoor microclimates and allergens causing allergy in buildings; searching for real estate alternatives, finding alternatives and making an initial negotiation table, completing a multiple criteria analysis of alternatives, making electronic negotiations based on real calculations, determining the most rational real estate purchase variant, and completing an analysis of loan alternatives offered by certain banks. The authors of the present research have suggested the idea to integrate knowledge-based, devices-based and decision support systems. In order to demonstrate the integration decision support, knowledge and devices systems in the real estate sector a Real Estate's Knowledge and Devices-based Decision Support System have been considered in the paper as an example.

3] A CONTROLLED EXPERIMENT FOR MEASURING THE USABILITY OF WEBAPPS USING PATTERNS, F. Javier GarcíaMaría LozanoFrancisco MonteroJose Antonio GalludPascual GonzálezCarlota Lorenzo

Real Estate's Knowledge and Device-based Decision Support System (KDDSUsability has become a critical quality factor of software systems in general, and especially important regarding Web-based applications. Measuring quality is the key to developing high-quality software, and it is widely recognized that quality assurance of software products must be assessed focusing on the early stages of the development process. This paper describes a controlled experiment carried out in order to corroborate whether the patterns associated to a quality model are closely related to the final Web application quality. The experiment is based on the definition of a quality model and the patterns associated to its quality criteria to prove that applications developed using these patterns improve its usability in comparison with other ones developed without using them. The results of this experiment demonstrate that the use of these patterns really improves the quality of the final Web application in a high degree. The experiment is formally based on the recommendations of the ISO 9126–4.

4] User/object interactions in an augmented reality environment, William Spencer Worley, IIIEdward Dietz CrumpColter E. CederlofChristopher ColeyRobert A. Yuan

The authors of this paper participated in the European Union's Sixth Framework Programme project Intelligent Cities (INTELCITIES, 2005). One of INTELCITIES's goals (on the Lithuanian side) was to develop an augmented reality environment allows interaction between virtual and real objects. By monitoring user actions with the augmented reality environment various functions are provided to users. Users may buy or sell items with a gesture, check inventory of objects in the augmented reality environment, view advertisements, and so forth.

5] Predicting public housing prices using delayed neural networks, Lipo Wang; Fung Foong Chan; Yaoli Wang; Qing Chang

This study uses delayed neural network models to predict public housing prices in Singapore. The delayed neural networks are used to estimate the trend of the resale price index (RPI) of Singapore housing from the Singapore Housing Development Board (HDB), with nine independent economic and demographic variables. The results show that the delayed neural network model is able to produce a good fit and predictions.

Test case template

1) Test Plan ID: RSBW_ST_TP_001

2) Introduction:

It is System Test Plan for Real estate buying and selling webapp , provides access to the users who are interested in real estates and guest from anywhere in the world. It has two interfaces one is Admin interface another is User interface. Admin can be accesses webapp authorized users, user interface can be accessed by customers who have bought or sold any flat.

The propose of the system (Application) is to provide user friendly interface and services online (through Internet), anyone having interest in real estates can buying and sell flats without visiting to the actual place.

3) Test Items:

Admin Interface:

Master Data

User Management

Reports
etc…

User Interface :

Information

Buying of flats

Selling of flats

Seeing offers

Etc…

4) References:

Requirements

Project Plan

Test Strategy

—
Use cases (If available)

High Level Design doc

Low Level design docs

Process guide line doc

Prototypes

5) Features to be Tested:

1. a) Admin Interface:
   i) Master Data
   1) Entering of security key
   2) Entering of username and password
   3) Managing collection of rooms
   4)Finding bugs in the database

   ii) User Management
   1) Delete any user details

2) Edit any user details
3) Giving appointments
4) Delete useless reviews

iii) Reports
1) Collecting reports about the design of rooms
2) Report of user activity
3) Day, month, yearly reports
4) Service wise report (only registration, only booking)

b) User Interface:
i) Information
1) Registration of account
2) Login with username and password
3) Booking different rooms
4) Giving reviews
5) Seeing offers

ii) Buying of flats
1) Login
2) Price enquiry
3) Fund transfer (transfer to same bank, others banks)
4) Statement generation (mini statement, detailed report)

iii) Selling of flats
1) Booking the appointment
2) Searching for good customer
3) Receiving payment

6) Features not to be tested:

NA

7) Entry Criteria:

1. **a) Test Design**

Team formation, Responsibilities, Schedule,
Requirements, Test Case Template etc…

Training on Domain, on Automation tools

1. **b) Test Execution:**

Readiness of Test Lab
Readiness of AUT
Requirements
Test Case docs
Test Data
Defect Report Template
Etc…

8) Exit Criteria:

All possible test cases executed

Maximum defects fixed, Final Regression performed successfully

Confidence on Test process

Time Limitations

Budget Limitations

9) Suspension Criteria:

Show-Stopper bug found

Supplier issues

Vast changes in requirements

If resolving defects are more

10) Roles & Responsibilities

Sno	Name	Role	Responsibilities	Remarks
1	Gayathri A	Test Lead	Test Planning, guidance, Monitoring and Test control	Very Good
2	Ravi Prakash	Sr. Tester	Test Data Collection, Generating Test Scenarios.	Very Good
3	BASIREDDY ITHIHAS REDDY	Tester	Test Case Documentation, Test execution, defect reporting and tracking for Admin module.	Good
4	KUNALA VENKATA LOKESWAR REDDY	Tester	Test Case Documentation, Test execution, defect reporting and tracking for Selling of flats module.	Good
5	Brajesh Bhatia	Tester	Test Case Documentation, Test execution, defect reporting and tracking for buying of flats module.	Good

11) Schedule:

Sno	Task	Days	Duration	Remarks
1)	Understanding & Analyzing Requirements.	5	6nd July to 10th July	Very good
2)	Review Meeting	01	13th July	Very good
3)	Generating Test Scenarios.	10	15th July to 26nd July	Very good
4)	Reviews	02	29th July to 30th July	Good
5)	Test Case Documentation	40	2th July to 16thAugust	Good
6)	Reviews	04	18th August to 22thAugust	Good
7)	Test Data collection	06	24th August to 30th August	Good
8)	Reviews	01	1th August	Very good
9)	Verifying Test Environment setup	01	2th August	Good
10)	Create Test batches	02	3th, 4st August	Good
11)	Sanity Testing	01	7rd September	Very good

12)	Comprehensive Testing	25	8th September to 6ndOctober	Very good
13)	Sanity Testing	01	3rd October	Good
14)	Selecting Test cases	02	8th and 9th October	Good
15)	Regression Testing	05	12th October to16th October	Good
16)	Sanity Testing	01	19th October	Very good
17)	Selecting Test cases	01	20th October	Very good
18)	Regression Testing Cycle 2	04	21th October to 26ndOctober	Very good
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.	.	.	.	
28)	Final Regression	08	23th November to 2th November	Good
29)	Evaluating exit criteria	01 or 02	3th, 4th of November	Very good
30)	Collecting all artifacts	02	7rd, 8th December	Very good
31)	Test Summary Report	01	9th December	Very good

Note: Regression Testing depends on Application and strength of Development team.

12) Training

Training Program on Real estate Domain

Test Automation Training using QTP Tool

13) Risks & Mitigations

Team members issues

Vendor issues

Time

Budget

14) Test Environment / Lab

Application Type: Web Application, Internet and Public

Server side:

Windows 10

UNIX server

Ms Exchange server

a) Web server, b) EDP, 3) Data storage

VS code

QTP Tool etc….

Browser Chrome 86.0.4240.75

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Client side:

Windows 10

VSS

MS Office

QTP

Etc…

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AUT Environment

Node.js,Mustache template,Express.js

SQL Server 2019 for Database server

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15) Test Deliverables

Test Plan,

Review Reports,

RTM

Test Scenario docs

Test Case docs

Test data

Opened, Closed Defect Reports

Test Summary Report

16) Approvals

SNO	Task/s	Author /Role	Date & Signature
1)	Test Plan Documentation	Gayathri A (Test Lead)	
2)	Review	Ravi Prakash (QA Analist)	
3)	Approval	Gayathri A (Project Manager)	

17) Glossary

AUT -Application Under Test

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PIN -Project Initiation Note

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SRS- Software Requirements Specification

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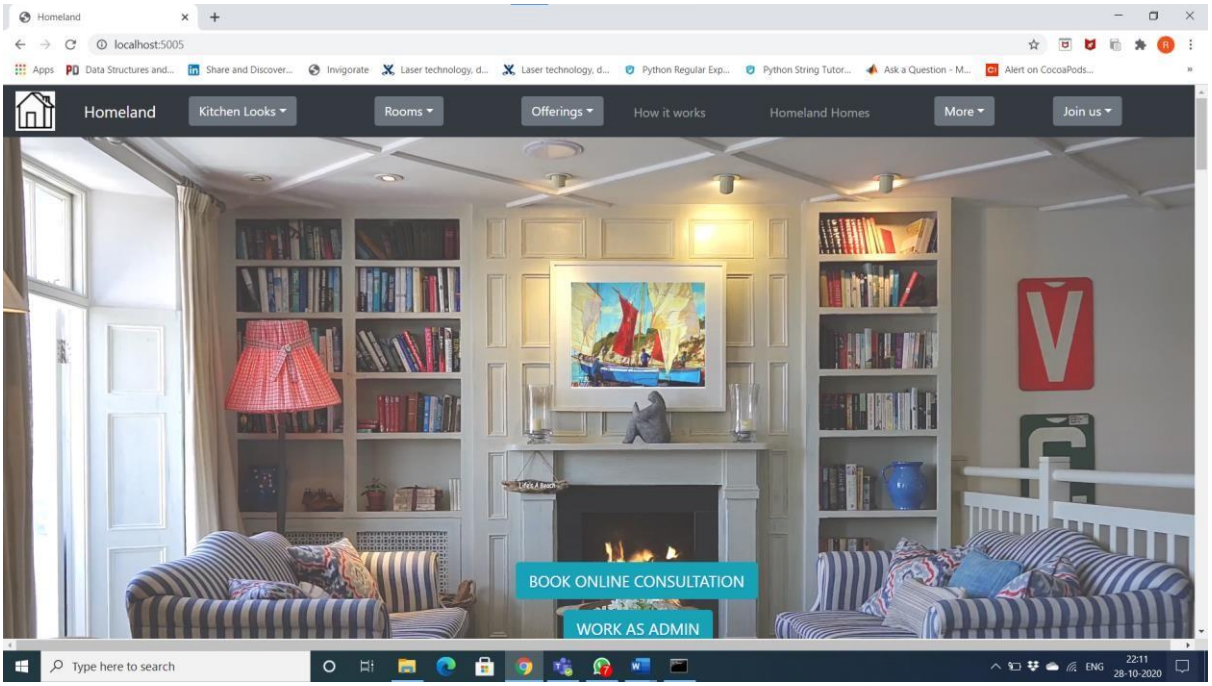
Test case diagram

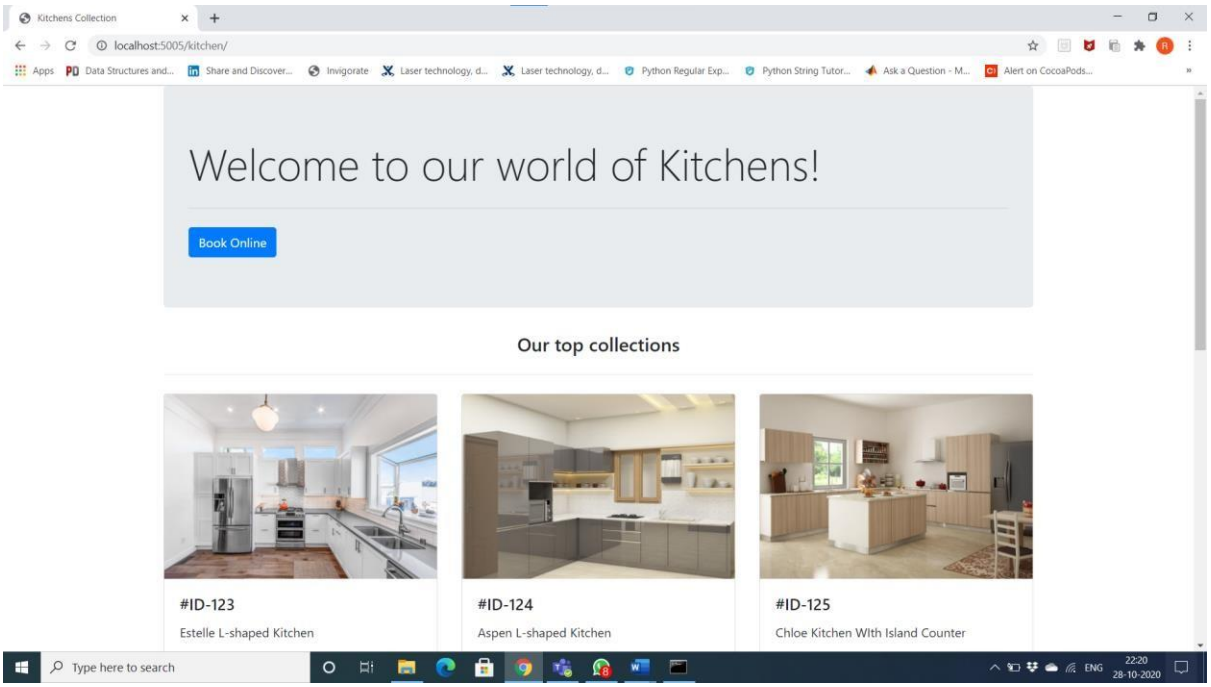
TEST CASE ID	TEST SCENARIO/DESCRIPTION	TEST STEPS	ACTUAL RESULTS	EXPECTED RESULTS	PASS/FAIL
1	Check customer sign in with valid data	Go to website Enter all the details (email, password) Click login	User should sign in into website	Login successful	Pass
2	Check customer sign up with already registered data	Go to website Enter all the details (full name, email, password) Click register	User should not signup into website	Signup failed	Pass
3	Check customer login with invalid data	Go to website Enter all the details (email, password) Click login	User should sign in into website	Login failed	Pass
4	Check admin sign in with valid security key	Go to website and enter the security key.	Admin should redirected to the admin activity page.	Authentication Successful	Pass
5	Check admin sign in with	Go to website and enter the security key.	Admin should redirected to	Authentication Successful	Pass

	invalid security key		the admin-error page.		
6	Check admin for giving appointments.	Go to website and start entering the appointments with different email ids.	Customers will get their appointment time and date.	Appointment Successful	Pass
7	Check admin for editing and deleting customers details	Go to website and start changing and deleting the customers records.	Selected customer details will be deleted or edited	Edit or delete operation is successful	Pass
8	Check admin for editing and deleting customers ratings and reviews	Go to website and start changing and deleting the customers ratings and reviews.	Selected customer rating and review will be deleted or edited	Edit or delete operation is successful	Pass
9	Check customers booking of rooms	Go to the website and start booking the rooms with the filling of the form.	Selected room will be booked with respective customer details	Booking operation is successful.	Pass
10	Check customers giving ratings and reviews	Go to the website and start giving rating and review after booking is done	Rating and reviews gets posted	Review and rating operation is successful.	Pass

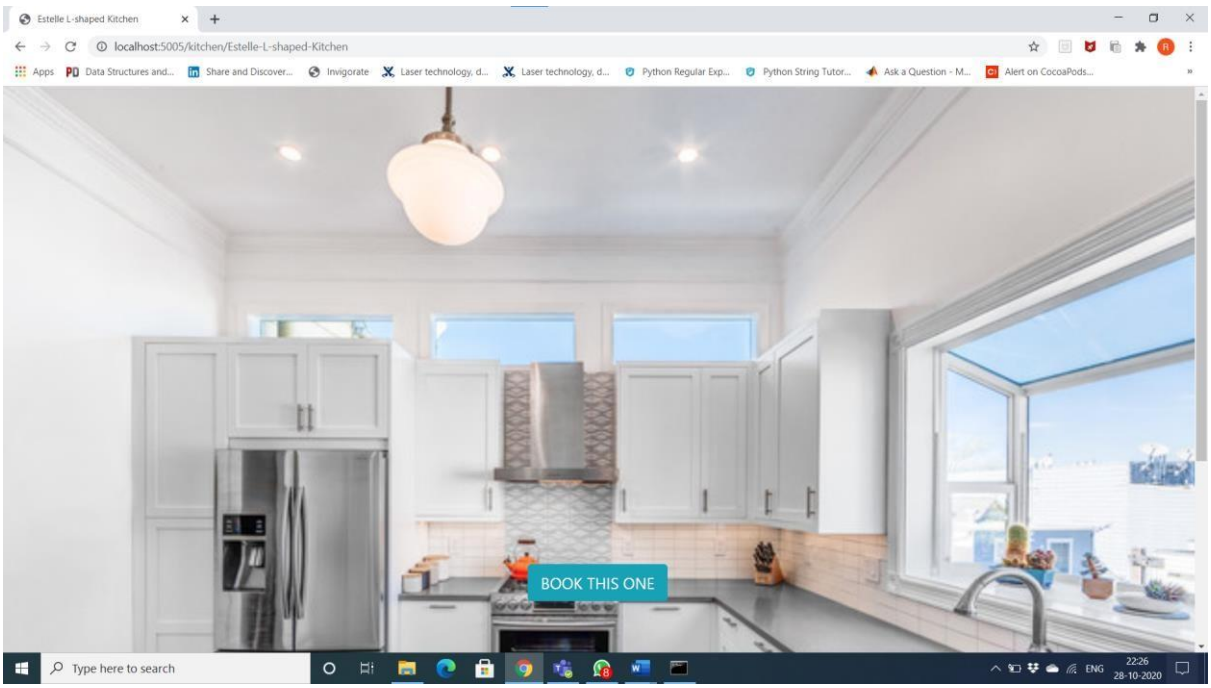
Step by step output screenshots



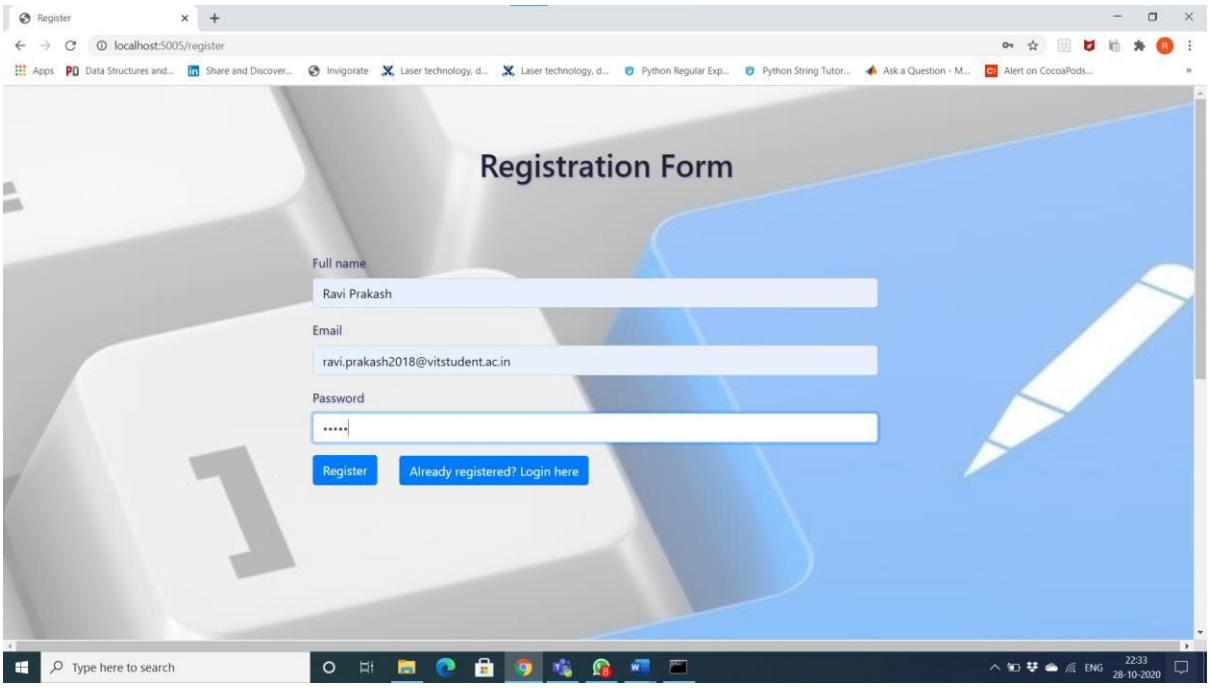
This is the home page of our website which consist of different buttons such as button for the kitchen looks,rooms,offerings,login/signup,book online consultation,work as admin etc.This page consist of many other things such as in the below part of this page we have created the steps that we have follow while doing booking on this website so that is only the front-end part.This feature has nothing to do with the backend.



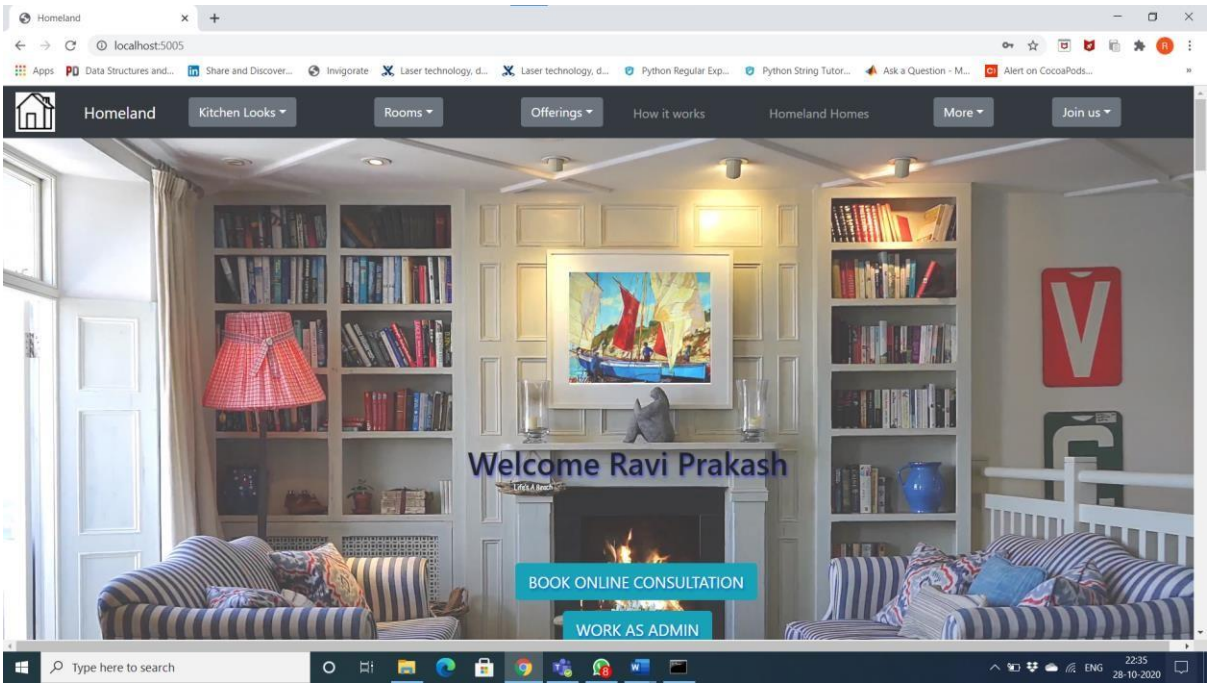
If we click on any of the dropdown buttons that is there in the header part we will be redirected to the different pages consisting of different design of rooms.For the above screenshot we have clicked kitchen looks button for demonstration.



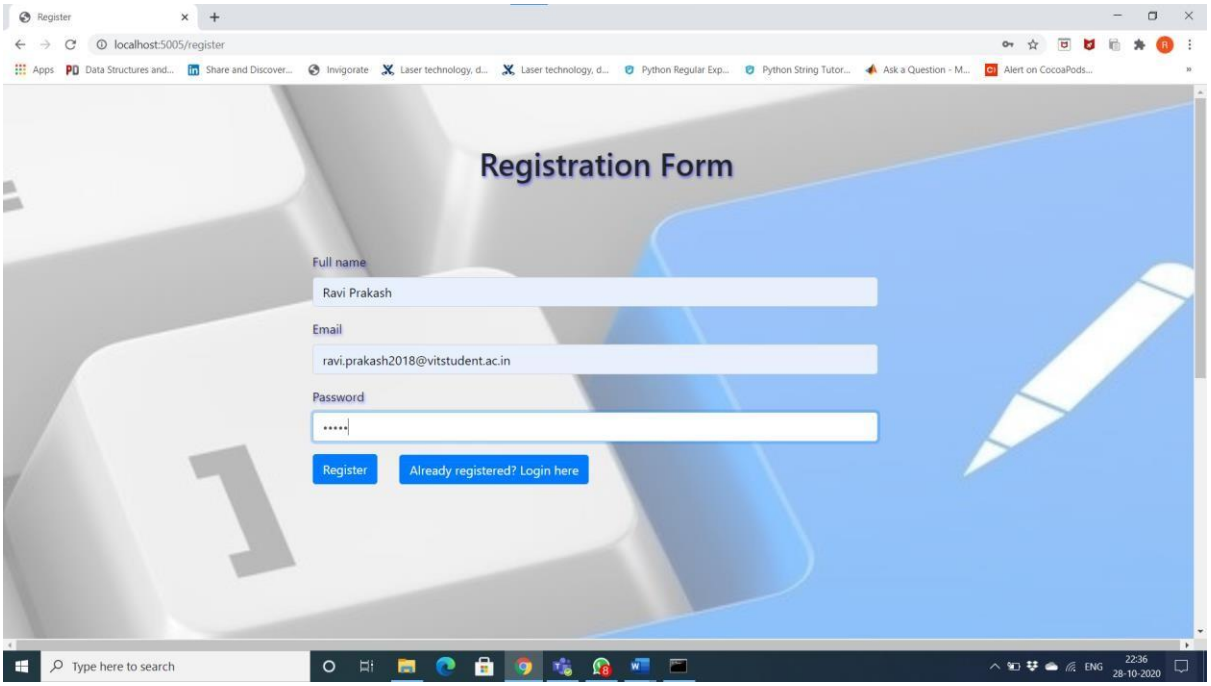
If we click on any of the rooms that we have shown in the previous screenshot then we will be redirected to a page which will show the broader view of that room.We can select any room design.On every page of this there will be “book this one” button.If we click on that we will redirected to a page where you have to fill a form to confirm the booking.



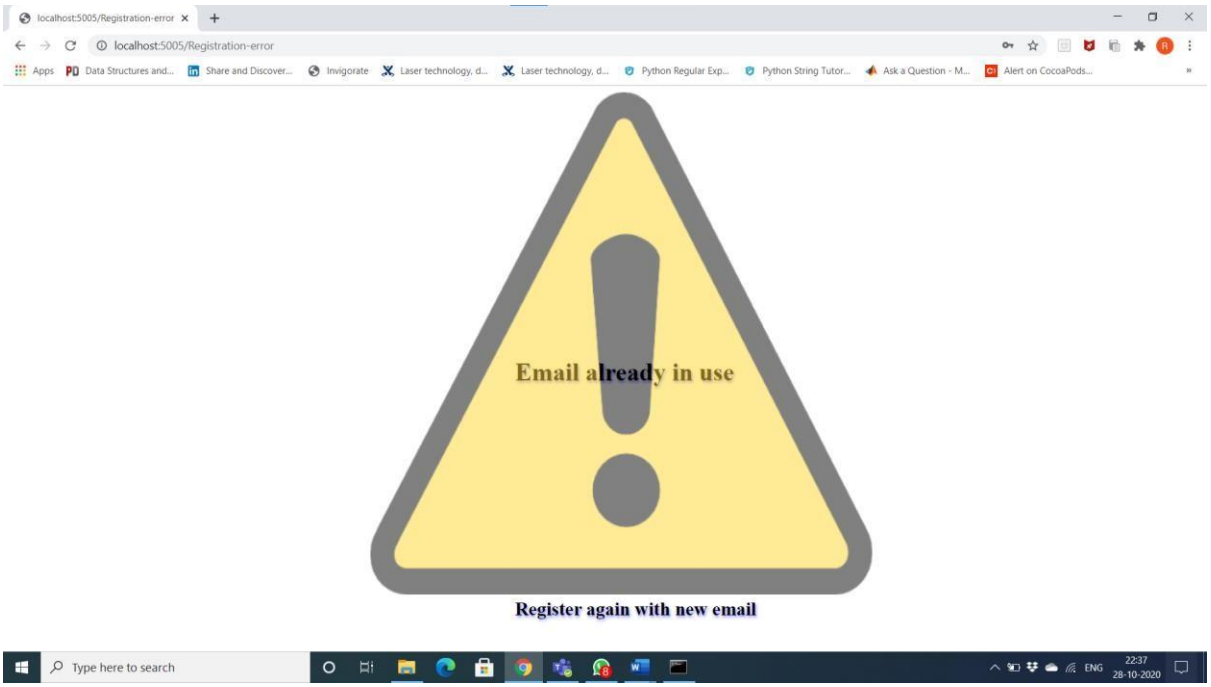
Now we will do the registration by clicking on the signup button that is there in “Join us” dropdown menu.In the above registration form I have entered all the details.Now when we click on the register button and if registration is successful then we will be redirected to the home page with our name displaying on it.



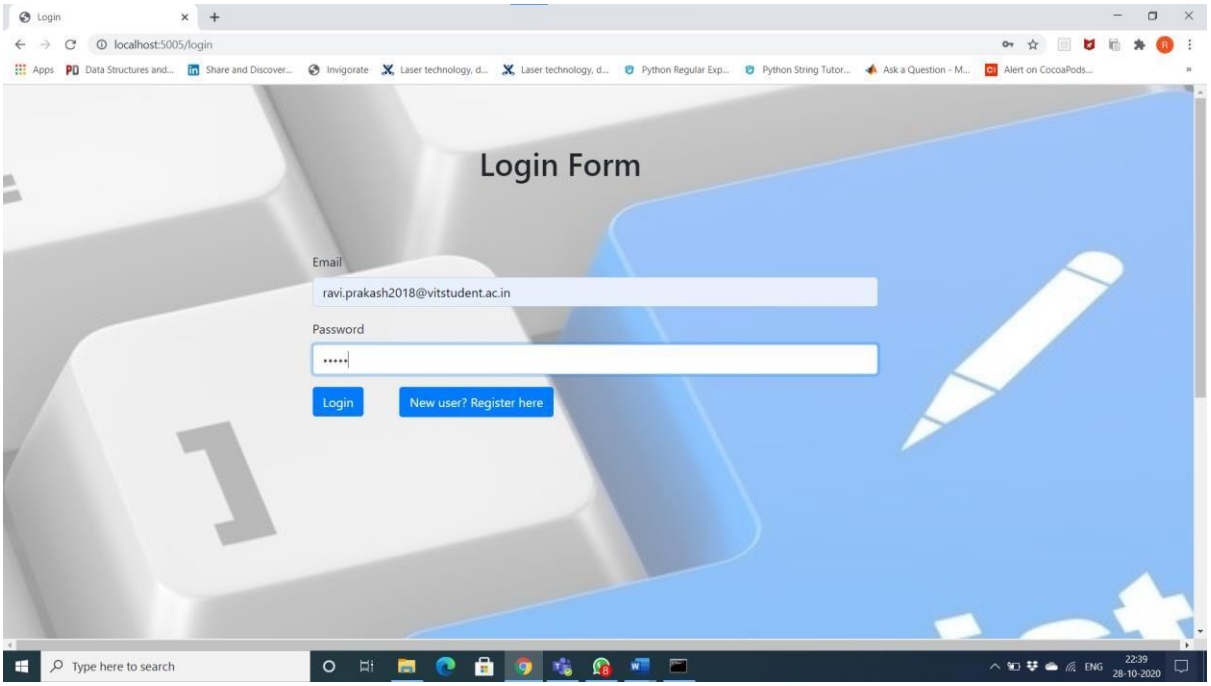
Now in the above screenshot we can see that we have successfully registered.



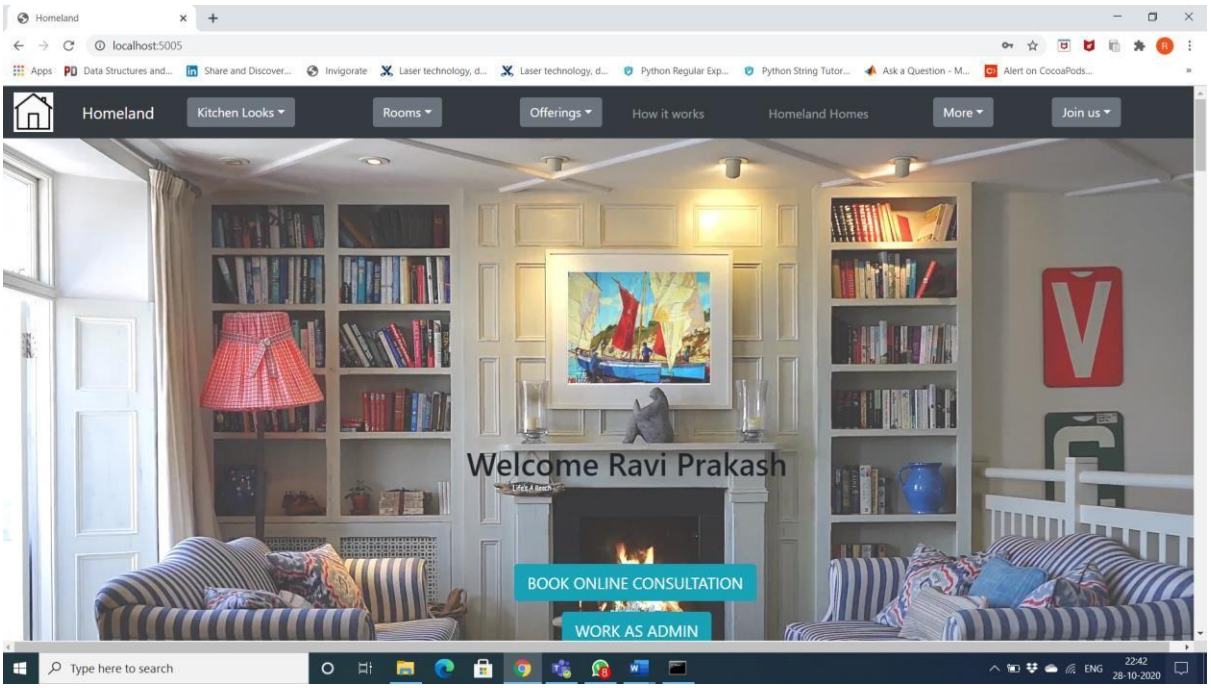
In the above screenshot we have tried to register again with the same email id.In this case it will throw an error.



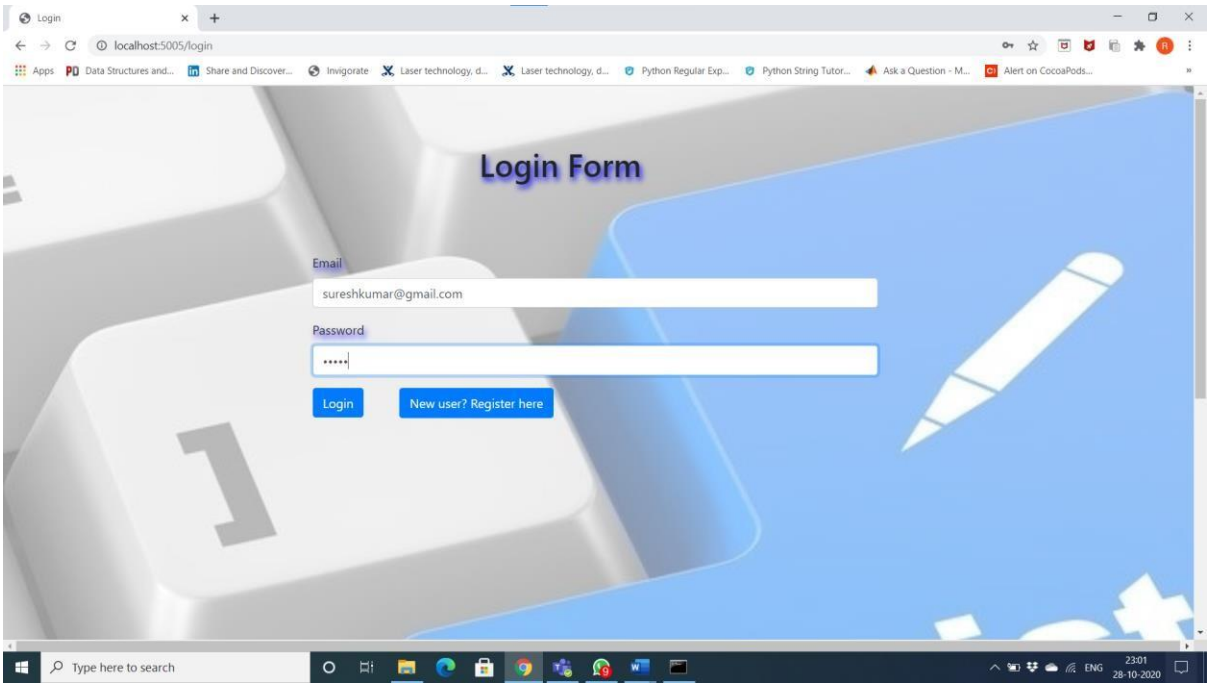
So in the above screenshot it is showing to register again with other email.



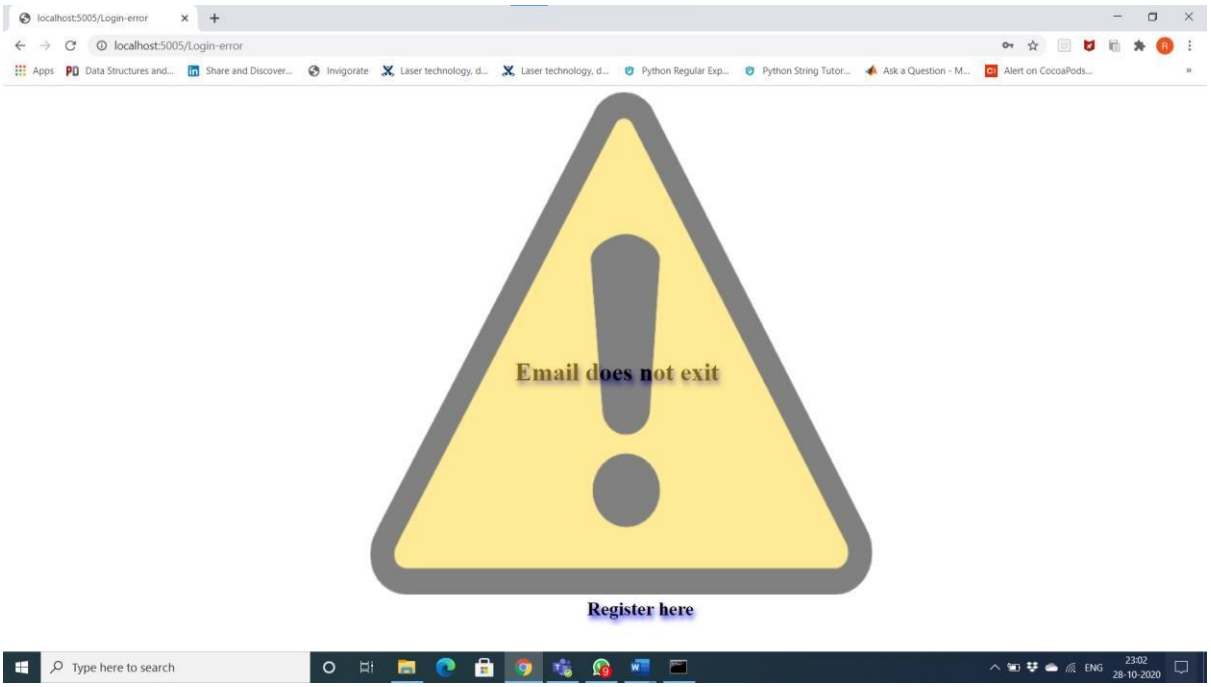
In the above screenshot we have tried to login with the same email id and password that we have used during registration.



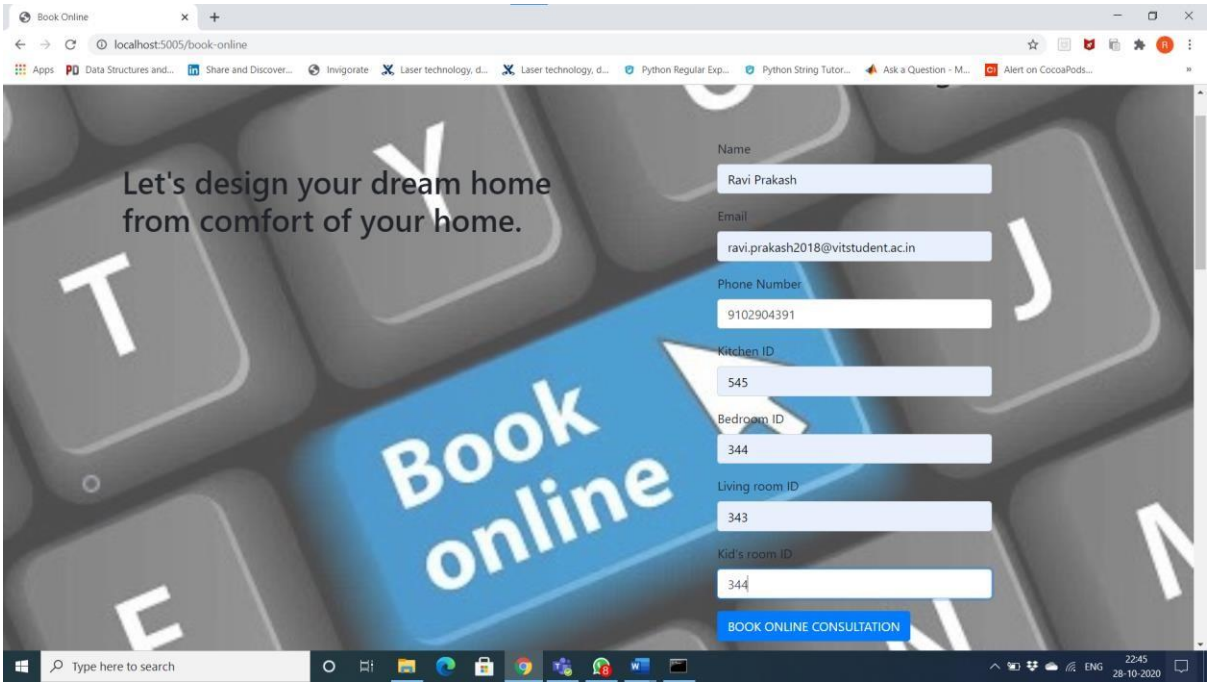
Above screenshot shows that we logged in successfully.



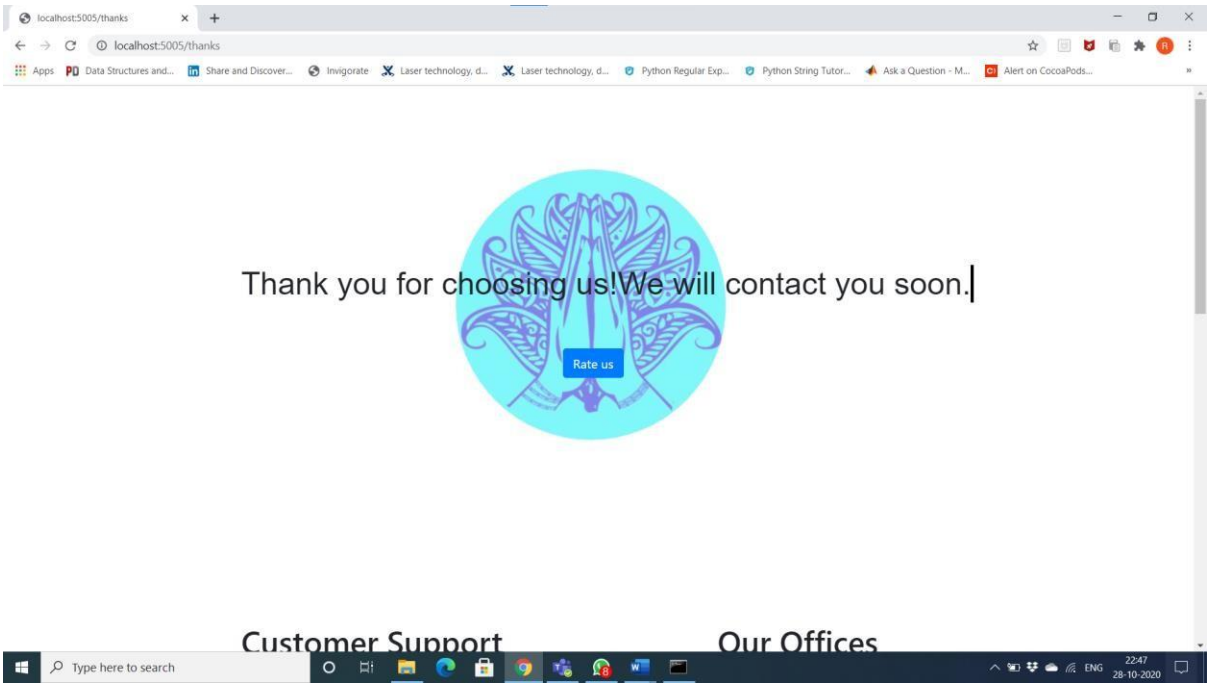
If we enter the wrong data then it will throw an error that is shown in the below screenshot.



Now we will start booking rooms.We will click on “BOOK ONLINE CONSULTATION” button.We will be redirected to book online page.

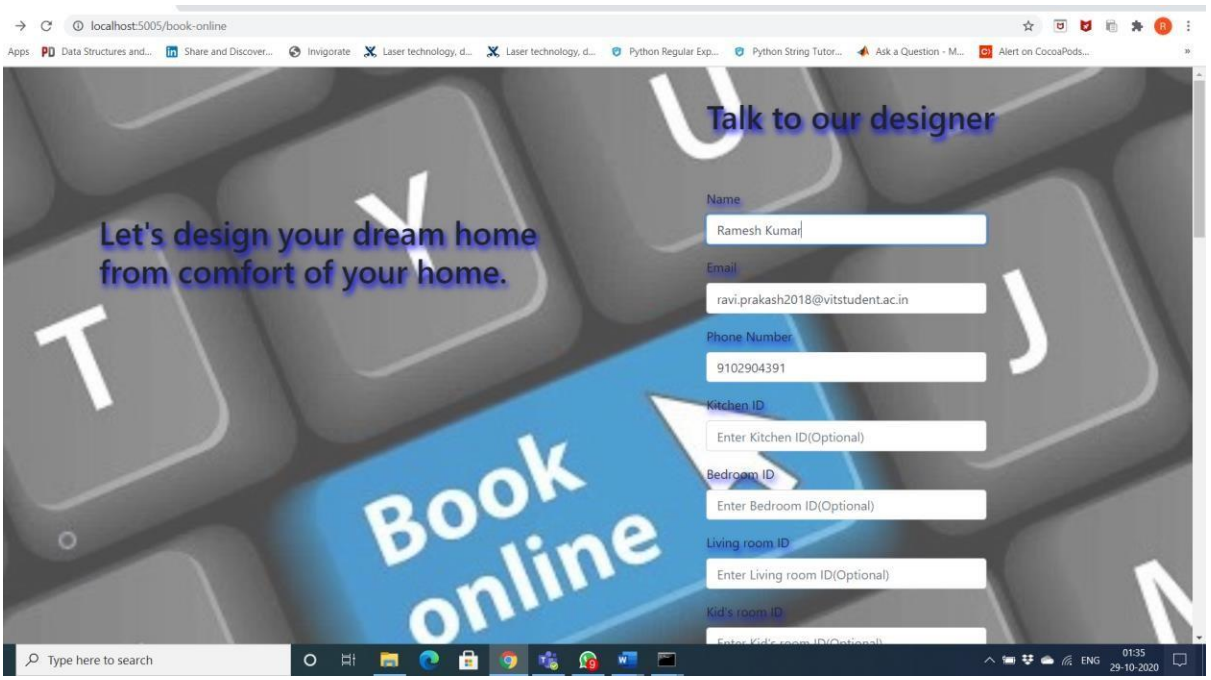


The above is the book online page and we have entered the details in the form which is necessary for booking.In the above form we have entered some more data for better demonstration.For now we have taken the screenshot of only one.

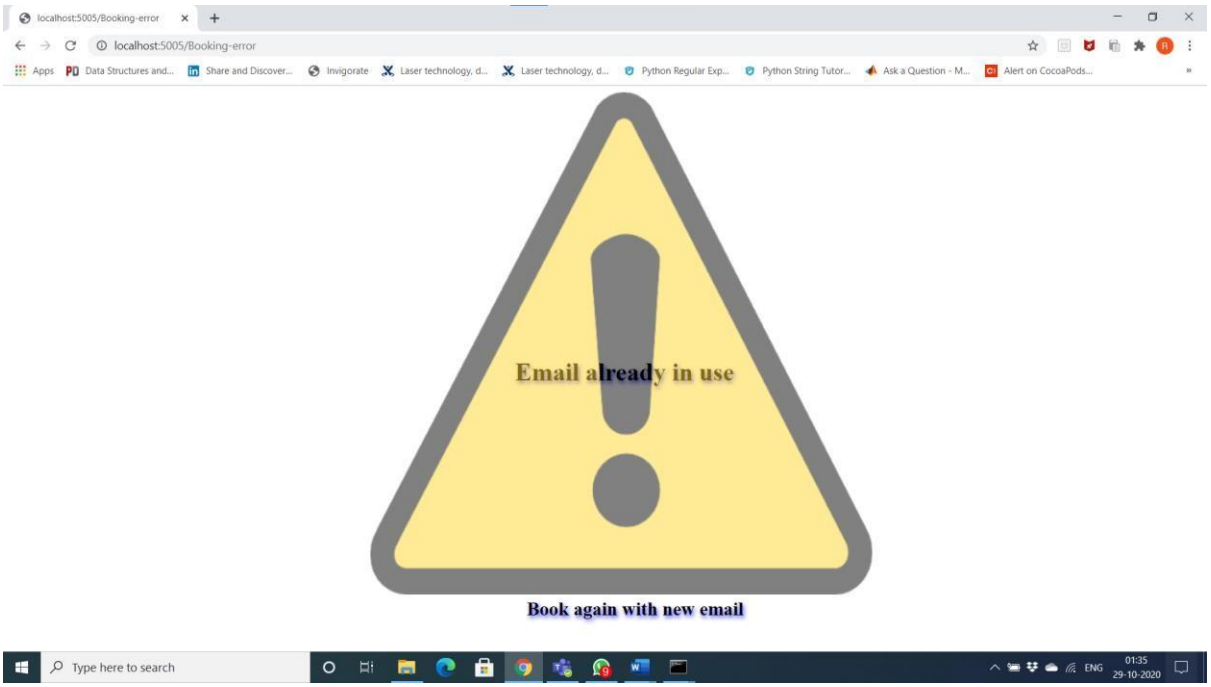


When we fill the above form we will be redirected to the thank you page.In that page we will asked for the rating.

In the above form when anyone tries to book any room or appointment with an email id which is used already by any other customer then it will throw an error.

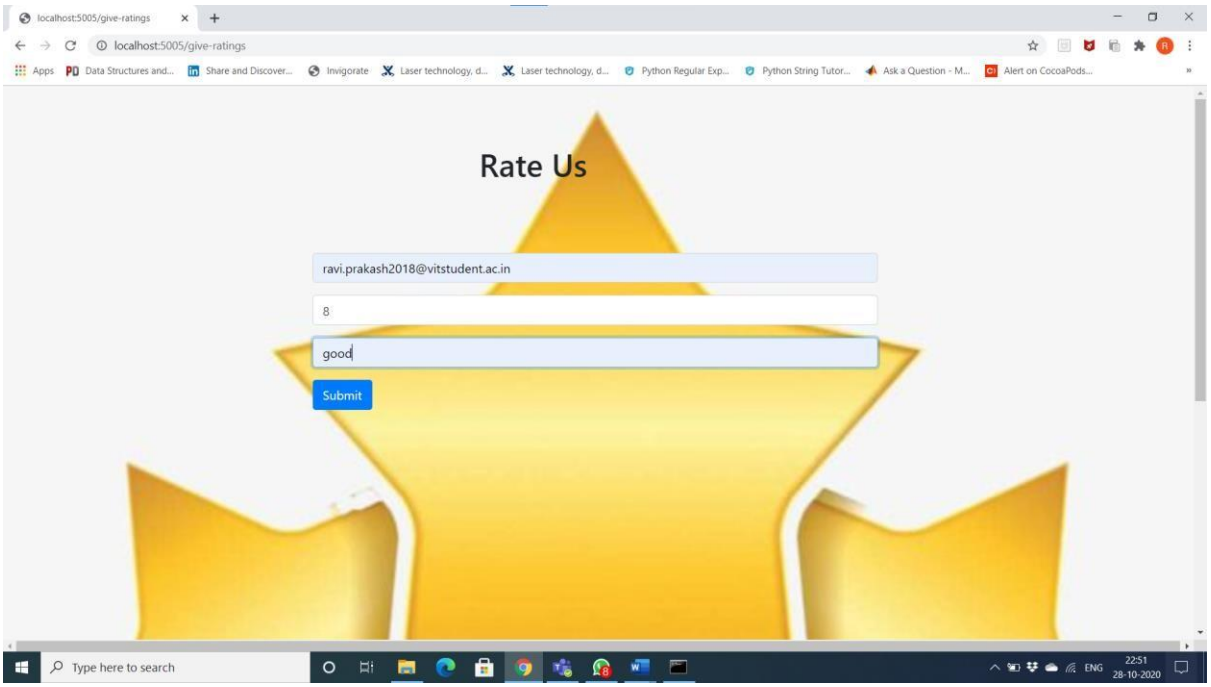


When we will click on “BOOK ONLINE CONSULTATION”

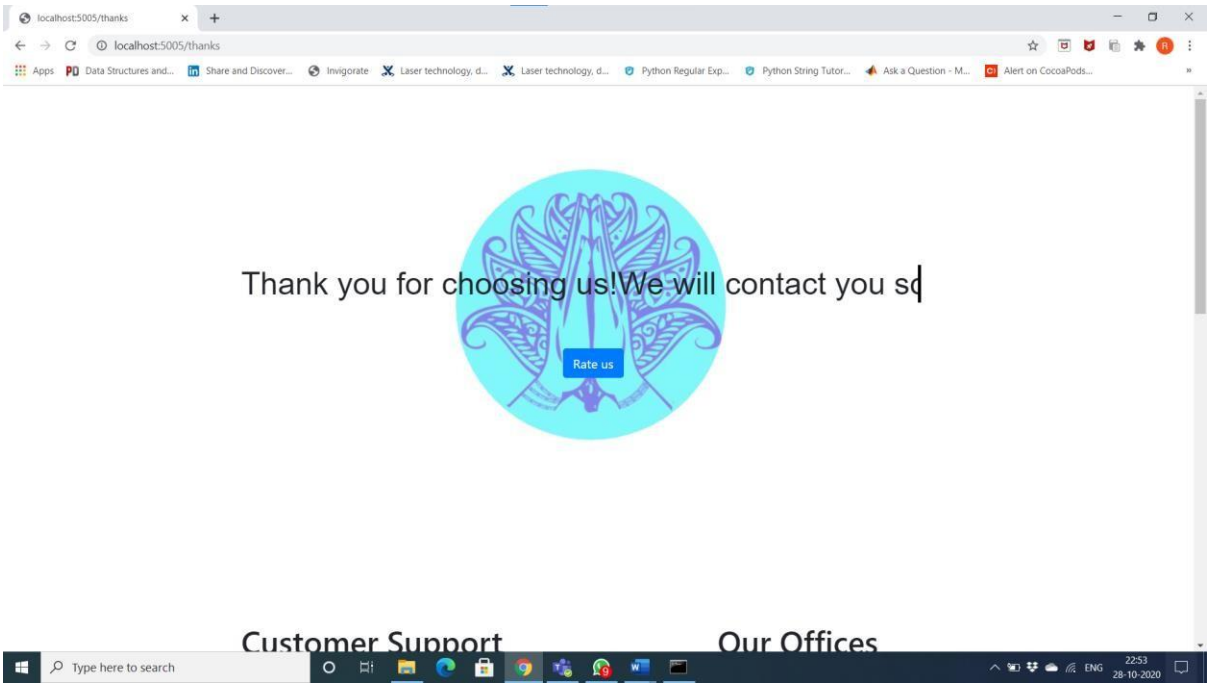


It will throw the above error.

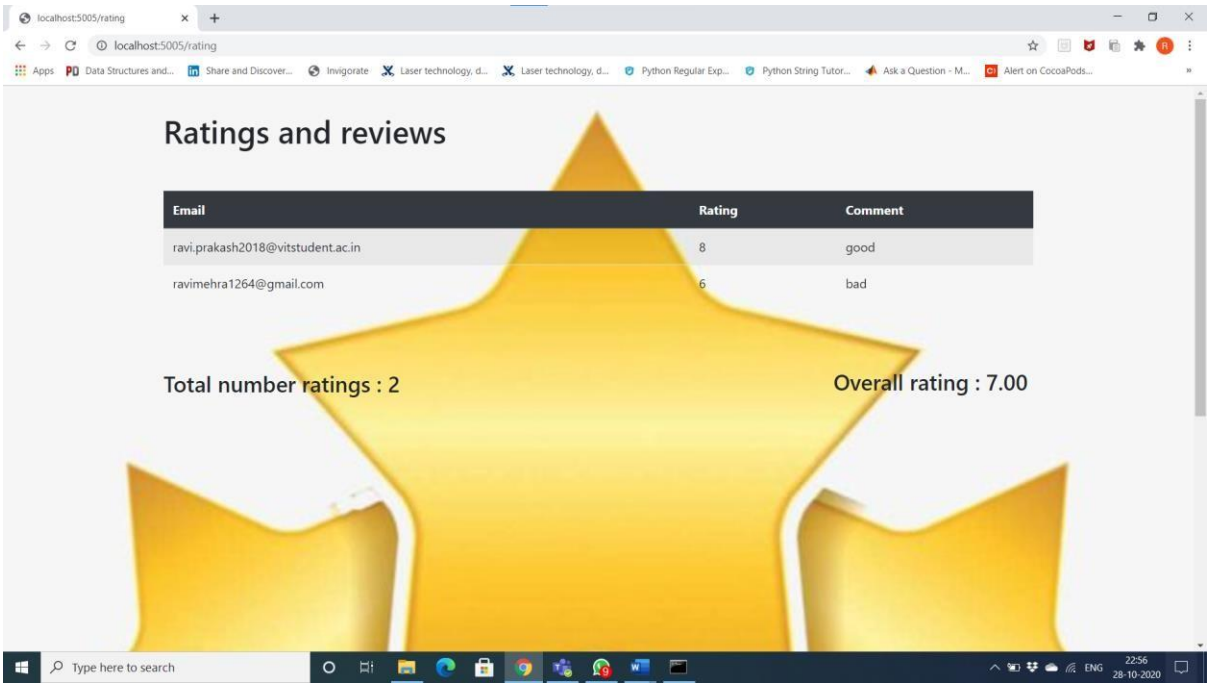
When we fill the above form we will be redirected to the thank you page.In that page we will asked for the rating.



When we click on the “Rate us” button as shown in the previous screenshot we will redirected to a ratings page.We have entered the details above in the form.

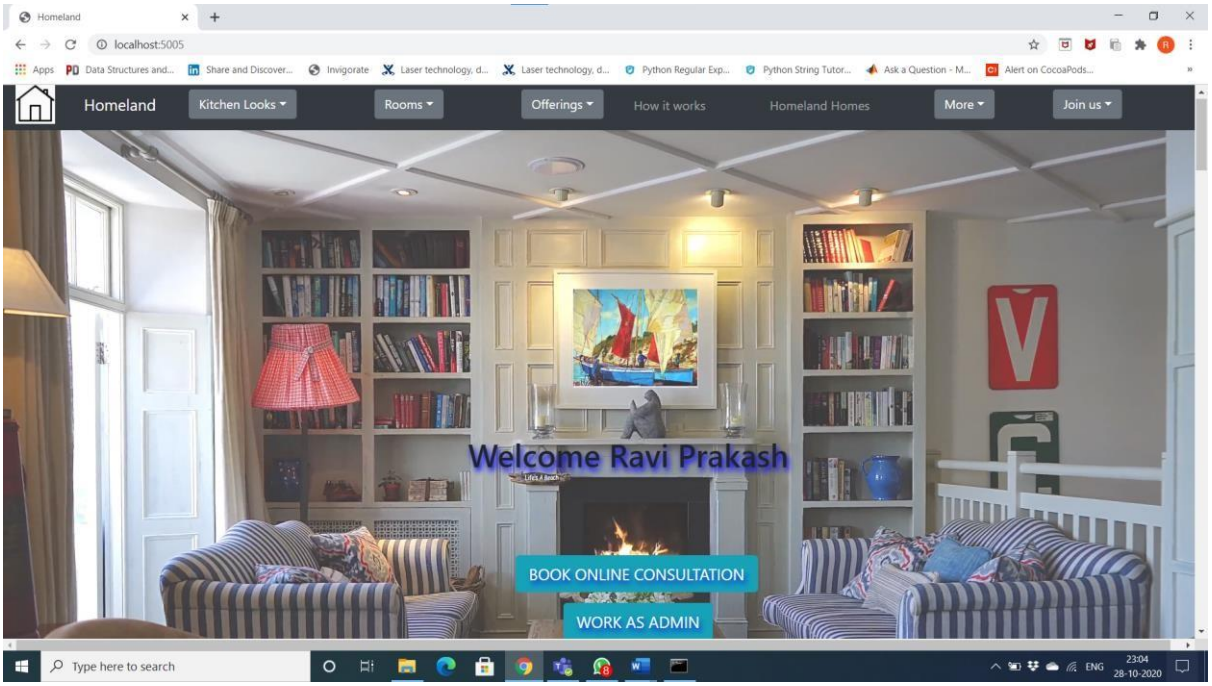


When we click on the submit button we will be redirected to the thank you page again. Whatever steps we followed earlier will be repeated for the other users also.

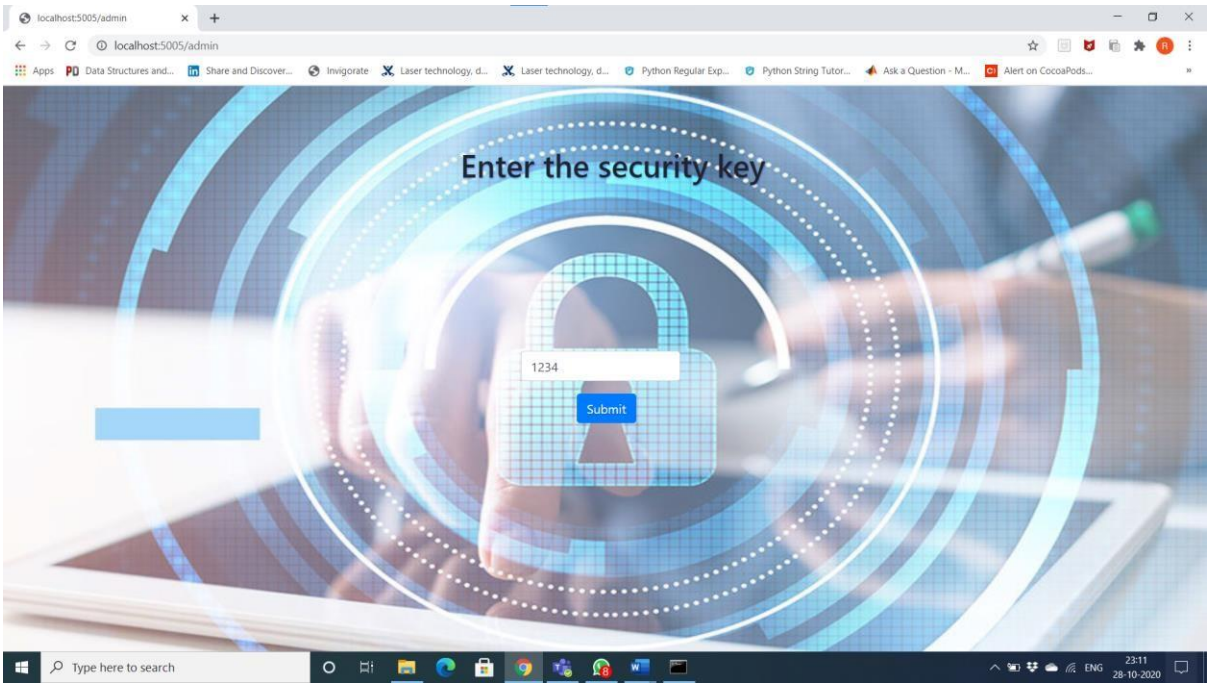


Any customer can be able to see the ratings and reviews given by different by visiting on the ratings page. As we can see that the above webpage is automatically calculating the average rating as well as the number of ratings.

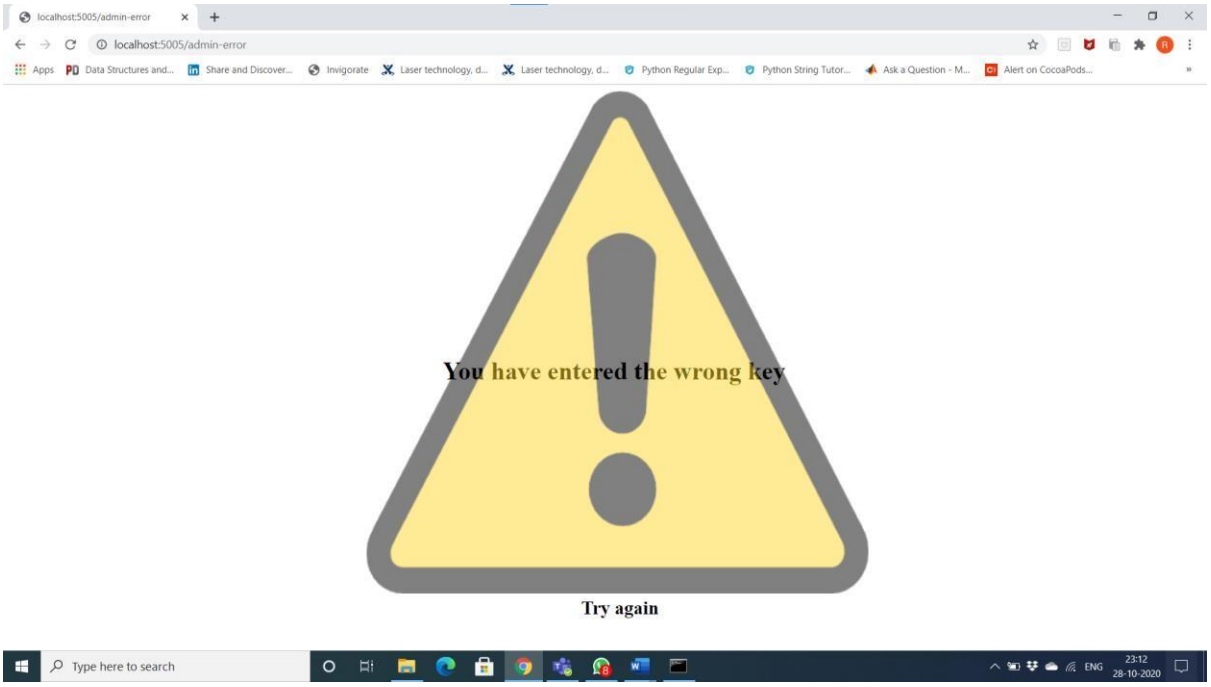
Now we will demonstrate admin feature of our website



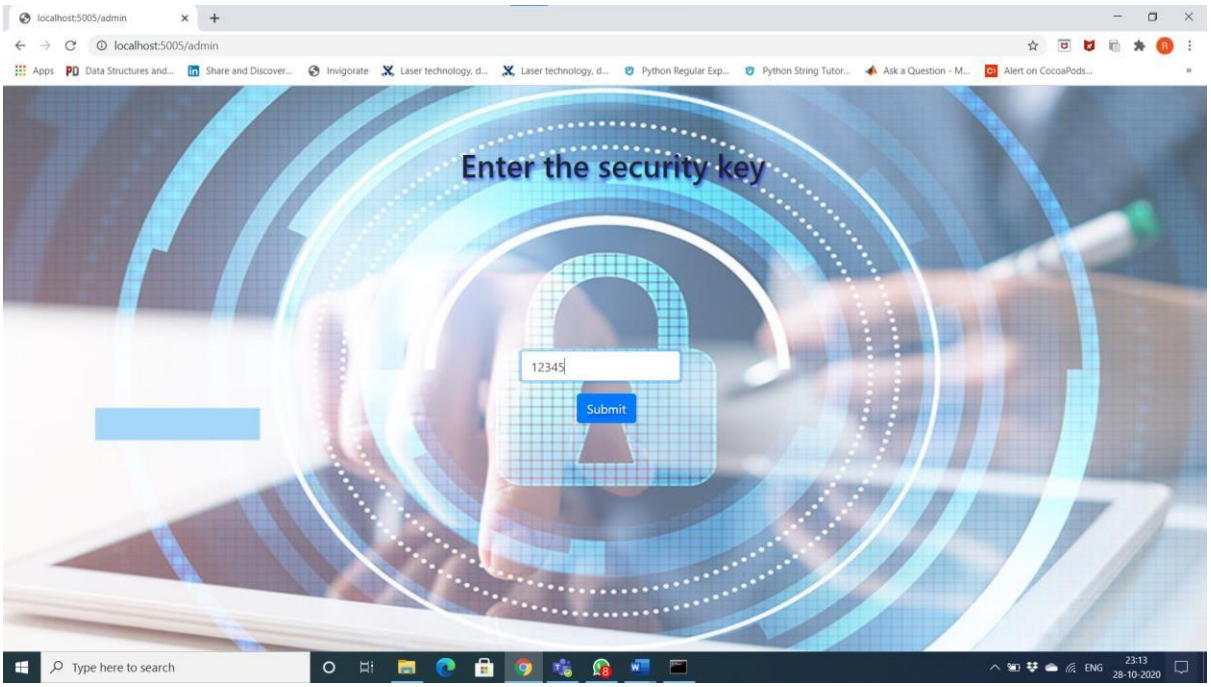
So when we click on “WORK AS ADMIN” button on the home page then we will be redirected to a page asking for the security key to work as admin.



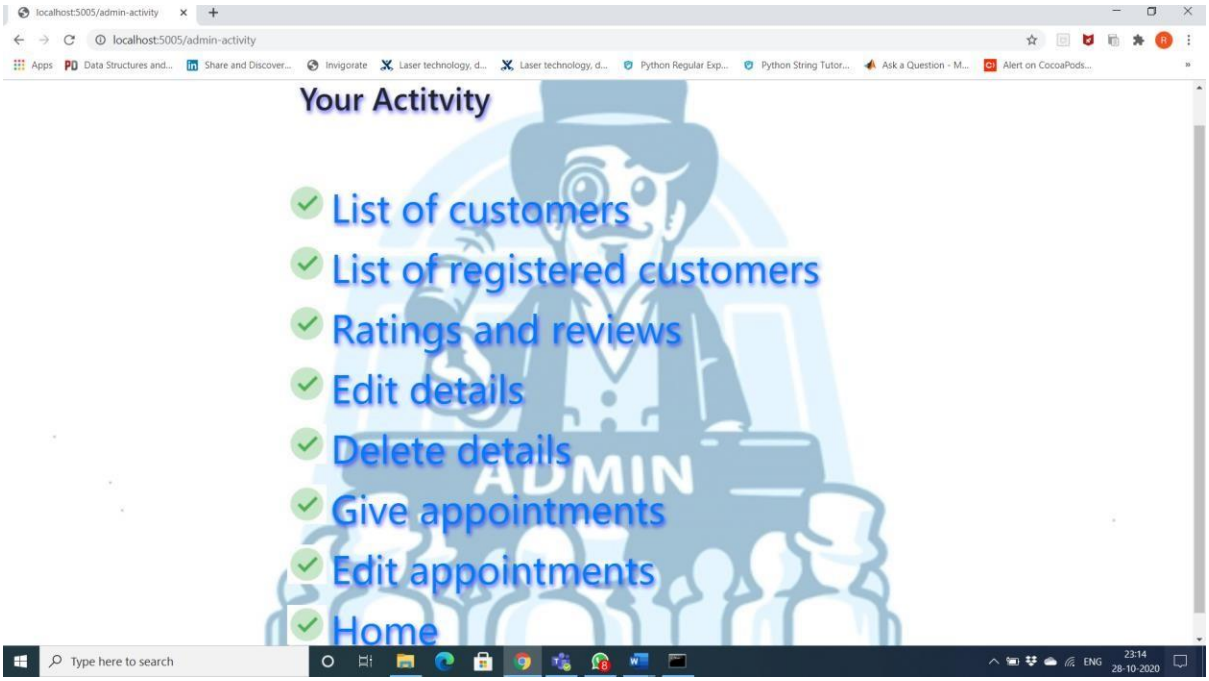
In the above screenshot if we enter a wrong security key(in above screenshot we have entered 1234 but the right one is 12345) then it throws an error.Above key is getting verified from our database.



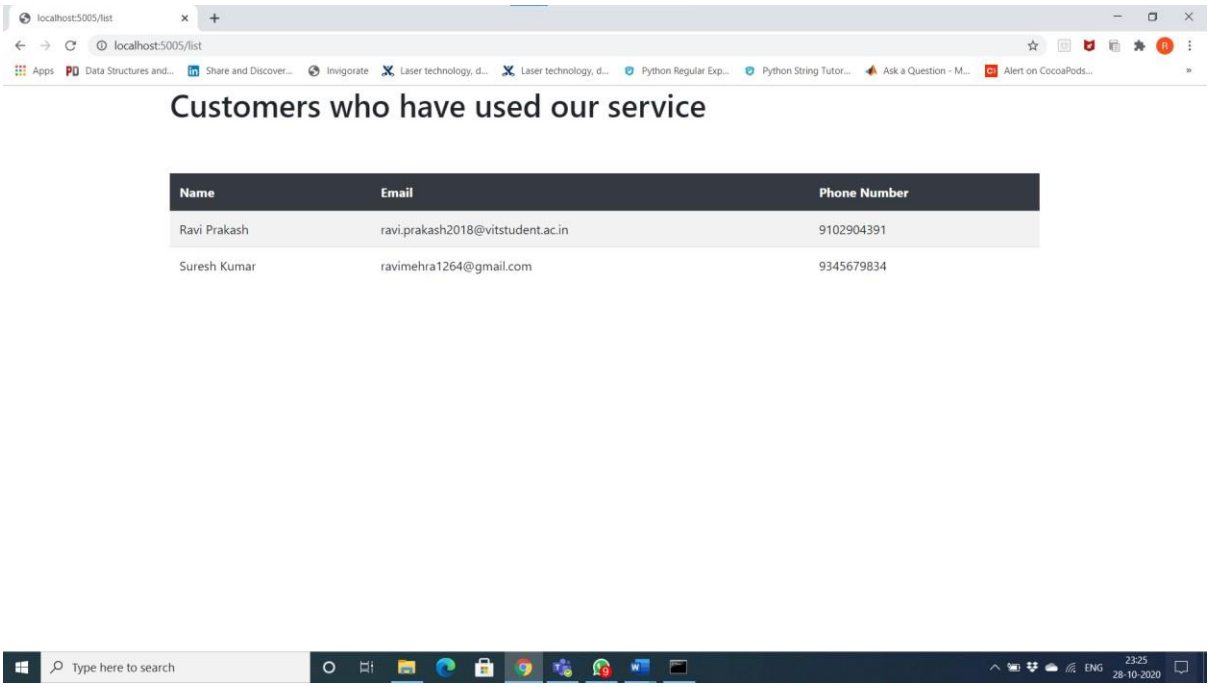
Above screenshot is showing the error that we encountered.



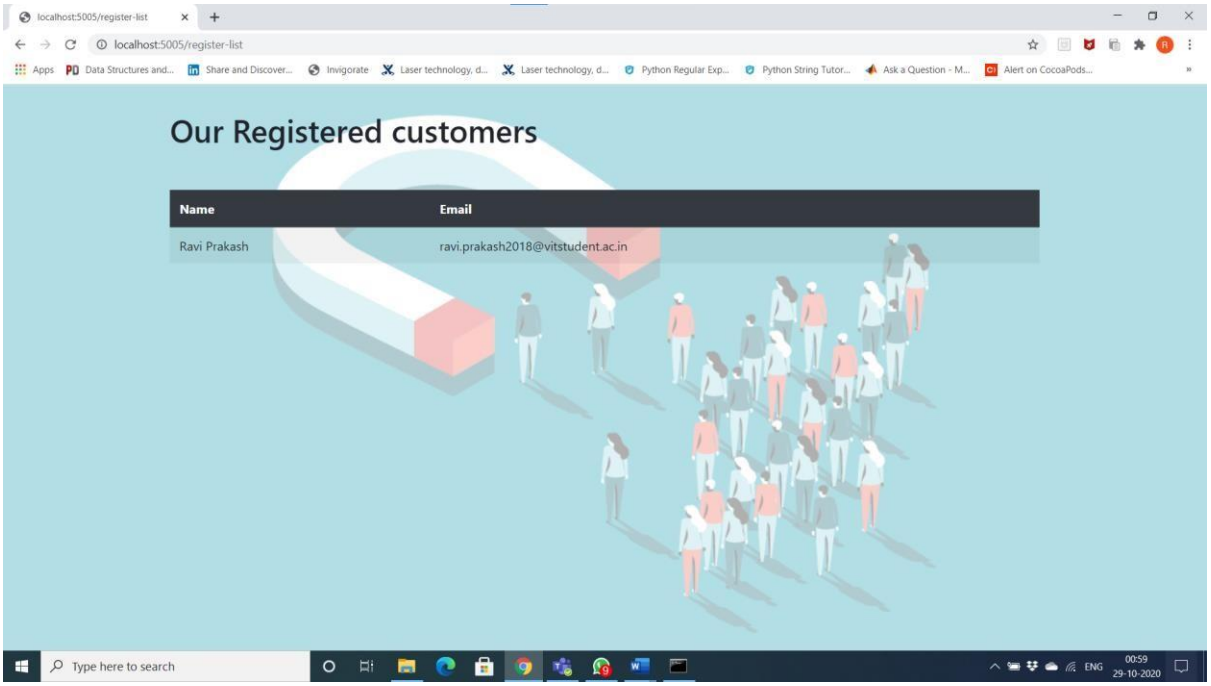
In above screenshot I have entered 12345 which is the correct key.



We will be redirected to a admin activity page as shown in the above admin screenshot.

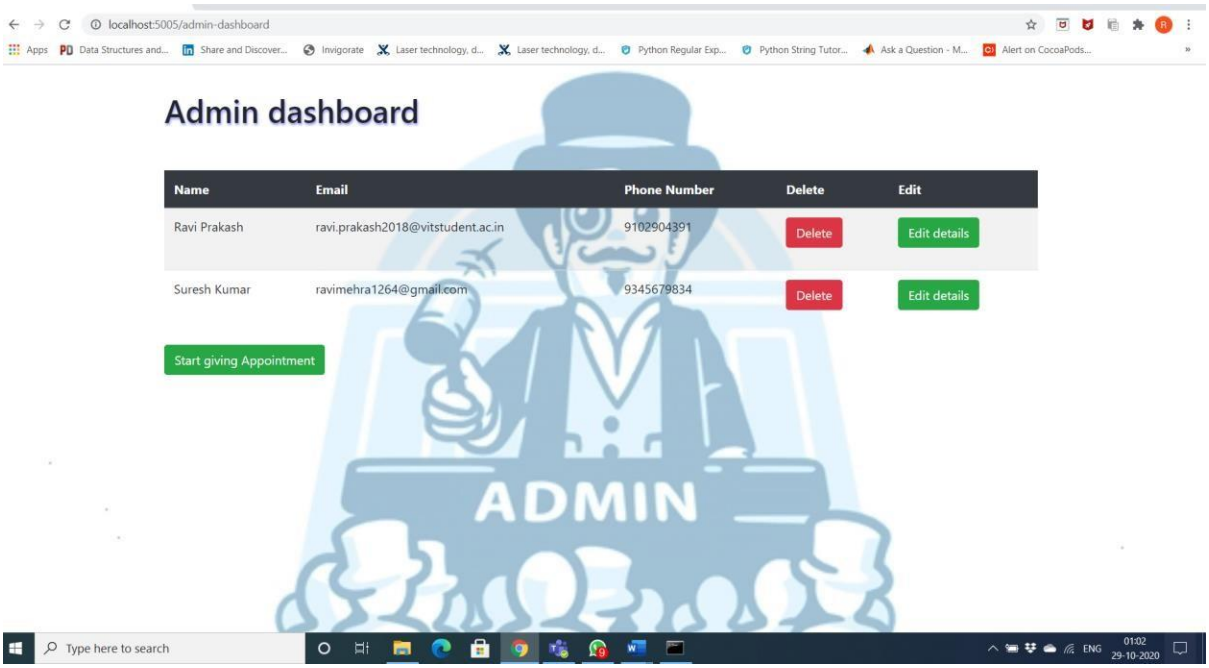


The above page will show the list of customers who have booked rooms on our website.This page is showing the dynamic data from the database.



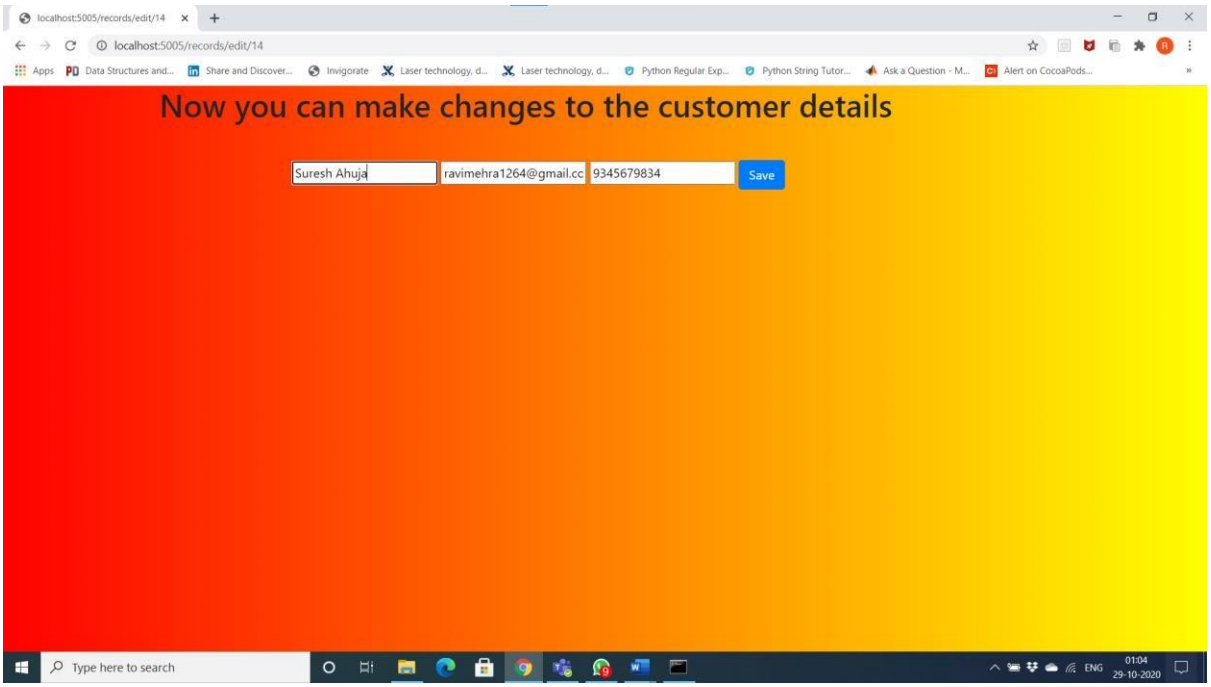
In the above screenshot it's showing the name and email of that customer who have registered in our website but didn't booked any rooms. This page is also showing the dynamic content so whenever

any user will register in our website then his/her name and email gets automatically updated on this page.

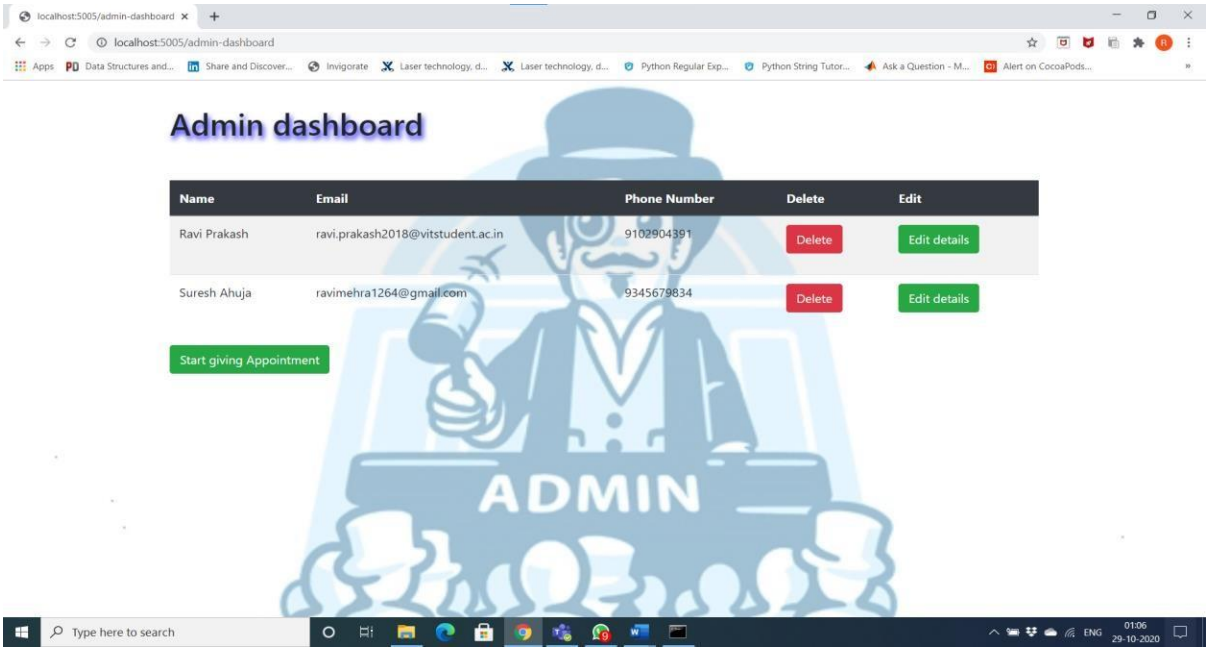


The above page is admin dashboard page.In this page admin can be able to edit name,email and phone number of the customer as per their demand.

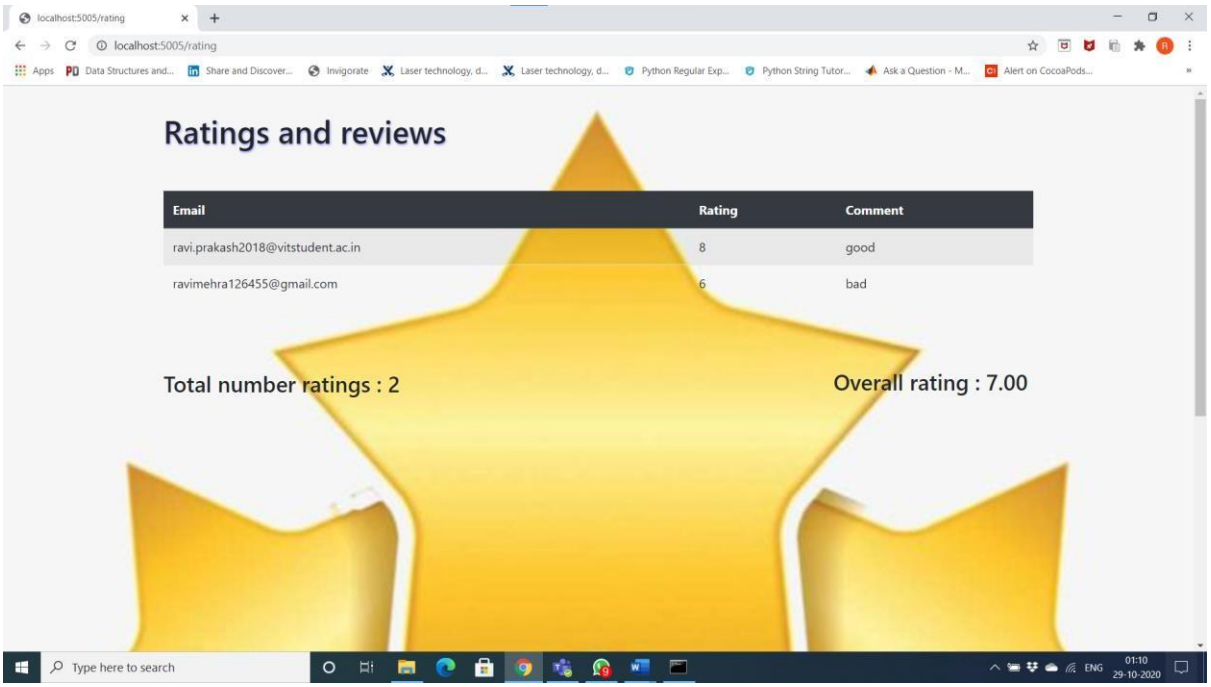
So when we will click on the edit button that is given in every row then we will be redirected to the below page.



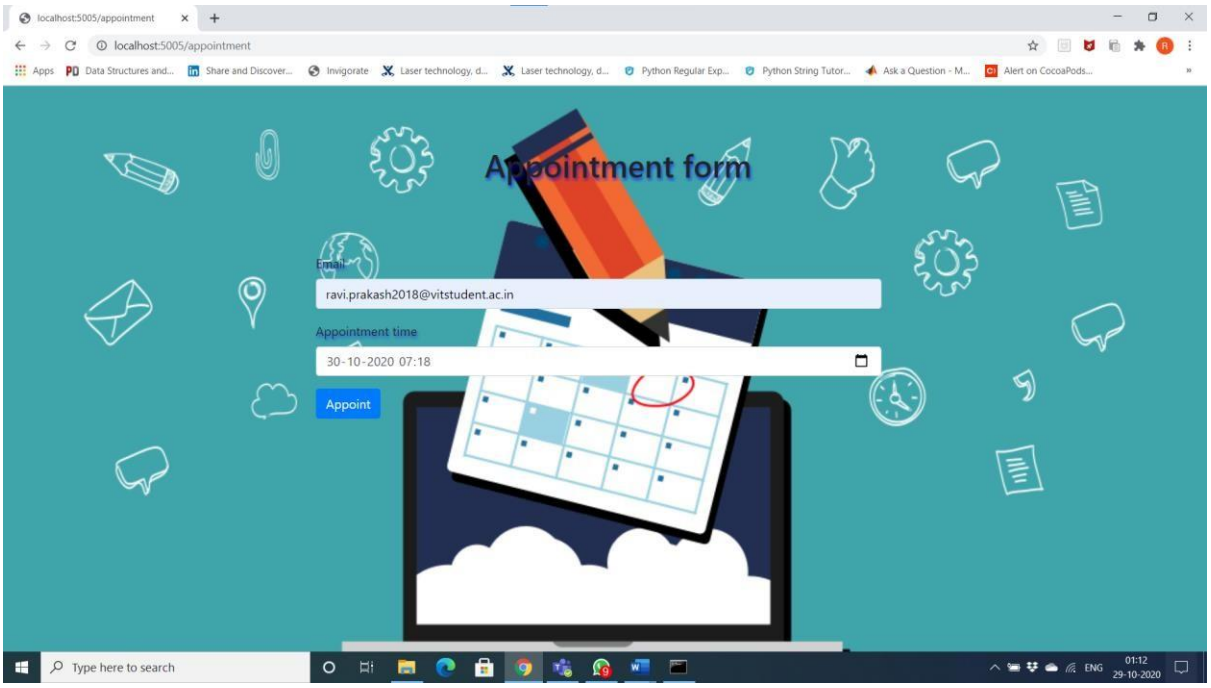
In the above screenshot we are making changes to the second row and in the email column.



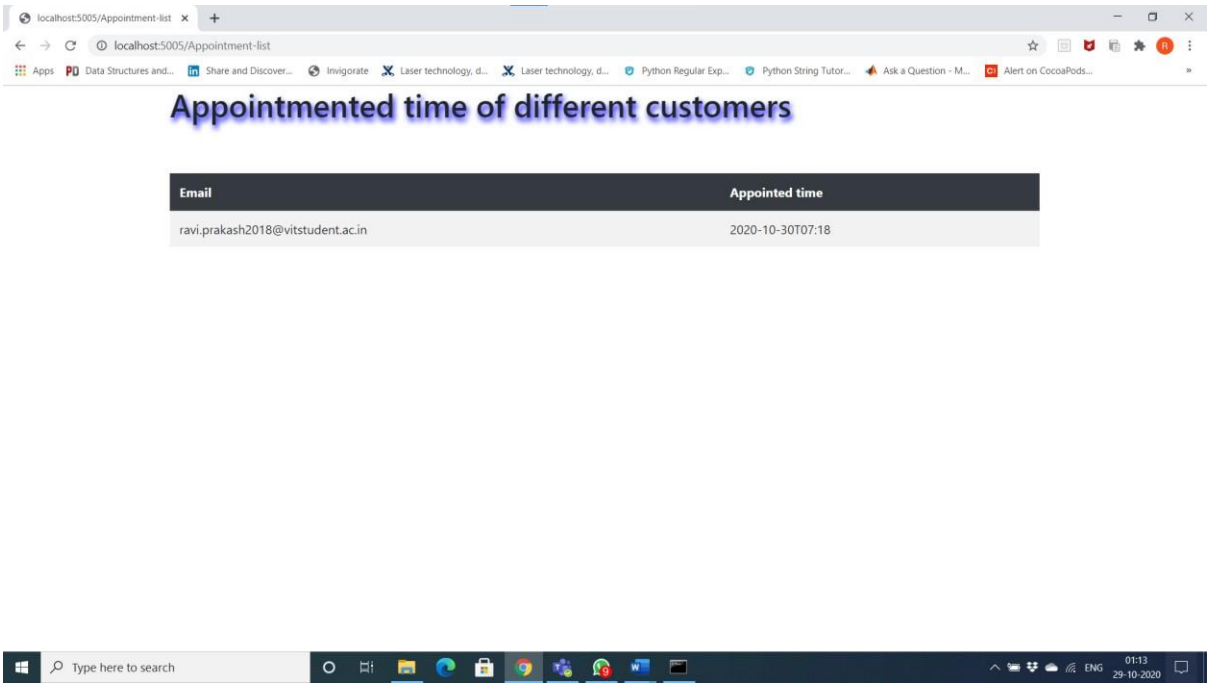
In the above screenshot we can see that the email of customer gets changed that is in the second row.Along with it the email gets changed to the ratings table also as shown in the below screenshot.



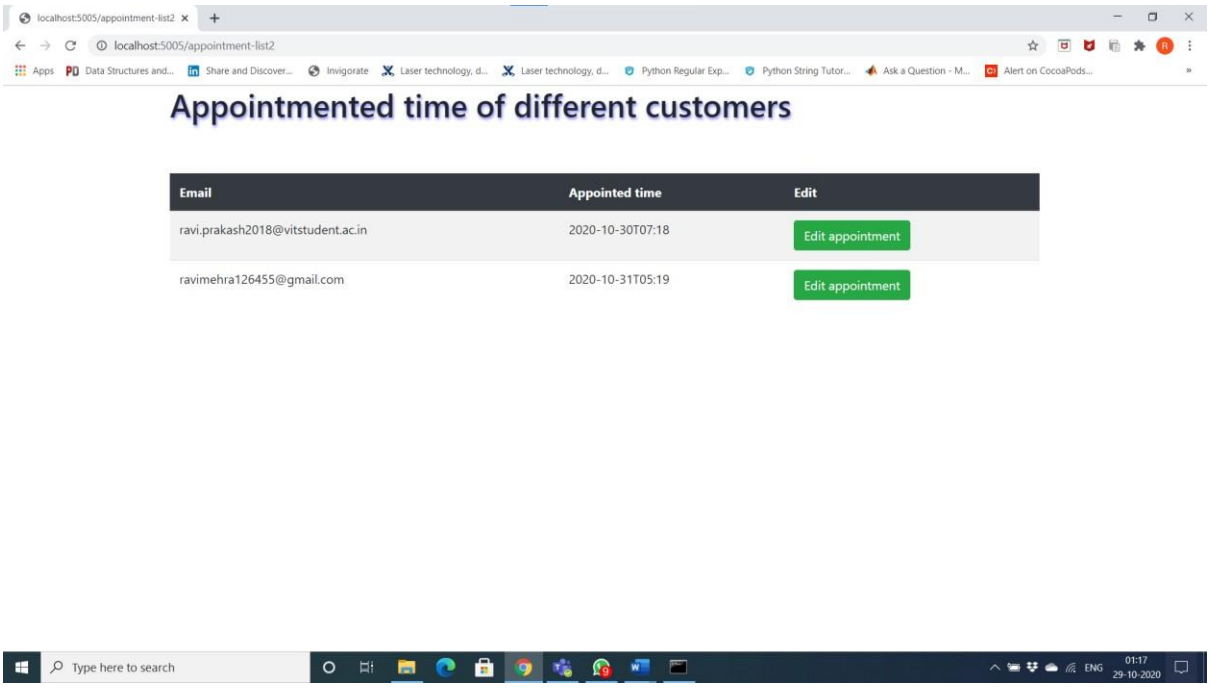
We can see that the email of the customer that is in the second column gets changed. This is because these two tables are attached with the help of foreign key.



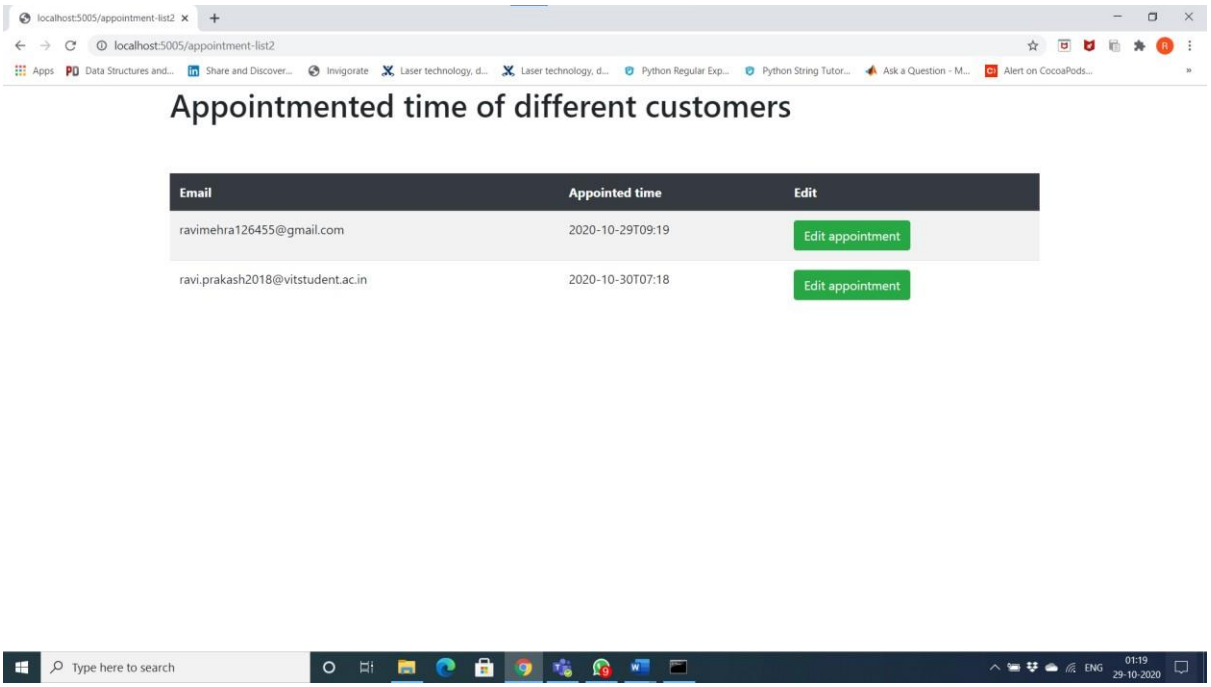
On this page admin can give appointment to the customers who have filled the book online form.



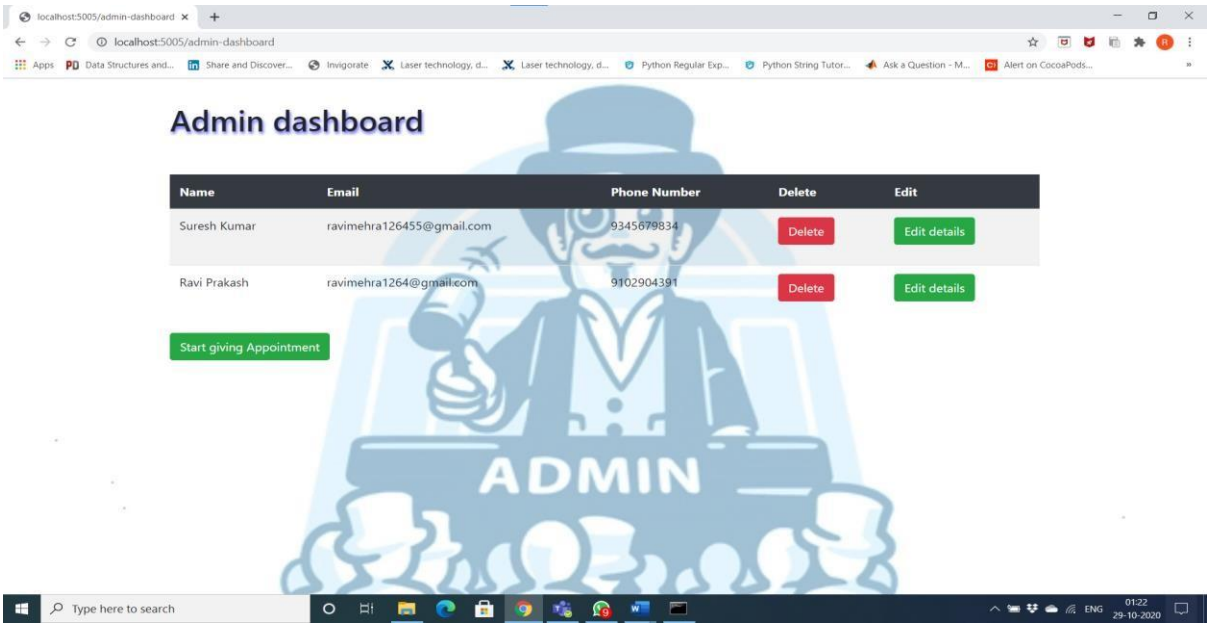
We can see that appointment is visible on the appointment list table which can be seen by any customer. Similarly admin can give appointment to the other customers also.



Above is the initial view of the appointment page.Now we will try to give the appointment time to the customer that is there in the second row before than the customer that is there in the first row.

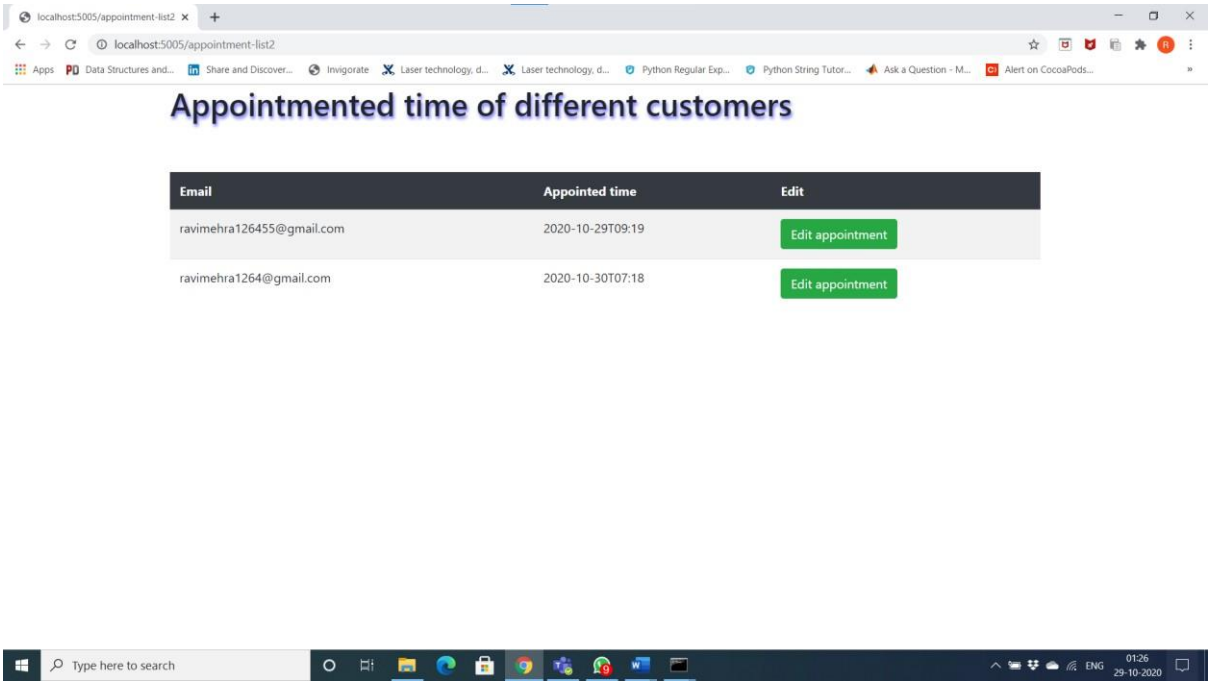


We can easily see that the order gets changed by itself.Now the customer that is there in the second now comes in the first row.The reason is that we are applying sorting query in the database which sort the customers according to their appointment. So these all things are dynamic. They have nothing to do with the front-end.



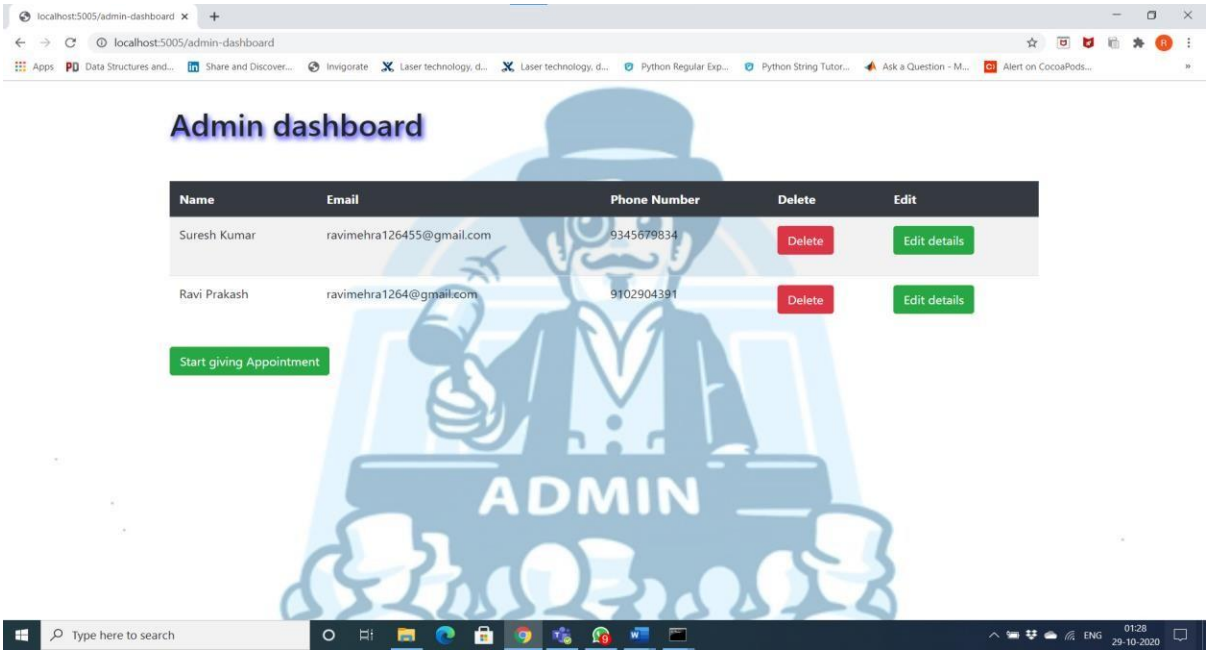
In the above screenshot we have tried to edit the email of the customer that was there in the first.We come to see that it's getting updated on the appointment as well as the ratings page.The reason

behind that is the three tables namely bookonline,appointments and ratings tables are connected with the help of foreign key.

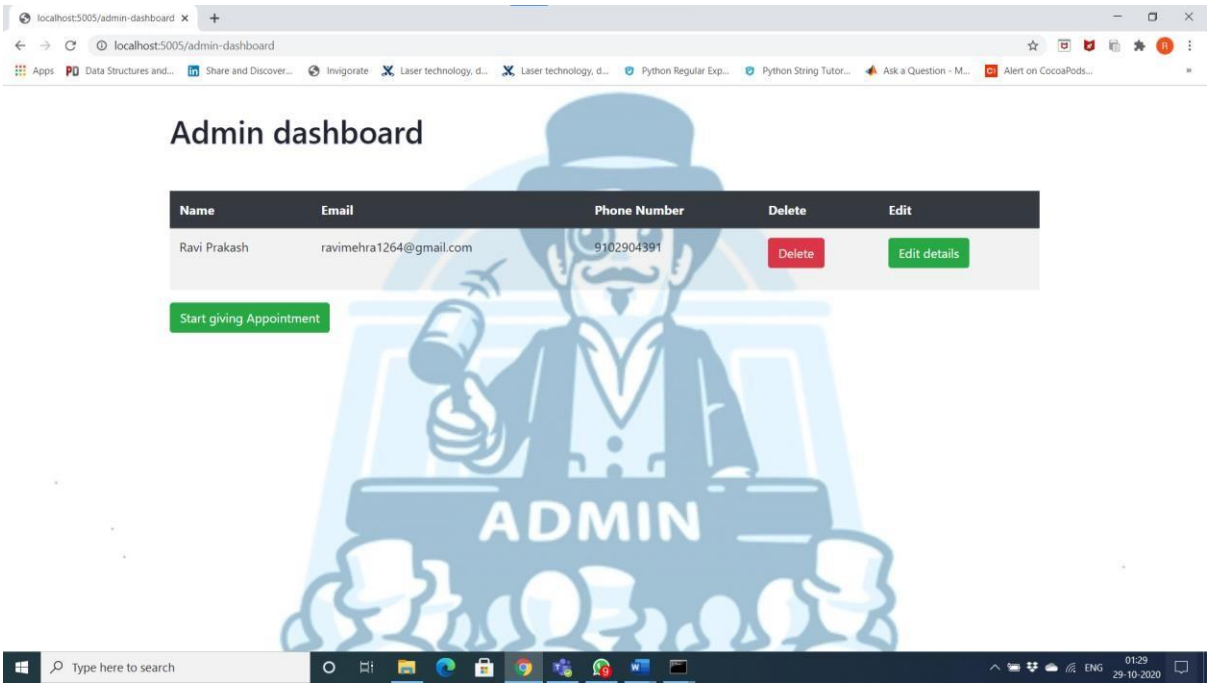


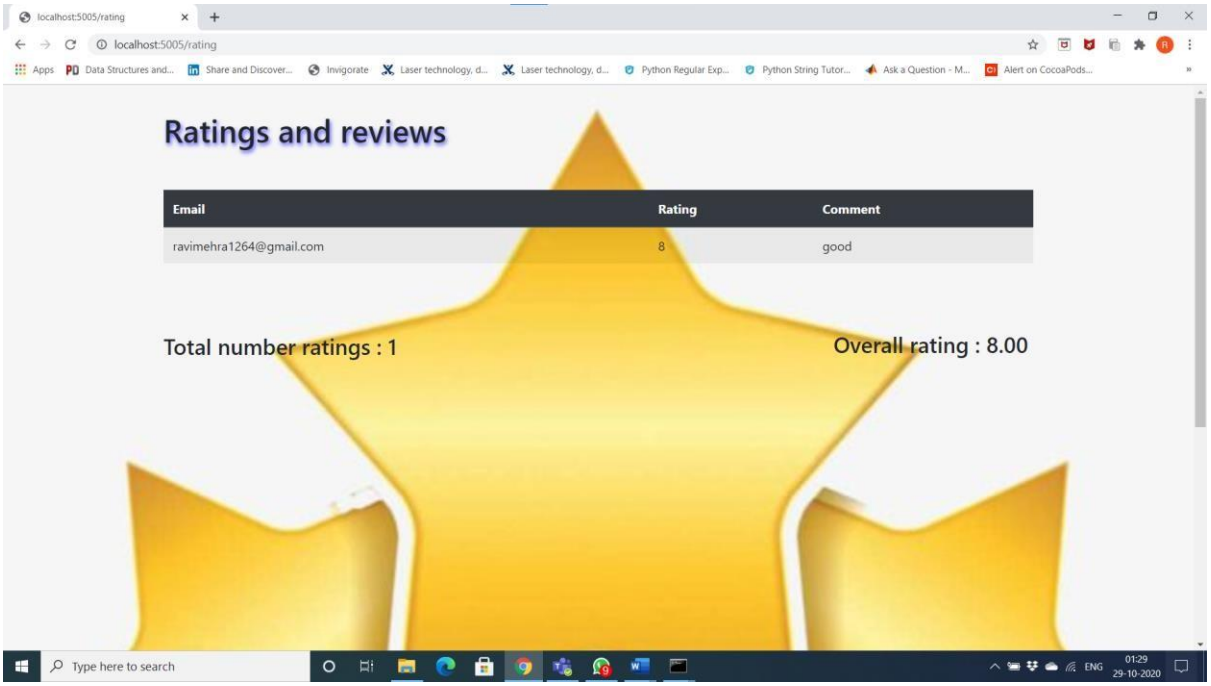
We can see that email gets updated on the appointment page also.

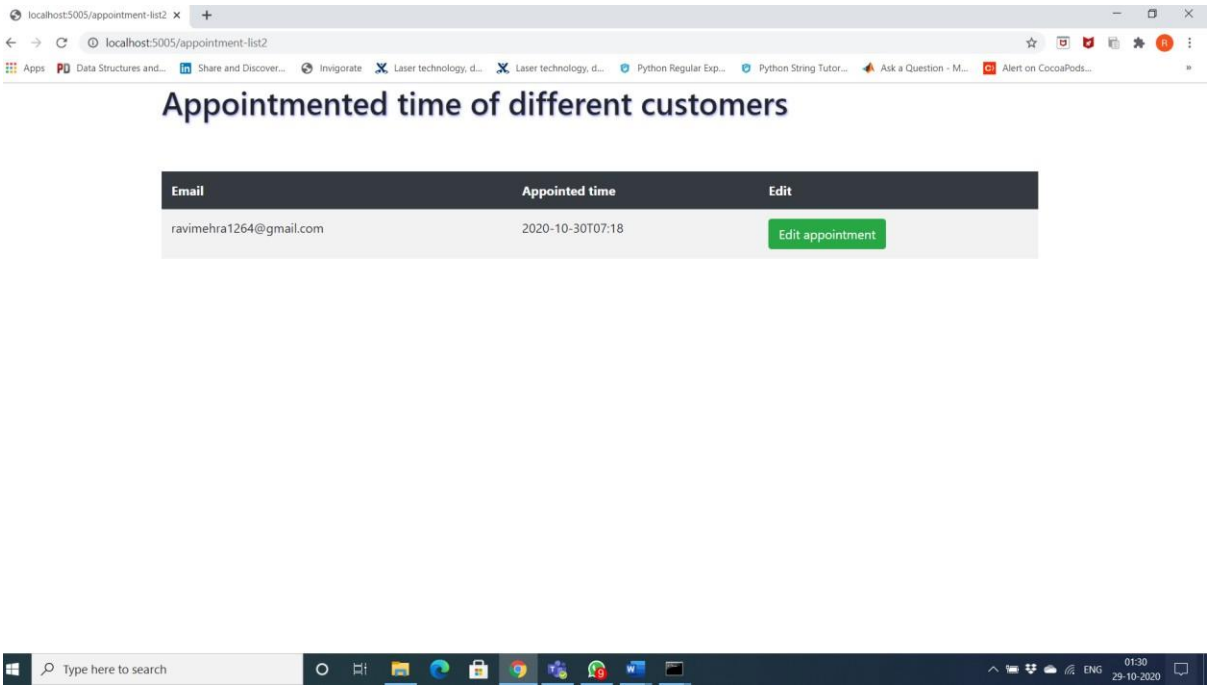
Now at last we will show the deletion function.



In the above screenshot we will try to delete the first row


localhost:5005/admin-dashboard
Admin dashboard
Name
Email
Phone Number
Delete
Edit
Ravi Prakash
ravimehra1264@gmail.com
9102904391
Delete
Edit details
Start giving Appointment
ADMIN
Type here to search


localhost:5005/rating
Ratings and reviews
Email
Rating
Comment
ravimehra1264@gmail.com
8
good
Total number ratings : 1
Overall rating : 8.00
Type here to search



We can easily see that particular data gets deleted from ratings, appointments page as well.Addition to this we can see that the ratings as well as the number of ratings gets changed accordingly.

Conclusion

To buy and sell flats online people prefer the service of reliable and trusted companies. A lot of such websites are floating around from where you can purchase and sell flats.

With the use of our website even who don't have interest in buying and selling flats now starts to do so with the help of our website.We have created a very user-friendly website whose functions can be understand by anyone. We are also giving many offers to the customers to increase their engagement. We try our best to implement this project as an start-up idea and make it reach to the maximum number of people.

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2] Decision Support Systems for Real Estate Development , Arturas Kaklauskas, Edmundas Kazimieras Zavadskas, Lina Pečiūrė

3] https://argouml.en.softonic.com/

4] https://code.visualstudio.com/

5] https://www.youtube.com/watch?v=DWnbtodOVmM

6] https://www.youtube.com/watch?v=SbTHKi8CXbg&t=112s

7] A Controlled Experiment For Measuring The Usability Of Webapps Using Patterns, F. Javier GarcíaMaría LozanoFrancisco MonteroJose Antonio GalludPascual GonzálezCarlota Lorenzo

8] INTERNATIONAL WORKSHOP VALUATION IN VIETNAM: STATUS-QUO, PROBLEMS AND SOLUTIONS, Dr. Sopon Pornchokchai President, Thai Appraisal Foundation

9] Carefully Study the Information before Making an Investment Decision: Prominence of the Specific Factors toward Thai Property Fund Investment, Natkawin Jiamchoatpatanakul

10] User/object interactions in an augmented reality environment, William Spencer Worley, IIIEdward Dietz CrumpColter E. CederlofChristopher ColeyRobert A. Yuan