RENT-IT Readme Document

Description:

The main idea of our project “Rent-It!” is to create a lending platform for users who are willing to rent out products and the lenders wishing to give out the items they own for rent to the willing renters. It can include items like furniture, books, electronics, construction equipment, tents, barbeque grill, etc. which people rarely use and might think of renting it out instead of purchasing it altogether. The platform allows both the potential user and the lender to create their personal accounts where the user can see the posts posted by the lender and if interested, the user can directly contact the lender and the lender can make further decision of renting out the product on the basis of the location, price, product availability and other features.

Github Repository of the Project:-

https://github.com/tejassmehta/rentit.git

Demo:

Video Url:

https://drive.google.com/file/d/1UWZeplBj6HoulI7hSHDHCEDtIBjxUtti/view?usp=sharing

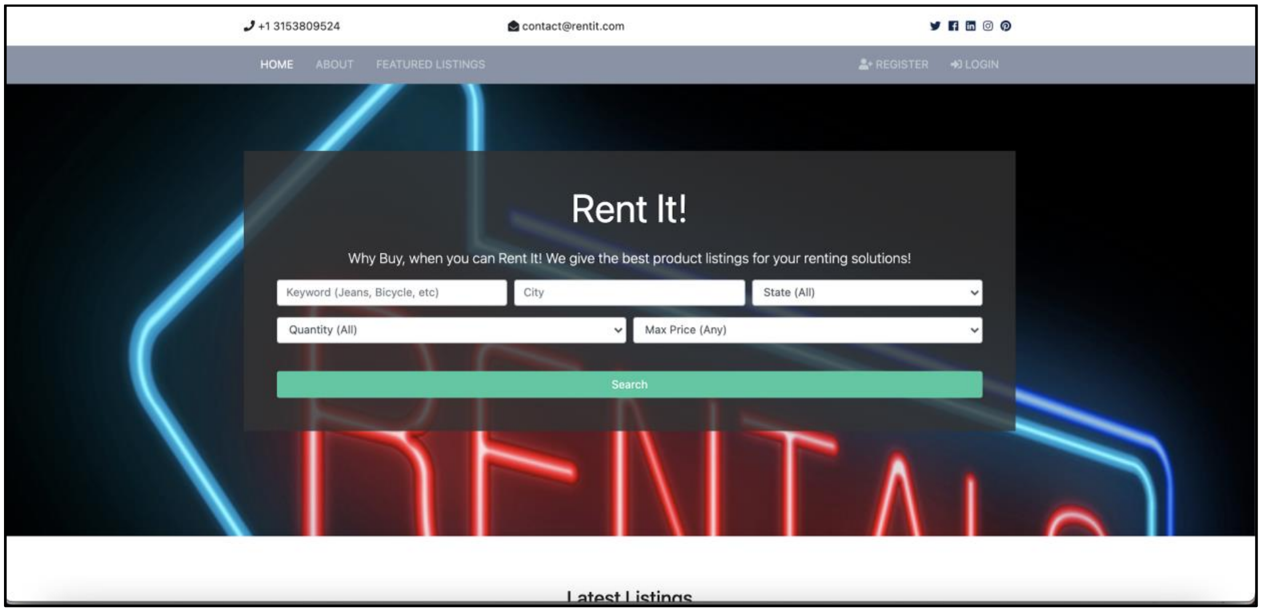
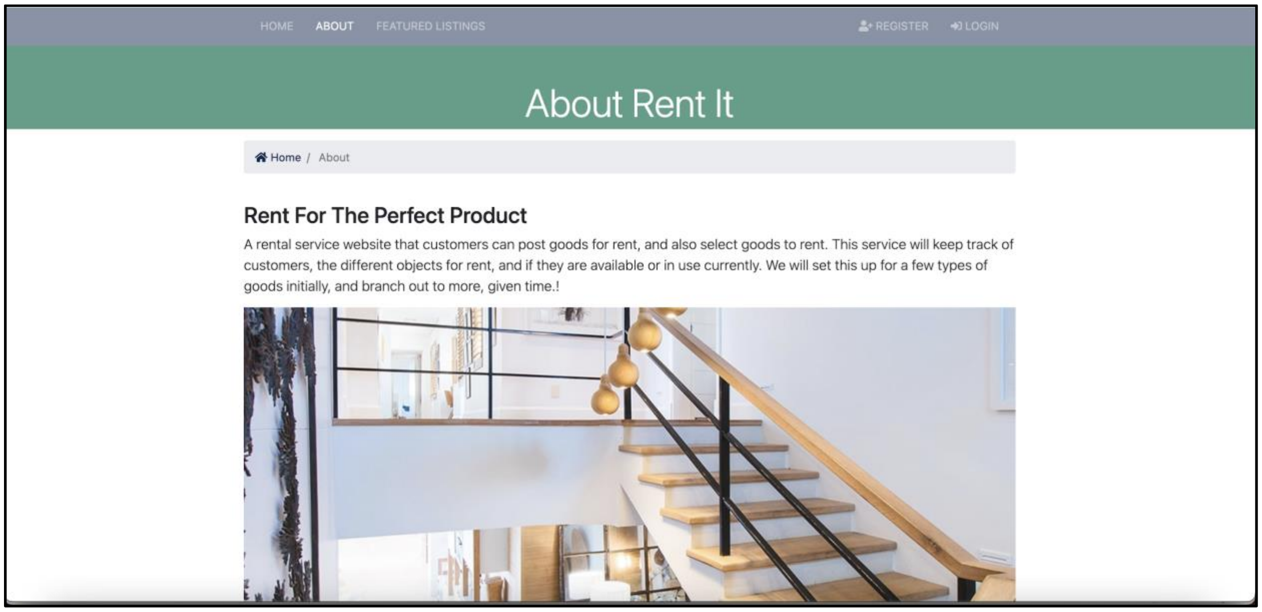


Fig. 1: Application home page



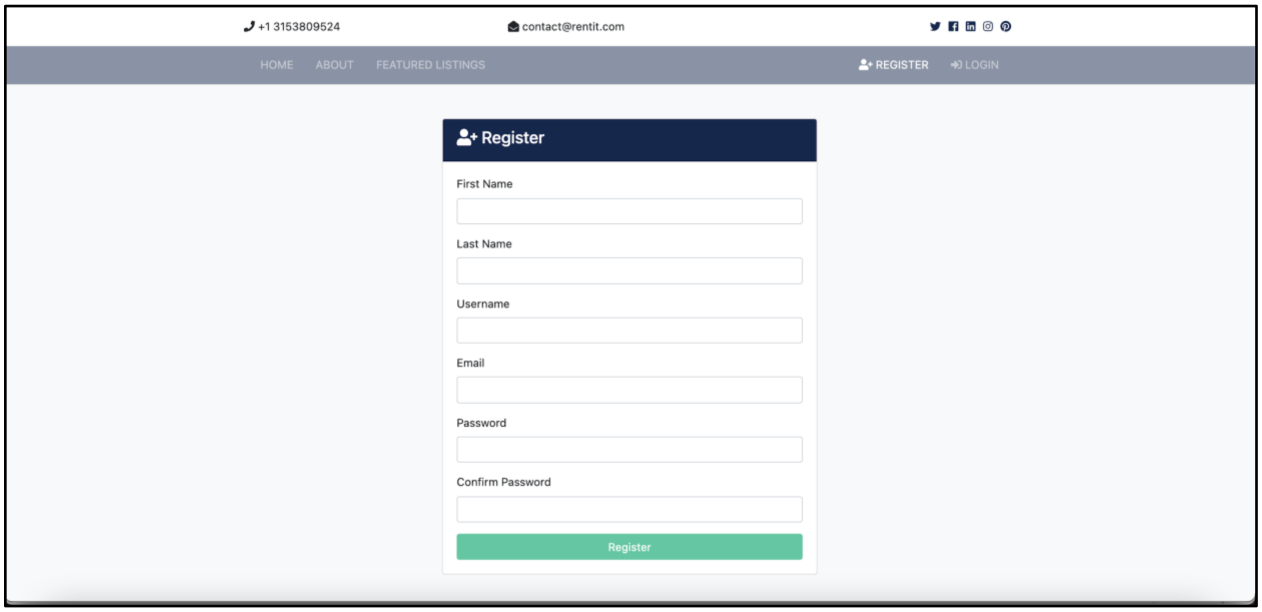
About Rent It

Home / About

Rent For The Perfect Product

A rental service website that customers can post goods for rent, and also select goods to rent. This service will keep track of customers, the different objects for rent, and if they are available or in use currently. We will set this up for a few types of goods initially, and branch out to more, given time.!

Fig. 2: Front page description



Register

First Name

Last Name

Username

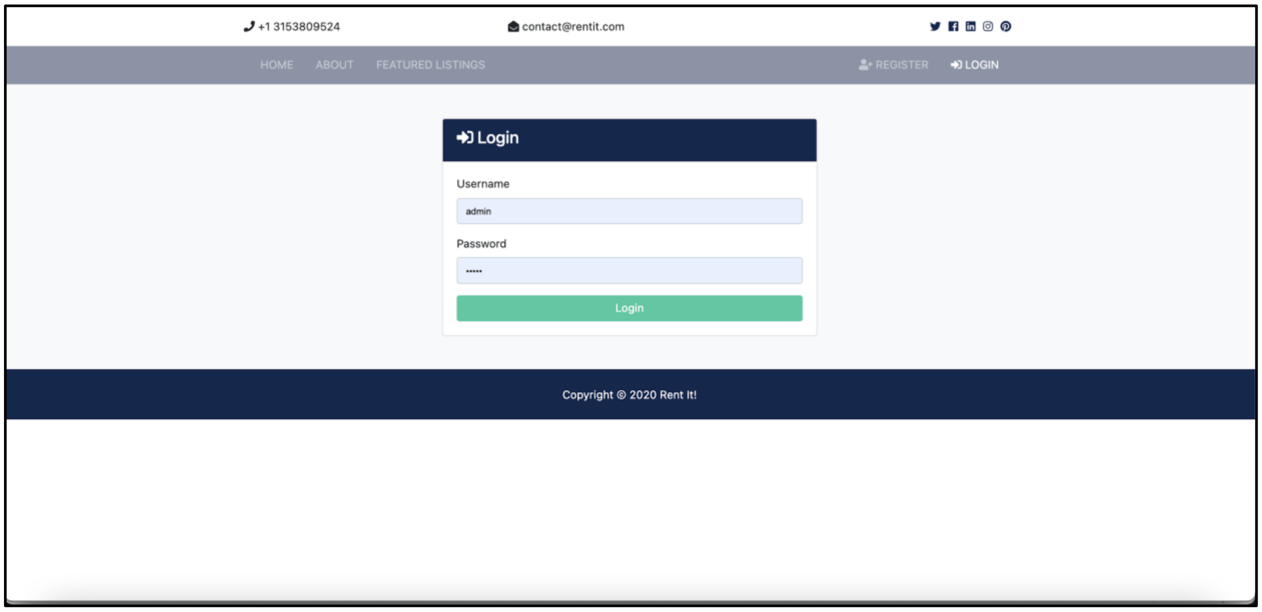
Email

Password

Confirm Password

Register

Fig. 3: New user registration


+1 3153809524 contact@rentit.com

Login

Username

admin

Password

•••••

Login

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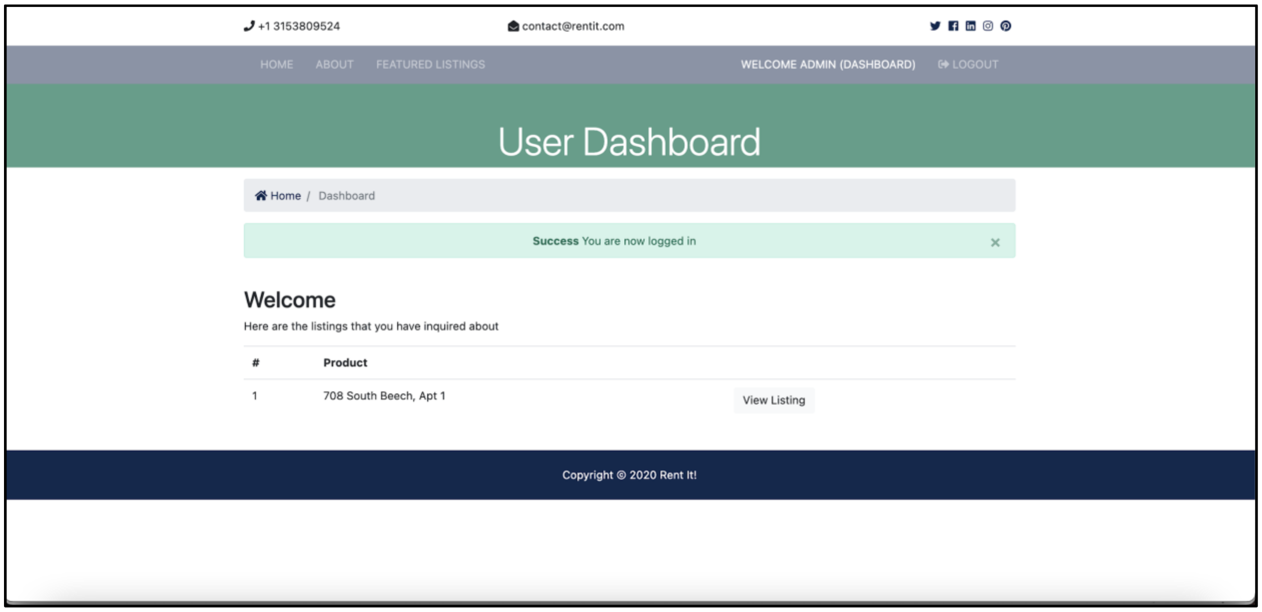
Fig. 4: User login page


+1 3153809524 contact@rentit.com

User Dashboard

Home / Dashboard

Success You are now logged in

Welcome

Here are the listings that you have inquired about

#	Product	
1	708 South Beech, Apt 1	View Listing

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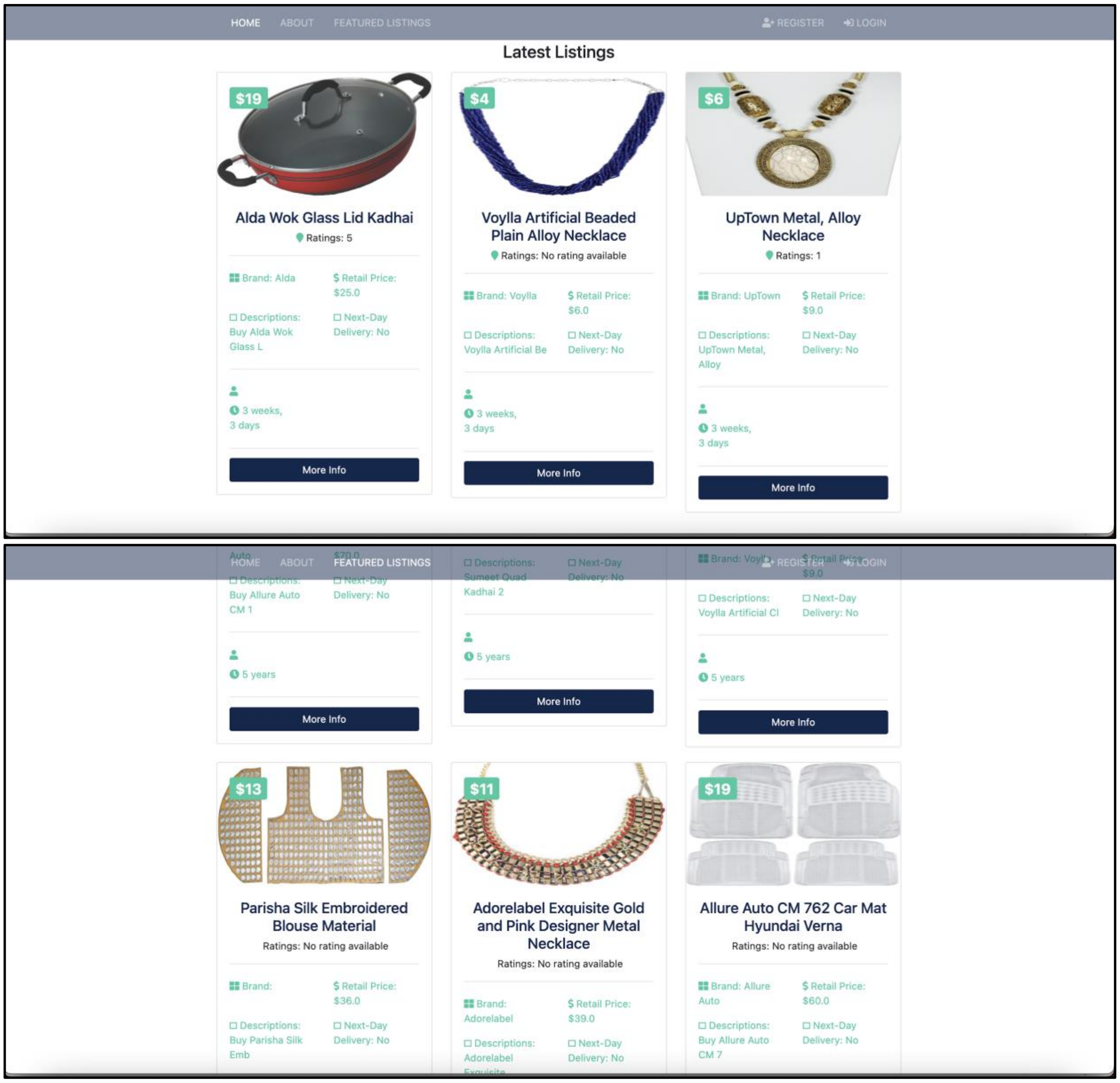
Fig. 5: User Dashboard



Latest Listings

$19
Alda Wok Glass Lid Kadhai
Ratings: 5
Brand: Alda
$ Retail Price: $25.0
Descriptions: Buy Alda Wok Glass L
Next-Day Delivery: No
3 weeks, 3 days

$4
Voylla Artificial Beaded Plain Alloy Necklace
Ratings: No rating available
Brand: Voylla
$ Retail Price: $6.0
Descriptions: Voylla Artificial Be
Next-Day Delivery: No
3 weeks, 3 days

$6
UpTown Metal, Alloy Necklace
Ratings: 1
Brand: UpTown
$ Retail Price: $9.0
Descriptions: UpTown Metal, Alloy
Next-Day Delivery: No
3 weeks, 3 days

Auto
$70.0
Descriptions: Buy Allure Auto CM 1
Next-Day Delivery: No
5 years

Descriptions: Sumeet Quad Kadhai 2
Next-Day Delivery: No
5 years

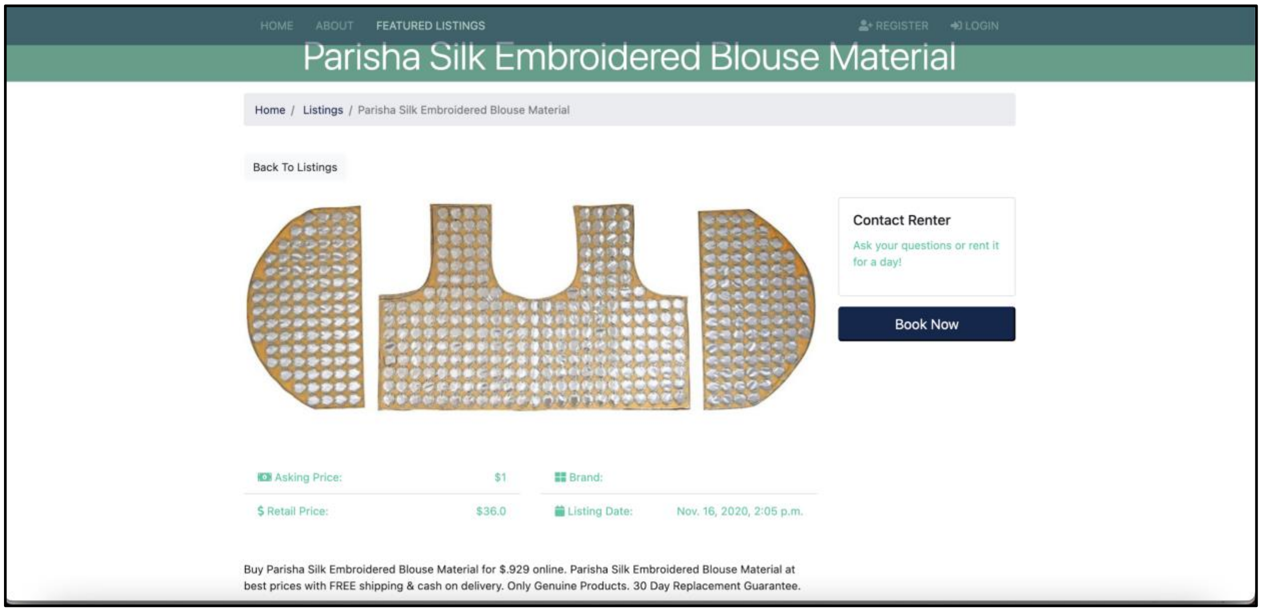
Brand: Voylla
$ Retail Price: $9.0
Descriptions: Voylla Artificial Cl
Next-Day Delivery: No
5 years

$13
Parisha Silk Embroidered Blouse Material
Ratings: No rating available
Brand:
$ Retail Price: $36.0
Descriptions: Buy Parisha Silk Emb
Next-Day Delivery: No

$11
Adorelabel Exquisite Gold and Pink Designer Metal Necklace
Ratings: No rating available
Brand: Adorelabel
$ Retail Price: $39.0
Descriptions: Adorelabel Exquisite
Next-Day Delivery: No

$19
Allure Auto CM 762 Car Mat Hyundai Verna
Ratings: No rating available
Brand: Allure Auto
$ Retail Price: $60.0
Descriptions: Buy Allure Auto CM 7
Next-Day Delivery: No

Fig. 6: Latest listings displayed to the user



Parisha Silk Embroidered Blouse Material

Home / Listings / Parisha Silk Embroidered Blouse Material

Back To Listings

Contact Renter

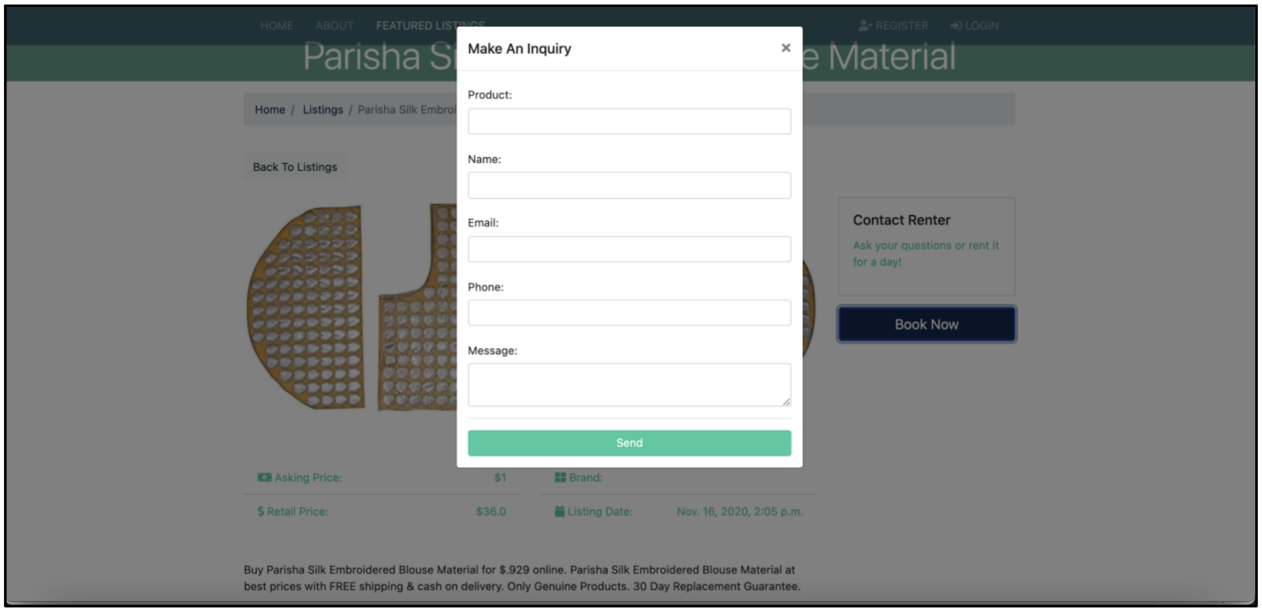
Ask your questions or rent it for a day!

Book Now

Asking Price:	$1	Brand:	
$ Retail Price:	$36.0	Listing Date:	Nov. 16, 2020, 2:05 p.m.

Buy Parisha Silk Embroidered Blouse Material for $.929 online. Parisha Silk Embroidered Blouse Material at best prices with FREE shipping & cash on delivery. Only Genuine Products. 30 Day Replacement Guarantee.

Fig. 7: Detailed description of the listed product



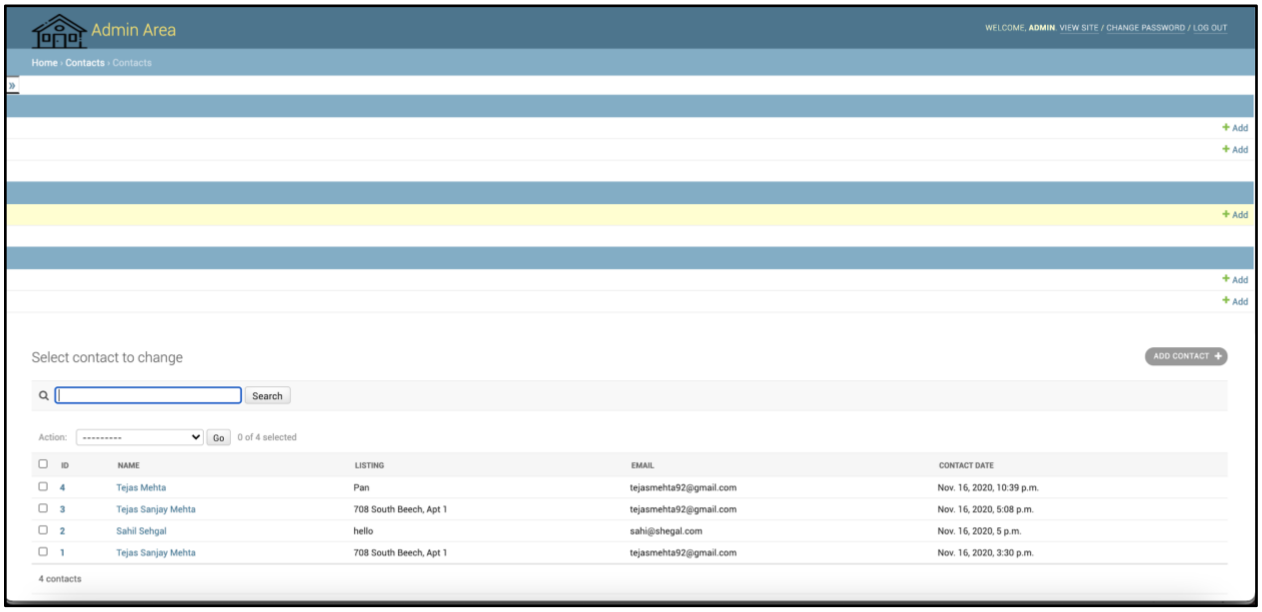
Make An Inquiry ×

Product:
Name:
Email:
Phone:
Message:

Send

Buy Parisha Silk Embroidered Blouse Material for $.929 online. Parisha Silk Embroidered Blouse Material at best prices with FREE shipping & cash on delivery. Only Genuine Products. 30 Day Replacement Guarantee.

Fig. 8: Making an inquiry about the product


Admin Area
WELCOME, ADMIN. VIEW SITE / CHANGE PASSWORD / LOG OUT
Home › Contacts › Contacts
Add
ADD CONTACT
Search
Action: Go

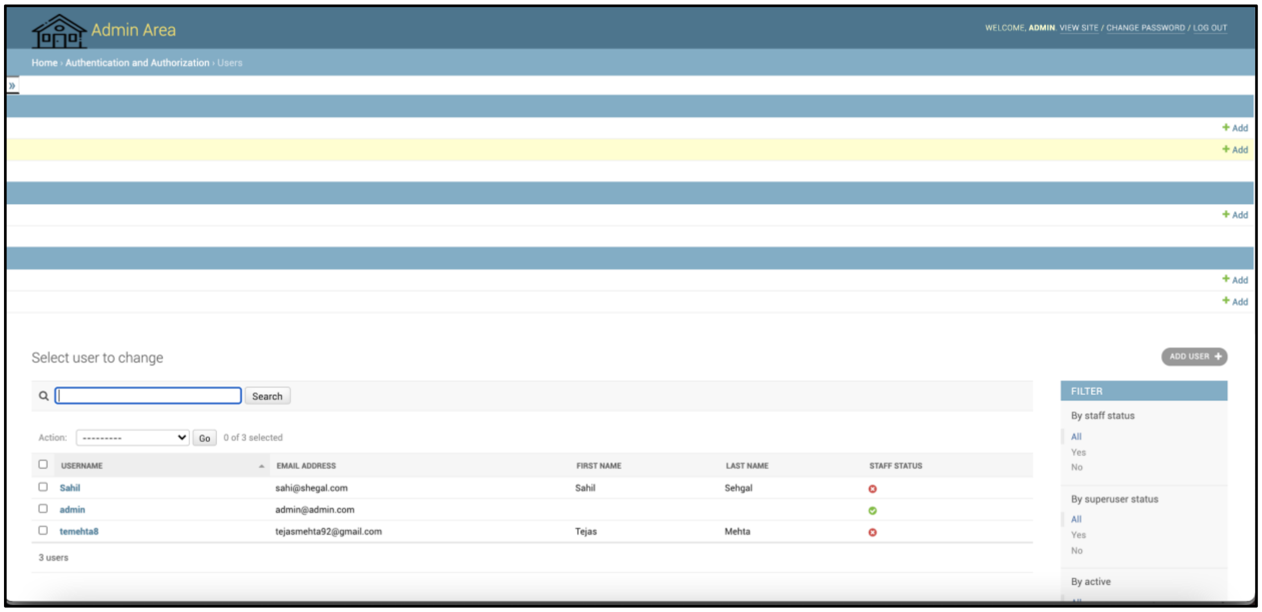
Select contact to change

0 of 4 selected

ID	NAME	LISTING	EMAIL	CONTACT DATE
4	Tejas Mehta	Pan	tejasmehta92@gmail.com	Nov. 16, 2020, 10:39 p.m.
3	Tejas Sanjay Mehta	708 South Beech, Apt 1	tejasmehta92@gmail.com	Nov. 16, 2020, 5:08 p.m.
2	Sahil Sehgal	hello	sahi@shegal.com	Nov. 16, 2020, 5 p.m.
1	Tejas Sanjay Mehta	708 South Beech, Apt 1	tejasmehta92@gmail.com	Nov. 16, 2020, 3:30 p.m.

4 contacts

Fig. 9: Admin portal of our application



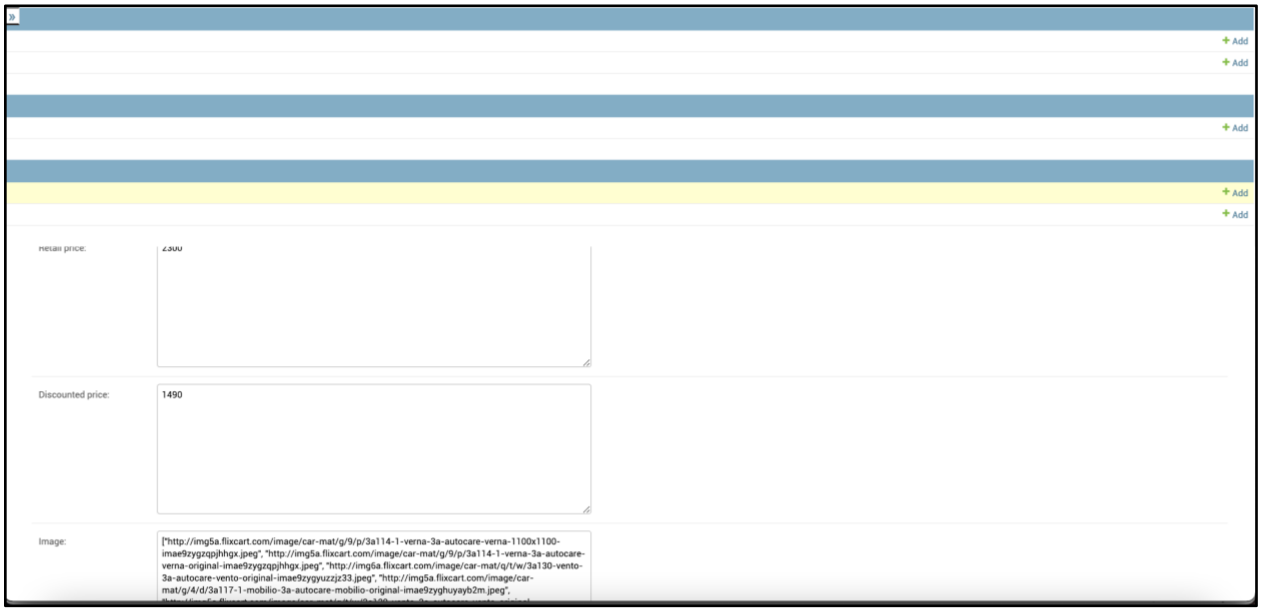
Select user to change

0 of 3 selected

USERNAME	EMAIL ADDRESS	FIRST NAME	LAST NAME	STAFF STATUS
Sahil	sahi@shegal.com	Sahil	Sehgal	✗
admin	admin@admin.com			✓
temehta8	tejasmehta92@gmail.com	Tejas	Mehta	✗

3 users

Fig. 10: Staff status of the admins

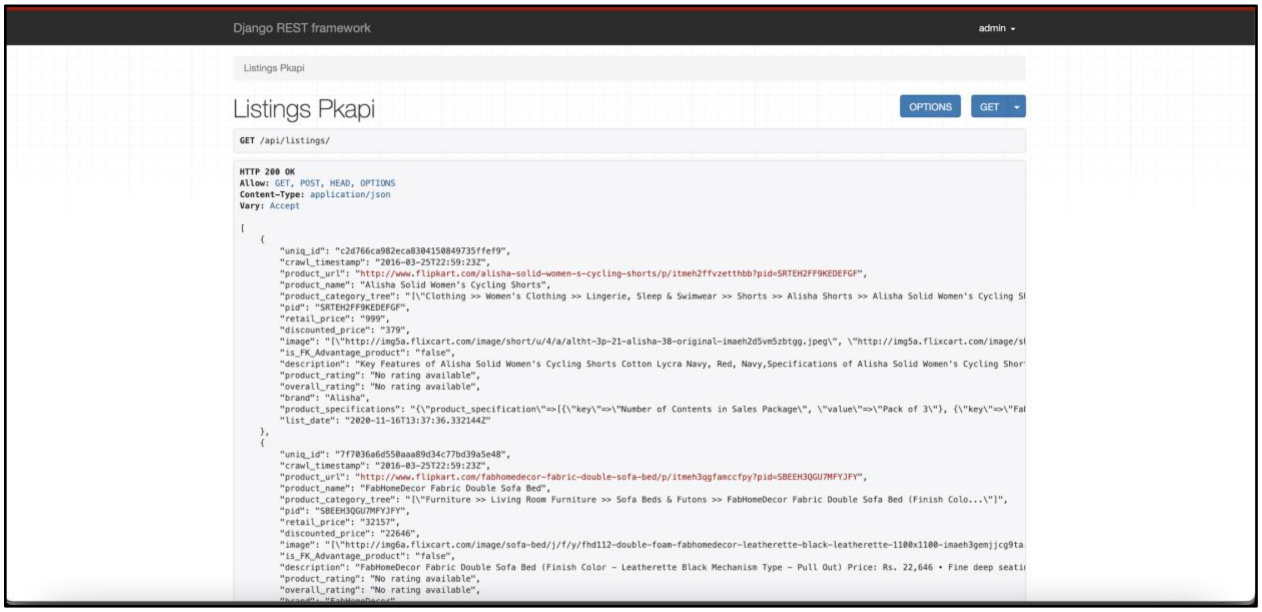


Retail price: 2300

Discounted price: 1490

Image: ["http://img5a.flixcart.com/image/car-mat/g/9/p/3a114-1-verna-3a-autocare-verna-1100x1100-imae9zygzqpjhhgx.jpeg", "http://img5a.flixcart.com/image/car-mat/g/9/p/3a114-1-verna-3a-autocare-verna-original-imae9zygzqpjhhgx.jpeg", "http://img6a.flixcart.com/image/car-mat/q/t/w/3a130-vento-3a-autocare-vento-original-imae9zygyuzzjz33.jpeg", "http://img5a.flixcart.com/image/car-mat/g/4/d/3a117-1-mobilio-3a-autocare-mobilio-original-imae9zyghuyayb2m.jpeg",

Fig. 11: Description of the listed products as shown in backend



Listings Pkapi

```
GET /api/listings/

HTTP 200 OK
Allow: GET, POST, HEAD, OPTIONS
Content-Type: application/json
Vary: Accept

[
    {
        "uniq_id": "c2d766ca982eca8304150849735ffef9",
        "crawl_timestamp": "2016-03-25T22:59:23Z",
        "product_url": "http://www.flipkart.com/alisha-solid-women-s-cycling-shorts/p/itmeh2ffvzetthbb?pid=SRTEH2FF9KEDEFGF",
        "product_name": "Alisha Solid Women's Cycling Shorts",
        "product_category_tree": "[\"Clothing >> Women's Clothing >> Lingerie, Sleep & Swimwear >> Shorts >> Alisha Shorts >> Alisha Solid Women's Cycling Sl
        "pid": "SRTEH2FF9KEDEFGF",
        "retail_price": "999",
        "discounted_price": "379",
        "image": "[\"http://img5a.flixcart.com/image/short/u/4/a/altht-3p-21-alisha-38-original-imaeh2d5vm5zbtgg.jpeg\", \"http://img5a.flixcart.com/image/sl
        "is_FK_Advantage_product": "false",
        "description": "Key Features of Alisha Solid Women's Cycling Shorts Cotton Lycra Navy, Red, Navy,Specifications of Alisha Solid Women's Cycling Shor
        "product_rating": "No rating available",
        "overall_rating": "No rating available",
        "brand": "Alisha",
        "product_specifications": "{\"product_specification\"=>[{\"key\"=>\"Number of Contents in Sales Package\", \"value\"=>\"Pack of 3\"}, {\"key\"=>\"Fa
        "list_date": "2020-11-16T13:37:36.332144Z"
    },
    {
        "uniq_id": "7f7036a6d550aaa89d34c77bd39a5e48",
        "crawl_timestamp": "2016-03-25T22:59:23Z",
        "product_url": "http://www.flipkart.com/fabhomedecor-fabric-double-sofa-bed/p/itmeh3qgfamccfpy?pid=SBEEH3QGU7MFYJFY",
        "product_name": "FabHomeDecor Fabric Double Sofa Bed",
        "product_category_tree": "[\"Furniture >> Living Room Furniture >> Sofa Beds & Futons >> FabHomeDecor Fabric Double Sofa Bed (Finish Colo...\"]",
        "pid": "SBEEH3QGU7MFYJFY",
        "retail_price": "32157",
        "discounted_price": "22646",
        "image": "[\"http://img6a.flixcart.com/image/sofa-bed/j/f/y/fhd112-double-foam-fabhomedecor-leatherette-black-leatherette-1100x1100-imaeh3gemjjcg9ta
        "is_FK_Advantage_product": "false",
        "description": "FabHomeDecor Fabric Double Sofa Bed (Finish Color - Leatherette Black Mechanism Type - Pull Out) Price: Rs. 22,646 • Fine deep seati
        "product_rating": "No rating available",
        "overall_rating": "No rating available",
```

Fig. 12: Our backend Django REST Framework displaying the API calls for new listings

Technologies used:

Hardware Interfaces:

As the platform is available to the users as a web application, minimal hardware interfaces are expected:

● Platform	: Intel Pentium
● RAM	: 512 MB

Software Interfaces:

A new user can register with his/her First Name, Last Name, email ID, and a password after which the account is created.

Once the account is created, the user willing to rent out the item creates a post which contains the entire description of the product he/she wants to list on the application which includes the name of the product, rental price per day/per week/per month (depending on the product), location of the listed product, availability, etc.

Once the product has been listed on the app, the user willing to rent the product can message the owner of the product directly by making an inquiry about the product which will be sent as an email message to the owner. The inquiry contains details like the product description, name of user, email, phone number, and a message for the owner to read if in case the user wants to get more details or have a conversation with the owner beforehand.

Following software interfaces have been used for the development of our application:

● Operating System	: Linux
● Database	: MySQL
● MySQL Server	: Workbench
● Technology	: Django Rest FrameWork , Python, HTML
● Front-End	: Razor Template Binding, JavaScript, CSS
● Web Server	: NgInx, Gunicorn deployment
● IDE	: Pycharm, Visual Studio Code

Technical Description:

Installations:

Download the following from the provided links and install in your system to run our application

1. MySQL Database – https://dev.mysql.com/downloads/mysql/
2. MySQL Work Bench - https://dev.mysql.com/downloads/workbench/ https://www.mysql.com/products/workbench/
3. Nginx - Type the following in the terminal
   ```
   $  sudo apt update
   $  sudo apt install nginx
   ```
4. Gunicorn
   ```
   $  sudo apt update
   $  sudo apt install gunicorn
   ```
5. Django Rest Framework: pip3 install django, pip3 install djangorestframework

Setup:

Connect MySQL database in Django

1. Go to Database perspective:

   Window → Perspective → Open Perspective → Other
2. Select the Database Development perspective and click on the Open button. It opens the DataBase development perspective as below.
3. There you can see the Database Connections folder, right click and click on the New. Then you will see the New Connection Profile window as below; there you will find all available connections, filter the connection profile type with "MySQL" string and select the MySQL connection. Name the connection and click on the next button. This window allows you to attach the driver details to connect with the MySQL DB. Click on the below-highlighted icon to attach MySQL connector. Then you will see the following window; select the MySQL version which you wanted to connect with and move to List tab.
4. Download and attach MySQL connector
5. Specify the MySQL connection details like username, password and database name and click on the Test Connection button.
   Username – root
   Password – welcome@123

Execution:

1. Open Pycharm and click **File → New → Django Project.**
2. Provide the **project name i.e. Rentit** and click on the **Finish** button.
3. In the **Package explorer** right click on the project name and select Run as → Run on Server.

4. This will launch our application on Google Chrome.

ASSIGNMENT - 5

DESIGN PATTERNS

Model View Template pattern:

Model: Model classes include the attributes of an application entity along with an instance of a model class which represents the state of a data record that belongs to that particular application entity.

View: View services our user's requests for modifying the application data. For instance, the data stored in the form which is relevant to the application entity can be submitted by the user, while the template assists in validating the data which has been submitted after which either the user commits the data into the database or helps in generating an appropriate error message for the user.

Template: Template helps us to render the data for the application users for handling user generated requests for modifying the data by invoking suitable methods used in the view.

In our project, we are following the MVT design pattern and for each application entity, we have created one model class.

- Listing class - Listing entity
- Contact class- Contact entity
- User class - User Details entity
- Enquire class - Enquire entity

Template → In order to render data to application users, We have used Django Template binding from the server end, as to help faster binding and SEO friendly.

View → Any modification requests to one of the above application entities goes through servlets, which accepts input data from application users and then commits it to the database.

Databases → All the structured data like user-profile, auctions, items and likes are stored in MySQL because we need a Database which follows ACID properties. It blends in SQL operations and to query, process data through connector or Play MVT. It will be deployed in AWS-RDS

DESIGN PRINCIPLES

We have implemented the following design principles

1. Don't Repeat Yourself

   The Don't Repeat Yourself (DRY) principle states that duplication in logic should be eliminated via abstraction; duplication in process should be eliminated via automation. Django models create separate constructs based on DRY principle.

   Duplication is Waste: Adding additional, unnecessary code to a codebase increases the amount of work required to extend and maintain the software in the future. Duplicate code adds to technical debt. Whether the duplication stems from Copy Paste Programming or poor understanding of how to apply abstraction, it decreases the quality of the code. Duplication in the process is also waste if it can be automated. Manual testing, manual build and integration processes, etc. should all be eliminated whenever possible through the use of automation.

   We have implemented to increase the code reusability and manage our memory. Thus, we could reduce the execution time.

2. Encapsulate what changes

   There is only one thing which is constant in the software field and that is "Change", So, encapsulate the code you expect or suspect to be changed in future. The benefit of this OOP Design principle is that It's easy to test and maintain proper encapsulated code.

   If you are coding in Java then follow the principle of making variable and methods private by default and increasing access step by step like from a private to protected and not public.

   Model view controller design pattern in Java uses Encapsulation, which encapsulates object creation code and provides flexibility to introduce a new product later with no impact on existing code.

3. Open closed Design principle

   "Classes, methods or functions should be Open for extension (new functionality) and Closed for modification".

   The key benefit of this design principle is that already tried and tested code is not touched which means they won't break.

   Ideally, if you are adding new functionality only than your code should be tested and that's the goal of Open Closed Design principle.

   The above mentioned three design principles of object-oriented programming are encapsulation, abstraction, inheritance, and polymorphism. We use encapsulation as it is the fundamental concept in object-oriented programming (OOP). It describes the idea of bundling data and methods that work on that data within one unit, e.g., a class in Java. This concept is also often used to hide the internal representation, or state, of an object from the outside.

   The main idea of using these principles is maintaining the simplicity, code reusability, extendibility and security. The main aim is code reuse which ensures that the code is developed faster.

4. Loosely coupled architecture

   The Django framework being an MVC framework operates across multiple tiers (e.g. HTML templates, business logic methods and databases). However, Django takes great care of maintaining a loosely couple architecture across all the components that operate across these tiers.