

Rental Housing Project (Shweaain)

Documentation



Project for CS401 – Modern Programming Practices

Group 4

Mohan Lar

Pedro Salazar

Selam Mulugeta Alemseged

Van Thai Nguyen

September 2020

1. Introduction

Sometimes it is difficult to find a house or an apartment to rent. It usually takes 3 months to finish the process. Therefore, we want to solve this problem by creating a Rental Housing System.

First, the system will let a user create an account log in. Second, it will let the user look for a house to rent approved by the admin. The user should be able to search for an apartment using many parameters such as area, number of bedrooms, etc.

The system will also let users rate apartments and add apartments they like to their favorite lists.

2. Problem Description

- a. **User** – A user needs to have an account in order to look for or upload a property to rent. A user has a name, date of birth, username, password, gender, phone number and email address.
- b. **Apartment** – The word apartment is a general name we used for a property. Property can be an apartment, condo and a house. We call those apartment types.
 - i. Apartment– has an address, town, area in sq feet, a title for the ad, apartment type (house, apartment, condo), business type (rent or buy), description, number of rooms, number of bathrooms, price, feature types, available date, image and floor number.
 - ii. Apartment Address – the property should contain the address and town. A country has id and name. A state has an id, name and country in which it is located. A town has id, name, the state where it is located and a zip code. A user can add one or more apartments, but an apartment must be added by just one user.
 - iii. Rented Apartment– A user can rent zero or more apartment, but an apartment can be rented by zero or one user.

- iv. User's favorite Apartments – A user can save his/her favorite properties. A user can have zero or more favorite properties and a property can be selected to be favorite by zero or more users.
 - v. Apartment Features – are extra features an apartment can have such as Air Conditioner, Wi-Fi, yard, swimming pool, laundry, dryer, microwave, gym, refrigerator, sauna and TV cable.
 - vi. Apartment Rating – a user can rate many apartments and an apartment can be rated by many users.
- c. **Admin** - can create, update and delete the apartments, apartment types, town, state, country, user data, etc. In addition, admins can create different type of sub-admins and can assign those admins to do different kind of CRUD operations on different tables. Admin can also make changes on the menus of the home page. Moreover, admins approve houses that are uploaded by users for rent. the admin is also responsible to add same data to the system such as properties, properties types.

3. User Case

The following use cases are supported by the system

- a. **Log in** - the first screen that a user or an admin sees is a log in screen. A different log in screen will be provided for the user and admin. In order to log in to the system the user must provide username and password. If the username is correct and the password matches with the one that is stored in the database, the user will log in to the system successfully if it has the required role.

User Action	System Response
1. User enters username and password	1. System checks for the correctness of username and password and return the either the Rental Housing System UI or Admin Portal according to the role of the user

- b. Create a user account** - the system will be available only for registered users. Therefore, a user must register/sign up first. After clicking the sign-up button, a form will be displayed that needs to be filled by the user. The form should contain name, date of birth, username, password, phone number and email address. A user can upload profile picture latter after a successful account creation.

User Action	System Response
1. User clicks sign up button	1. System provides user account registration UI
2. User fills all the mandatory information and selects submit button	2. System will create the user and redirects him/her to the Rental Housing system website.

- c. Add apartment** - user with an account can add apartment to the system. When the user clicks the add apartment menu, a form will be provided by the system. The form contains information about the property such as address of the property (country, state, town, zip code), area, apartment type, business type, description, number of rooms, number of bathrooms, feature type, floor number and price. After filling all the mandatory fields, the user must click the add apartment button. Then the system will process all the data, checks for missing value and adds the property in the database. However, the property needs to be approved by an admin before it can show up on the list of properties to rent.

User Action	System Response
1. User clicks add apartment menu	1. System provides a form to enter apartment details
2. User fills the form and clicks add button	2. System checks for validity of the form and adds the apartment to the system

- d. Approve apartment** – when an admin clicks the approve apartment menu, he/she will be provided with a list of pending apartments. Then the admin can select, monitor and approves each apartment if the requirement is met.

User Action	System Response
1. Admin clicks approve apartment menu	1. System will return the list of newly created apartments in pending state
2. Admin selects an apartment to approve	2. System will return details of the apartment
3. After monitoring the system will click the approve button	3. System will change the status of the apartment to approved.

- e. List Apartments** – After an apartment is approved by the admin it will start to show up on the list of apartments. The most recent apartments will show up on the home page of the website.

User Action	System Response
1. User logs in to home page	1. System will return recently added apartment lists.

- f. Search for an apartment** - If a user wants to search for a particular kind of apartment, a search functionality is provided by the system. A user can search an apartment by location, type, number of bedrooms, number of bathrooms, floor, price range and area. A user should select his/her search criteria and should send the criteria to the system. Then, the system will look for the properties that meet those criteria from the database and returns a list of properties if exists.

User Action	System Response
1. User chooses search criteria for an apartment and clicks search	1. System will search for apartments based on the search criteria from the database and returns the result

- g. See apartment details** - If a user needs to see details of an apartment, he/she must click the apartment item from the list. Then the system will fetch all the details of the apartment from the database and provide the user with a detail description of the property.

User Action	System Response
1. User clicks an apartment item	1. System fetches the apartment details from the database and returns the result.

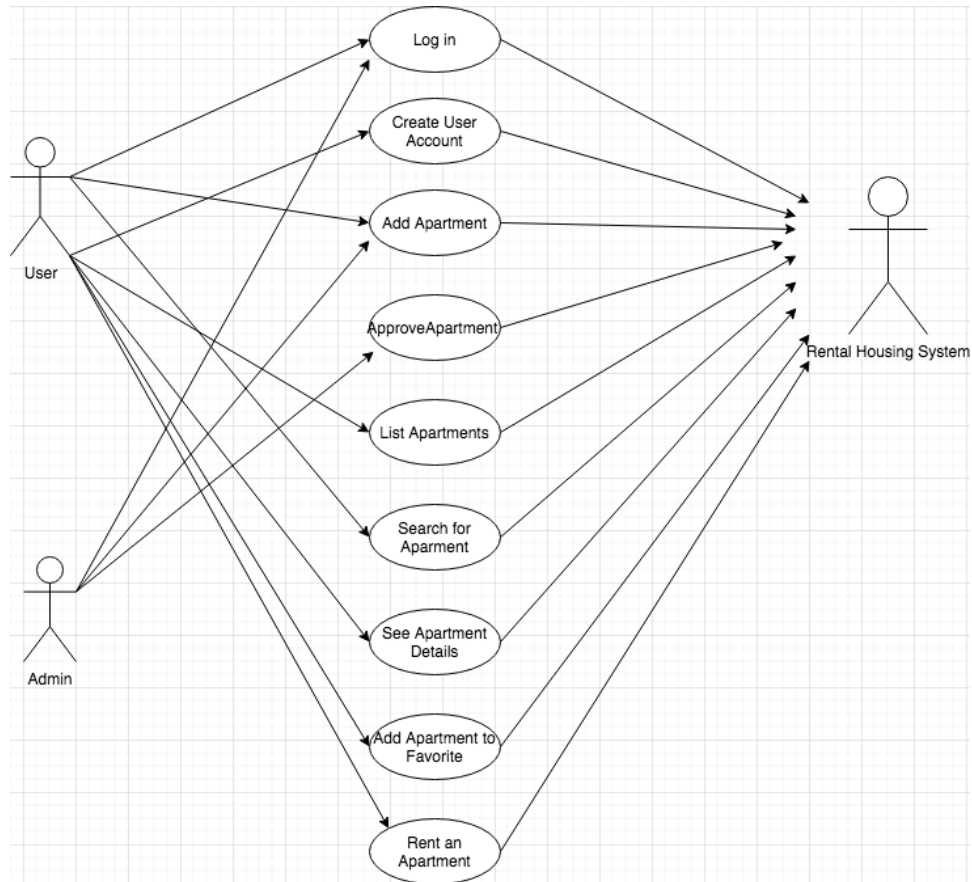
- h. Add apartment to favorite** - If a user likes the apartment after seeing all the details, he/she can add it to his/her favorite by clicking the add to favorite button. By doing this the user can access the apartment without having to search for it again. Apartments that have been added to favorite by the user will show up on the favorite property items.

User Action	System Response
1. User selects an apartment that he/she likes	1. System returns the details of the apartment
2. User clicks the add to favorite button	2. System will create a relationship between the user and the apartment in the favorite table.

- i. Rent an Apartment** – user can rent an apartment. When the apartment is finally rented, the is_deal_done flag property on the Apartment is set on. The customer and the rented property will also get associated.

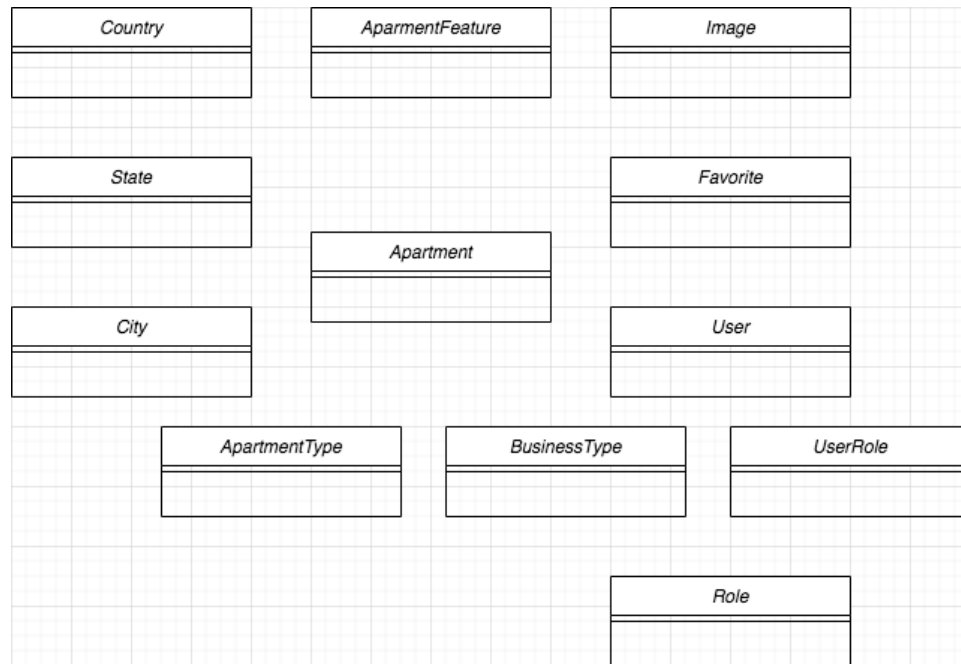
User Action	System Response
1. User clicks rent button on an available apartment	1. System updates is_deal_done value to true (property is rented); system associates rented property with the customer (in table Transaction)

The following diagram shows Use Case diagram for the Rental Housing System.

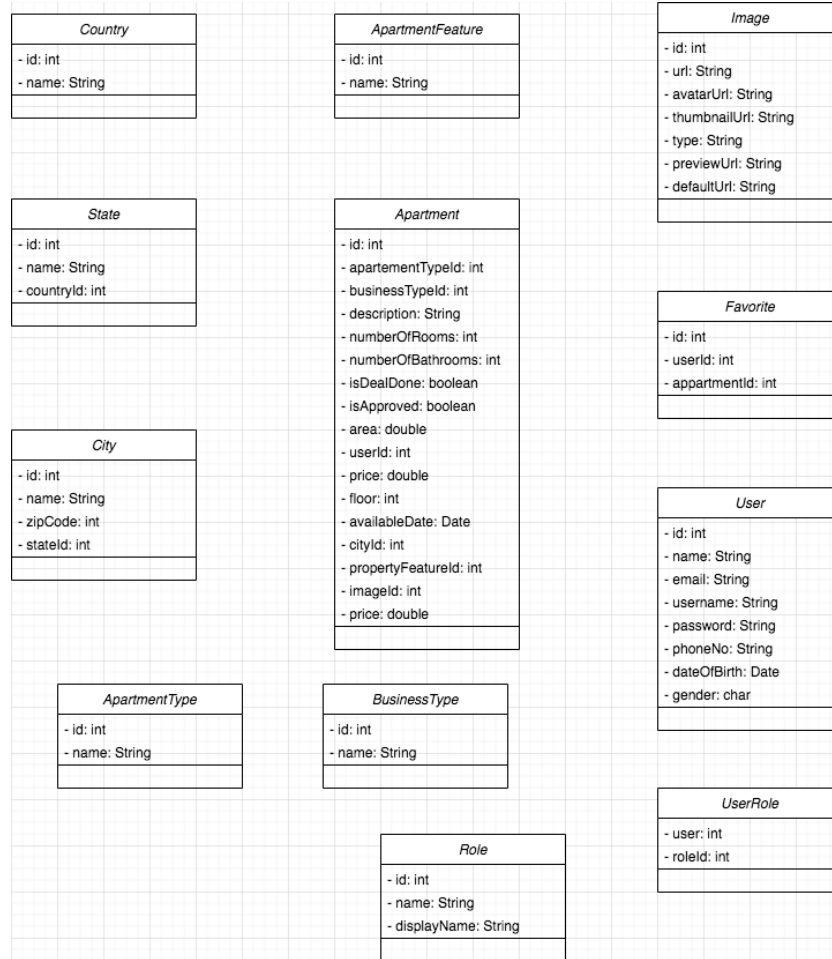


4. Class Diagram

- a. Isolating concepts and candidate class by noun phrase identification - from the above problem description, we identified noun phrases, eliminate some duplicates by choosing one terminology for the same concept (we group synonyms) and finally we remove those nouns that can be included as an attribute of another class. The following are list of classes that are derived from the noun phrases: User, Apartment, Apartment Type, Business Type, Country, State, Township, Favorite, Apartment Feature, Image, Role and UserRole.

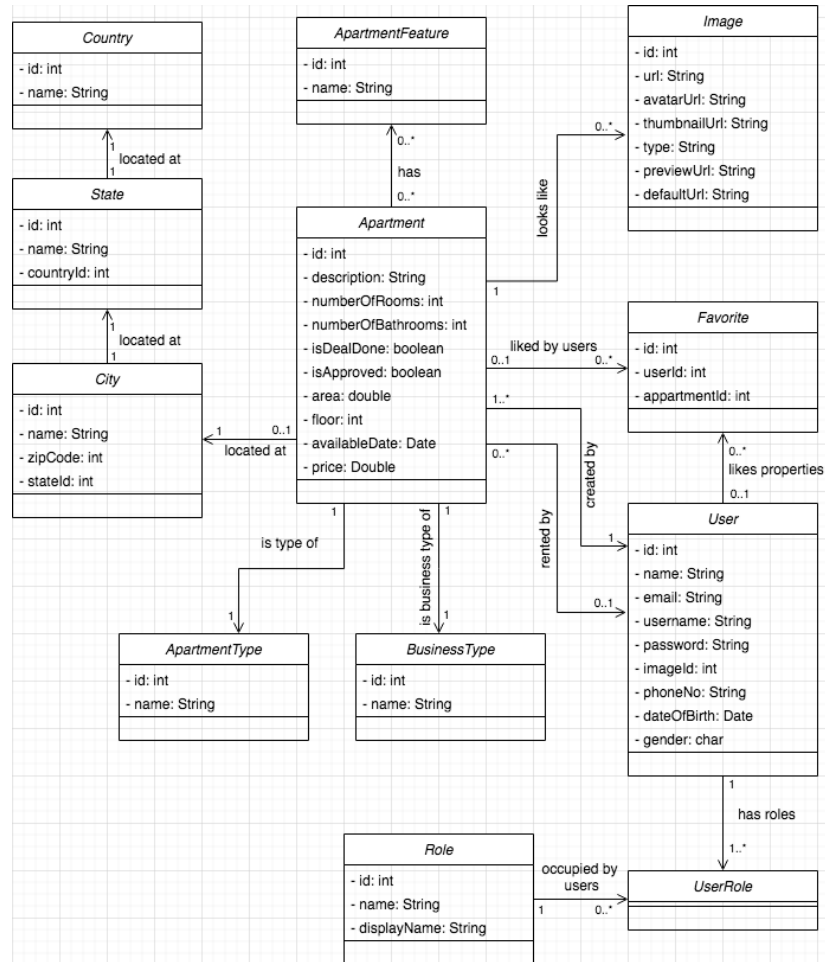


b. Class Diagram with attributes (without relationships and operations)

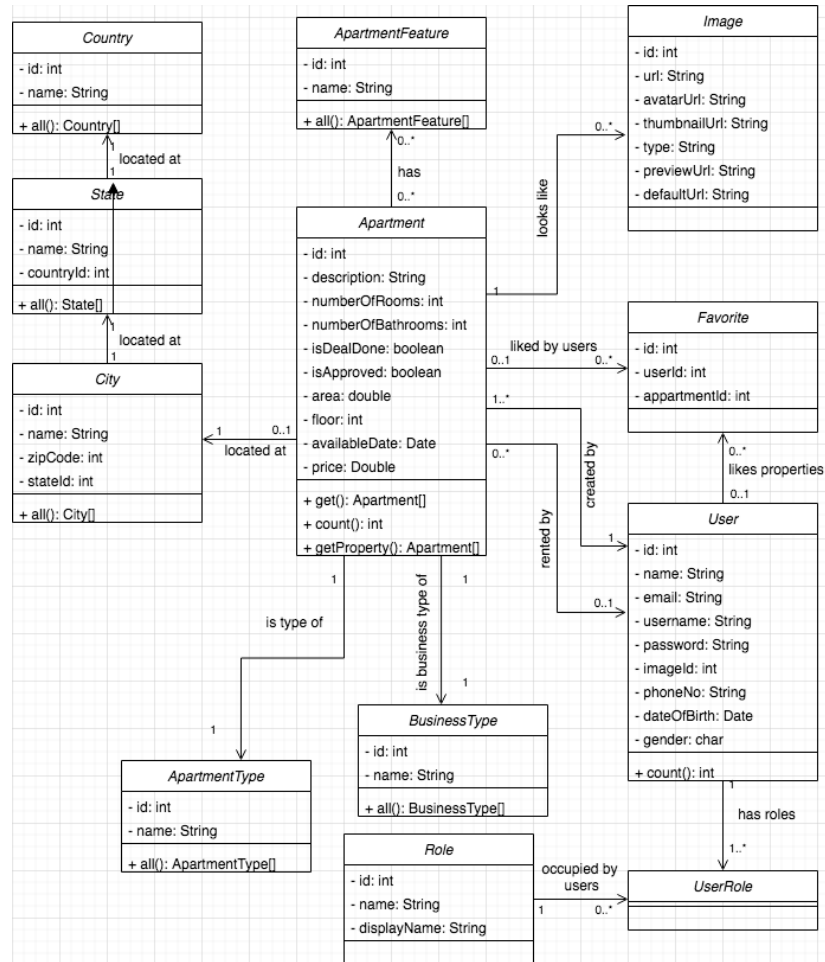


c. Association and Dependencies between classes

The following class diagram shows multiplicity (optionality and cardinality), multidirectional/unidirectional, the identified association roles, relationships between classes and association class (such as favorite and userRoles). The operations are not included in this diagram.



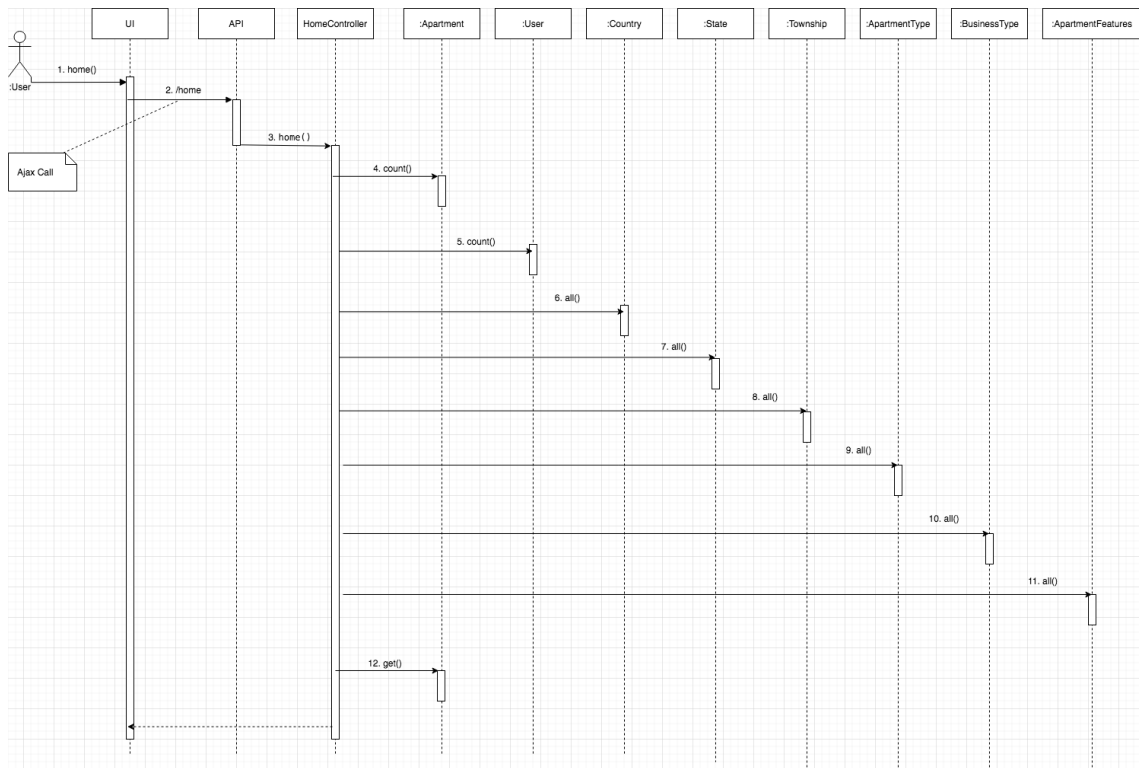
- d. Final Class diagram with Operation – this class diagram is designed after the design of the sequence diagram.



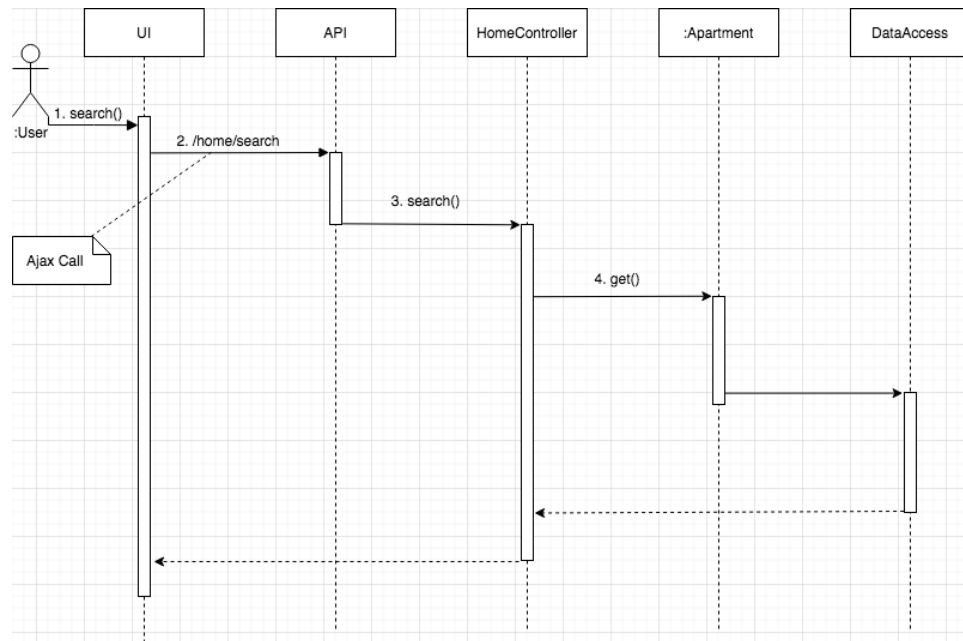
5. Sequence Diagram

Of all the use cases we selected 3 and designed their sequence diagrams.

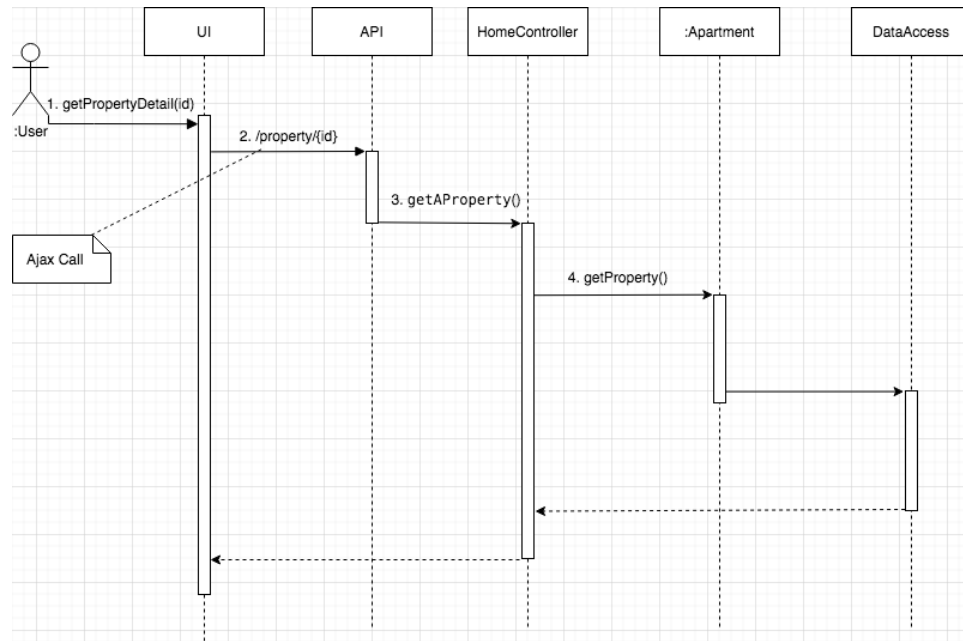
a. Home



b. Search Apartment



c. See Apartment Detail



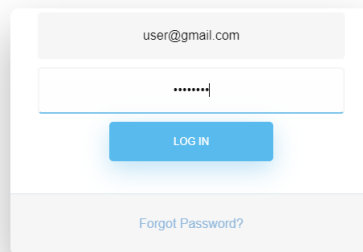
6. Data Access

- a. Database Management Used – The DBMS used for this project is MySQL. The tables of the database are based on the class diagram of section 4.d.

A. Appendix - Sample UI from the system

A.1 Login Page

File | C:\xampp\htdocs\shweaain_ui\login.html | PageSpeed Insights | Latest Requirement | Page Speed - Site S...



user@gmail.com

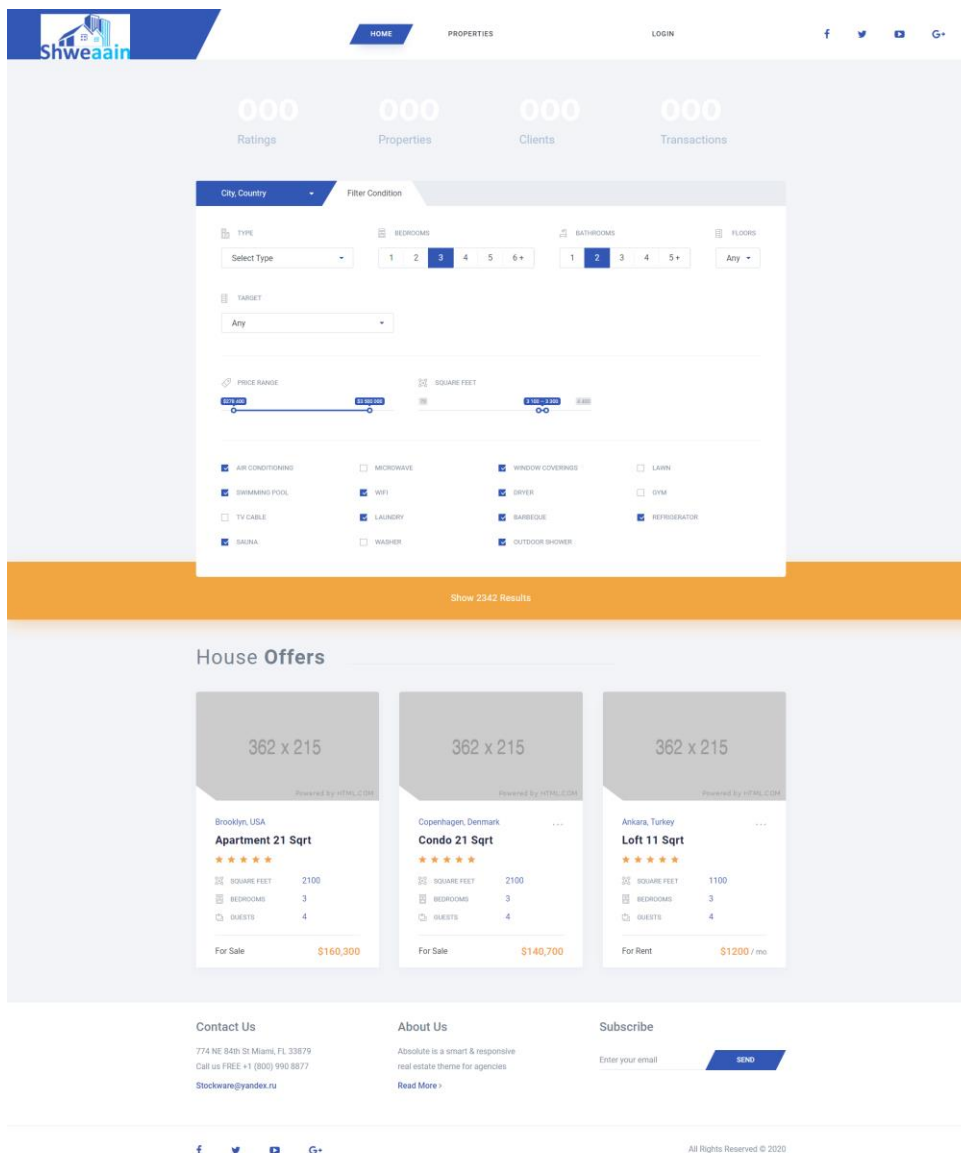
.....

LOGIN


[Forgot Password?](#)

Password is = useruser

A.2 Home Page



A.3 Apartment Detail Page




OUR ADDRESS
Santa Monica, 11TH Street

CONTACT US
support@absolute.com

WORKING HOURS
Mon - Sat : 8 am to 7 pm

[Home](#)[Properties](#)[Login](#)

[Home](#) > [Single Property](#)Updated on Sep 10, 2020 at 8:18 PM



720 x 480




Madrid, Spain

Comfortable Apartments 15 Sqrt

★★★★★

STATUS	For Rent	SQUARE FEET	1500
BEDS	4	PRICE	\$1600
TYPE	Apartment	BATHS	2

PRICE
\$1800 / month



About Property

Etiam vitae tortor id augue mattis convallis eget sed elit. Quisque tincidunt faucibus orci, in tristique dui. Sed ac vestibulum dui. Nam at ligula odio. Morbi sit amet vulputate lectus. Fusce non lacus nec nulla tristique rutrum. Suspendisse tincidunt non urna sit amet fringilla. Morbi sit amet sagittis risus, non porta eros. Sed varius id risus in iaculis. Phasellus non egestas enim, vel molestie justo. Maecenas varius neque ullamcorper interdum sagittis. Suspendisse turpis risus, lacinia at vestibulum at, tempor vel felis.

Advanced Features

☒ AIR CONDITIONING

☒ MICROWAVE

☒ WINDOW COVERINGS

☒ LAWN

☒ BARBEQUE

☒ WIFI

☒ DRYER

☒ GYM

☒ SAUNA

☒ REFRIGERATOR

Contact Us

774 NE 84th St Miami, FL 33879
Call us FREE +1 (800) 990 8877
Stockware@yandex.ru

About Us





Absolute is a smart & responsive
real estate theme for agencies

[Read More >](#)

Subscribe

Enter your email

[SEND](#)



All Rights Reserved © 2020