



An-Najah National University

Faculty of Engineering & Information Technology
Computer Engineering Department
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Graduation Project I

Find Place



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Table of Contents:

Abstract:	5
Chapter 1:Introduction	6
Chapter 2: Constraints, standards and earlier work	7
Chapter 3: Literature review	8
Chapter 4: Methodology	9
4.1 Tools, Programming Languages, and Technologies	9
4.1.1 Mobile application	9
4.1.2 Web Admin page	9
4.1.3 Database	9
4.2 Implementation	10
4.2.1:Mobile Application	10
4.4.2:Web Admin page	33
Chapter 5: Results and Discussion	37
Chapter 6: Conclusions and Recommendation	38
• Summary	38
• what we learned	38
• Future work	38
Chapter 7:References	39

Table of figure:

Fig1(start page).....		10
Fig1(Registration)	Fig2(Registration)	11
Fig3((Registration)	Fig4(Registration).....	12
Fig1(profile)	Fig2(profile)	13
Fig3(profile).....		14
Fig4(profile).....		14
Fig1(Add property)	Fig2(Add property)	15
Fig3(Add property)	Fig4(Add property)	16
Fig5(Add property)	Fig6(Add property)	17
Fig7(Add property)	Fig8(Add property)	18
Fig9(Addproperty)	Fig10(Add property)	19
Fig10(Add property)	Fig11(Add property)	20
Fig1(Activity screen)	Fig2 (Activity screen)	21
Fig1(Activity screen)	Fig2 (Activity screen)	22
Fig3(Activity screen)	Fig4 (Activity screen)	22
Fig5(Activity screen)	Fig6 (Activity screen)	23
Fig7(Activity screen)	Fig8 (Activity screen)	23
Fig9(Activity screen)	Fig10 (Activity screen)	24
Fig11(Activity screen).....		24
Fig1(search screen)	Fig2(search screen)	25
Fig3(search screen)	Fig4(search screen)	26
Fig5(search screen)		26
Fig6(search screen)	Fig7(search screen)	27
Fig8(search screen)	Fig9(search screen)	27
Fig10(search screen)	Fig11(search screen)	28
Fig12(search screen)	Fig13(search screen)	28
Fig14(search screen)		29
Fig1(Home screen)	Fig2(Home screen)	30
Fig1(show details)	Fig2(show details).....	31
Fig3(show details)	Fig4(show details).....	32
Fig1(Admin)		33
Fig2(Admin)		34
Fig3(Admin)		34
Fig4(Admin)		35
Fig5(Admin)		35
Fig6(Admin)		36
Fig7(Admin)		36

Abstract:

Nowadays, people tend to rent and buy real estate of different types more than before, but many problems may face those who are looking for a property or the owner about safety and credibility and obtaining the desired purpose as soon as possible. In this project, we turn to design a mobile application to facilitate the work of all parties and save time. For all parties that the application will help them, they must create an account on the application, the owner to put details about his estates, put images for it he will have page or pages to be allowed to him to add or edit the details about his estates that he offers them or he wants to add them, he can accept or decline the requests from the customers to rent or buy his estate, he can open a conversation with the customers in the event of the possibility of discussing some details about renting or buying process. The owner can be a customer if he wants to rent or buy an estate. For the customer, he can search for the property he needs, whether it is an apartment, House, Flat, Student Housing, and a Terrace House in the neighboring areas or any other area. He can also specify more specifications such as area, number The bedrooms, the presence of terraces, the budget, the duration of the rent, in the case of student housing, if he needs a room for one, two, or three people For all of these features, we will add an admin page to manage all the aspects of the application.

Chapter 1: Introduction

With the development of life, people's tendencies to build houses decreased due to the high costs and increased demand for buying and renting real estate. The rental and purchase project is always going on, especially with the desire and need of people to move to different areas. People also resort to renting real estate because of the possibility of installments and paying costs through an agreed period between the two parties, the owner and the customer, which reduces the burden on the customer.

also The use of mobile devices in daily life is continuously increasing. This indicates that investing in any application will not be a loss.

Sometimes there are problems in presenting real estate by traditional methods on drawings and papers on the one hand, as well as in the way the customer discovers these properties on the other hand. There must be technology employment in this field, since it has become an integral part of life. The presence of an application that combines both includes the possibility of searching For all the information about any drug with just a click of a button is very important. From here, let's combine these ideas into a mobile application project for renting real estate, as there must be a need for such an application.

Chapter 2: Constraints, standards and earlier work

The first problem that we faced is that for the first time we deal with the creation of mobile applications, as we did not take a course in our educational journey on this subject, and also there was not enough time to delve into more ideas, as the presence of other courses with the project makes us distract from it somewhat. Another problem is that we used a program Android Studio is a heavy program that consumes a lot of the device's resources.

We used the React Native framework to deal with front-end, fetch and insert data from back-end, so we took an online course to learn the basics about react native and how to use it in addition to its documentation. We used for back-end Node.js with Express, MYSQL for databases , we learned it by watching videos and searching online. For the admin web portal we used PHP with HTML, CSS and Javascript.

Chapter 3: Literature review

People often think that the real estate business is easy. They also believe dealing and managing properties is a source of passive income. However, it is the reverse. The real estate business includes several complexities. It also involves daily site visiting, meeting clients situated in different places. From here we came to the idea of real estate application[1].

the project to create an application for real estate is a profitable investment due to the increasing use of people for real estate applications because of its several advantages for the customer to search and see the largest possible amount of available real estate and determine the most appropriate while sitting at home and without the need to go to the real estate site, I know that there is no doubt that seeing the property on Reality is not like seeing it on the phone, but by using the application, the process of seeing the real estate can be made in the last stages and before the final agreement and the completion of legal procedures.

Using mobile apps provides cost-saving too. Instead of using the traditional ways of reaching potential clients (e.g. printing brochures and flyers), you can update your information automatically and inform your clients more quickly[2]. Real estate applications also help target customers, so it is possible to know the customer's needs and provide the best offer to him by discovering the customer's location and preferences[3]

Furthermore, according to the Real Estate In A Digital Age, 2018 Study by the National Association of Realtors (NAR), 73% of homebuyers use digital tools, such as a mobile app or website, at some point during their search[4].

Chapter 4: Methodology

4.1 Tools, Programming Languages, and Technologies

4.1.1 Mobile application

We used JavaScript because we used React Native as a framework in the front Node.js for the server side which is open-source and we use android,vs code programs.

4.1.2 Web Admin page

We used the client-side HTML, CSS and JavaScript languages which are the most popular web languages for client side, PHP language which is a server scripting language, and a powerful tool for making dynamic and interactive web pages,and we used Notepad++ editor for writing code.

4.1.3 Database

We used MYSQL which is an open-source relational database management system, it is more secure, scalable, capable of handling large amounts of data and easy to use .

4.2 Implementation

4.2.1: Mobile Application

- **Start Screen:** this start screen to begin loading the application

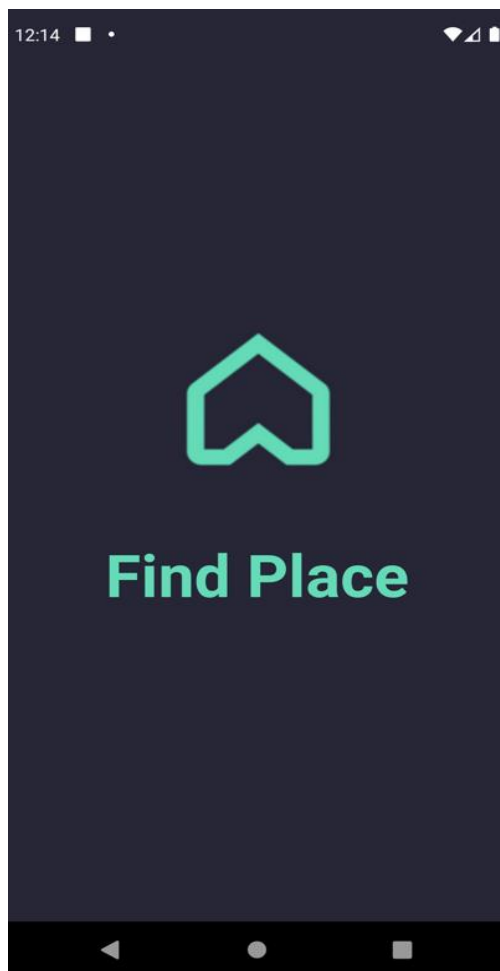


Fig1(start page)

- **Registration Screen:** this is screen to enter an information account for the user if user have an account can enter username or email ,and password then press in login button,if user forgot password can re assign it from email address.

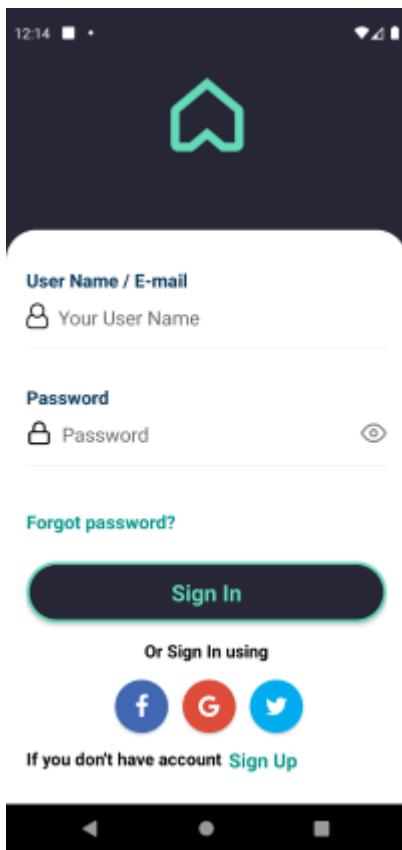


Fig1(Registration)

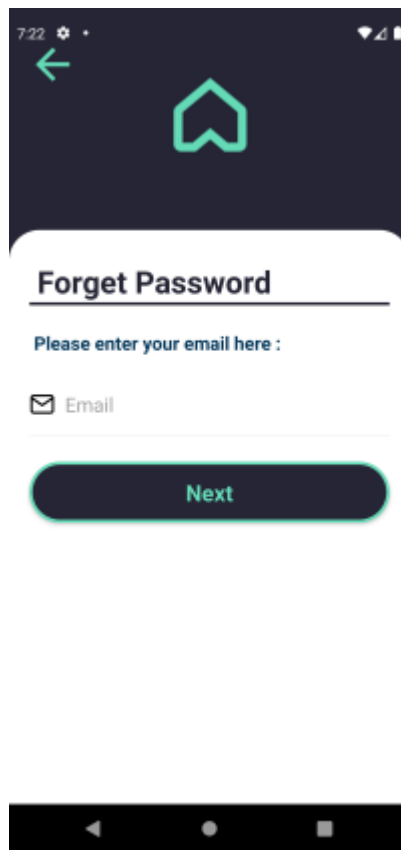


Fig2(Registration)

- **Sign up Screen:**
if the user don't have an account on application he can press in “sign up” and entering valid information such as user name,email,password city,phone number,village and address.

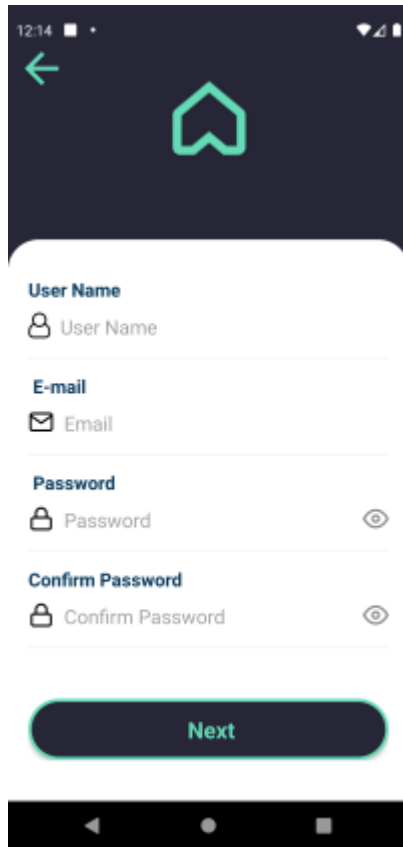


Fig3((Registration)

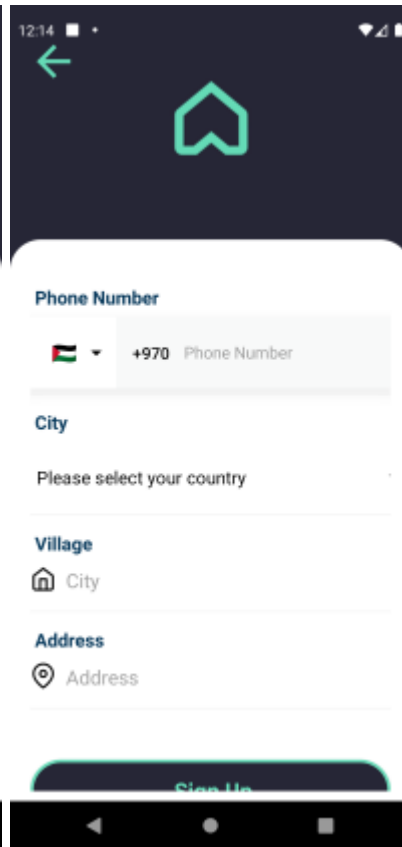


Fig4(Registration)

- Profile Screen:** this page contains basic information about the user and If the user owns real estates the profile also contains all the real estate which are for this owner, from this page owner can delete any real estate from accounts, looking for booked customer appointments for each property from, comments on each property, and property evaluation. if user not owner then there is no real estate in her profile.



Fig1(profile)

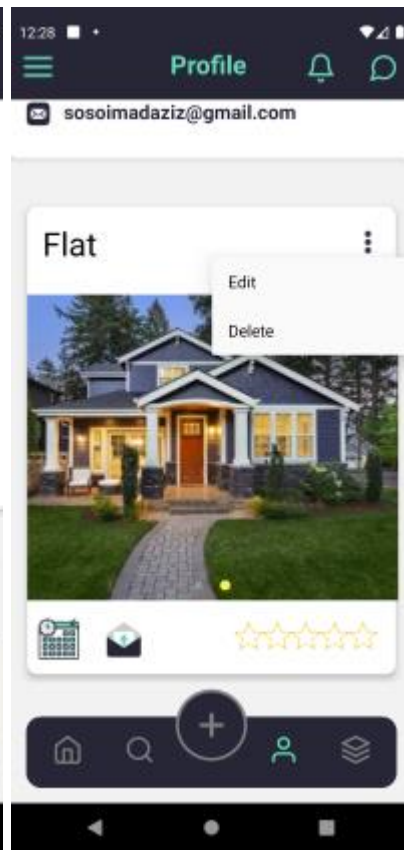


Fig2(profile)

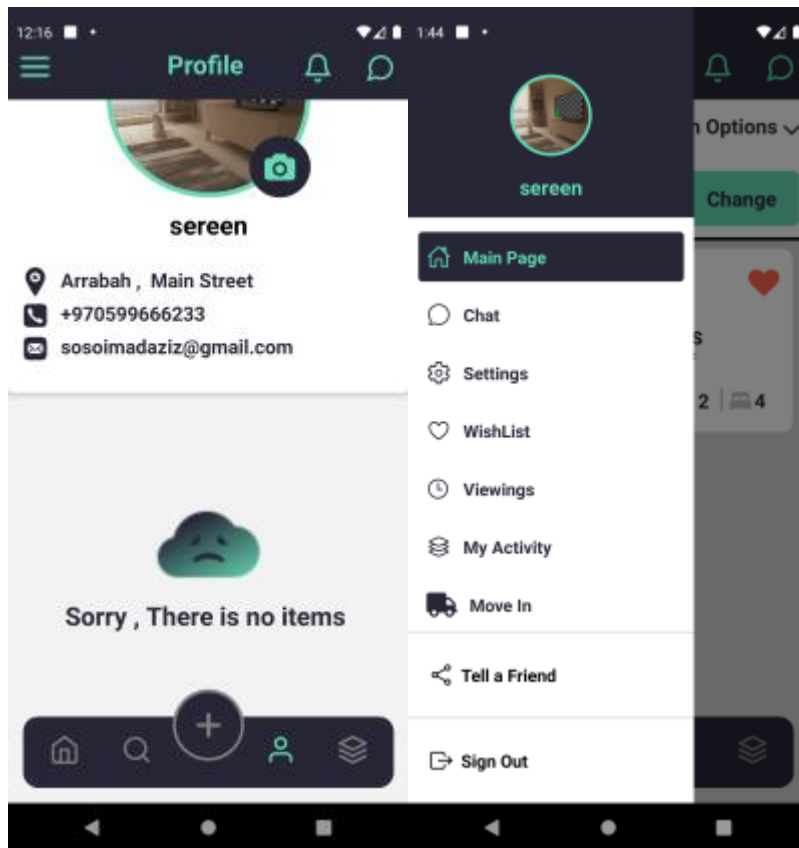


Fig3(profile)

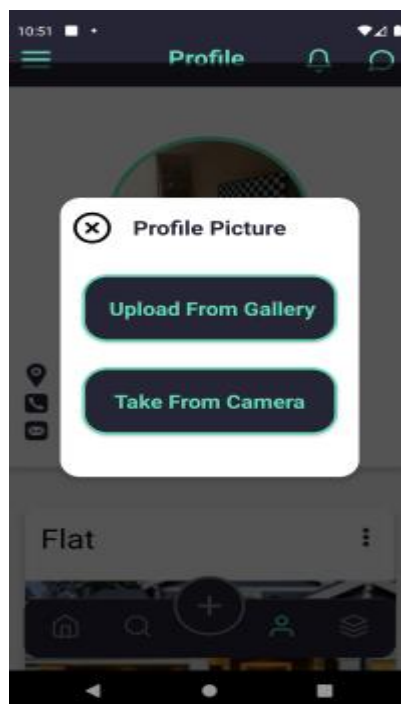


Fig4(profile)

- Add Property screen:**from this page user can add new real estate by entering all information about this property such as,price,location,address,Number of bedrooms,number of bath rooms,and choose features existing from list,property type (Flat,Home,Terrace House,Student Housing),move in type,state(rent,sell),available time for Booking date ,Available viewing days,and upload an images related to property.

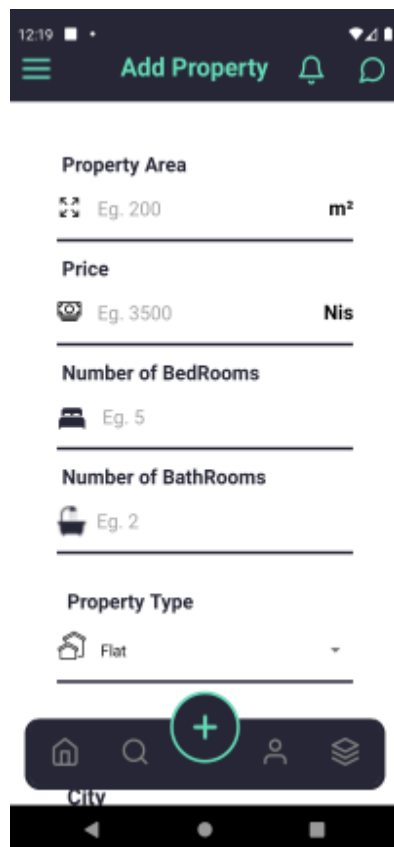


Fig1(Add property)

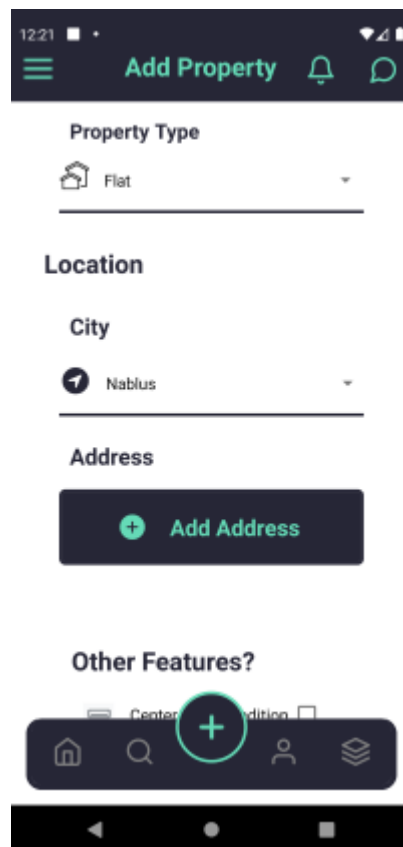


Fig2(Add property)



Fig3(Add property)

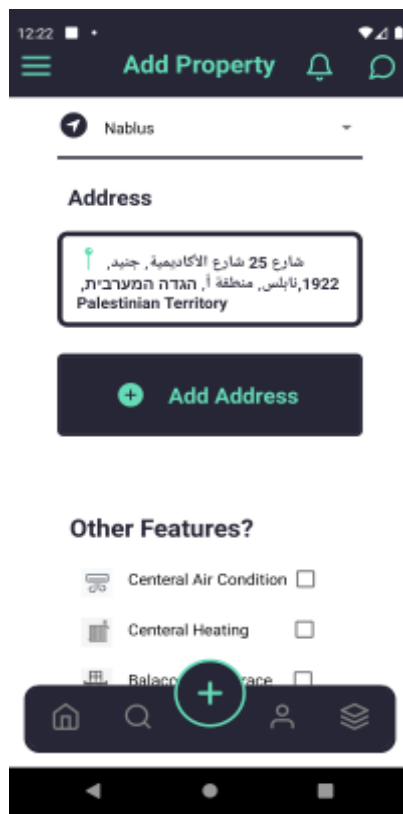


Fig4(Add property)

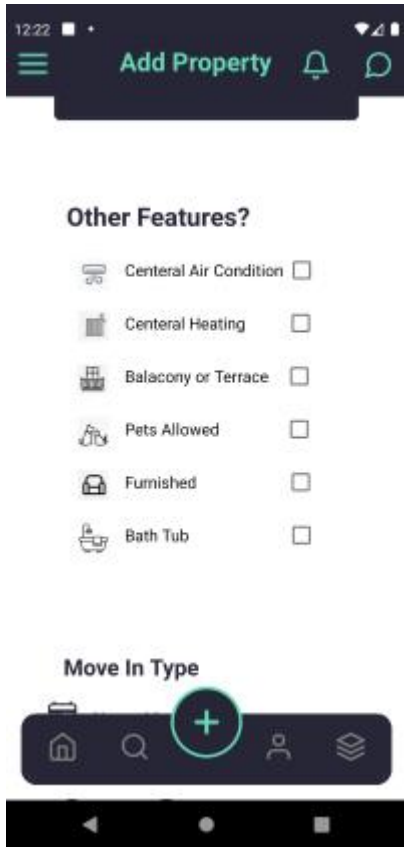


Fig5(Add property)

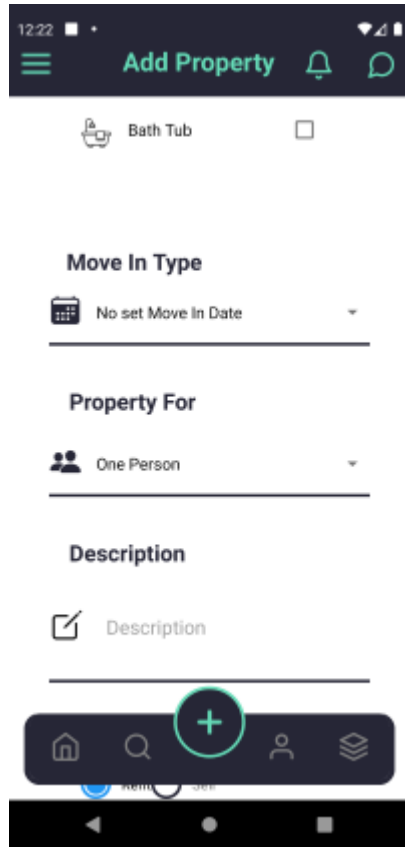


Fig6(Add property)

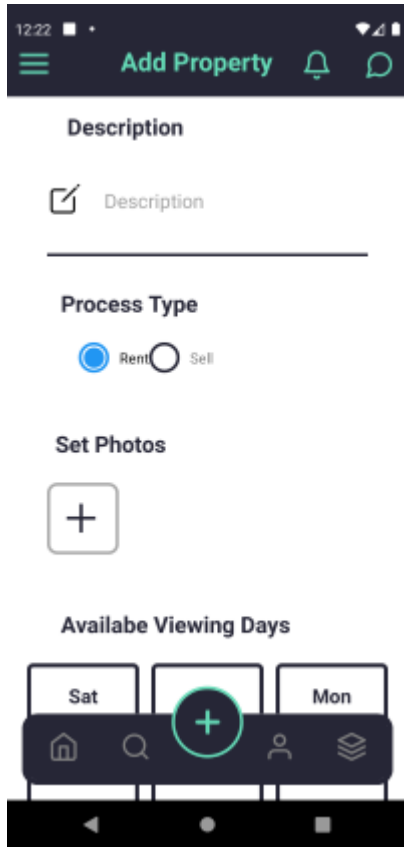


Fig7(Add property)

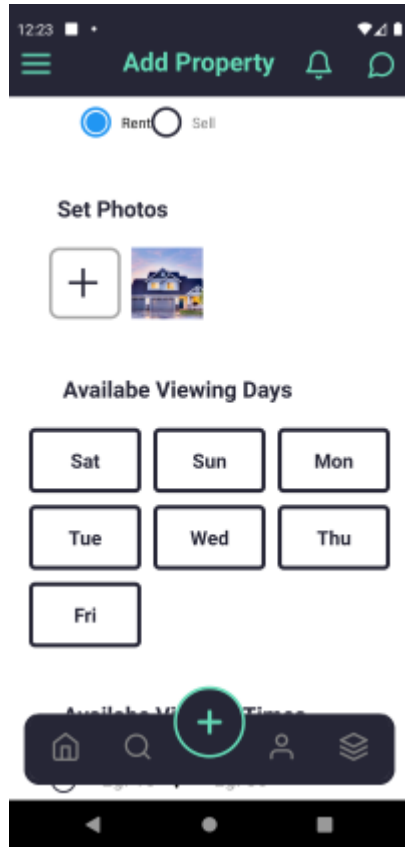


Fig8(Add property)

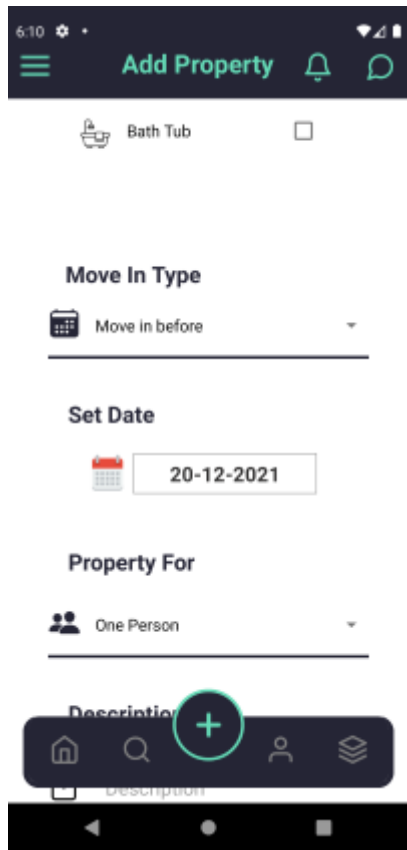


Fig9(Addproperty)

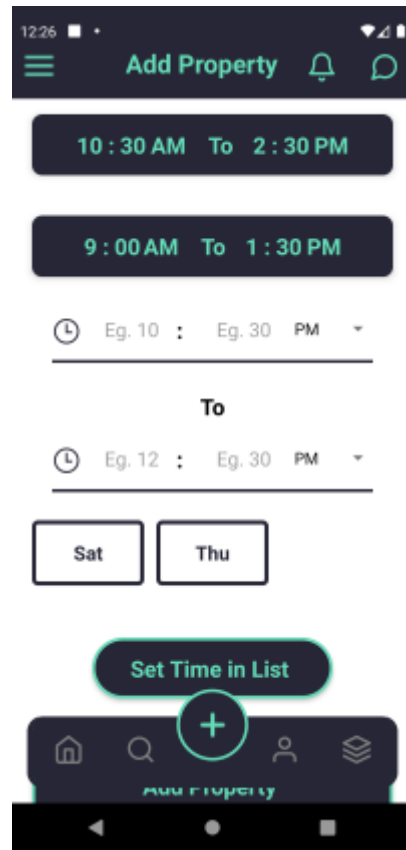


Fig10(Add property)

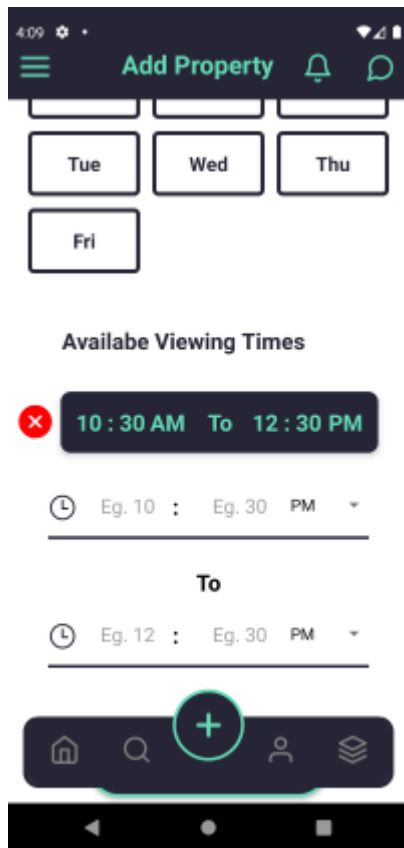


Fig10(Add property)

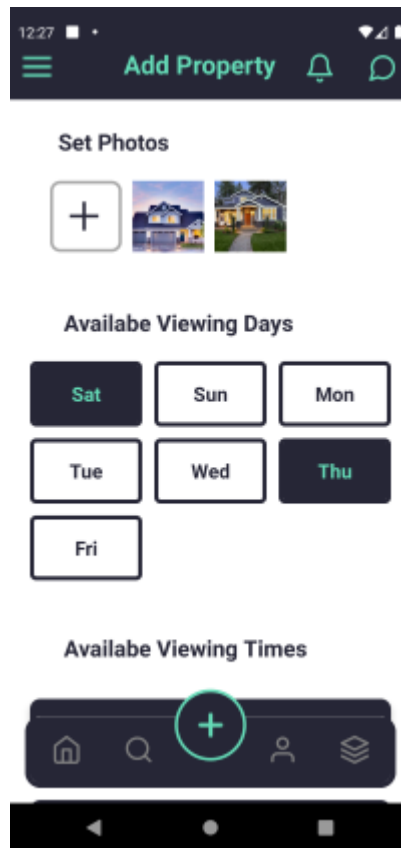


Fig11(Add property)

- My Activity Screen:**from this screen user can see all his activity to the properties for example,The user can see all the properties he has previously liked,He can also see the properties that he requested for reservation, but he did not receive a response from owner this falls within the 'requested' category, as well as the properties that he booked an appointment to see and the owner approved the booking date Which falls within the Booked category,then from Booked category he can press on button inspected to move property to the inspected category but if not inspected user can change or delete the booked ,after inspected the property will move to the applied and on press on Apply button this mean the user deciding to take this property but he Awaiting approval from owner.

Example of inspected and not inspected:

--If I am made appointment in 18/12/2021
the data of made twp Booked is 15/12/2021
and data of today is 19/12//2021

assume user go to the first Booked in date 18/12/2021 which is the agreed date
then we considered this request is inspected the user can move it to the inspected
category or delete it, but if user didn't go to the appointment so it is considered not
inspected then can edit the appointment.

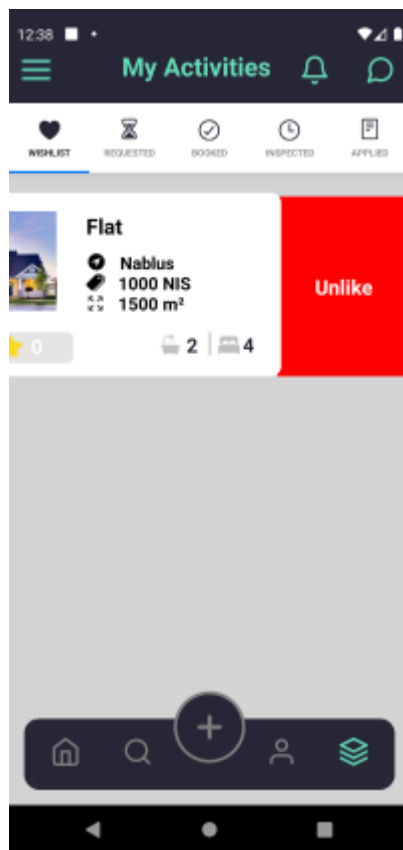


Fig1(Activity screen)



Fig2 (Activity screen)

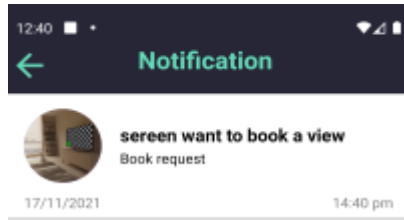


Fig1(Activity screen)



Fig2 (Activity screen)

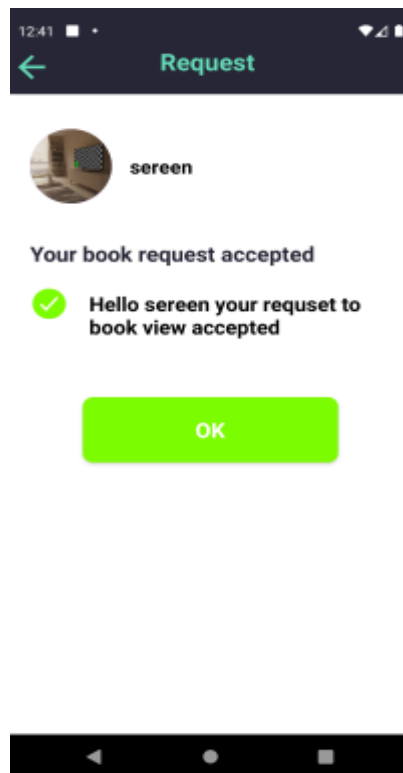


Fig3(Activity screen)

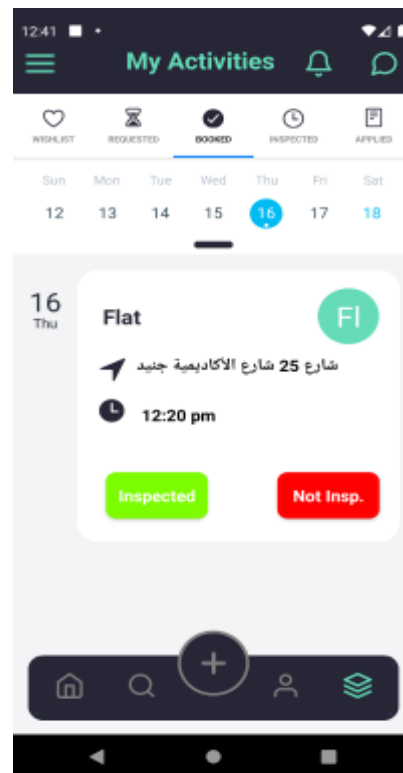


Fig4 (Activity screen)

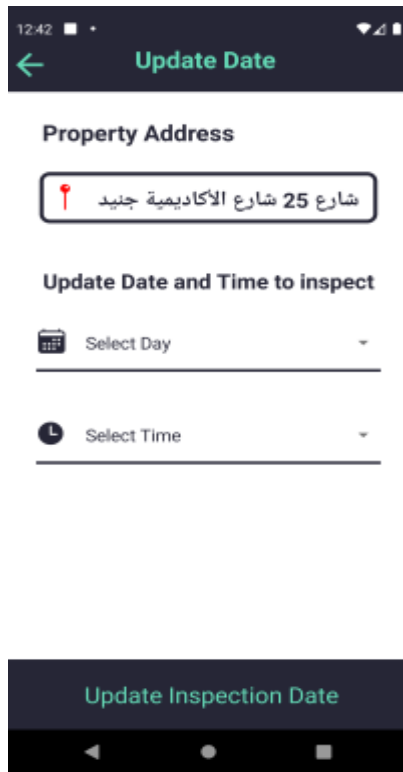


Fig5(Activity screen)

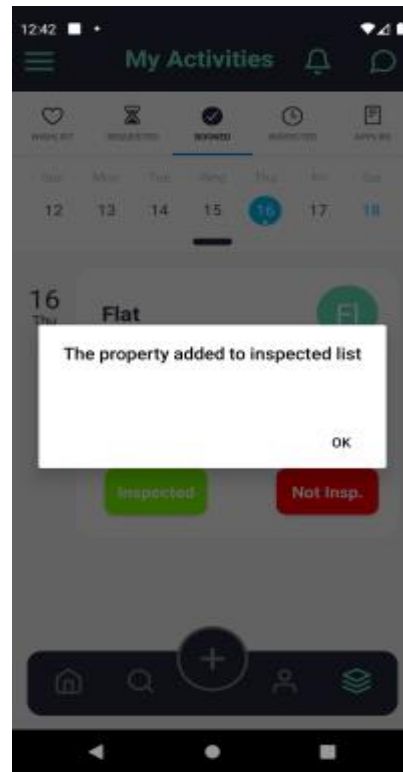


Fig6 (Activity screen)

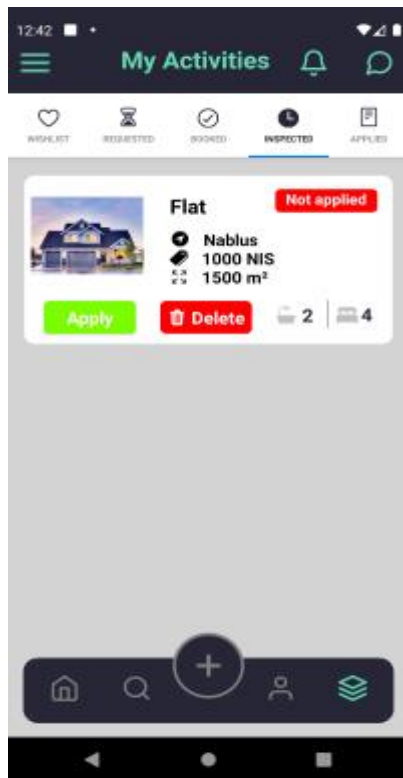


Fig7(Activity screen)

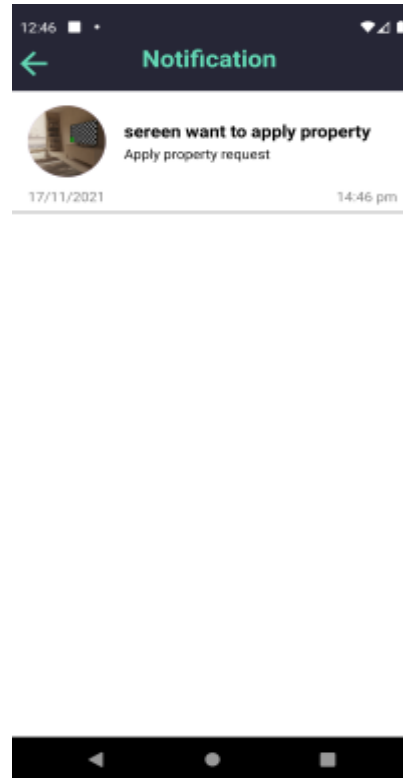


Fig8 (Activity screen)

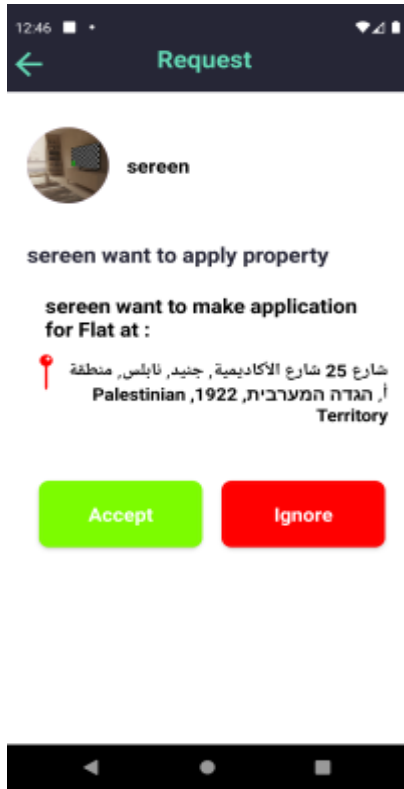


Fig9(Activity screen)

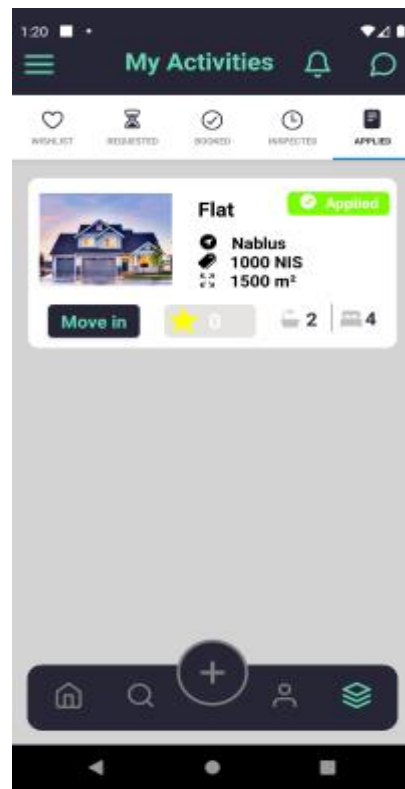


Fig10 (Activity screen)

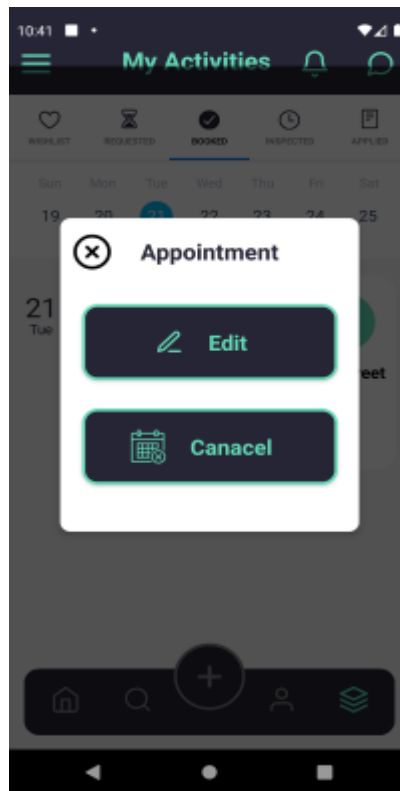


Fig11(Activity screen)

Search Screen:When the "search options" are clicked, the user can search for the properties by entering a set of preferences such as the type of property, price range, number of bedrooms and bathrooms, and location ,move in date ,features and he can also modify the preferences to start the search again,when pressed on sort the user can make sorting on the searched items based on differents filters such as property street name(A-z,z-A),property price(Low to high,high to low),Data property was listed (earlier to latest,latest to earlier),moving in(earlier to latest,latest to earlier)then can see the result of search and sort in list or in map view.

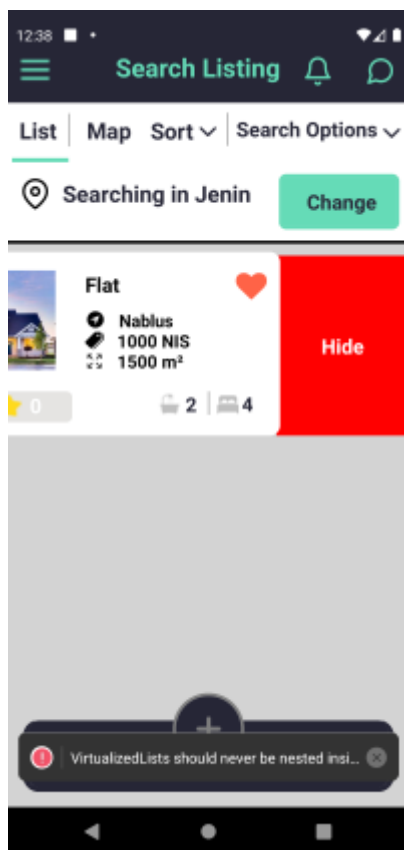


Fig1(search screen)

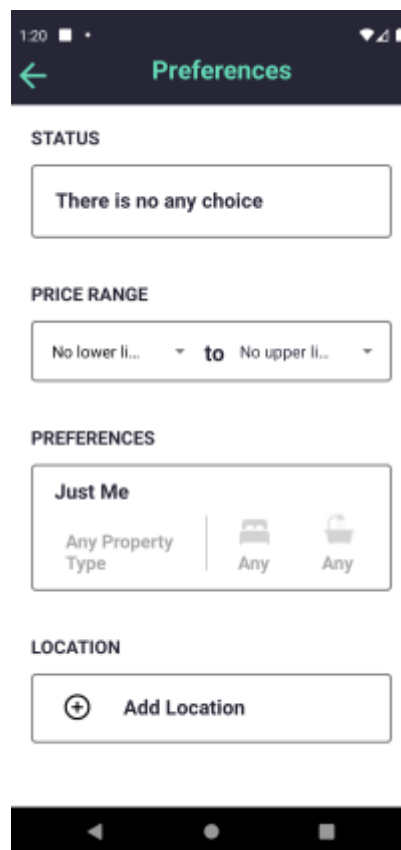


Fig2(search screen)



Fig3(search screen)



Fig4(search screen)



Fig5(search screen)

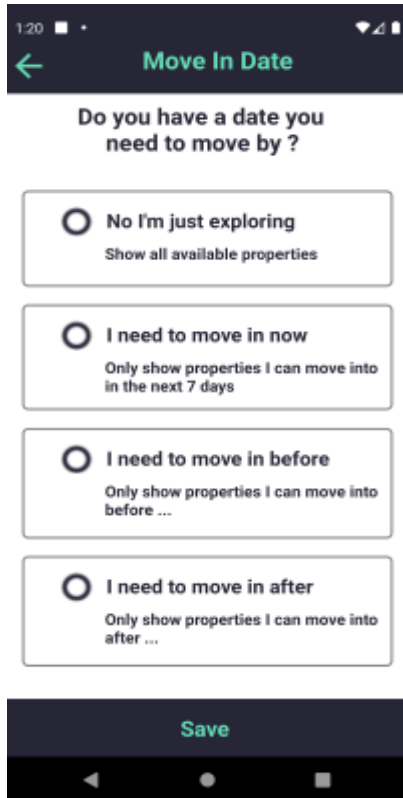


Fig6(search screen)

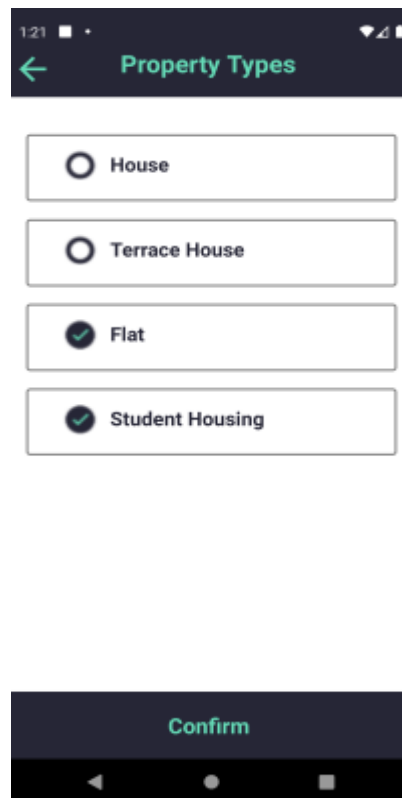


Fig7(search screen)



Fig8(search screen)

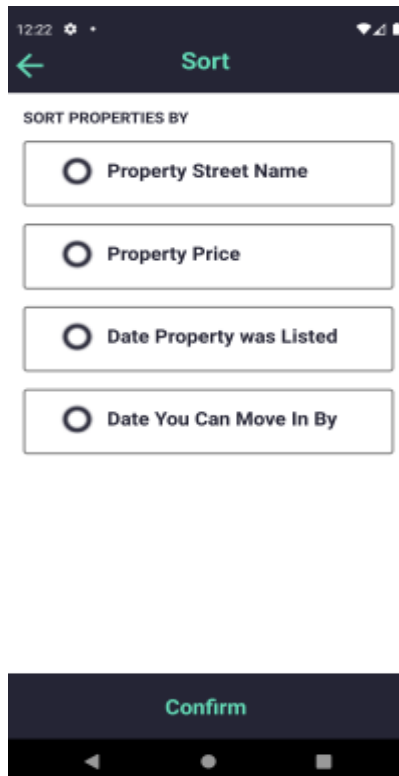


Fig9(search screen)

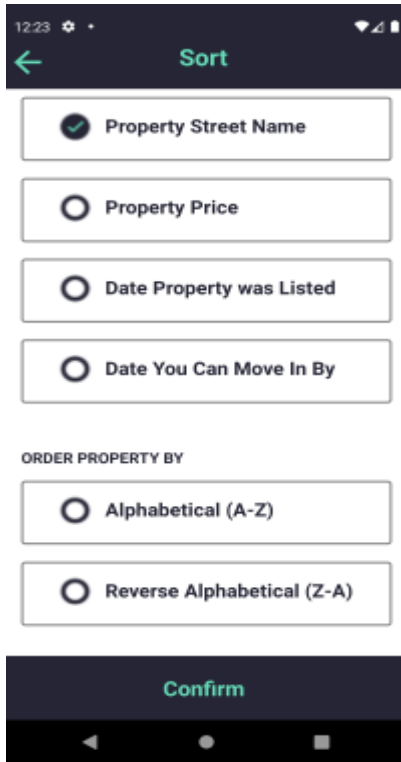


Fig10(search screen)

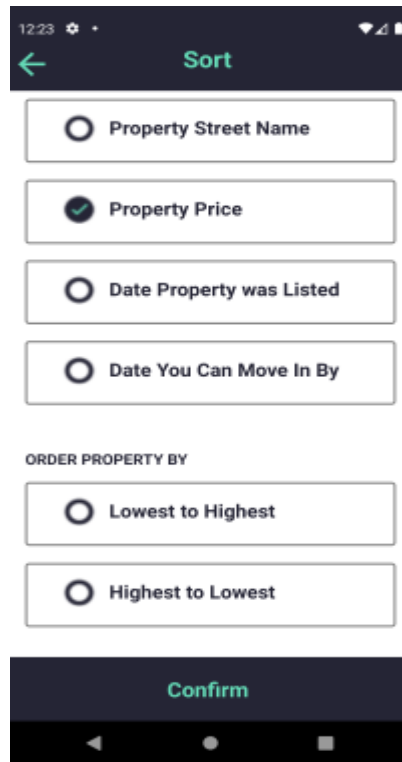


Fig11(search screen)

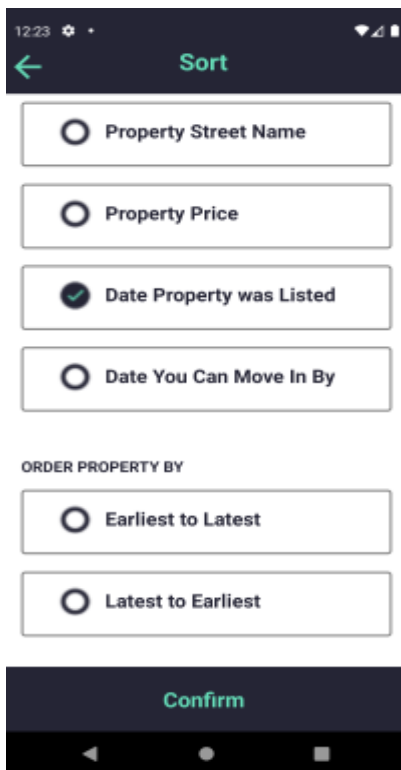


Fig12(search screen)

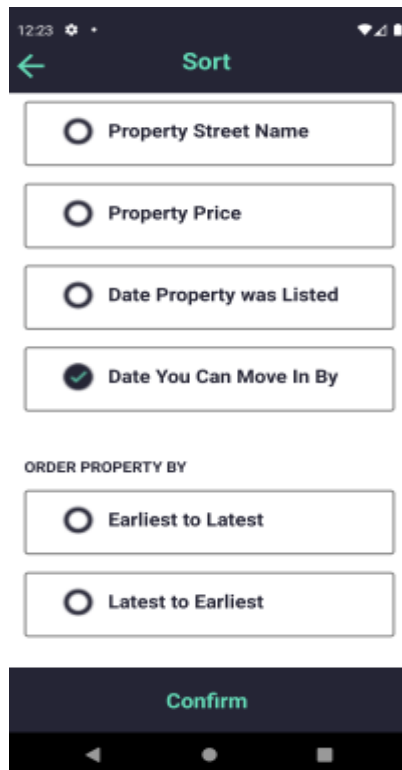


Fig13(search screen)

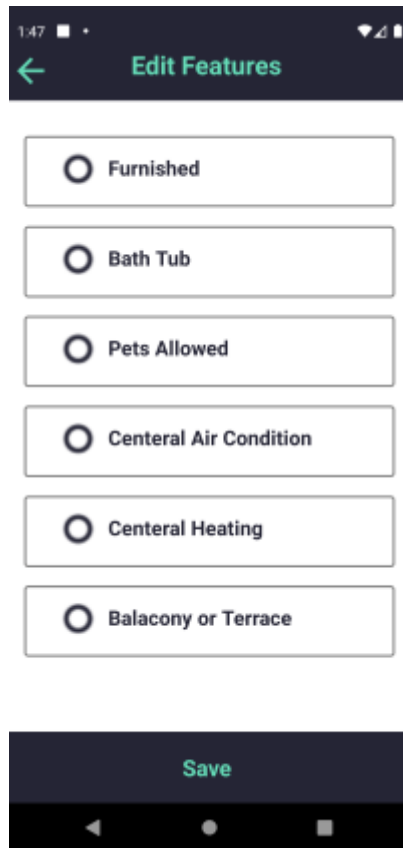


Fig14(search screen)

Home Screen: in this screen we showing the latest and mostrating properties user can make like in property and can hide it from home page

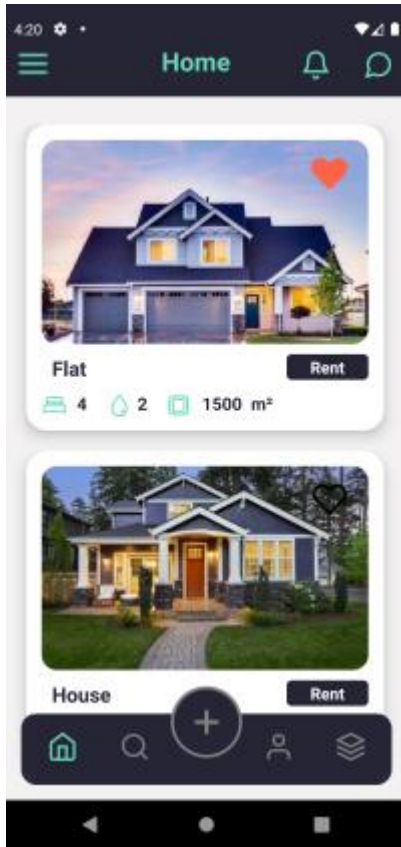


Fig1(Home screen)

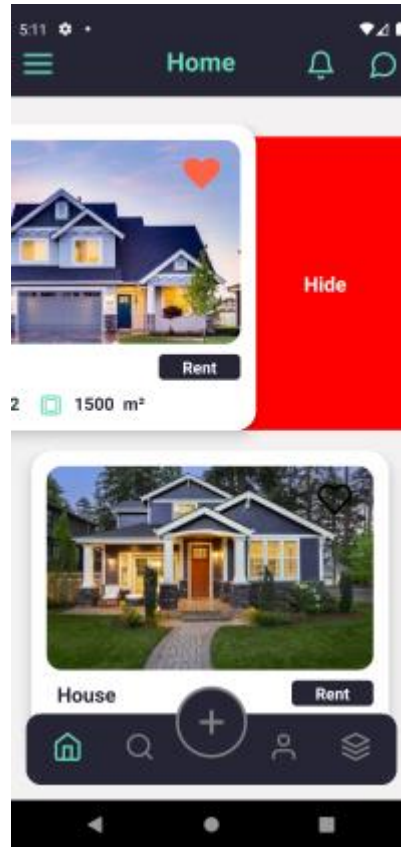


Fig2(Home screen)

Show Details screen: this screen will show the all information about property such As price,location,number of bedrooms,number bathrooms,Address,Area,and can add Comment.



Fig1(show details)

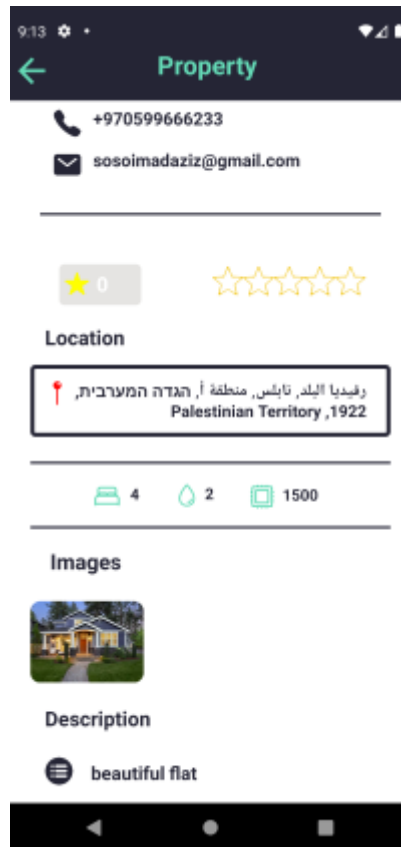


Fig2(show details)

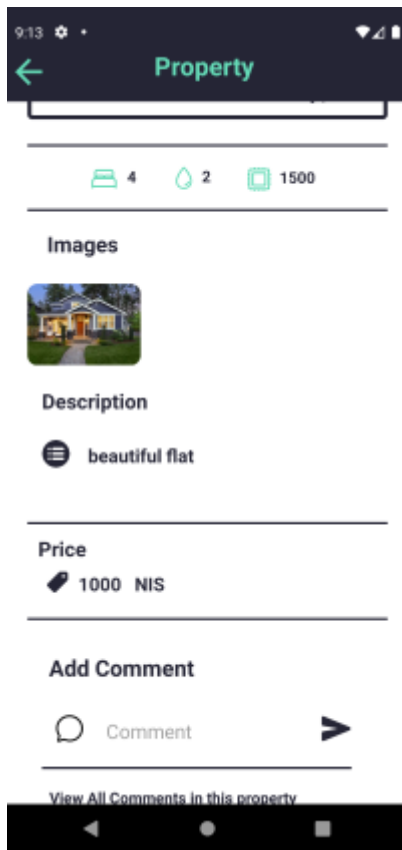


Fig3(show details)

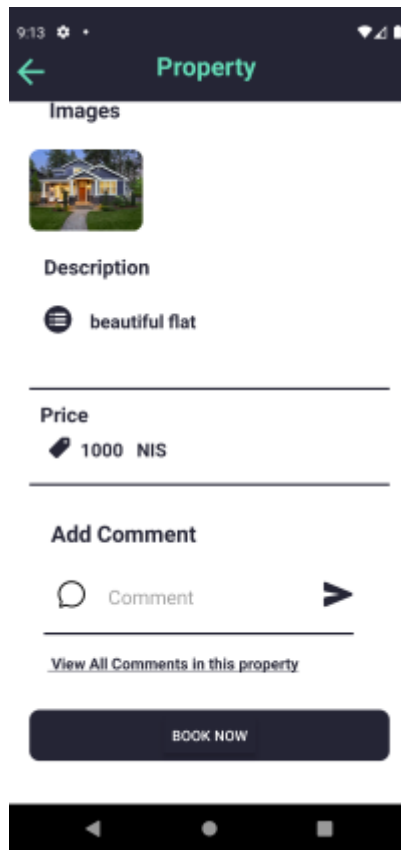


Fig4(show details)

4.4.2: Web Admin page

- The website is only available for the admin of the application, the admin opens the website and logs in with his information to his page. The admin page consists of many parts, the admin profile which contains his information, he has the ability to edit this information if the admin changed or anything from his information has changed, there also the menu which contains the operations that the admin does, such as View all requests from owners who want to add a property to the application and check the information related to each the property to decide if it will be approved or rejected. What if the owner has the capacity of trust so that if there are more than three properties for this owner within the application, his new requests are approved without checking any information related to the property, and the admin can also delete any property from the application.

House Rental Management System Muna_Admin

Dashboard
Owner Requests
House Type
Houses
Owners
Charts
Users

House Form

House_Number
Owner_Name
House_type
features
Price
city

OWNers Requests

Show 10 entries Search:

#	House	Action
1	Owner Name: malek esam House Type: Student Housing Features: centrall heating Price: 500.00	Show more Details Delete
2	Owner Name: ahmad awwad House Type: Student Housing Features: centrall heating Price: 500.00	Show more Details Delete

Showing 1 to 2 of 2 entries Previous 1 Next

Fig1(Admin)

The screenshot displays an administrative interface. On the left is a vertical sidebar with a dark background and white text, containing the following menu items: Dashboard (with a home icon), Owner Requests (with a bell icon), House Type (with a list icon), Houses (with a house icon), Owners (with a group of people icon), Charts (with a bar chart icon), and Users (with a group of people icon). The main content area is titled 'House Form' and contains several input fields: 'House_Number', 'Owner_Name', 'House_type', 'features' (a large text area), 'Price', and 'city'.

Fig2(Admin)

- there is a capability to add new kind of properties or edit , delete existing kinds

The screenshot shows an administrative interface for managing categories. On the left is a 'Category Form' with a 'Name' input field and 'Save' and 'Cancel' buttons. On the right is a 'Category List' section. It includes a 'Show 10 entries' dropdown and a search box. Below is a table with 4 rows, each representing a category. The table has columns for '#', 'Category', and 'Action'. The 'Action' column contains 'Edit' and 'Delete' buttons for each row.

#	Category	Action
1	House	Edit Delete
2	Flat	Edit Delete
3	Student Housing	Edit Delete
4	Terrace House	Edit Delete

Below the table, it says 'Showing 1 to 4 of 4 entries' and 'Previous 1 Next'.

Fig3(Admin)

- View all owners in the application and see the percentage of real estate for each owner in the application.

List of Owners

Show 10 entries Search:

#	Owner Name	property percentage	Action
1	lama	14%	Show all
2	leen ali	71%	Show all
3	malek esam	14%	Show all

Showing 1 to 3 of 3 entries Previous 1 Next

Fig4(Admin)

- Charts :The admin has 2 charts, a chart to classify users by their gender, first chart to represent the percentage of properties offered for sale and properties offered for rent in the application ,second chart to represent percentage of each category of properties in the app.

the distribution for sell and rent propertires

View chart

➤

the distribution for kind of properties

View chart

➤

Fig5(Admin)

the distribution for sell and rent propertires

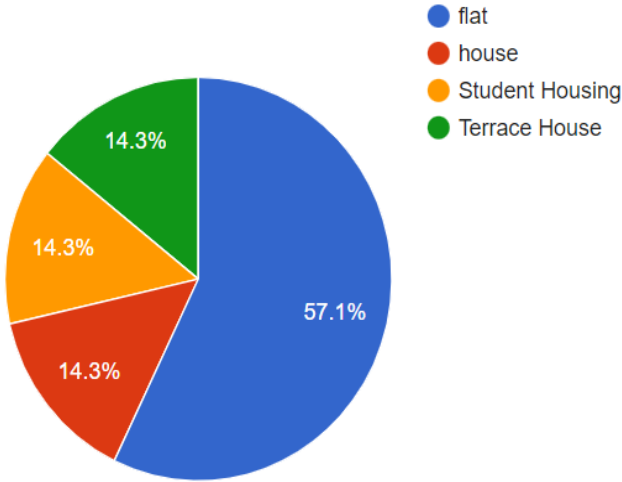


Fig6(Admin)

the distribution for sell and rent propertires

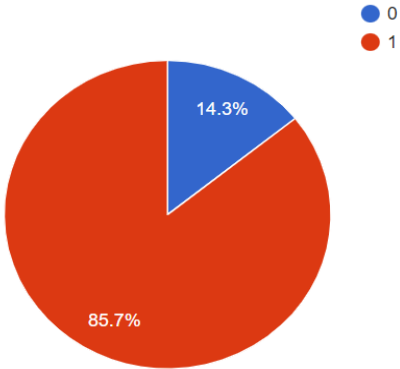


Fig7(Admin) (0 : rent,1: sell)

Chapter 5: Results and Discussion

We were able to finish the project and reach the desired goal of creating a mobile application for real estate, where the application contains different types of real estate that can be rented or sold. The owner just sends a request to the admin by entering all information about the property and uploading some pictures of the property, the customer can search, navigate and explore all the real estate within the application in all places without the need to move, travel, go and suffer. This application saved time and effort and gave the user knowledge of real estate, prices and characteristics.

Chapter 6: Conclusions and Recommendation

- Summary

We were able to create a mobile application to make the real estate process easier and save time for the owner to view all the details related to his property and get the largest number of tenants and buyers, and also for the customer he can see all the properties and choose the most suitable for him.

- what we learned

- 1- React native framework for mobile development on the client side.
- 2- Node.js runtime environment with Express framework for the server side.

- Future work

- 1-Make more development on the admin page to make the admin verify the owner's ownership of the property using the image processing techniques and make more restrictions on accepting or rejecting real estate requests, but we did not find enough time during this chapter.

- 2-ñable showing the all hospital and restaurants and Public parks, sports clubs and pharmacies available in the area of the property.

- 3-make chat between owner and customers

- 4-Allow to enter more properties such as lands,offices and farms.

Chapter 7:References

[1]<https://www.softermii.com/blog/real-estate-app-development-guide-types-features-and-cost>

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[3]<https://www.cisin.com/coffee-break/enterprise/what-are-the-benefits-of-having-a-mobile-app-for-real-estate.html>

[4][5 Important Benefits of Real Estate App for Agents and Brokers - TechTravelHub](#)