Software Engineering CSC648/848 Spring 2019

BetterHome

Spring 2019
Team 43

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Milestone 2
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History Table (revisions):

Revisions	Date
1st	04/02/2019

Table of Contents:

1. **Data Definitions V2:**

Admin:
User from BetterHome team that can maintain use information and ensure listings posted on our website are valid.

Client (Registered User):
User that has registered with the site, can access all listings on the site, can message the listing owners, and can post their own listings.

Guest User:
User can see the listings on the site without making an account, but cannot message listing owners nor access their contact information.

Privacy policy:
Policy to maintain and protect our user information.

Map View:
A list of all available home/apartment listings in the designated area.

Handicap:
Indicator on listings to show that they have handicap accessible pathways.

Listing:

- Photo:
Some photos to showcase the house/apartment.
- Price/Rate:
A general idea of how much each listing is.
- Address:
Area for where the listing is located.

BART Accessible:
Within a close proximity to a BART Station.

Availability:
Indicator to show that if the listing is available (could signify that an admin should take down the listing OR can just scrap this and have the owner take down the listing themself).

Reseller:
A user that is planning to purchase houses/apartments not for their own use, but to improve and then resell back on the market.

Handicap User:
A user that would like special accommodations with their house: wheelchair accessible (elevator to apartment, ramp) or within a relatively close distance to a hospitable or care unit.

Landlord:
A user that will be posting listings on the website in order to get a buyer's attention.

Rooms:
Amount of rooms available in the property listing.

Parking:
How much parking comes with the property.

Profile:
A place on our website that will show personal information of the user.

Help:
A brief explanation of how our website works.

2. Functional Requirements V2:

1st Priority:

1. For Admin:
1. Admin shall be able to update/maintain user information.
2. Admin shall be able to delete Landlord and Clients.
3. Admin shall be able to lock and unlock Landlord and Clients.
4. Admin shall be able to find Landlord and Clients.
5. Admin shall be able to view gallery.
6. Admin shall be able to delete photos.
7. Admin shall be able to reset password for both Landlord and Clients.
8. Admin shall be able to access username and email of Landlord and Clients.

2. For Landlord:
1. Landlord shall be able to browse the website without login.
2. New Landlord shall be able to register.
3. Registered Landlord shall be able to post property descriptions.
4. Registered Landlord shall be able to post the location of the property.
5. Registered Landlord shall be able to post the price of the property.
6. Registered Landlord shall be able to post the city and zipcode of the property.

3. For Client:
1. New clients shall be able to register.
2. Registered clients shall be able to login.
3. Registered clients shall be able to sign out.
4. Registered clients shall be able to modify their profile.
5. Registered clients shall be able to add the listing as favorite .
6. Registered clients shall be able to revisit the favorite .
7. All clients shall be able to browse the website without login.
8. All clients shall be able to view the sale listing.
9. All clients shall be able to view the sold listing.
10. A free text search box shall be displayed to all clients.

2nd Priority:

For Admin:
9. Admin shall be able to filter data by property type, status, or date posted.
10. Admin shall be able to review flags, and take the appropriate action.
11. Admin shall be able to run data analysis on user data to understand how the application is being used.

For Client:
11. The default display in the free text search box shall be "address, neighborhood, zip".
12. All clients shall be able to search the listing by city.
13. All clients shall be able to search the listing by price range.
14. All clients shall be able to search the listing by property type.
15. All clients shall be able to filter the search result by relevance.
16. All clients shall be able to modify the last search
17. The search results shall be able to be sorted by relevance.
18. All clients shall be able to view the search results in a map view based on current location.
19. All clients shall be able to contact the landlord.
20. All clients shall be able to contact the admin.
21. Listings thats are similar to a viewed listing should be displayed to all clients
22. A Q&A page shall be provided for all clients.
23. All handicap users shall be able to search for listings by accessibility.
24. All resellers shall be able to repost the listing onto the site.
25. The application shall keep track of registered user history search.
26. Registered clients shall be given a list of checkbox to select and search (Advanced search).

For Landlord:
7. Registered Landlord shall be able to select if the property is a house or apartment.
8. Registered Landlord shall be able to select if the property is wheelchair accessible.
9. Registered Landlord shall be able to login.
10. Registered Landlord shall be able to add photos.
11. Registered Landlord shall be able to delete photos.
12. Registered Landlord shall be able to contact registered clients.
13. Registered Landlord shall be able to view gallery.
14. Registered Landlord shall be able to contact admin.
15. Registered Landlord shall be able to change the property status to available, pending, and sold.

16. Registered Landlord shall be able to update price, location, and pictures.
17. Registered Landlord shall be given a list of checkbox to select if their property has access to wheelchair, BART, parking, etc.

For guest User:
1. Guest users shall be able to register.
2. Guest users shall be able to search listing by city.
3. Guest users shall be able to search listing by price range.
4. Guest users shall be able to search listing by property type.
5. Guest users shall be able to modify the last search.
6. Guest users should be able to view the search results in a map view based on current location.

For apartment Searcher:
1. Apartment searcher shall be able to search apartments only available for rent
2. Apartment searcher shall be able to search the apartment by number of bedrooms
3. Apartment searcher shall be able to search the apartment by monthly payment.
4. Apartment searcher shall be able to sort by the results by relevance.
5. Apartment searcher shall be able to filter the results by relevance.
6. Apartment searcher shall be able to view the apartment features.

3rd Priority:

6. For handicap:
1. Handicap users shall be able to flag their profile, denoting a need for handicap-specific accessibilities.
2. Handicap users shall be able to specify in their profile the exact nature of their accessibility needs.
3. Handicap users shall be able to specify in their search that they require a ramp.
4. Handicap users shall be able to specify in their search that they require a ground floor unit.
5. Handicap users shall be able to search the listing by number of floors.

7. For reseller:
1. Resellers shall be able to access the original post for the property they purchased.
2. Resellers shall be able to modify and repost the original listing with updated information.
3. Original listing shall be linked to new listing so other users may view and verify improvements and/or alterations to property.

Non-Functional Requirements:

Security:
1. Login shall be required for Clients and Admins.
2. Username shall be the Client's email.
3. Password shall be encrypted when stored.
4. Client's session shall end upon leaving the site.
5. Client's session shall only end by code design.

Performance:
1. Loading time for site shall be less than 3 seconds for any screen.

Capacity:
1. The total data storage allowed by the web site shall not exceed of 80 % of the server capacity for this site.
2. The web site shall be prepared to support scalability for adding future new features.
3. The web site shall be capable to handle at least 50 Clients simultaneously.

Reliability:
1. Downtime for maintenance shall be less than 3 hours per month.
2. Downtime for maintenance shall not affect the main functionality of the site.
3. In all cases, downtime for maintenance shall be informed to the Client through email.

Recovery:
1. In a total failure case, the whole site should be put down to revision.
2. If broken, the mean time to recovery shall not exceed one day.

Data Integrity:
1. Database tables shall be backed up every day.
2. Administrator shall be able to execute a recovery when needed.
3. Image Sizes shall be limited up to 1 megabyte.
4. Images shall be uploaded in correct format (jpg, jpeg, or pdf) to the server.
5. Links to images on the server shall be uploaded to the database.

Compatibility:
1. The site shall be compatible with the last version of Microsoft Edge browser (44.17763).

2. The site shall be compatible with the last version of Safari browser (12).
3. The site shall be compatible with the last version of Firefox browser (65.0.2).
4. The site shall be compatible with the last version of Chrome browser (7.3).
5. Third party applications shall not be able to modify any content that may affect the site compatibility.
6. The site shall be ready to support with any or minimal changes any other compatibility that may be added in future versions.
7. The site should be compatible to escalate to new relational databases.

Conformance with Coding Standards:
1. Architecture and design standards shall meet all the requirements listed under the High Level Architecture section of this document.
2. Only working code that meets all the code standards shall be submitted to the project repository.
3. Any working code shall be tested and debugged before being considered working code.
4. Any internal errors or exceptions returned by the code shall be stored in a log.
5. Any error that may affect the functionality of the site shall be reported to the Client.
6. Any error shall be handled in a way that does not affect the functionality of the site.
7. The whole production cycle of this site shall be finished 2 weeks before the delivery date.
8. This site shall not be launched without all the priority one features completed and tested.

Look and Feel Standards:
1. The application and its layouts shall look professional.
2. The site shall be simple enough to handle by all the parties involved.
3. Elements on screen shall have the correct density to meet the compatibility standard of the browsers.
4. Elements on screen shall have rich and beautiful colors for Client delight.
5. The site shall be able to work correctly without mouse interaction.
6. The site shall be able to work correctively without keyboard interaction.
7. Elements in screen shall be resized automatically without Client interaction when being loaded in all the different platforms supported by the site.

Internationalization / Localization Requirements:
1. Default language shall be English.
2. The site shall support scalability to add other languages.
3. The site shall support geolocation in order to show listing locations.
4. Any copyrighted material shall be immediately be taken down upon reception of an official DMCA takedown request.

Website Policies:
1. A link to the policies of this site shall be always visible in all its pages to be accessible by all the parties.
2. Clients' data shall not be sold to third parties.
3. Clients and Landlords data that do not add any functionality to the system shall not be collected.
4. Clients that post inappropriate listings(false listings/ copyright images/ sexual images) shall have their postings taken down.

3. UI Mockups and Storyboards

For Client:

Client users(Registered users) can login the account with their username and password. They are able to recover their password and all users are able to register a new account. Client users are able to view their profile and modify their profile and information. And client users are able to

revisit the listings that they mark as favorites .

Login Page

Home | About us | Contact us

Username [   ]
password [   ]
    Forget password

Create Account   Login

Register page

                                          Login

Home | About us | Contact us

First name [   ]
Last name [   ]
username [   ]
password [   ]
E-mail [   ]

Enter the word below

T6S9B

[   ]   Submit

My account : profile page

Home | About us | Contact us

My Account

Your Account > Profile

Favorites

→ Profile

My Listings

First Name

Last Name

Email

Save

Set password

"password"

"confirm password"

save

My Account: Favorites page

Home | About us | Contact us

My Account

Your Account >

→ Favorites

Profile

My Listings

- Address
- price
- Area

Delete

- Address
- price
- Area

Delete

- Address
- price
- Area

Delete

Home Page

Home | About us | Contact us   [Login]

| Buy | Rent |

"Enter City" | "Address, Neighborhood, zip" | [Search]

Search Result Page

Home | About us | Contact us   [Login]

[Back]   Showing 1-4 out of 100   Sort by: [Relevance ∨]

☐ For Sell
☐ For Rent

Price
☐ under $10k
☐ over $10k

Bed Room
☐ 1+
☐ 2+

- Property type
- price
- Area
- Address

- Property type
- price
- Area
- Address

Relevance
Price: Low-high
Price: high-Low
Area: Low-high
Area: high-Low
Newest

← [1] [2] [3] ... [10] →

For Apartment Searcher:

Apartment Searchers can search the results that only contains the listings that are for renting. Similar to other registered users, they can register new account and they can login to the account. And they are able to view their profile and modify their profile. They are able to revisit their favorites list.

Home Page

Home | About us | Contact us   Log in

Buy   Rent
"Enter City" "Address, Neighborhood, Zip" Search

Search Result Page

Home | About us | Contact us   Log in

Back   Showing 1-4 out of 100.   Sort by: Relevance ▼

☐ For Sell   Price: Low-high
☑ For Rent   Price: high-low
Price   - Property type   Area: Low-high
☐ under 1k/month - Price   Area: high-low
☐ over 1k/month   - Area   Newest
Bed Room   - Address
☐ 1+
☐ 2+   - Property type
                  - Price
                  - Area
                  - Address

← ⬚1 ⬚2 ⬚3 ... ⬚10 →

Login Page

Home | About us | contact us

Username [_____]
password [_____]

Forget password

Create Account   Login

Register Page

Login

Home | About us | contact us

First name [_____]
Last name [_____]
username [_____]
password [_____]
E-mail [_____]

Enter the word below

T659B

[_____]   Submit

My account: profile page

Home | About us | Contact us

My Account

Your Account > Profile

Favorites

→ Profile

My Listings

First Name
Last Name
Email

Save

Set password
"password"
"confirm password"

save

My Account: Favorites Page

Home | About us | Contact us

My Account

Your Account >

→ Favorites

Profile

My Listings

- Address
- price
- Area
Delete

- Address
- price
- Area
Delete

- Address
- price
- Area
Delete

For Handicap

Handicap or BART user can search for wheelchair or BART accessible properties directly from the home page by checking the checkbox for handicap or BART accessible, without login into their account. If handicap user login into his/her account, they can also search for wheelchair or BART accessible under the advanced search option (This option will have many searching criteria in addition to handicap and BART). Handicap or BART user can also find this information from the property listing page, all property listing will indicate if the property has a wheelchair access. All users can access recently added properties from the home page without searching, but registered users will have recommended properties in their account based on their search history. When user click on recently added or recommended properties, it will take them to the property listing page.
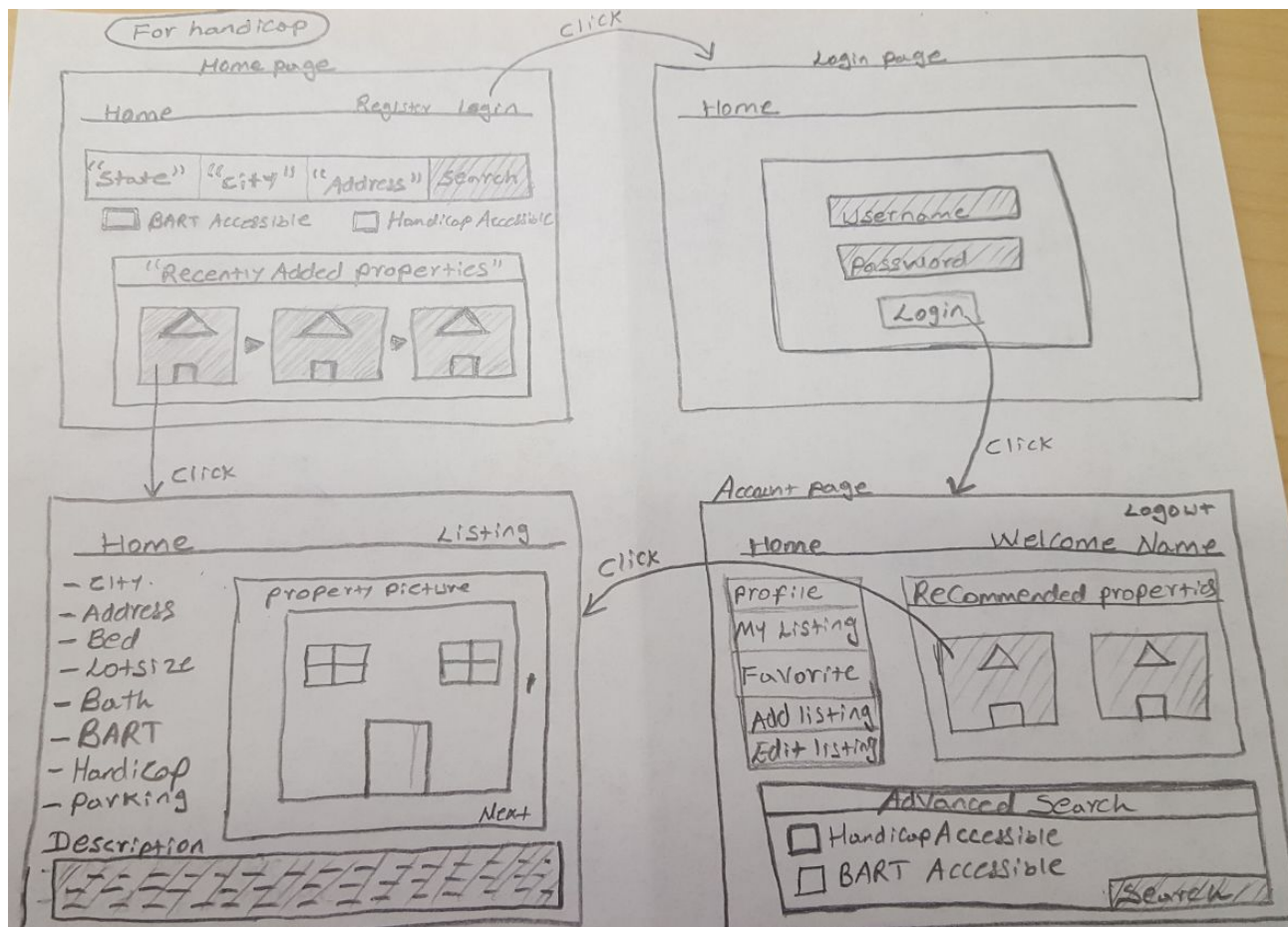
For Landlord:

Joe decides to sell the house. He registers a new account and he fills out the the property information.
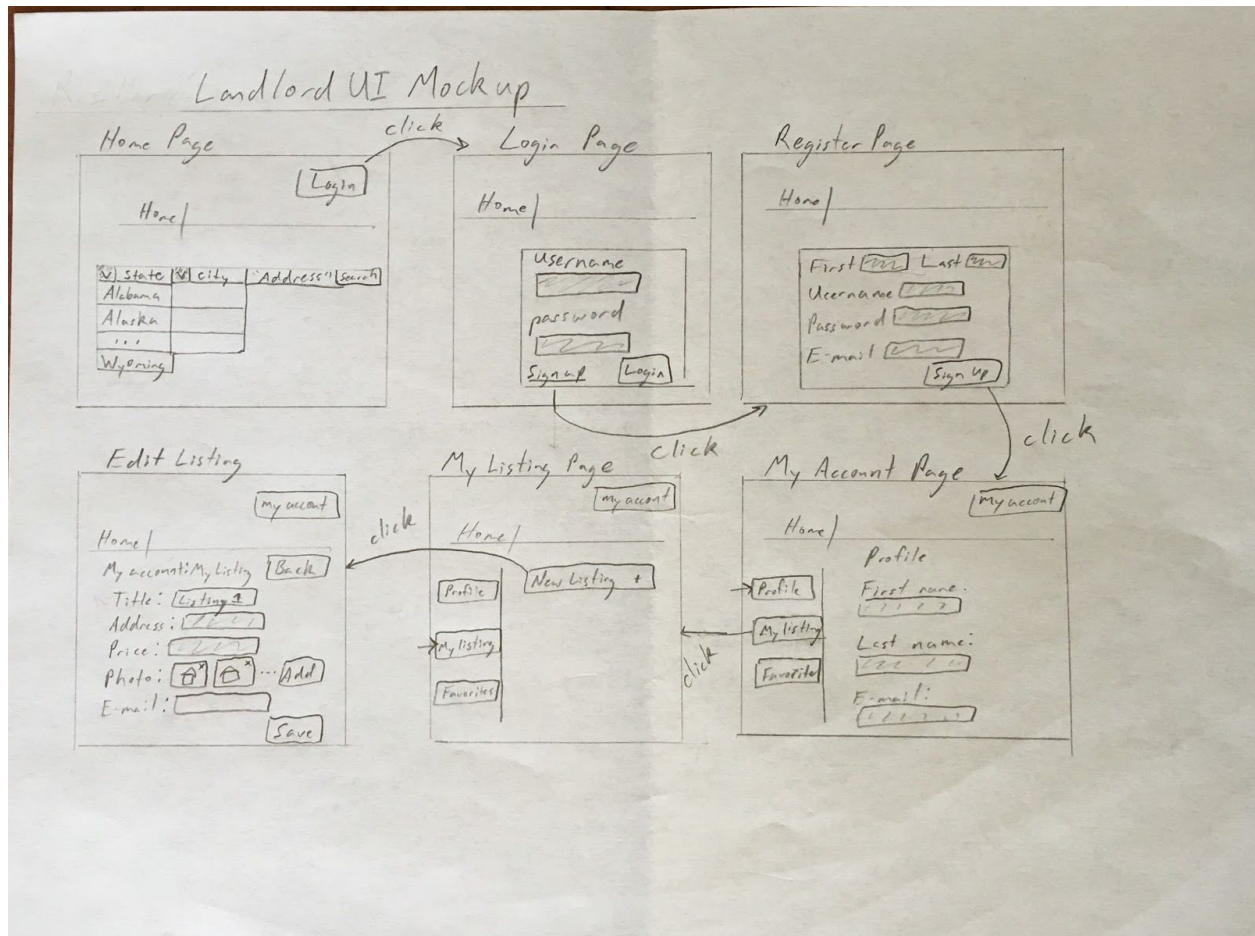
For reseller:

A reseller looks for two things when buying: location and price. They want to search and sort search results in accordance to these terms. While having images to preview the property are also important, he won't make a purchase before making a trip out to look at the property, so it is vital that he be able to contact the seller in order to arrange a meeting. After navigating to the desired listing, they can use the contact information included in the listing.
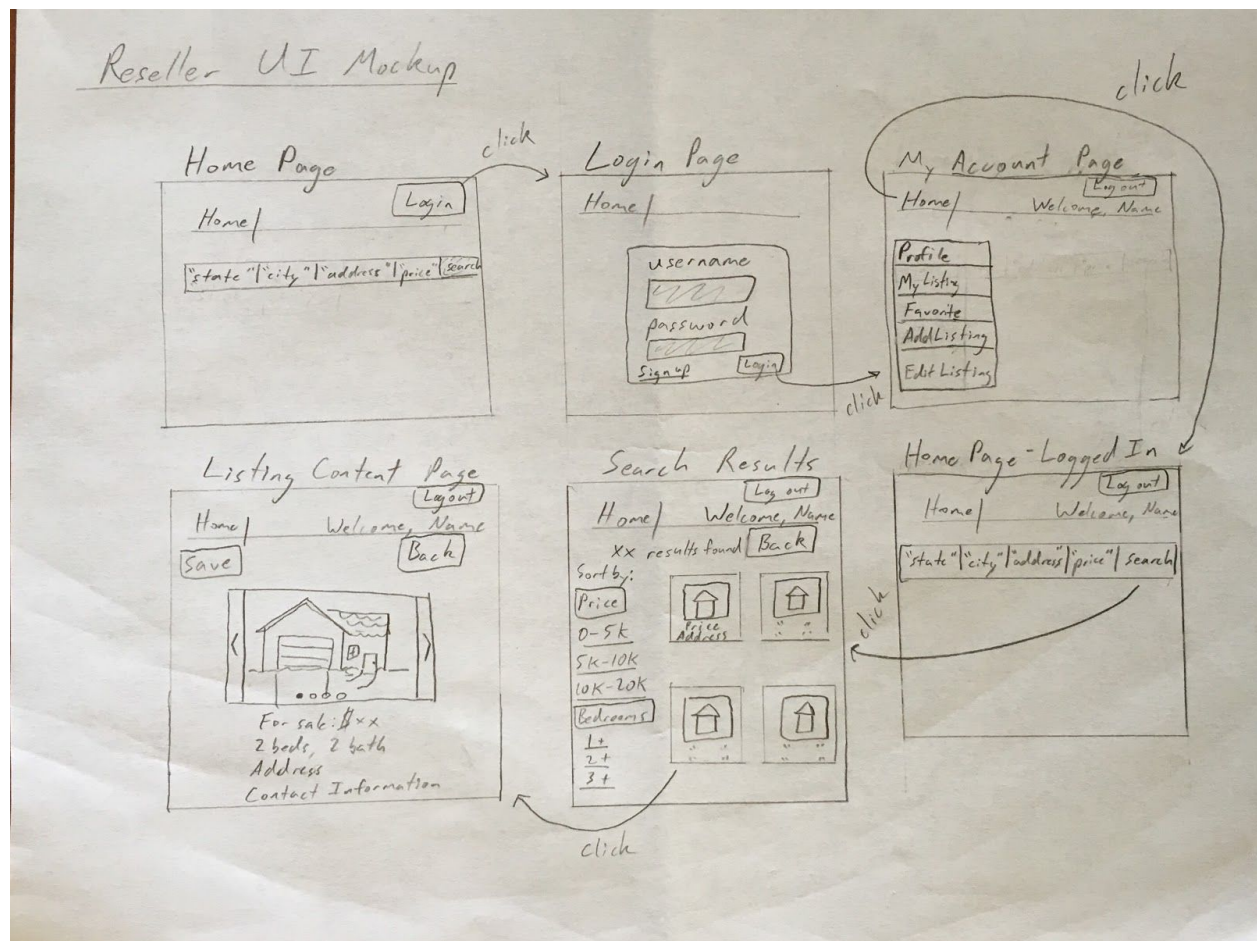
For guest User:

All guest users can search properties using the search button and access recently added properties from the home page. Guest users can register using the register option in the home page. When a guest user clicks on recently added properties or use the search button, the link will take them to the property listing page, using this page they will be able to view different properties.
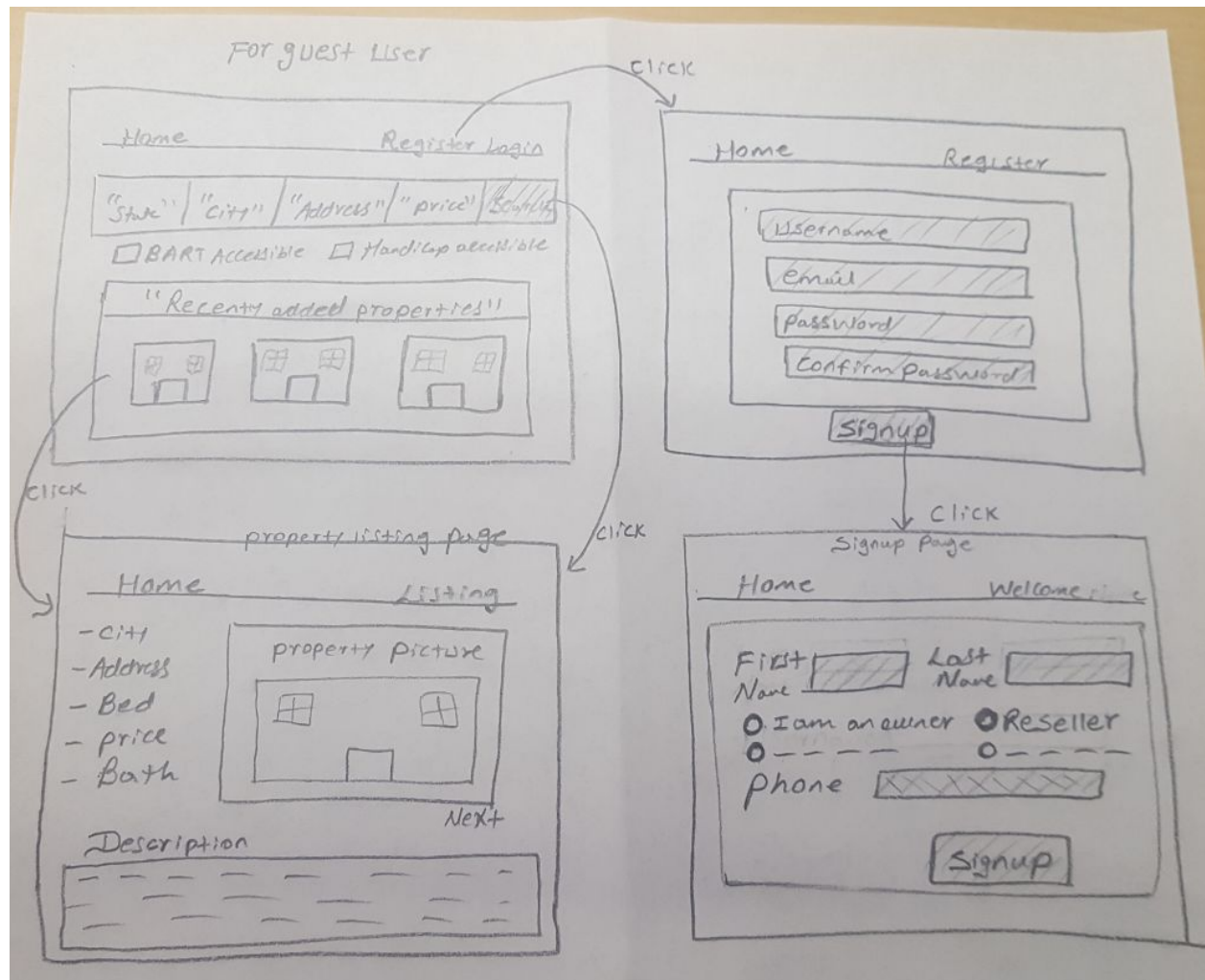
For Admin

Admin will login as an admin, and the admin will have access for administration listing. This listings will include User Management, Database, Image, and logs. The Admin can click in these dropdown list options and edit users (delete or block user) or database.
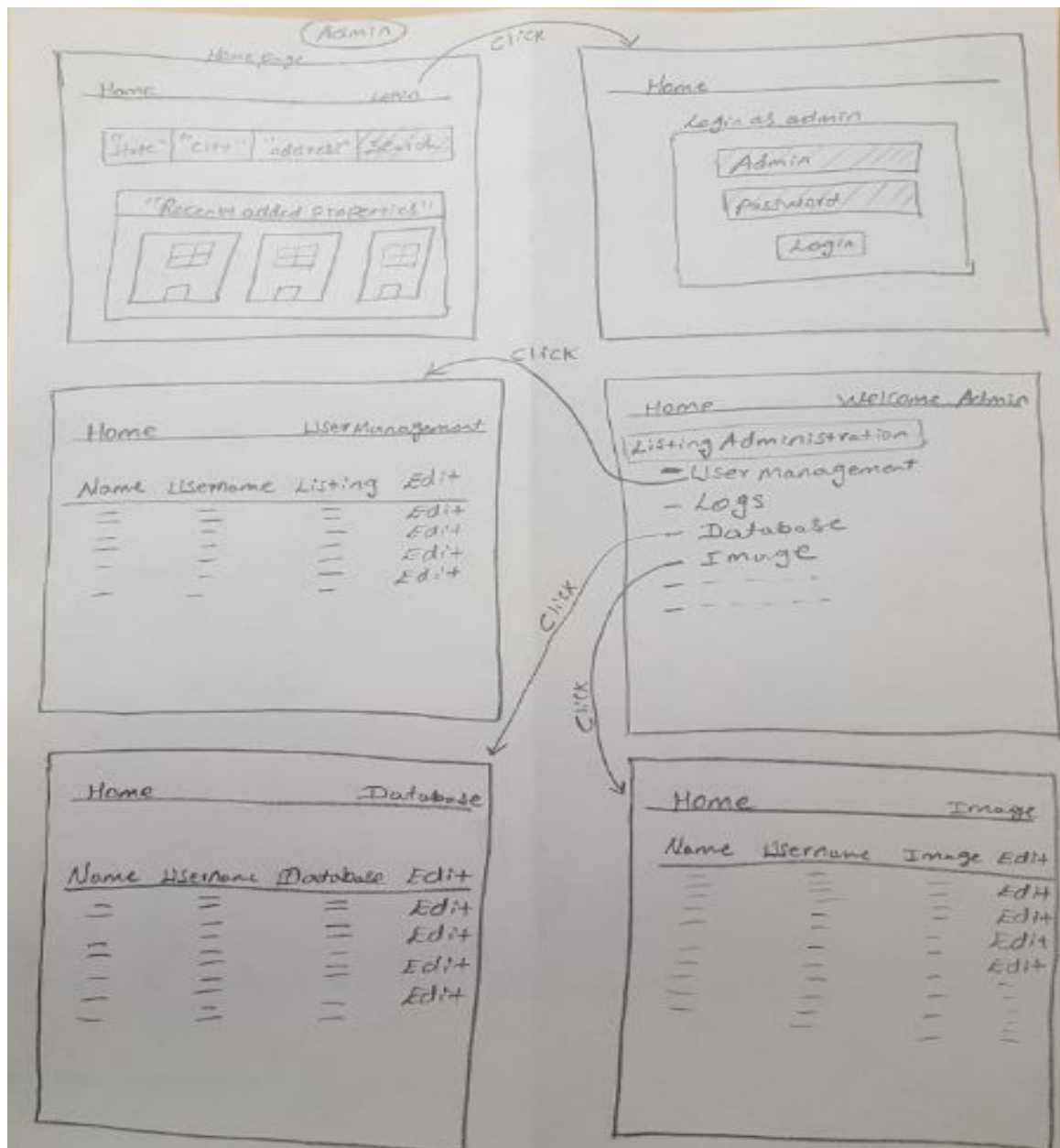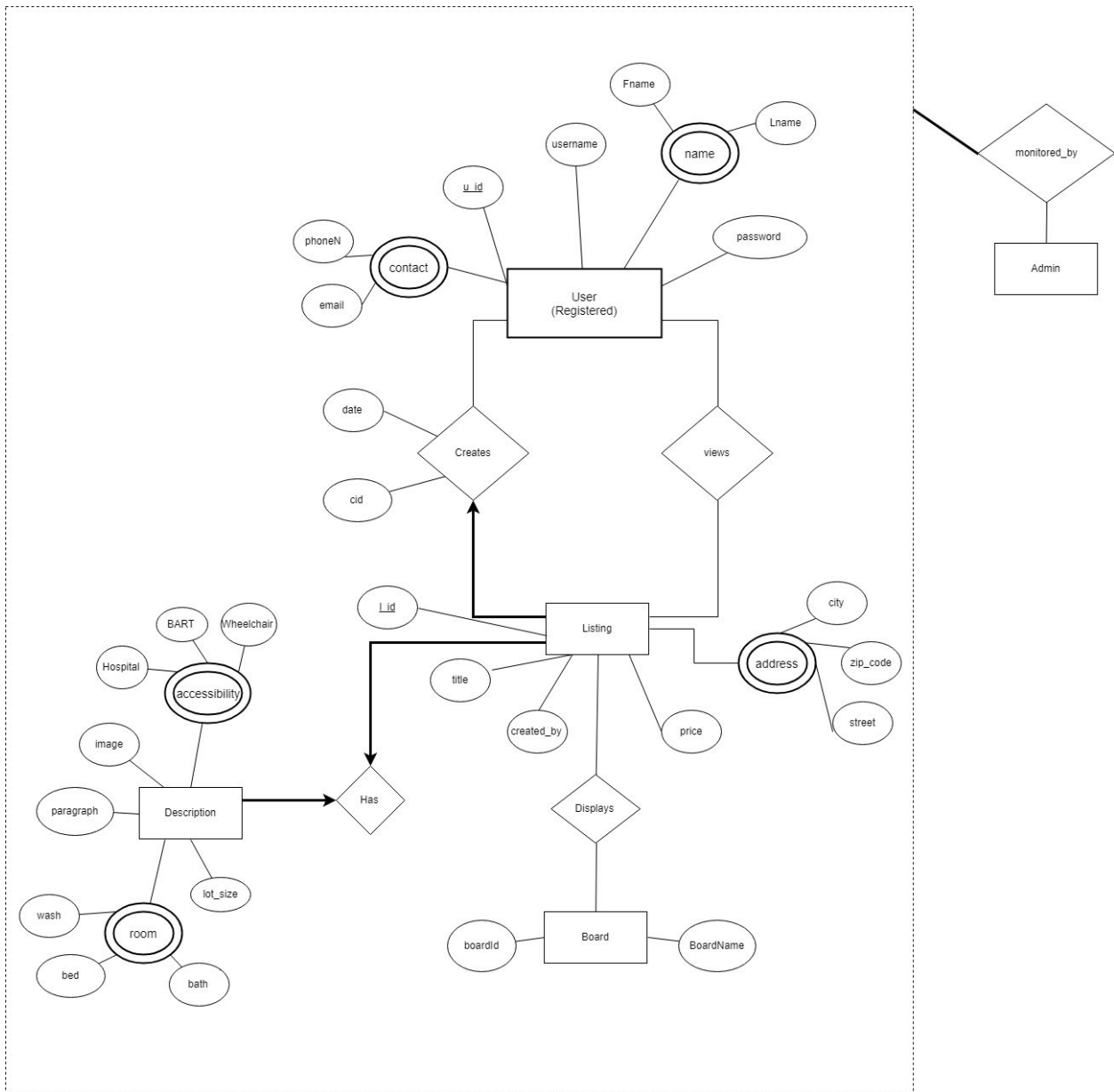
4. High-level Architecture, Database Organization:
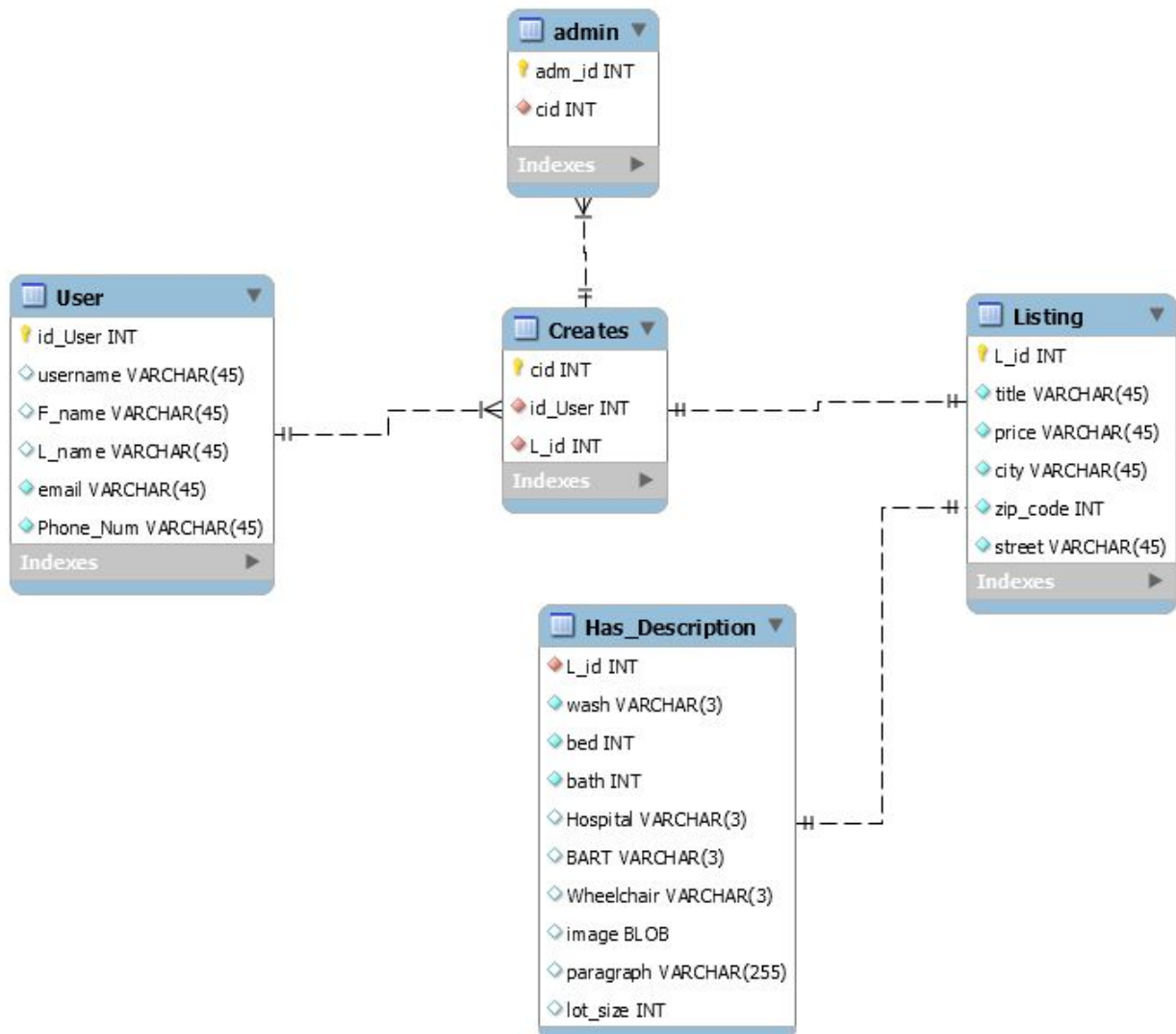
Business Rules:
- Users can create listings on the website.
- Users can view listings with a specific amount of rooms.
- A listing must have only one description describing its characteristics.
- Listings can be displayed on listing boards.
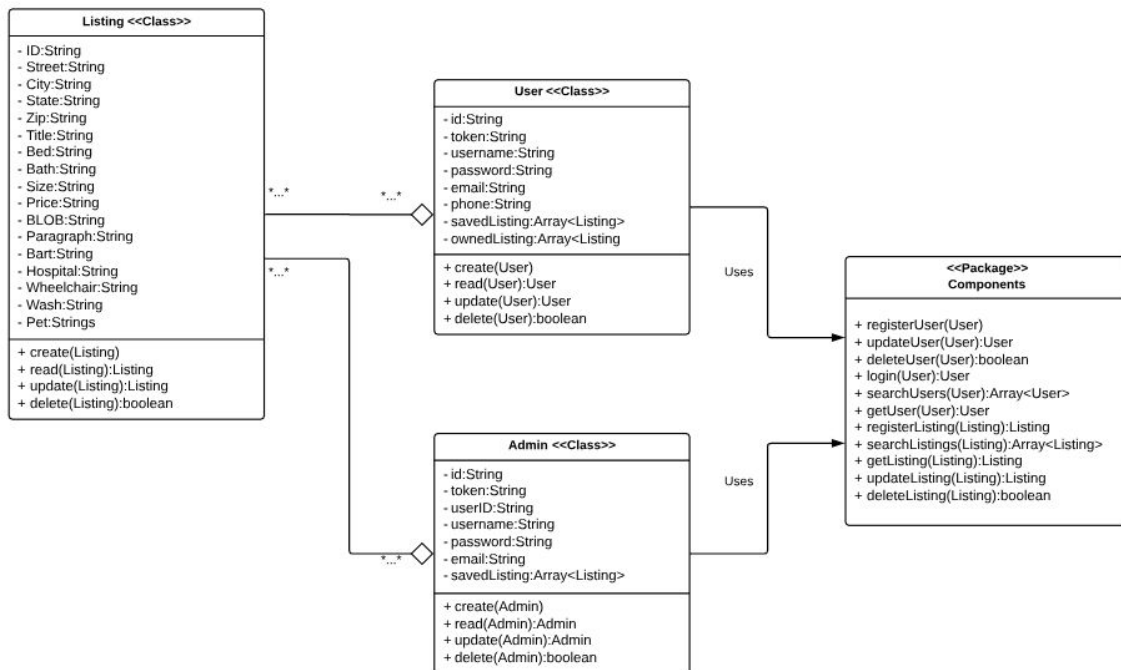- Admins must monitor listings posted by users.

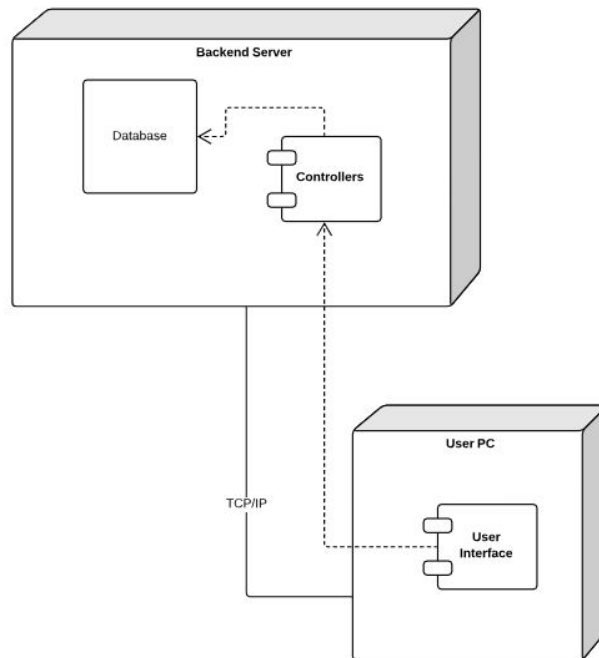**ERD Diagram:**

DB Diagram:

5. High-level UML Diagrams:

Visibility:

+   Public

–   Private

Better Home UML
Class Diagram

Listing <<Class>>

- ID:String
- Street:String
- City:String
- State:String
- Zip:String
- Title:String
- Bed:String
- Bath:String
- Size:String
- Price:String
- BLOB:String
- Paragraph:String
- Bart:String
- Hospital:String
- Wheelchair:String
- Wash:String
- Pet:Strings

+ create(Listing)
+ read(Listing):Listing
+ update(Listing):Listing
+ delete(Listing):boolean

User <<Class>>

- id:String
- token:String
- username:String
- password:String
- email:String
- phone:String
- savedListing:Array<Listing>
- ownedListing:Array<Listing

+ create(User)
+ read(User):User
+ update(User):User
+ delete(User):boolean

Admin <<Class>>

- id:String
- token:String
- userID:String
- username:String
- password:String
- email:String
- savedListing:Array<Listing>

+ create(Admin)
+ read(Admin):Admin
+ update(Admin):Admin
+ delete(Admin):boolean

... *...*

Uses

Uses

<<Package>>
Components

+ registerUser(User)
+ updateUser(User):User
+ deleteUser(User):boolean
+ login(User):User
+ searchUsers(User):Array<User>
+ getUser(User):User
+ registerListing(Listing):Listing
+ searchListings(Listing):Array<Listing>
+ getListing(Listing):Listing
+ updateListing(Listing):Listing
+ deleteListing(Listing):boolean

Deployment Diagram

6. Identify actual key risks for your project at this time:

• Skills risks (do you have the right skills):
  - As a whole, the frontend and backend teams are developing the necessary skills in order to take the database and UI mockup design and learn the frameworks in order to implement the requirements in code

• Schedule risks (can you make it given what you committed and the resources):
  - Due dates for the milestones so far have felt tight, however with proper time management and getting started early as we have, we should be in good shape

• Technical risks (any technical unknowns to solve):

- With the architecture and structure provided in the codebase by the team lead, we don't foresee any legitimate technical issues during development

• <u>Teamwork risks (any issues related to teamwork)</u>:
- The team has well defined roles (frontend / backend) and is operating well on their own, however there could be more time spent to meet up outside of lecture in order to sync up

• <u>Legal/content risks (can you obtain content/SW you need legally with proper licensing, copyright)</u>:
- There are risks of copyrighted images being uploaded to our server and how we will address this, however this is the only major hurdle

7. **<u>Project Management:</u>**

We have decided to use Trello for agile development and project management:

https://trello.com/b/8fSVt9YJ/csc-648-betterhome-team43-board