

**Software Engineering CSC648/848 Spring 2019**  
**~ Project Pegasus ~**  
Team Number 104

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**Milestone 2**  
*March 25th, 2019*

Revision Number	Date	Notes
1	March 25th, 2019	Original submission
2		
3		

## 1 - DATA DEFINITIONS

- Student: a student at San Francisco State University who has been assigned an SFSU email address. Students can be current users of the Pegasus website (either registered or unregistered), future users of the website, or non-users of the website that we would like to attract. A student can be an undergraduate or a graduate, enrolled part time or full time. Student website registration status determines their access to Pegasus services.
- Domicile: a residence, which can be an apartment, house, room, garage, half-room, or other rentable dwelling. A Domicile has the following properties: address, type of property, price, amenities, parking, laundry, gym, number of occupants, etc.
- Landlord: The owner of a Domicile, which can be a private homeowner or a property management company, who does not reside at the domicile. They have an account and are logged in. They use the website to browse listings, post listings, and receive messages from registered users. Landlords have an account, but need not have a profile. Landlords can contact domicile or residence for maintaining property.
- Tenant: A Student that is a current resident of a Domicile. They have an Account and Profile, as well as the address of their current Domicile. They will have access to the Student Neighbor Network.
- Star Tenant: A Tenant who creates and has a Listing to rent out portions of their Domicile. They may or may not share their current Domicile with other Tenants. They may also own the Domicile as a Landlord. Star Tenants have an Account, Profile, and address of their current Domicile. They will have access to the Student Neighbor Network if they are also a Student. Their Profile will indicate whether or not they are a Student. 
- Unregistered User: a user who does not have an account or is not currently logged in. Unregistered Users can browse listings and use the features of the geographical overlay, such as viewing nearby services and calculating commute times, but may not contact any Landlord, Tenant, or Star Tenant. They will not access any information pertaining to the Student Neighbor Network or profiles of Registered Users. They will not access information about current residents of a domicile. Unregistered Users may, if they are Students or Landlords, create an account. Once an account has been created and verified by the administrator, the Unregistered User becomes a Registered User.
- Registered User: a user who has an account and is currently logged in. They use the website to browse listings. Registered users may be Landlords, Students, Tenants, or Star Tenants. Registered Users have an account and a profile. A registered user has access to the services that Project Pegasus has to offer. The user is able to contact any Landlord, Tenant, or Star Tenant in contrast to an unregistered user. A registered user must be only SFSU students, unless, they are registering as a landlord.
- Administrator: a user who has elevated privileges including access to the website database. They use the website to perform administrative tasks and to moderate Listings and Registered Users. An administrator is granted admin rights by another admin and/or the company itself. The administrator is a user but they do not fall under registered or unregistered.

- Student Neighbor Network: A network of Registered Students that provides a platform for Registered Students to communicate with each other, find roommates, post information to neighborhood and community pages, and view information posted by others. The Student Neighbor Network may be accessed only by Registered Students. The Student Neighbor Network is **made up of Pages and users at the macro level**. Pages created in the Student Neighbor Network may contain text descriptions, photos, comment boxes, links, and contact information. Users are Registered Students that can view and post to pages. Users have a profile that can be viewed by other users.
- Account: Landlords, Star Tenants, Tenants, and Registered Students, must create an account to use the website. An account will contain information pertinent to each user type: Students: name, phone number, SFSU email address, user profile; Star Tenants: name, phone number, email address; Tenants: name, phone number, email address, user profile; Landlords: name, property management or real estate company, office phone number, number of listings created. An account can either be verified or unverified. Any account, when created, will be considered unverified. We plan to verify accounts based on their university-provided email address. **Once they have verified their account through an email link, their account will be considered verified**. An unverified account will not have access to post or apply for listings, or access the social network portion of the site. Furthermore, if a user opts to deactivate their account, their account will be considered disabled. When an account is disabled, the end user is given a secret key with which they can use to reactivate their account if they choose. After 1 week, any disabled account will be permanently deleted.
- Profile: A profile is a special view of an account's attributes. For example, a "profile" will consist of a verified user's name, major, interests, bio, etc. There will be a special page that will be set up for all users that acts as a way to view their 'profile'.
- Listing: the entity that represents a property for rent. Listings contain information on the domicile (location, property amenities, number of bedrooms, number of bathrooms, price, etc.), information about the landlord, current Star Tenant and Tenants (when applicable), and embedded calendar for open-house sign-up. Individual Registered Students will also see their **roommate compatibility score** with the current Tenants (if applicable) on the listing. Listings are posted by Landlords or Star Tenants and are available to view by all users. Listings may be moderated by the administrator.

## 2 - FUNCTIONAL REQUIREMENTS

### **KEY:** Reference #

Ex. PL1.2

Post Listing - PL

Item.SubItem - 1.2

### **Priority 1. Post listings.** Reference # PLX.X.

**P1.** PL1.0 - Landlords and tenants will be able to create listings with information about their domicile:

- P1.** PL1.1 - Price
- P1.** PL1.2 - Square footage
- P1.** PL1.3 - Type of domicile
- P1.** PL1.4 - Number of occupants
- P1.** PL1.5 - Pet policy
- P1.** PL1.6 - Amenities
- P1.** PL1.7 - Disability accessibility
- P1.** PL1.8 - Pictures
- P2.** PL1.9 - Length of commitment
- P2.** PL1.10 - Utilities included
- P2.** PL1.11 - Parking
- P2.** PL1.12 - Furnished or unfurnished
- P2.** PL1.13 - Individual or group leasing
- P2.** PL1.14 - Security
- P3.** PL1.15 - Move-in specials
- P3.** PL1.16 - Lease renewal policy
- P3.** PL1.17 - Subletting policy
- P3.** PL1.18 - Number of each type of room
- P3.** PL1.19 - Renovation status
- P3.** PL1.20 - Noise policy
- P3.** PL1.21 - Age of building

**P1.** PL2.0 The site administrator will approve all listings prior to posting.

### **Relevant Stories**

*L1, L2, L3, A1*

### **Priority 1. Search and Filter.** Reference # SFX.X.

**P1.** SF1.0 - Registered and unregistered users can search available domiciles using filters for:

- P1.** SF1.1 - Size and type of domicile (private bedroom in an apartment or house, shared bedroom, private apartment)
- P1.** SF1.2 - Price range
- P1.** SF1.3 - Roommate compatibility (for Registered Users only)
- P1.** SF1.4 - Amenities

- P1. SF1.5 - Utilities included
- P1. SF1.6 - Disability accessibility
- P2. SF1.7 - Number of occupants
- P2. SF1.8 - Proximity to university
- P2. SF1.9 - Pet friendliness
- P2. SF1.10 - Furnished or unfurnished
- P2. SF1.11 - Length of commitment
- P2. SF1.12 - Individual or group leasing
- P3. SF1.13 - Parking
- P3. SF1.14 - Rent control policy
- P3. SF1.15 - Provided security type
- P3. SF1.16 - Rent payment methods
- P3. SF1.17 - Noise level
- P3. SF1.18 - Renters insurance requirements
- P3. SF1.19 - Subletting policy
- P3. SF1.20 - Age of building

**Relevant Stories:**

*S1, S2, S3, S4*

**Priority 1. Registration.** Reference # RGX.X.

- P1. RG1.0 - University students will be able to:
  - P1. RG1.1 - Register using their SFSU email
  - P1. RG1.2 - Create an account and student profile
  - P1. RG1.3 - Use roommate compatibility score feature
  - P1. RG1.4 - Access student neighbor network and associated pages
  - P2. RG1.5 - Contact landlords, tenants, and other registered users through the

site

- P1. RG2.0 - Landlords and Star Tenants will be able to:
  - P1. RG2.1 - Register with their personal or business email
  - P1. RG2.2 - Create an account
  - P1. RG2.3 - Post listings
  - P2. RG2.4 - Access calendar features
  - P2. RG2.5 - Track their listings
- P2. RG3.0 - Star Tenants, Tenants and Landlords will be verified by the administrator by:
  - P1. RG3.1 - Physical mail sent to the address with a passcode
- P2. RG4.0 - Anyone who has an account (verified or unverified) will be able to:
  - P1. RG4.1 - Delete their account.
  - P2. RG4.2 - Recover said deleted account if they act within 1 week of opting to disable it.



**Relevant Stories:**

*S1, S2, S3, S4, L1, L2, L3*

**Priority 1. Roommate Compatibility Score.** Reference # RCX.X.

To provide the following to registered students, tenants, and star tenants:

**P1. RC1.0** - Match registered students who are looking for a shared domicile with tenants and star tenants currently residing in a domicile

**P1. RC2.0** - Match registered students with other registered students for the purpose of moving into a domicile together



**P1. RC3.0** - Allow registered students to search listings by roommate compatibility

**P1. RC4.0** - Display roommate compatibility score (compatibility of current tenants and registered student who is searching the site) on a listing

**P1. RC5.0** - Roommate compatibility will be evaluated using structured data input by users during registration. Data will be connected with the registered user profile and will include content such as:

**P1. RC5.1** - Lifestyle priorities (family, studying, hobbies, exercise, going out)



**P1. RC5.2** - Morning person or night owl

**P1. RC5.3** - Personality traits

**P1. RC5.4** - Comfort level with roommate guests

**P1. RC5.5** - Preferred frequency of gatherings in the home

**P1. RC5.6** - Cleanliness

**P1. RC5.7** - Special skills (like cooking, languages you speak, home maintenance skills)

**P1. RC5.8** - Major

**P1. RC5.9** - Interests and hobbies

**P2. RC5.10** - Self described introversion / extroversion

**P2. RC5.11** - Relationship status

**P1. RC6.0** - Structured data input by users can be evaluated for simple similarity

**P2. RC7.0** - A classifier algorithm will be used to evaluate compatibility

**P2. RC8.0** - Roommate compatibility will be evaluated using data mining of currently existing social media profiles (if possible)

**Relevant Stories:**

S1, S2, S3, S4

**Priority 1. Student Neighbor Network.** Reference # SNX.X.

**P1. SN1.0** - Allow registered users to post information about their neighborhoods in neighborhood pages.

**P1. SN1.1** - Allow registered users to post information about neighborhood events.



**P1. SN1.2** - Allow registered users to post information about nearby services.

**P2. SN1.3** - Allow registered users to post information about entertainment.

**P2. SN1.4** - Allow registered users to post other information about the neighborhood, such as security.

**P1. SN2.0** - Allow registered users to view available pages for the neighborhood of a domicile.

**P2. SN3.0** - Classified Pages

**P1. SN3.1** - As a way to foster community spirit, pages allow users to share information about moving services, or buying / selling furniture and household items. Very similar to Craigslist, but more communal. This will be a page within the student neighbor network, and should allow filtering for services, items, time of posting, etc.

**Relevant Stories:**

*S1, S2, S3, S4*

**Priority 1. Administrative Tasks.** Reference # ATx.x

Administrative tasks consist of:

**P1. AT1.0** - Reviewing and approving listings.

**P1. AT1.1** - Checking for inappropriate content including explicit photos or language

**P2. AT1.2** - Checking for discriminatory content

**P2. AT1.3** - Verifying authenticity of listings (for example by making sure that the photos associated with the listing aren't photos available elsewhere online)

**P1. AT2.0** - Managing registered user accounts and profiles

**P1. AT3.0** - Maintaining integrity of listings and removing them if shown to be fraudulent

**P2. AT4.0** - Moderating posts in neighborhood pages and classifieds pages.

Inappropriate content will be removed as detected.

**Relevant Stories:**

*A1*

**Priority 1. Messaging**

Registered Students will be able to message landlords and star tenants.

**P1. M1.0.** Registered students will be able to contact landlords and star tenants through the application **without giving out their email addresses**

**P1.M1.1** users should have profiles pic

**P1.M1.2** users should have their name displayed by their profile

**P2.M1.3** chat should show if the user is online or not

**P2.M2.0.** Messages should show the message is been read or not

**P1.M2.1** users shall be able to take photo and send it.

**Relevant Stories:**

*S1, S2, S3, S4, L1, L2, L3*



**Priority 2. Watch List.** Reference # WLx.x

Registered users can create a "watch list" for residences that meet their search criteria, i.e. a room of size at least 10'x10' and of price less than \$1,000 per month. When residences appear that match these pre-set criteria, the users will get notified through their choice of notification method, e.g.. Telephone, email, through the app, etc.

**P1. WL1.0** - Allow registered users to save searches that match certain criteria.

**P2. WL2.0** - Allow registered users to choose whether or not to be notified if any new residences appear on market that match that search.

**P2. WL3.0** - If any residences do appear, and the registered user opted to be notified, they should be notified.

**P2. WL3.1** - Allow registered users to select the method of notification (via email, app, etc.).

**Relevant Stories:**

*S1, S2, S3, S4*

**Priority 2. Geographic overlay.** Reference # GOx.x

Verified and unverified users can:

**P1. GO1.0** - Visualize the available apartments on a geographic overlay

**P2. GO2.0** - Users can additionally use the geographic overlay to:

**P1. GO2.1** - Map their route from the apartment to campus

**P2. GO2.2** - Map from the apartment to another selected location (such as their work address, or child care)

**P3. GO2.3** - Place markers for points of interest

**P3. GO2.4** - See neighborhood boundaries and crime statistics

**P2. GO3.0** - Users can also visualize nearby landmarks, like parks, grocery stores, or transit stops.

**Relevant Stories:**

*S1, S2, S3, S4*

**Priority 2. Calendar.** Reference #CLx.x

A calendar can be embedded in listings and on registered student accounts. The calendar should:


**P1. CL1.0** - Allow landlords and star tenants to post their open house hours on their listing.

**P1. CL2.0** - Allow registered students to sign up for an open house with one click.

**P1. CL3.0** - Display the calendar on the profiles of landlords, star tenants, and registered users.

**P1. CL3.1** - For landlords and star tenants, display on the calendar the dates and times for applicant appointments and open houses.

**P2. CL3.2** - For registered students, display a calendar with upcoming open house appointments.

**P1. CL4.0** - Forward the profile of registered students who sign up for open house hours to the landlord or star tenant that posted the listing. 

**P2. CL6.0** - Send notifications to landlords, tenants, and registered students to remind them of upcoming appointments.

**Relevant Stories**

*L1, L2, L3, S1, S2, S3, S4*

**Priority 3. Application.** Reference #Ax.x

After registering for an open house, registered users can fill out an additional form, containing additional information required by the landlord or star tenant who posted the listing:



**P1.** A1.0 First / Last Name

**P1.** A1..0 Contact information. (Whether it be through the app, email, telephone, etc.)

**P2.** A1.0 Any questions or concerns regarding the residence.

**Relevant Stories:**

*L1, L2, L3*

**Priority 3. Props, Likes, and Shares.** Reference #PLSx.x

Registered users will be able to share listings and review listings and neighborhood pages.

**P1.** PLS1.0 Allow registered users to share listings.

**P1.** PLS1.1 Share with a link.

**P3.** PLS1.2 Share through social media.

**P1.** PLS2.0 Allow registered users to like listings.

**P1.** PLS2.1 Registered users will be able to like a listing.

**P1.** PLS2.2 Registered and unregistered users will be able to view the number of likes on a listing.

**P2.** PLS3.0 Allow registered users to post reviews about listings and neighborhoods.

**P1.** PLS3.1 Registered users will be able to comment on listings and neighborhood pages.

**P1.** PLS3.2 Registered and unregistered users will be able to view all comments on a listing or neighborhood page.

**P3.** PLS4.0 Registered users can endorse aspects of another registered user's profile via giving props.

**Relevant Stories:**

*S1, S2, S3, S4*

**Priority 3. Variety of photos.** Reference #VPx.x

Landlords and tenants are required to post photos of their listings that accurately reflect the living conditions.

**P1.** VP1.0 They must take photos of main rooms suchs as

**P1.** VP1.1 Living room

**P1.** VP1.2 Family room

**P1.** VP1.3 Dining room

**P1.** VP1.4 Bathroom

**P2.** VP1.5 Property from the outside

**P2.** VP1.6 Master bedroom

**P1.** VP2.0 Photos of the listed domicile

**Relevant Stories:**

*S1, S2, S3*

**Priority 3. Find roommates**

Registered students will be able to seek out other registered students who are looking to co-lease a domicile.

**P1.**FR1.0. Allow users to search potential roommates based on category such as majors, courses, hobbies, roommate compatibility score, etc.

- P1.FR1.1** Allow users to see all potential roommates list on the listings.
- P2.FR1.2** Organize the listings with highest matching rate (best match)
- P3.FR1.3** Display the matching categories on the list (in common).
- P2.FR2.0.** Allow users to contact roommates after matching the categories.
- P1.FR2.1** Users shall see the contact information include photos, contact lists.
- P2.FR2.2** Allow users to message the roommates through the site.
- P3.FR3.0.** Allow users to see potential roommates profile.
- P4.FR4.0.** Allow users to make an appointments based on the schedule availability.

**Relevant Stories**

*S1, S2*

**Priority 3. Notifications.**

The application will have the ability to send notifications to registered users when a desired domicile becomes available, and as a reminder for upcoming open houses.

- P1.N1.0.** Allow landlords and tenants to send message to users who are on the watchlist.
- P2.N2.0.** Notify registered students of the available domicile.
- P3.N3.0** Engage users to receive information without knowing the contact detail
  - P1.N3.1** Allow users to have option for notify information through email, phone, social network, etc.
  - P2.N3.2** Provide prompt and accurate content delivery.
- P3.N3.0.** Allow users to unsubscribe when they do not want to receive information.
- P4.N4.0.** Work as appointment/open-house reminder.

**Relevant Stories**

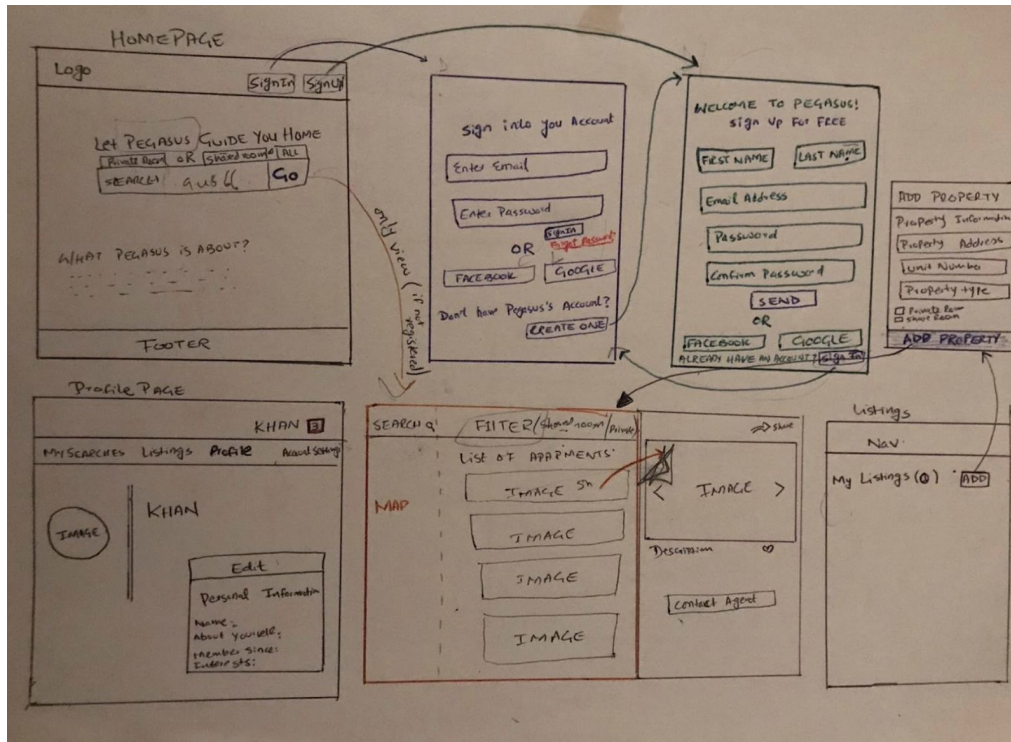
*S1, S2, S3, S4*

### 3 - UI MOCKUPS AND STORYBOARDS

#### Hand-drawn mockups:

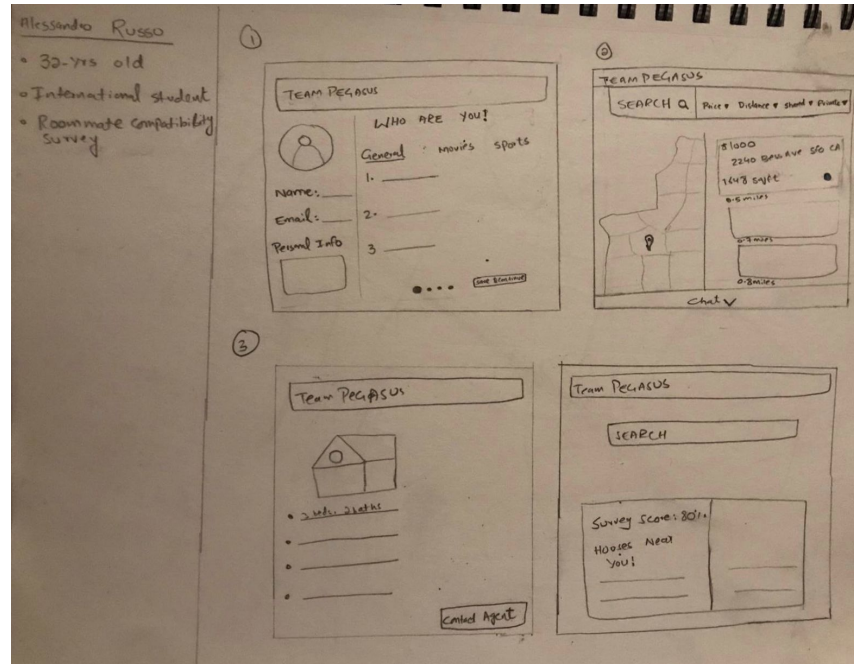
#### Homepage Options and Journeys

This is the homepage with the sign in/sign up as well as the profile page of the user. Also the listing page and the page where to add a new list. This shows how the pages are connecting to each other.



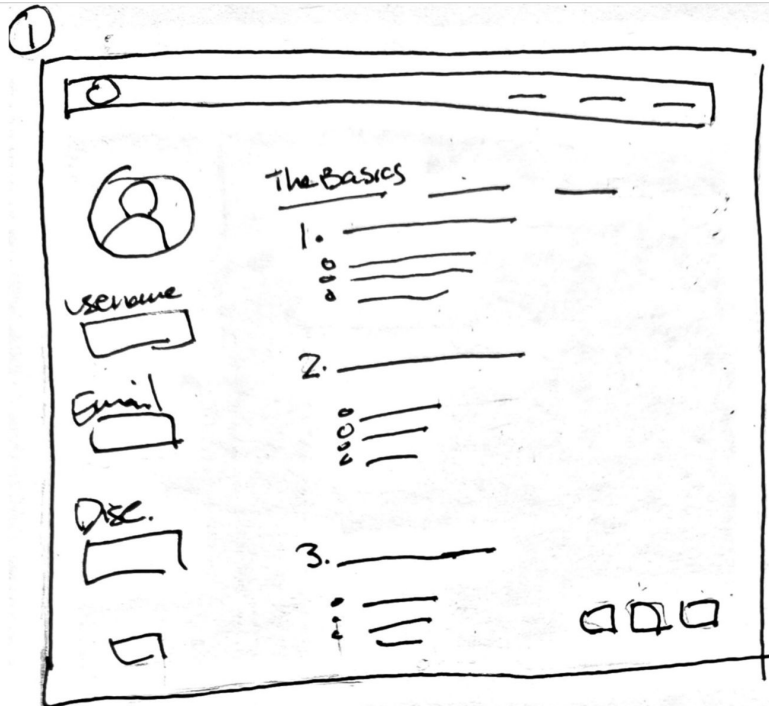
## Alessandro

Alessandro will first have to make an account with survey in order he wants to rent through pegasus. After he sign up he can not only view but chat with others to check about any area he wants to live at. 2 -is the map along with the listing of the houses. 3 it is the description of the house he chose to see.

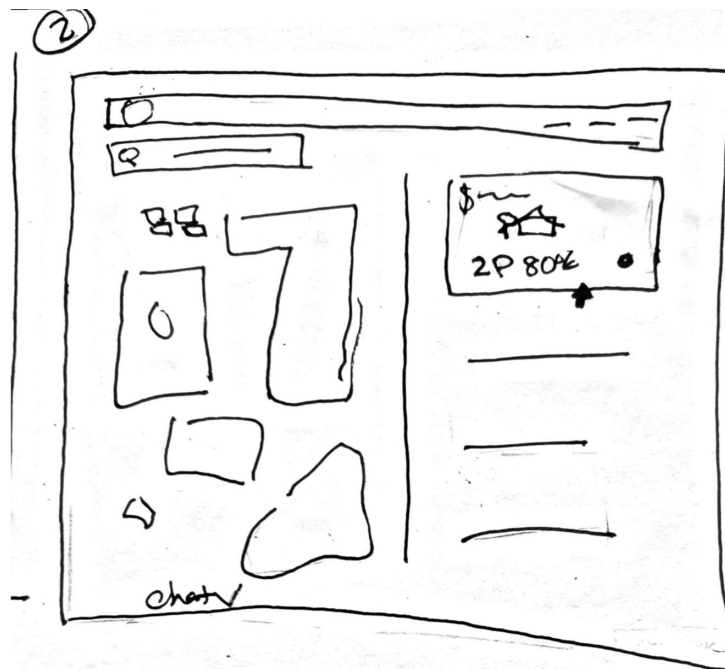


## Andy

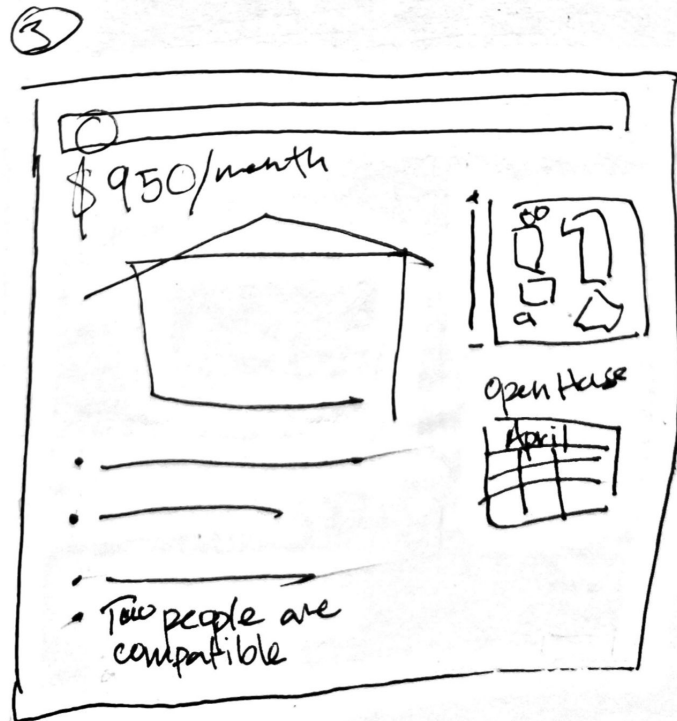
As a registered student, Andy will see his profile with his posts in the Student Neighbor Network.



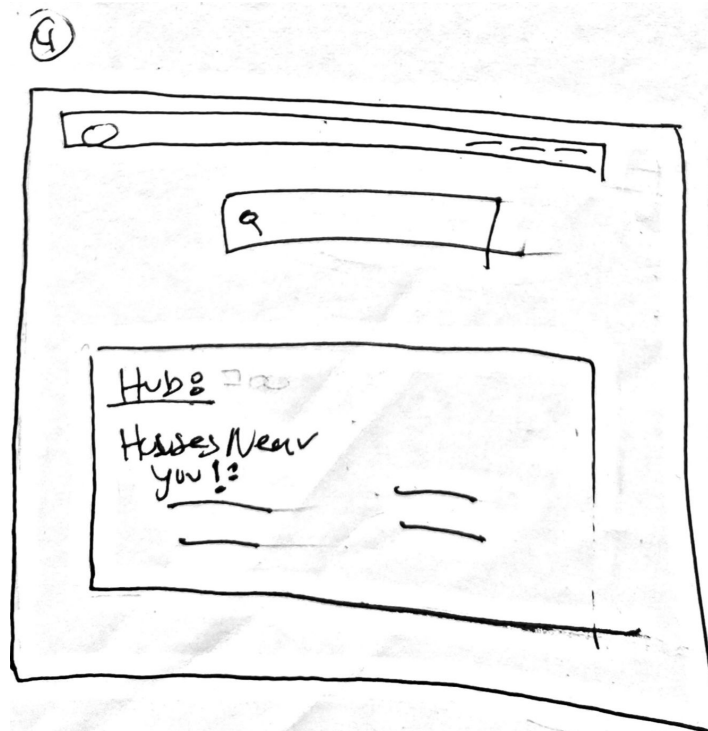
He can view listings next to the geographic overlay. Listings are organized according to search parameters, and hovering over a card reveals more details.



Clicking on a listing opens a new display with more details, including map, sign-up for an open house, and compatibility scores between Andy and the current Tenants.

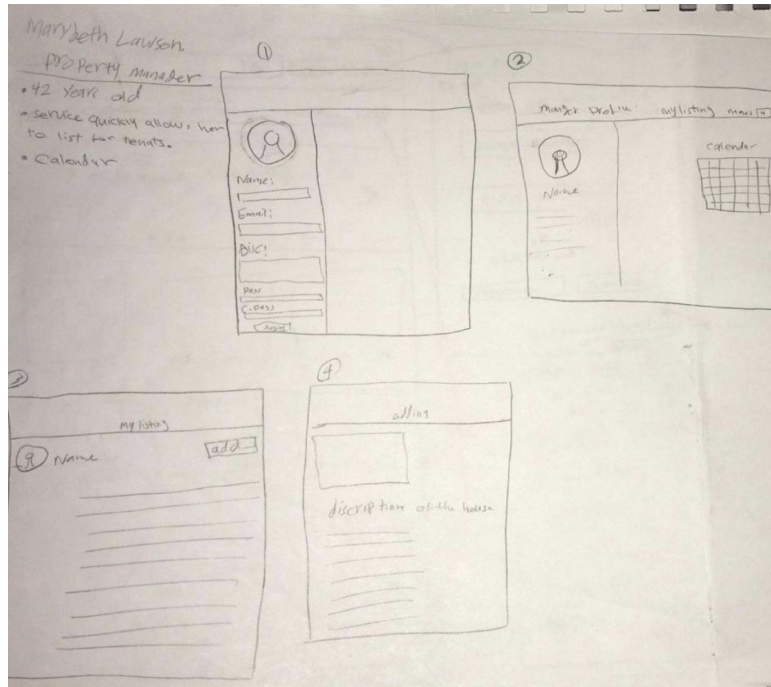


When signed in, Andy can also see which domiciles are recommended for him.

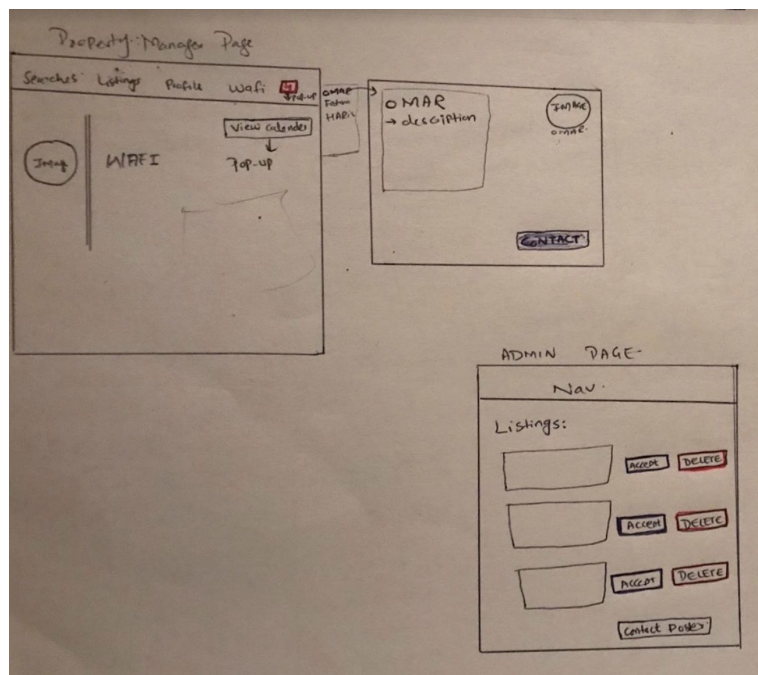


## Marybeth

As a property manager, Marybeth will have a manager sign-up page (1). She will access each of her listings individually on her page, where she can set open-house dates in an embedded calendar (2). She can add listings one at a time (3), which are then displayed (4).



After submitting a listing, the listing will be sent for approval to the administrator. Administrators will have the power to see all the new posts and they will be able to approve or disapprove each post.

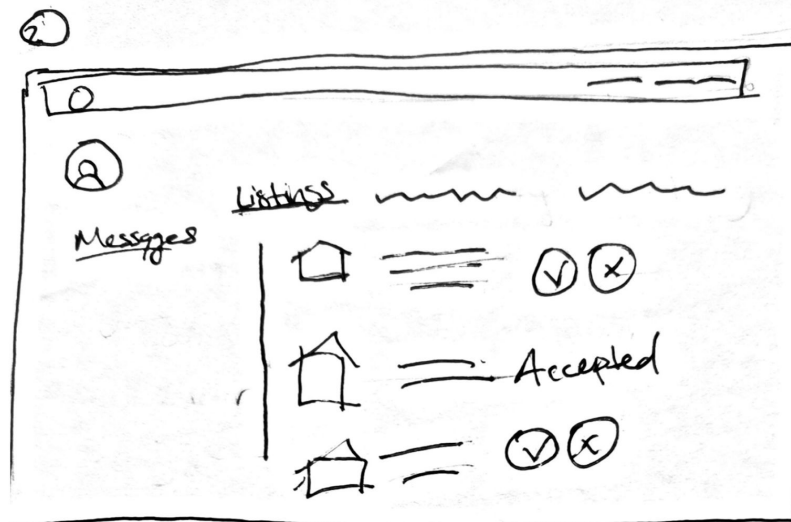


## Velvet

As an administrator, Velvet will have her own dashboard for her various administrative tasks.



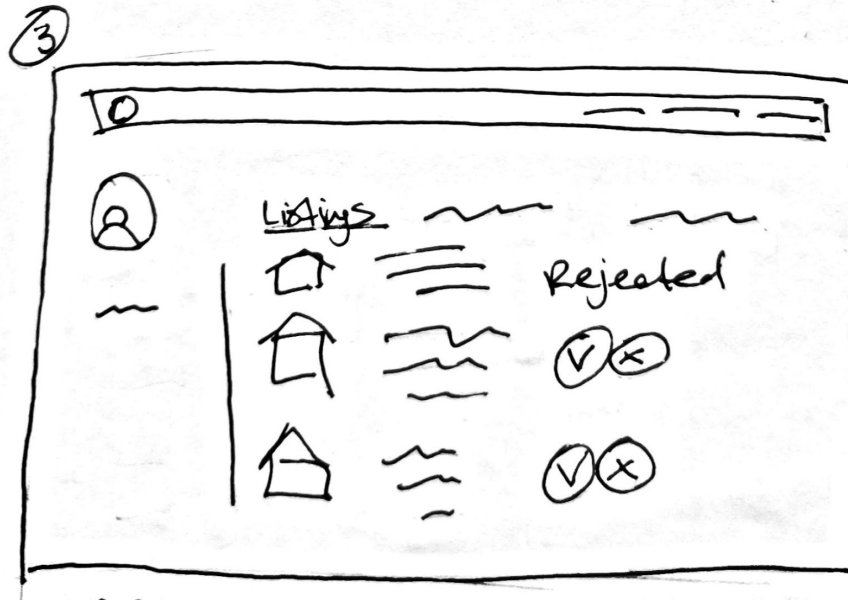
She will have a dedicated section to accept or reject listings posted by Landlords or Star Tenants.



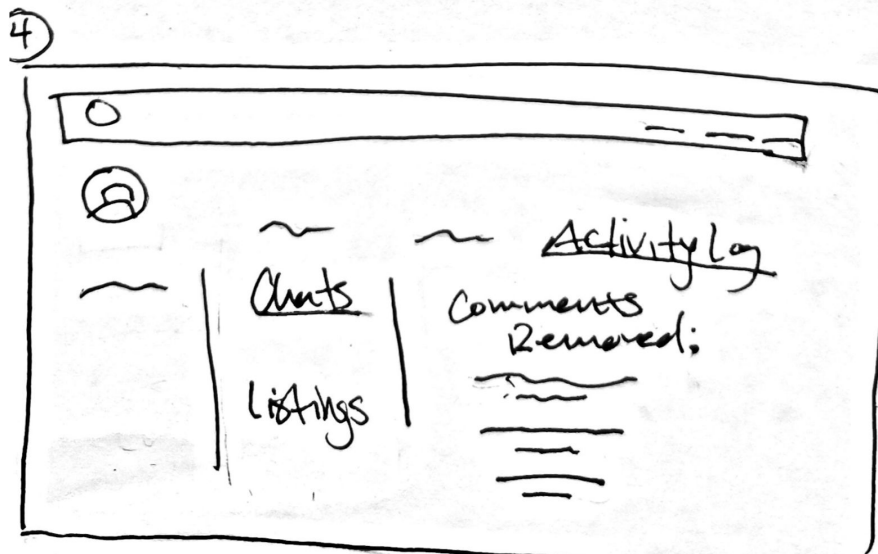
Once Accepted the house will leave  
user's view but it will be logged.



Listings will appear as either accepted or rejected once an action has been taken.



Velvet will also have a page to view logs related to user activities such as listings, comments, messages, etc.



## Mockups in Adobe XD:

### Alessandro

#### Sign-in

+ Add Photo

Email

School E-mail

Password

Confirm Password

Save

The Basics

The Hobbies

The Sports

The Food

1. How clean are you?

☒ Strongly Agree

☐ Agree

☐ Disagree

☐ Strongly Disagree

2. Are you a morning person?

☒ Strongly Agree

☐ Agree

☐ Disagree

☐ Strongly Disagree

3. Are you a night owl?

☒ Strongly Agree

☐ Agree

☐ Disagree

☐ Strongly Disagree

4. How clean are you?

☒ Strongly Agree

☐ Agree

☐ Disagree

☐ Strongly Disagree

5. Are you a morning person?

☒ Strongly Agree

☐ Agree

☐ Disagree

☐ Strongly Disagree

6. Are you a night owl?

☒ Strongly Agree

☐ Agree

☐ Disagree

☐ Strongly Disagree

Save

Next

Cancel

#### Browsing Listings

Home

Account

Search

Go


Price

Distance

Private

Shared

More



Chat v

- \$2000

- 1440 Mission Rd, Sfo CA

- 1648 soft

- \$2000

- 1440 Mission Rd, Sfo CA

- 1648 soft

- \$2000

- 1440 Mission Rd, Sfo CA

- 1648 soft


- \$2000

- 1440 Mission Rd, Sfo CA


- 1648 soft


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## Listing View



[Home](#) [Account](#)









**- \$3500**  
- 3beds, 2 Baths  
- One garage

Apartment A - about 200 m² - (pax 6+2+4) : There are 3 bedrooms all with private bathrooms (WC/ bidet/shower) and one also with hydro-massage Jacuzzi. The first room has a double bed and two single beds in castle. The second room has a double bed. The third room has two single beds. In the living room there are two single bed in a reserved area and a double sofa bed .



[Save](#) [Share](#) [Contact](#)

## Home Page





[Home.](#) [Account](#)

[Go](#)

Survey Score : 80%

Houses Near you!





Andy

## Sign-up

+ Add Photo

Email

School E-mail

Password

Confirm Password

Save

The Basics

The Hobbies

The Sports

The Food

1. How clean are you?

- ☒ Strongly Agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly Disagree

2. Are you a morning person?

- ☒ Strongly Agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly Disagree

3. Are you a night owl?

- ☒ Strongly Agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly Disagree

4. How clean are you?

- ☒ Strongly Agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly Disagree

5. Are you a morning person?

- ☒ Strongly Agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly Disagree

6. Are you a night owl?

- ☒ Strongly Agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly Disagree

SaveNextCancel


## Browse Listings

HomeAccount


Search

Filters:

- Any price
- Distance
- Beds: 1
- House Type



Chat



\$3000/Month

2 Beds

2 Bath Rooms

5598 21st Street, SF, 12345

2 People: 86% Compatible

\$4000/Month

4 Beds 3 Baths

12 Monkey Street, SF, 12345

\$1000/Month

1 Beds 1 Baths

1234 Duh, Daly City, 12345

\$2000/Month

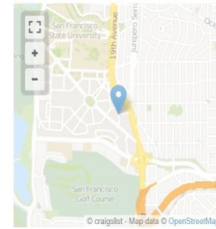
1 Beds 1 Baths

101 Bogus, SF, 12345

### Listing View

[illegible]

[Home](#) [Account](#)



April

Save Share Contact Cancel

**Marybeth**

## Profile



## Profile



Name:  
John Smith  
Phone number :  
415-123-4567

[Home](#)   [Account](#)


[View Calendar](#)

## Owned Listings

Home

Account


My Listing



Date of posting: 20/11/2017  
Number of bed room : 4  
Number of bath rooms : 2  
Address : 120 20th ave sf ca 94101  
Status: Sold

Post

Delete




Date of posting: 20/11/2017  
Number of bed room : 4  
Number of bath rooms : 2  
Address : 120 20th ave sf ca 94101  
Status: Sold

Post

Delete

Adding



Date of posting: 10/02/2019  
Number of bed room : 3  
Number of bath rooms : 2  
Address : 120 20th ave sf ca 94101  
Status: Active

Post

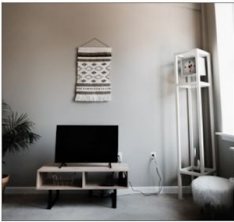
Delete


## Add Listing


Home

Account

Adding new house







Discription

Number Of rooms: 3

Number of bath rooms: 2

Address: 555 California st San Fran ca 94123

Price : \$3000

Pets: cats only

Submit

Cancel

21




Approve Listings

Messages

Home Account

ListingsCommunityActivity Log



\$3000/Month

2 Beds


2 Bath Rooms

5598 21st Street, SF, 12345

2 People: 86% Compatible

Yes

No



\$3000/Month

2 Beds

2 Bath Rooms

5598 21st Street, SF, 12345

2 People: 86% Compatible


Accepted

Approved and Rejected Listings

Messages

Home Account

ListingsCommunityActivity Log



\$3000/Month

2 Beds


2 Bath Rooms

5598 21st Street, SF, 12345

2 People: 86% Compatible

Yes

No



\$3000/Month

2 Beds

2 Bath Rooms

5598 21st Street, SF, 12345

2 People: 86% Compatible

Rejected

22

## Activity Log I

Messages

Chat

Listings

Home

Account

Listings

Community

Activity Log

Comments Removed

user1:  
Lordk ladjkfk Invi ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi  
ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi kav  
user2:  
Lordk ladjkfk Invi ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi  
ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi kav  
user3:  
Reason: ka;fd kjkasd ;fkjjas;lkdf jksa;jf  
Date: 13/34/0000

## Activity Log II

Messages

Chat

Listings

Home

Account

Listings

Community

Activity Log

Comments Removed

user1:  
Lordk ladjkfk Invi ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi  
ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi kav  
user2:  
Lordk ladjkfk Invi ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi  
ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi kav  
user3:  
Lordk ladjkfk Invi ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi  
ka Lordk ladjkfk Invi ka Lordk ladjkfk Invi kav



## 4 - HIGH LEVEL ARCHITECTURE, DATABASE ORGANIZATION

### Overview

- For our database, we're using the following setup. We have one database for testing, pegasus-dev, and one for production, pegasus-prd. The schema, triggers, etc. in pegasus-prd should mirror that of pegasus-dev. The idea for the separation is to keep one copy of the database always in working order. We also have scheduled backups of these databases occurring three times a day, in case we need to restore after an accidental change, deletion, etc.

### Media

- Media storage will be done on the filesystem itself, while the database will contain the paths to these files. From what we were able to research, BLOBs seem to work better for a large amount of smaller files, but when the file size is increased, having the files stored on the filesystem is more efficient. We have not at this moment considered any media type other than static images.

### Table Schema

Table	Table Purpose
active_listings	Hold current listings for residences.
admins	Hold admins to the site.
auth_group	Django built-in.
auth_group_permissions	Django built-in.
auth_user	Django built-in.
auth_user_groups	Django built-in.
auth_user_user_permissions	Django built-in.
disabled_users	Hold disabled users.
django_admin_log	Django built-in.
django_content_type	Django built-in.

django_migrations	Django built-in.
django_session	Django built-in.
landlords	Hold landlords.
residences	Hold domicile information.
star_tenants	Hold star_tenants.
students	Hold students.
unverified_users	Hold users who have not verified their registration

Table	Column Name	Column Type
active_listings	residence_id	integer
active_listings	tenants	character varying (100)
active_listings	owner	character varying (15)
active_listings	price	double precision
admins	username	character varying (15)
admins	password	character varying (50)
admins	date_of_birth	date
admins	physical_address	character varying (100)
admins	email	character varying (100)
admins	profile_picture	character varying (100)
admins	creation_time	date
admins	first_name	character varying (20)
admins	last_name	character varying (20)
students	username	character varying (15)

students	password	character varying (50)
students	date_of_birth	date
students	physical_address	character varying (100)
students	email	character varying (100)
students	profile_picture	character varying (100)
students	creation_time	date
students	first_name	character varying (20)
students	last_name	character varying (20)
star tenants	username	character varying (15)
star tenants	password	character varying (50)
star tenants	date_of_birth	date
star tenants	physical_address	character varying (100)
star tenants	email	character varying (100)
star tenants	profile_picture	character varying (100)
star tenants	creation_time	date
star tenants	first_name	character varying (20)
star tenants	last_name	character varying (20)
landlords	username	character varying (15)
landlords	password	character varying (50)
landlords	date_of_birth	date
landlords	physical_address	character varying (100)
landlords	email	character varying (100)
landlords	profile_picture	character varying (100)

landlords	creation_time	date
landlords	first_name	character varying (20)
landlords	last_name	character varying (20)
landlords	agency	character varying (50)
active_listings	residence_id	integer
active_listings	tenants	character varying (100)
active_listings	owner	character varying (15)
active_listings	price	double precision
active_listings	creation_time	date
expired_listings	residence_id	integer
expired_listings	tenants	character varying (100)
expired_listings	owner	character varying (15)
expired_listings	price	double precision
expired_listings	expiration_time	date
direct_messages	sender	character varying (15)
direct_messages	recipient	character varying (15)
direct_messages	message	character varying(500)
direct_messages	send_date	timestamp with timezone
groups_table	group_name	character varying (50)
groups_table	group_location	character varying(100)
groups_table	creation_time	timestamp with timezone
groups_table	group_picture	text
groups_table	group_owner	character varying (15)

group_members	group_name	character varying (50)
group_members	username	character varying (15)
group_posts	post_id	integer
group_posts	poster	character varying (15)
group_posts	post_date	date
group_comments	poster	character varying (15)
group_comments	comment	character varying (500)
group_comments	comment_date	date

## API

- CRUD operations will be handled by Django's API for models, and not through any direct SQL. As such, we have not planned for any additional algorithms to use, other than what comes packaged with Django. As far as the user query terms are concerned, the idea is that they will enter whatever filters that they want into the form, which will be cleansed by Django, and through Django's API, go to the database. **We do not plan to create any specific APIs ourselves at this time.**



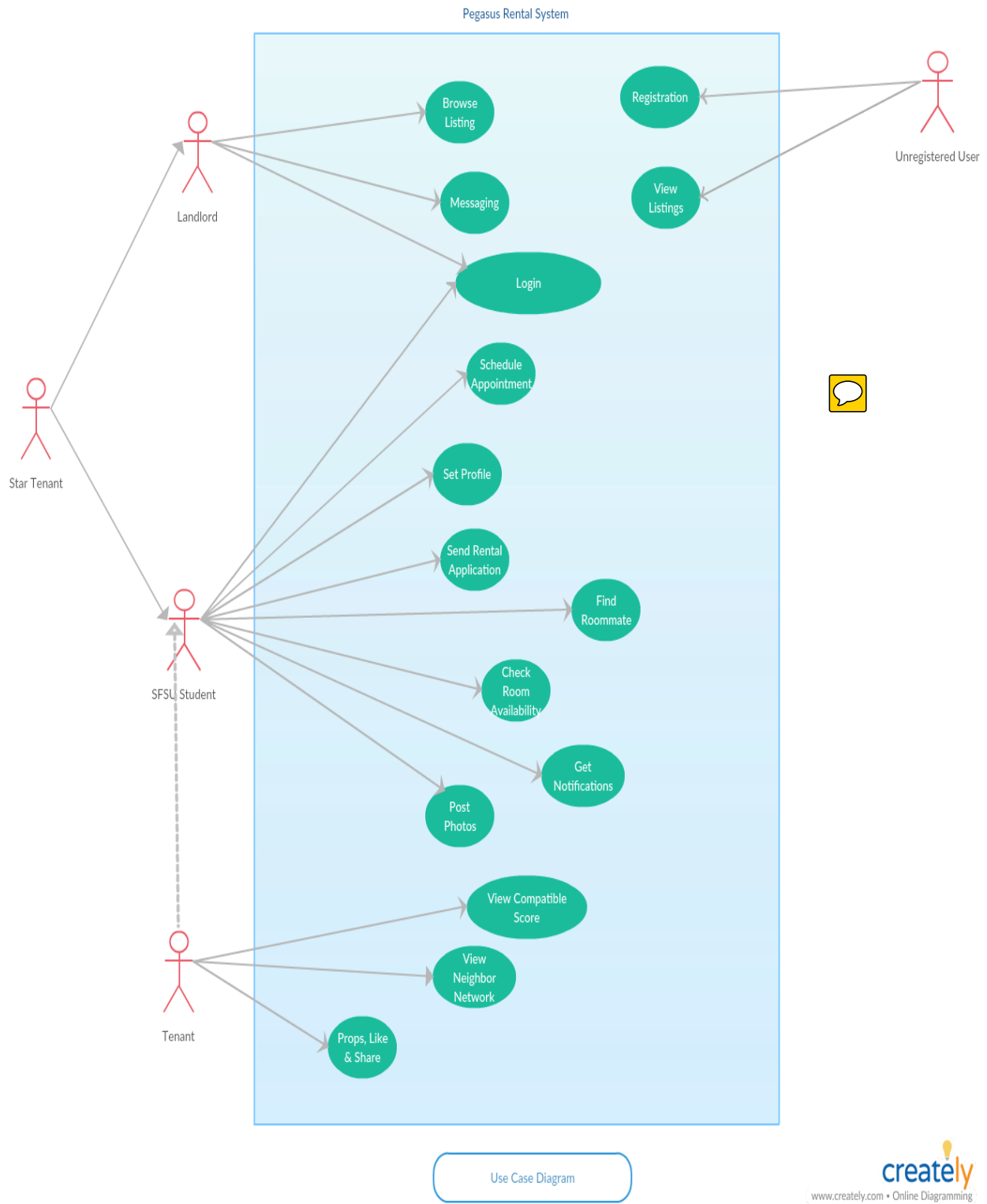
## Processes

- One process we have been discussing is the process of generating a "roommate **compatibility score**" with other tenants. This will be done via a mandatory survey at user registration. An example question might be "On the below scale, choose how introverted are you? 0: Very Introverted 1: Somewhat Introverted 2: Neutral (...)". The responses to this survey can be stored within the database and calculated on the fly against a particular user when they are trying to determine their compatibility score with someone else. As a starting point, we propose an unsupervised learning algorithm, k-means-clustering, to cluster users into groups based on the similarity of their survey responses. If the groups are large, we could additionally use pairwise ranking to suggest most similar users.

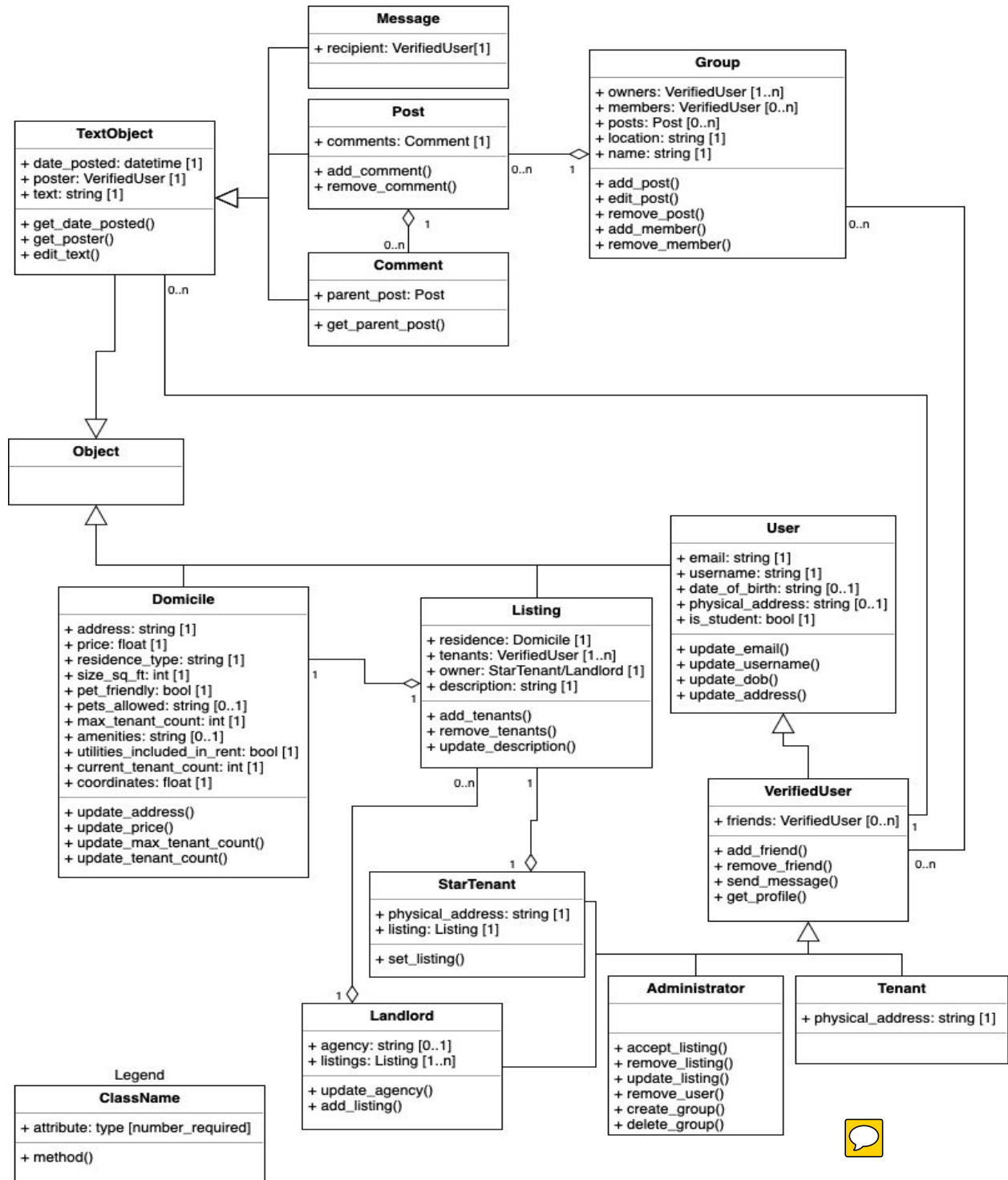


## 5 - HIGH LEVEL UML DIAGRAMS

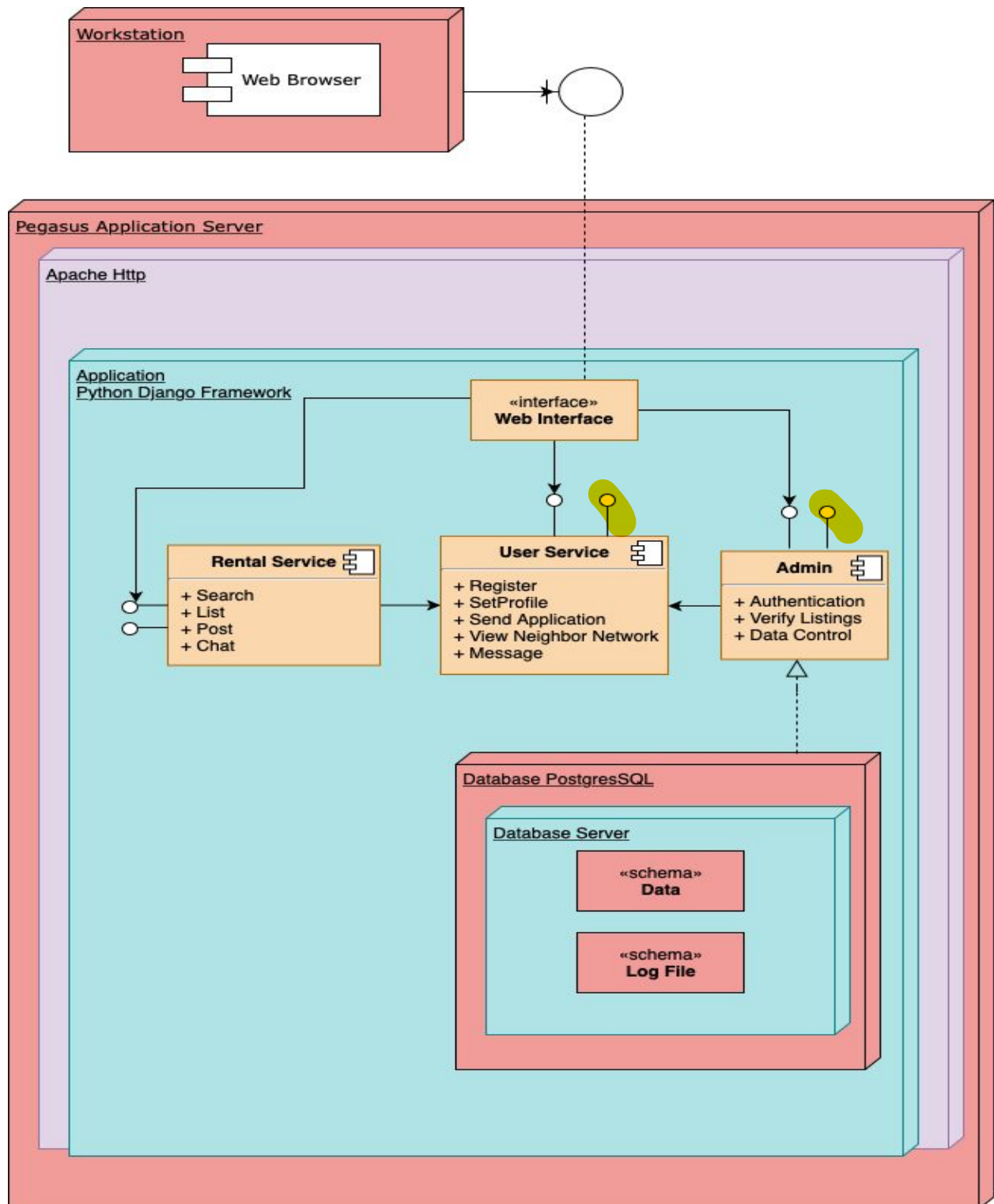
### User Case Diagram



## Class Diagram



## Component and Deployment Diagram





## 6 - ACTUAL KEY RISKS FOR OUR PROJECT AT THIS TIME

### **Skills Risks**

- Working with Django. Two team members have experience working with the Django framework, and the rest do not. There is a learning curve with Django that we will have to overcome. To address this, three of the team members have been assigned to study Django tutorials and help teach the others.
- Understanding the front-end frameworks. Two team members have experience working with React, and the others do not. The team members with experience in React do not have experience working with Django. Similar to our approach for learning Django, three team members have been assigned to learn how to connect React to Django and to teach the others.
- Comfort working with git. We have agreed upon how to use git to manage our project in GitHub. While some team members are already experts using git, those of us who are less comfortable will need to practice. The team leader will compile git documentation into an easily readable flowchart for team members to reference.

### **Scheduling Risks**

- There is not much time left in the semester, so incorporating all the features we want will be a challenge. Using Trello to break the deliverables into manageable tasks with regular due dates will help us stay on track.

### **Technical Risks**

- We are still not sure about all the APIs / libraries / packages we will need to use in order to achieve the functionality we want. The website is still in the concept stage. Going forward, each team member will be assigned tutorials to read through, so that we can be better prepared about the possibilities.
- How to calculate roommate compatibility score. We have discussed and decided upon the kind of data we want to collect and how we would like the score represented. We have even discussed machine learning algorithms we can use. However, the results of these may be difficult to interpret. We will not know if our roommate compatibility score has real world meaning.

### **Teamwork Risks**

- In our team, we have some team members that are experienced, and some team members that are less experienced (a common issue in any team of students). The challenge here is that it can be difficult to divide the work evenly. We will address this problem by assigning very specific tasks to each team member. The less experienced team members can ask the more experienced ones when they need help, but everyone will get a chance to contribute.

### **Legal / Content Risks**

- Licensing for the APIs we want to use. The APIs we would like to use, for example Google Maps or Google Calendar, may not be free under all circumstances. We need to research how to use these APIs for free, or with educational credits, in our application. Issues may arise with any other API we would like to use as the project progresses.

- HTTPS certificates. Currently, under AWS free tier, we are not able to get an Amazon signed identity certificate in order to run on HTTPS. To scale our application, we would like to use HTTPS. We may be able to get a signed certificate for free using educational credits of some kind, but it is not clear how. We will need to get in touch with Professor Song about how to obtain a signed certificate at no cost to us.
- Since there is a networking component to our application, we have to deal carefully with user data. Users will be able to make their profiles private and their data unavailable to view by others. Registered students should be able to opt in or out of the roommate compatibility score. Data for each user will be stored securely as well.

## 7 - PROJECT MANAGEMENT

For Milestone 1, we used Slack and Google Drive to organize our tasks. To manage Milestone 2 better, we began using the free version of Trello, an online project management tool (<https://trello.com/home>). We organized our deliverables into lists in Trello indicating the current state of the deliverable: Not started, Doing, Code review, Done, and Snoozed (to indicate that the deliverable is waiting on something else to complete). Each deliverable card contains a description of the deliverable and additional sub-deliverables that are organized into checklists of tasks, each of which is assigned to a team member. You can also set due dates for each deliverable, so we were able to divide the M2 tasks into chunks, staggering the due dates throughout the 2 weeks. We were able to connect Trello to our team Slack channel as well, so that we receive Slack notifications when there is activity in Trello. This was really convenient to get everyone organized, and it's easy to see who's on track with their deliverables and who could use some help. We plan to continue using Trello for the remainder of the project. We continue to use Google Drive for storing and editing our working documents, and Slack for communication.