

SW Engineering CSC648/848 Spring 2019

GatorState

Team 6

Team Members:

Team Lead: Rowvin Dizon (email: rdizon1@mail.sfsu.edu)

Front End Lead: Jonathan Gurdal

Front End: Daisy Sun

Back End Lead: Marlon Johnson

Full Stack: Minho Cha

Full Stack: Rene Elias

GitHub Master: Kayla Musleh

Milestone 2

April 2nd, 2019

History Table

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1. Data Definitions V2

Classes:

- **Home Page:** Default page that provides access to login, navigation of site, and search
- **User Account:** Able to see basic info of listings, favorite/bookmark listings, can create listings
 - Database Elements:
 - Name: A string of User's first name, can be displayed on User profile
 - Username: A string for User's ID credentials that allows user to be found via search
 - Email: One email required for login credentials
 - Password: A string of characters to authorize user at login
 - Age: Integer for users age
 - Photo/Image: One .jpg or .jpeg file for User Profile Picture
 - Listings: A list that contains user's own posted listings
 - Saved Listing: A list that contains user's bookmarked listings
- **Listing:** Holds the basic and necessary information of a home. Must be created by Registered User
 - Database Elements:
 - Address: String that holds the physical address/location of listing
 - Images: Multiple .jpg or .jpeg files of Listing
 - Home Type: Falls under either apartment, condo, house category.
 - Number of Rooms
 - Square Feet: Size of listing
 - Price: Cost of listing per month, or total overall cost.
 - User ID: A String of the original poster's User ID.
- **Search:** Retrieves specific information from the database depending on User's input
 - Database Elements:
 - Listing Address: Elements and data from Listing class are retrieved
 - Thumbnail: Small image to represent a larger image
 - Price: Pricing for listings can be pulled up
 - Rating: A percentage that shows the total average of all ratings.

2. Functional Requirements V2

Priority 1 (Must have):

1. Buy

- a. Be able to see multiple listings.
 - i. Filters shall be applied to narrow down posting selection.
- b. Be able to search different locations to tailor postings to user's location.

2. Sell

- a. Be able to show other listings in the area.
- b. Create a button saying "Post a listing" to add a new posting/listing to the site.
 - i. Once clicked, the button links to a form containing posting details such as name, address, etc.
 - 1. At the end, if the user isn't logged in, they shall get a registration pop up.
 - a. The registration pop up requires user email and password.

3. Account

- a. Name
- b. Photo
- c. Personal Info/Bio
- d. View your listings
- e. Edit Profile
- f. Save Listing (Priority 2)

4. Search

- a. Partial Address
 - i. Zip Code
 - ii. City
 - iii. Street
 - iv. Neighborhood
- b. Full Address
 - i. Everything in partial
- c. Filter (Priority 2)

5. Login/Registration

- a. Email
- b. Password

Priority 2 (Desired):

1. Filter

- a. Distance
- b. Bed
- c. Bath
- d. Price
- e. Type of Building

2. View Listing

- a. Square footage
- b. Price
- c. Address
- d. General Description
- e. Contact

3. Save Listing

- a. Save listings to your profile page to allow it to be viewed again later.

4. Messaging

- a. Ability to message the seller or buyer directly with direct messages.

Priority 3 (Opportunistic):

1. Compare

- a. Ability to select two listings and compare them side by side to easily compare the different attributes of the listings.

2. Things to do

- a. General recommendations of things to do in the area based on your location.

3. Directions

- a. Different methods of transportation to get from your listing to SFSU.

4. Reviews

- a. Depending on the type of listing, you are able to leave reviews on the listing for everyone to read about the listing.

5. Tutorial

- a. Step by step instructions on the posting page to help less technical users post the listings with greater ease.

6. Feedback

- a. Feedback button to allow users to message the developers with feedback.


3. UI Mockups and Storyboards (high level only) : [View in Figma \(Recommended, 2 pages\)](#)

*If you choose to view in Figma, go from left to right

Unregistered Users

*Stretched to make it easier to view



<p>When you click Sign Up</p> 	<p>This is the the other page that will pop up if the user clicks register instead. You are able to switch between the two in the pop up.</p>
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LogoBuyRentSellRegister | Log In

Add a ListingX

Address

Enter

Unit Number

Optional

Property Type

Select▼

☐ Room for rent

Submit

Property Type Dropdown

House

Apartment

Dorm

Condo

Type of UnitPriceAddressBed | Bath |Sq ft

Type of UnitPriceAddressBed | Bath |Sq ft

If the user clicks on the Sell button the following pop-up will appear. It prompts the Unregistered User for their Address, Unit Number if they have one, but it is not required. They can select that type of property they are listing and check off if they are renting just a room in a listing.

LogoBuyRentSellRegister | Log In

Add a ListingX

Address

Enter

Unit Number

Optional

Property Type

Select▼

☐ Room for rent

Submit

Property Type Dropdown

House

Apartment

Dorm

Condo

Type of Unit

Price

Address

Bed | Bath |

Sq ft

Type of Unit

Price

Address

Bed | Bath |

Sq ft

[Back](#)[Click Here for assistance](#) ?

Details and Description

Rent Price:

Beds Bath

Lease Duration

Date Available

Description

Contact Information

Name

Email

Amenities and Rules

Check all that apply

☐ A/C

☐ Balcony/Deck

☐ Furnished

☐ Hardwood Floor

☐ Garage Parking

☐ Off-Street Parking

Laundry

☐ None

☐ In Unit

☐ Shared/ In-building

Pets

☐ No pets allowed

☐ Cats OK

☐ Dogs OK

Photos

Save Listing

Post Listing

After the user clicks Submit from the previous diagram they will be redirected to the following page asking for additional information.

The Unregistered User will be able to provide

- Price
- # Bed
- # Bath
- Lease Duration
- Date Listing is Available
- Description of Listing

The Unregistered User will need to provide their

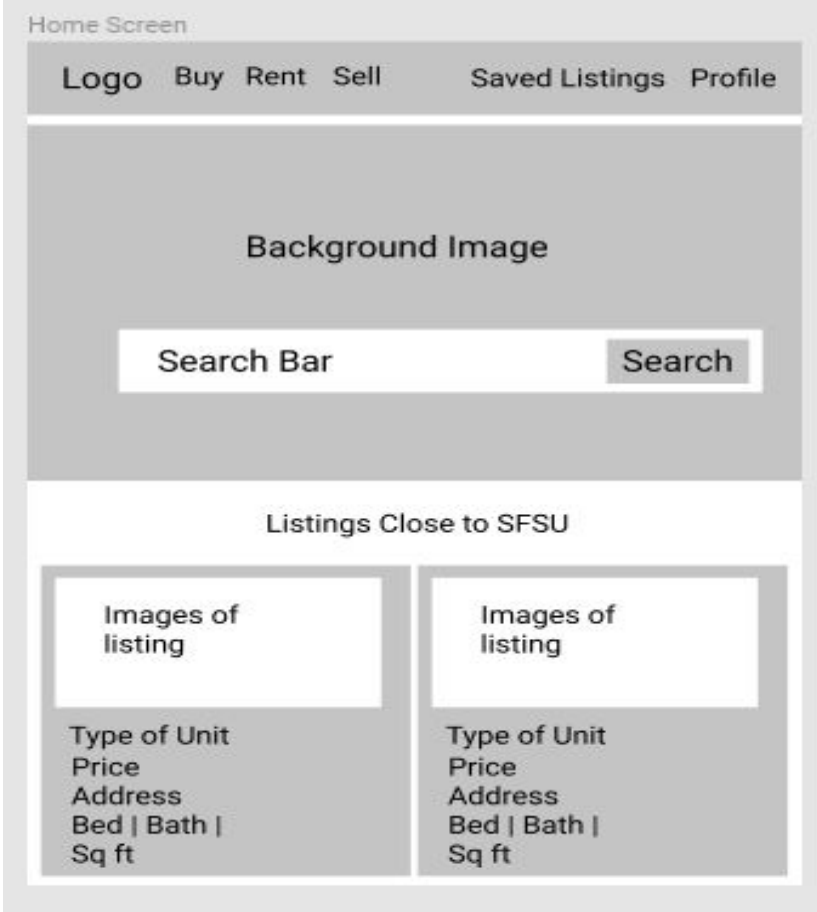
- Name
- Email

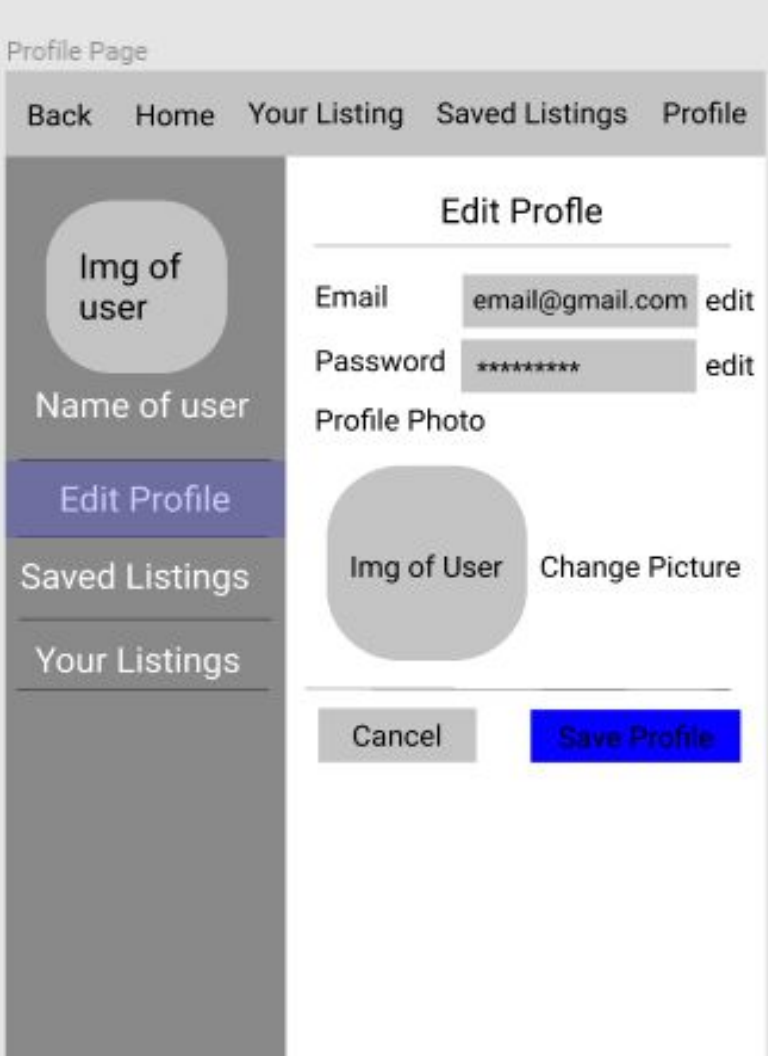
So that they can be contacted for their listings.


Amenities and Rules will be a check box where the Unregistered User can specify more information about their listings, the is optional.

The Unregistered User can upload images of their listings and afterwards can choose to Save Listing to complete later or Post Listing to be reviewed before uploaded to site. When either button is clicked a pop up for registration/sign in will appear.

Registered Users

 <p>Home Screen</p> <p>Logo Buy Rent Sell Saved Listings Profile</p> <p>Background Image</p> <p>Search Bar Search</p> <p>Listings Close to SFSU</p> <p>Images of listing</p> <p>Type of Unit Price Address Bed Bath Sq ft</p> <p>Images of listing</p> <p>Type of Unit Price Address Bed Bath Sq ft</p>	<p>Home Page for Registered Users, they are able to go to their Profile, view their Saved Listings and Buy, Rent, Sell like Unregistered Users.</p>
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	<p>Registered User Profile Page where there is a side menu navigation that displays an Image of the User and their Name underneath.</p> <p>The User can then navigate between Edit Profile, Saved Listing and Your Listing.</p> <p>*Those will be the next posts.</p> <p>The Registered User will be able to change the Email or Password and their Image.</p>
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<div> <div>Saved Searches</div> <div> Back Home Your Listing Saved Listings Profile </div> <div> <div>  <div> <div>Img of user</div> <div>Name of user</div> <div>Edit Profile</div> <div>Saved Listings</div> <div>Your Listings</div> </div> </div> <div> <div> <div>Saved Listings</div> <div>3 listings</div> <div> <div>Sort By: Cheapest Distance More</div> <div>Compare Listings</div> </div> <div> <div> <div>Images of listing 1</div> <div> <div>Type of Unit <input type="checkbox"/></div> <div>Price</div> <div>Address</div> <div>Bed Bath Sq ft</div> </div> </div> <div> <div>Images of listing 2</div> <div> <div>Type of Unit <input type="checkbox"/></div> <div>Price</div> <div>Address</div> <div>Bed Bath Sq ft</div> </div> </div> <div> <div>Images of listing 3</div> <div> <div>Type of Unit <input type="checkbox"/></div> <div>Price</div> <div>Address</div> <div>Bed Bath Sq ft</div> </div> </div> </div> </div> </div> <div> <div> <div>Bed</div> <div>Bath</div> <div>Price (High - Low)</div> <div>Square Feet</div> </div> </div> </div></div>	<p>The Registered User will be able to see the Number of Listings they have saved as well as being able to sort those Listings by the following filters:</p> <ul style="list-style-type: none"> • Cheapest • Distance • # Bed • # Bath • Square Feet • Expensive <p>The Registered User can check the boxes on the top right corner of the Listings to use the Compare Listings function. *Which will be designed on a later date.</p>
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Your Listings

BackHomeYour ListingSaved ListingsProfile

Img of user

Name of user

Edit Profile

Saved Listings

Your Listings

Your Listings

NewEditRemove Listing

3

View Messages from your listings

Active ListingsInactive Listings

Images of listing 1

Type of Unit
Price
Address
Bed | Bath | Sq ft

Set listing as Active/Inactive

Images of listing 2

Type of Unit
Price
Address
Bed | Bath | Sq ft

Set listing as Active/Inactive

The Registered User will be able to view the Number of Listings they have posted. They will be able to Post, Edit, or Remove Listings from this page. Messages they have received from other User from their Listings.

Registered User will be able to change their listings from Active Listing or Inactive Listing and select which Listings they want to view on that page.

Active/Inactive

BackHomeYour ListingSaved ListingsProfile

Img of user

Name of user

Edit Profile

Saved Listings

Your Listing

Your Listings2 listings

Are you sure you want to set this listing to active/ inactive

Img of Listing

Description

NoYes


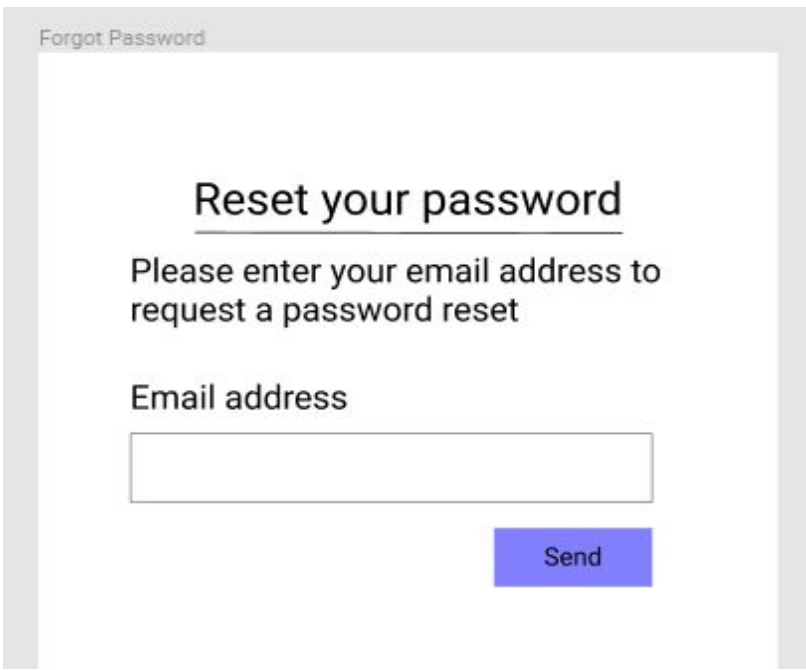
Images of listing 2

Type of Unit
Price
Address
Bed | Bath | Sq ft

Set listing as Active/Inactive

When a Registered User clicks Set Listing as Active/Inactive on the previous image the following pop up will appear asking for confirmation and displays the Listing Image and Description.

Admin

 <p>The image shows a login page for the GatorState Administrator. At the top left, it says 'Login Page'. The main heading is 'GatorState' in a large, bold font. Below it is a circular logo with the word 'Logo' inside. Under the logo is the word 'Administrator' in a bold font. There are two input fields: 'Username' and 'Password'. Below the 'Password' field is a blue button labeled 'Log In'. At the bottom, there is a link that says 'Forgot Password?'.</p>	<p>Separate Login Page for Admin of GatorState. It prompts the Admin for their Username and Password. If the admin forgot their password and they click the button it will lead to the following page.</p>
 <p>The image shows a 'Forgot Password' page. At the top left, it says 'Forgot Password'. The main heading is 'Reset your password' in a bold font. Below it is the text 'Please enter your email address to request a password reset'. There is an input field for 'Email address'. At the bottom right, there is a blue button labeled 'Send'.</p>	<p>The Admin will need to supply the Email address and if there is a Admin with that email in our database then we will send a password reset email.</p>

*This is currently not a part of M2 but I would like your feedback on the idea behind the admin page.

Home Page/Review Listing View

GatorState

Search

Profile

Review Listings

Messages

Contact Developer

Sign Out

Filter by: Newest | Recently Updated By User | Flagged

New listings that need to be approved

Images

Description of Listing

Set Listing Inactive

Flag

Request Edit from User

Approve

Images

Description of Listing

Set Listing Inactive

Flag

Request Edit from User

Approve

Admin will have a side navbar that allows them quick access to their Profile, Review Listings, Messages, Contact Developer, Sign Out.

At the top of the page the Admin will be able to search for any address, Complete or Partial to find listings to review.

On the Homepage for the Admin there will be listings displayed and they can be filtered based on Newest, Recently Updated By User, Flagged.

On the listings themselves the Admin can Approve a listing to go public, Request Edit from the User if some information needs to be changed and can be done by the user. Admins can Flag postings for additional review and Set Listings Inactive if they violate our TOS.

*Explanation of the image above:

Side Navbar

Profile

- Home page with listings to review
 - The listings can be filtered by
 - Newest
 - Flagged
 - Updated by User

Review Listings

- View listings that have been flagged for additional review by other admins.

Message

- Hub of messages
- Admins can message user regarding information on their listings that need to be changed before it can be made public on the site.
- Admins can see the messages between them and developers

Contact Developer

- Quick way to message developers
- If the message is regarding a listing it will need to be attached with the message.

Buttons beneath the Listing

Approve

- If an admin finds no fault with a listing he can make it public to the site.

Request info from user

- Quick way for the admin to message the user on information that needs to be changed regarding their listing.

Flagged

- If a listing needs additional review from an admin
- Listings that are flagged will remain Inactive
- If a user has enough Listings that are flagged their account may be frozen.

Inactive / Delete?

- Listing cannot public until further changes by the admins
- The user will receive a notification on why their listings are not being made public.

4. High level Architecture, Database Organization

DB Organization:

These are the each of the database tables along with the attributes contained within them:

❖ User

- UserID
- Name
- Username
- Email
- Password
- Age
- Photo
- Messages
- UserFavoritesListID

❖ Messages

- FromUserID
- ToUserID
- Message
- TimeSent

❖ Listing

- ListingID
- UserID
- StreetAddress
- City
- ZipCode
- State
- NumberOfRooms
- NumberOfBathrooms
- Images
- HomeType
- SquareFeet
- Price
- Rating
- ThumbnailPhoto
- Active

- ❖ UserFavoritesList
 - UserFavoritesListID
 - ListingID(1)...ListingID(n)

Media Storage:

We have decided to use a file system to store our data, images as well as gps data.

Search/filter architecture and implementation:

We shall organize the searches we display first and foremost around the specification of the user. We shall display listings that are within the range of the filters specified. Additionally we can show recommended listings that are close to the users specifications but are slightly* out of range. (We need to define what slightly means)

Algorithm Overview:

Entered in from user search:

1. Address
 - a. If given, show the building of the exact address that was given
2. Zip code
 - a. If we are only given a zip code, show all listings in that given zip code
3. City
 - a. Show Listings in that city across the city.

Filter priority rating:

- High: Only find listing that are within what the user specified.
- Low: Show listings that are within what the user input, however if a listing has been found within the filtered input except this one, then dismiss this one.

Filters that can be added:

1. Price
 - a. High priority
 - b. If a user specifies price our algorithm will then only show listings within that range.
2. Distance
 - a. High priority
 - b. Stay within the users input.

3. Home type
 - a. Low priority
 - b. Show only the type of buildings the user specifies
 - i. Dorm
 - ii. Apartment
 - iii. House
 - iv. Condo
4. Bed
 - a. Low priority
 - b. Lower priority
5. Bath
 - a. Low priority
6. Square Feet
 - a. Low priority

If the user changes a filtered search after the initial search, prioritize showing all the new listings that fall within the filter.

How information will be retrieved from the database:

Depending on which filters are specified, only the necessary attributes needed to determine which listings are desired to populate in the search results and in which order they should be displayed will be initially queried. The requesting app will then parse through the information provided by the database, and send a second request which will have the desired order, will request more information on the listings to display, and will omit any listings from the initial query that are undesired. Here are couple of examples of how this will generally work:

1. No filters specified:
 - a. ListingID and ZipCode/City of all listings will be requested from the database. Requesting app will then parse through results and re-query for all the listings in distance order and omit any results that are undesired in the new query.
2. Price range specified:
 - a. ListingID and ZipCode/City of all listings will be requested from the database using a query that only returns results within the specified price range using the Price attribute in Listing. Requesting app will then parse through results and re-query for the listings in a new order that uses distance and pricing as weights and omit any results that are undesired in the new query.

Example of database query:

- Initial Query:

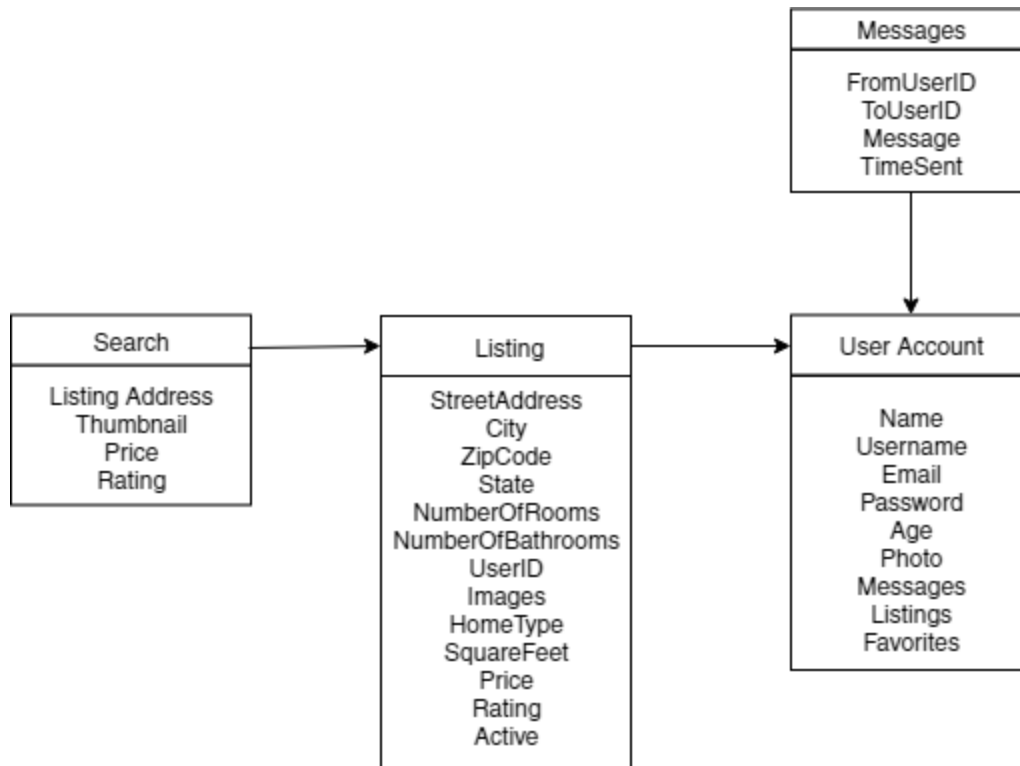
```
SELECT ZipCode, City  
FROM Listing L  
WHERE L.Active = True
```

- Follow-up Query (Will be called multiple times for each desired listing):

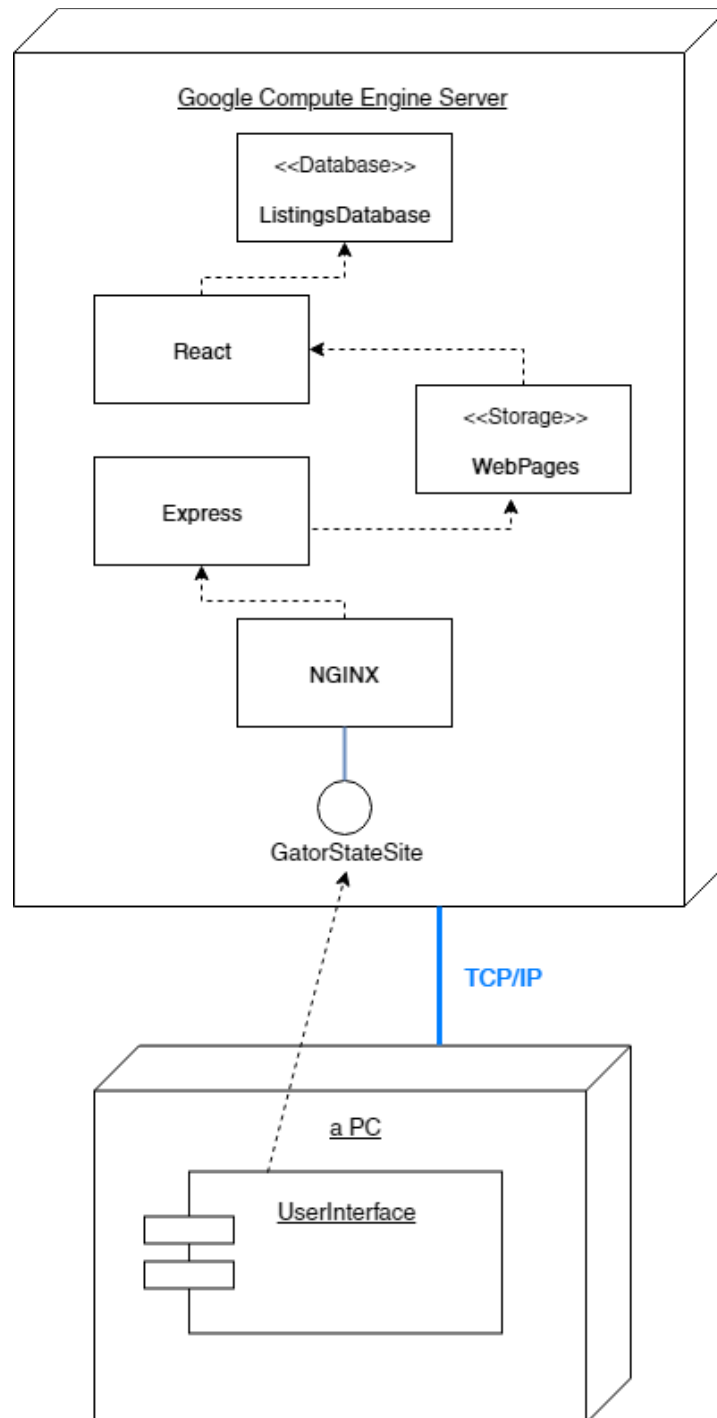
```
SELECT *  
FROM Listing L  
WHERE L.UserID = @UserID
```

5. High Level UML Diagrams

High-Level UML:



Component/Deployment Diagram:



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

Skills (Risks)

- Back End
 - Not properly structure the database entities
 - Having clear entity name that relate to their function and using proper naming conventions.
 - Race conditions
 - Mutex, semaphore locks.
 - Setting proper access depending on user priority.
 - Write the right rules for each priority level of the users.
 -
- Front End
 - Having improper states and calling improper functions
 - Setting obvious and clear names for our states and functions.
 - Not properly linking sources to our back end.
 - Actively debug and do code reviews. Create test cases for functions in our front end.
- Scheduled risks
 - Pushing bad code to the main branch
 - Push to the development branch and make sure it runs properly before pushing it to the main branch
 - Recently pushed code breaks the site
 - Restore to the previous version of the site.
- Technical Risk
 - Map API
 - Look into other programs that integrate google map api and use it as a reference.
 - Linking front end and back end while using react.
 - Study react in depth and find how others use react when having the front end communicate with the back end.
 - SQL injections
 - Proper checks on any data that is being inputted by the user.
 - Properly protecting sensitive information that the users may have.
 - Identify what the information is and set proper checks and restrictions on that data.
 - Prevent bots from flooding the sites with postings to crash it.
 - Implement a captcha when posting

- Teamwork Risk
 - People are doing something they aren't comfortable coding
 - Clear communication among teammates and discussing what people need help with or changing the tasks people are doing.
 - Teammates not showing up to class and or scheduled meetings.
 - Discuss to see whether it is an issue of the time the group is meeting or talk to the team member who is missing the meetings and see if there is a reason why and if there is a way to resolve it. If all else fails and the group member refuses to meet up or work on the project, contact the professor to see what the next steps should be.
- Legal
 - Make sure users are posting listings that are actually theirs and not just someone else's home.
 - Have a team to verify the listing before listings are posted.
 - Have a report button that users can use.
 - Properly licensing any material that is not ours, i.e. SFSU logo
 - Don't use them and create our own, or contact the owner of the material to see if we can get the rights to use the material.

7. Project management

We managed all of Milestone 2 requirements by organizing all the tasks that were assigned into Trello. From there we meet up as a group to discuss all the requirements and agreed on how to separate the tasks that we felt should be handled by front end and back end. We organized the priorities of the tasks that needed to be completed first in order to make the rest of the tasks easier. From there we assigned tasks to team members that felt the most confident with completing them. After a team member has completed what they were assigned, they marked that it was done on Trello, which allowed prompted other team members to review what was completed.