

## SW Engineering CSC648/848 Section 02 Fall 2017

# UNLOCK.COM

Team 01 (Local Team)

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## 1. Data Definitions V2

### 1.1 User Model

Attribute	Data Type	Data Definition
admin		prime administrator of the website who can modify the listings
agent		registered user who is selling the property through website
client		registered user who is buying the property through website
guest		unregistered user who is browsing through the website
admin_id	INT	unique number assigned to the admin of the website
seller_id	INT	unique number assigned to registered user who will list/sell the property
client_id	INT	unique number assigned to registered user who will buy/rent the property
company	CHAR(20)	name of the place where seller is working
avatar	BLOB	display image for the registered user
username	CHAR(10)	unique name assigned to registered user for logging in
first_name	CHAR(15)	first name of the registered user
last_name	CHAR(15)	last name of the registered user
email	CHAR(20)	email address of the registered user
password	CHAR(20)	password chosen by the registered user for logging in

## 1.2 Property Model

Attribute	Data Type	Data Definition
property_id	INT	unique number assigned to the property posted by the registered user(Seller)
like_id	INT	unique number assigned to the property which is liked by the registered user(Client)
image	BLOB	image of the property
description	VARCHAR	overview about the exclusive features and amenities of the property
bedrooms	INT	number of bedrooms in the property
bathrooms	INT	number of bathrooms in the property
lot	INT	lot size of the property in square feet
backyard	BOOLEAN	whether the property have a backyard
pool	BOOLEAN	whether the property have a pool
ac	BOOLEAN	whether the property have a ac
heater	BOOLEAN	whether the property have a heater
year	INT	year when property was built
publish_date	DATE	date on which the property was made available for purchase
price	DECIMAL(19,4)	price of the property as posted by the registered user(Agent)

house_num	INT	house/apt number of the property
street_name	CHAR(20)	street address of the property
city	CHAR(15)	city of the property
zip	INT	zip code of the area of the property
latitude	DECIMAL(12,9)	angular distance of the property north or south of the earth's equator
longitude	DECIMAL(12,9)	angular distance of the property east or west of the meridian

## **2. Functional Requirements V2**

### **2.1 Unregistered User**

#### ***Priority 1:***

- a. Sign-up Feature
- b. Search by City or Zip Code Feature
- c. Display Images of Property Feature
- d. Number of Properties Found Feature

#### ***Priority 2:***

- a. Filter Search Feature

#### ***Priority 3:***

- a. Featured Houses Feature
- b. Display Video of Property Feature

### **2.2 Registered Buyer**

Registered Buyer shall have access to all privileges provided to Unregistered User, except Sign-up Feature.

#### ***Priority 1:***

- a. Log-in Feature
- b. Log-out Feature
- c. Contact Real Estate Agent Feature

#### ***Priority 2:***

- a. Save Property Feature
- b. Personalized Dashboard
- c. Upload Personal Information Feature
- d. Upload Avatar Feature

#### ***Priority 3:***

- a. Message Real Estate Agent Feature

## 2.3 Registered Seller

Registered Seller shall have access to all privileges provided to Unregistered User, except Sign-up Feature.

### ***Priority 1:***

- a. Log-in Feature
- b. Log-out Feature
- c. Personalized Dashboard
- d. Post Listing Feature (list number of bedrooms and bathrooms, list price, upload images, list address, list whether it has a backyard, pool, ac, or heater, list year posting is published, write description)

### ***Priority 2:***

- a. Upload Personal Information Feature
- b. Upload Avatar Feature

### ***Priority 3:***

- a. Upload Video of Property Feature

## 2.4 Admin

### ***Priority 1:***

- a. Delete Listing Feature
- b. Delete User Account Feature

### ***Priority 2:***

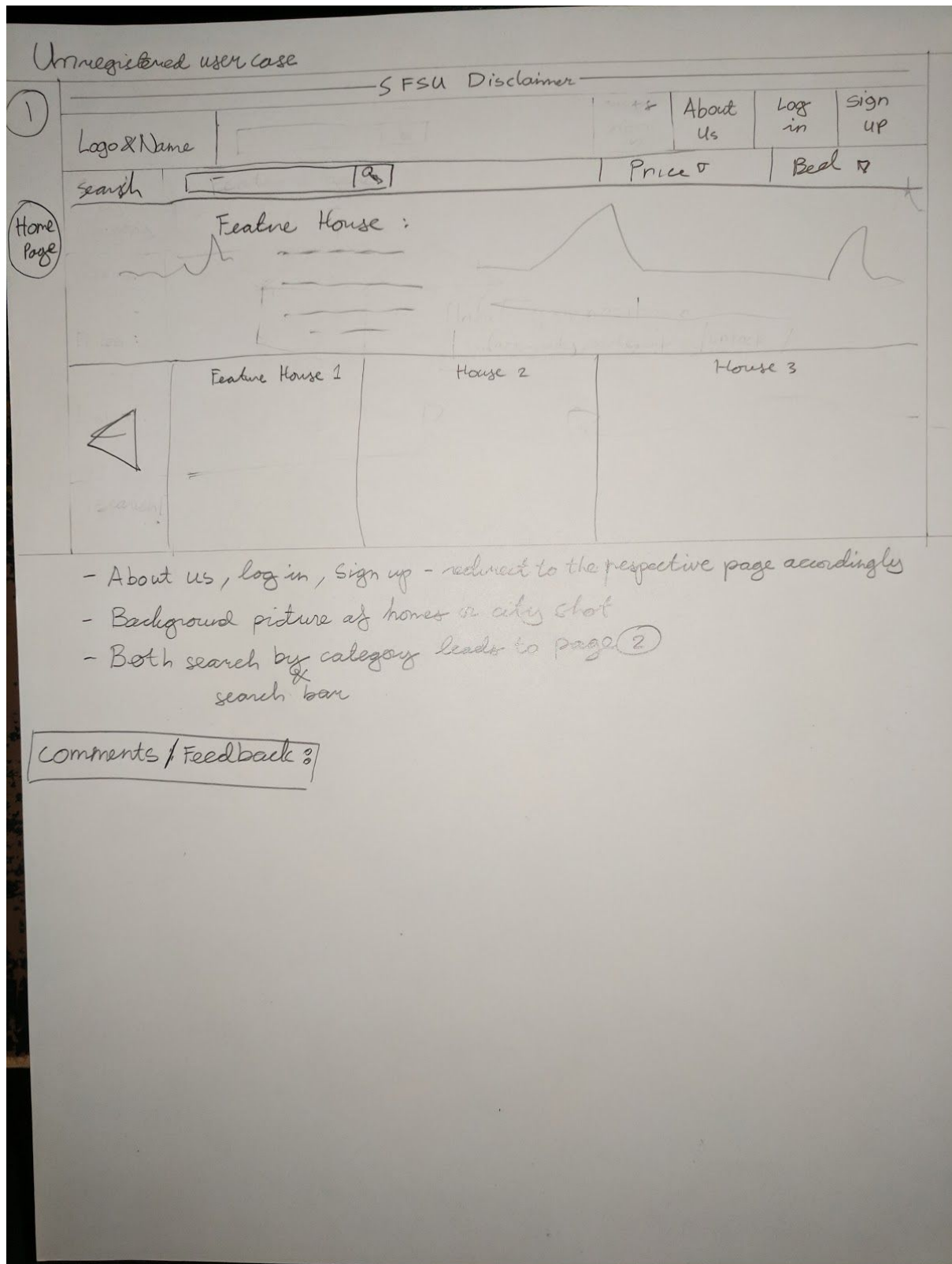
- a.

### ***Priority 3:***

- a.

### 3. UI Mockups and Storyboards (High-Level Only)

#### 3.1 Unregistered User (Home Page)





### 3.2 Unregistered User (Search Results Page)

Unregistered user case

2) Logo & name

About US Log in Sign up

94014 5 found Sort by Price Bedroom

Search used

map

switch place

Bed # \$

Bed \$

Bed \$

Bed \$

Bed \$

Bed \$

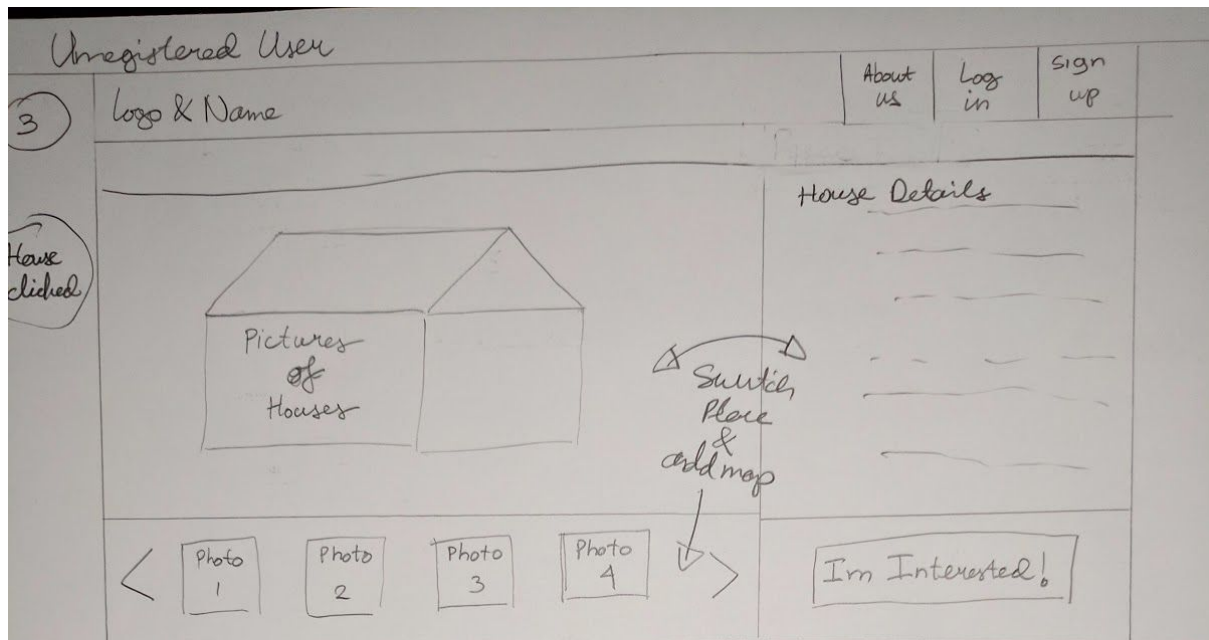
if user used the search by category the price & bedroom are selected

if user used the search bar, then price & bedroom are empty and houses sorted by the database default

if user clicks on the house on map or from right list it will go to page 3

Comments & Feedback:

### 3.3 Unregistered User (Property Listing Page)



- This page shows photos of the house & details about it too
- if an Unregistered user clicks "I'm interested" button it will prompt to sign up page (4) & login
- if it's a registered user it will go to page (7)

Comments & feedback:

### 3.4 Unregistered User (Sign Up Page)

5

Registered Page

Buyer

Agent

Username

Password

email

Sign me up !

- After Users fill in the info it will go to the message page since now he becomes a registered user, goes to page 7

Comments & feedback :

### 3.5 Registered Buyer/Agent (Log In Page)

④ Unregistered User

Sign up page

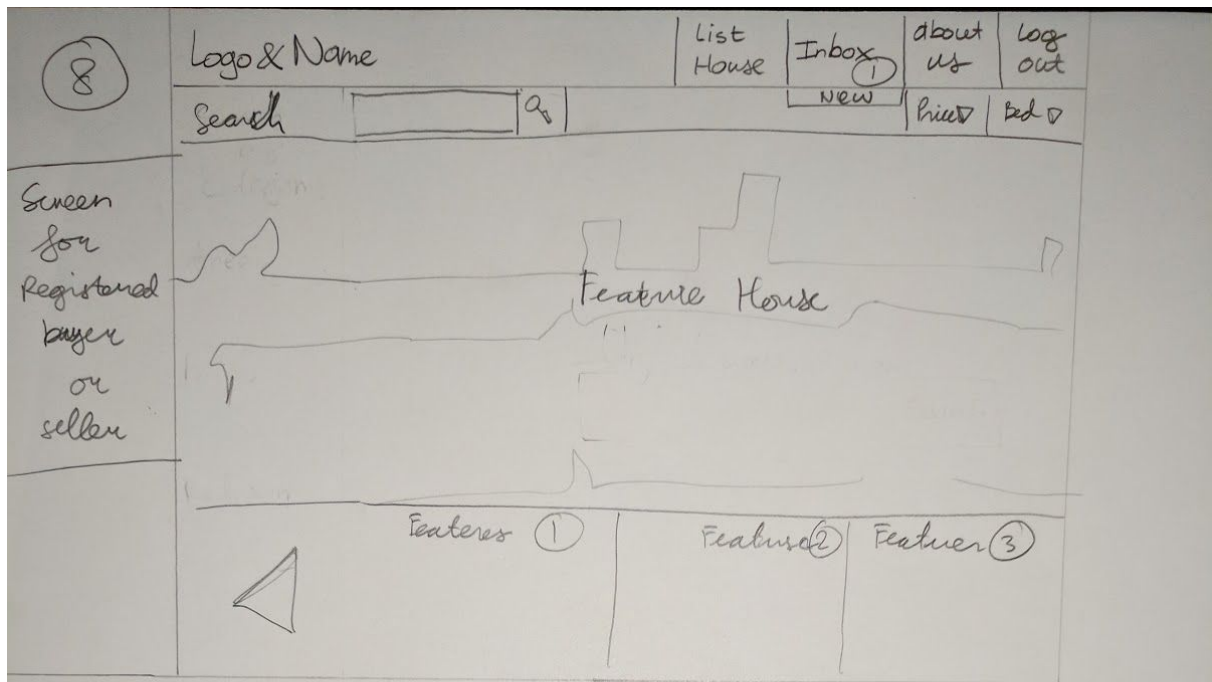
Username  
  
 Password  
  
 Sign in!  
 FORGOT my ~~password~~  
 or  
 I dont have an acct  
 Sign up!

- This is the sign up page, any unregistered users that clicks the "I'm Interested" button is directed here.
- "Sign up" button from the front page also leads here
- Sign in with correct username & pass will go to page ⑦ or ⑧ depends on registered user type.
- Sign up will go to page ⑤

Comments & feedback %



### 3.6 Registered Buyer/Agent (Home Page)



- Buyer page does not have "list house" button
- Seller's page has "list house" button
- Both have inbox that retrieve messages (9)
- "list house" button lead to page (10)

Comment & feedback:

### 3.7 Registered Buyer (Message Page)

7

Registered buyer

Message page

Subsell  
message body  
Predefined by DB

Send Message

- Prefilled message, that sends to the house lister or seller

Comments & Feedback :

### 3.8 Registered Buyer (Inbox Page)

<div>9</div> <div>Inbox Page</div>	Logo & name		about us	log out
	Inbox	<input type="checkbox"/>	Message 1	
	go back	<input type="checkbox"/>	Message 2	
		<input type="checkbox"/>	3	
		<input type="checkbox"/>	4	
		<input type="checkbox"/>		
		<input type="checkbox"/>		
		<input type="checkbox"/>		
		<input type="checkbox"/>		
		<input type="checkbox"/>		

- Inbox page where it shows the message & whether it has been read or not.

Comments & Feedback

### 3.9 Registered Agent (Post Listing Page)

10

for Registered seller

logo & name

no map

map

Becomes full screen & no Map for listing

go back | Inbox | about us | log out

House Details

Price

Bedroom

Upload photos

choose File

List!

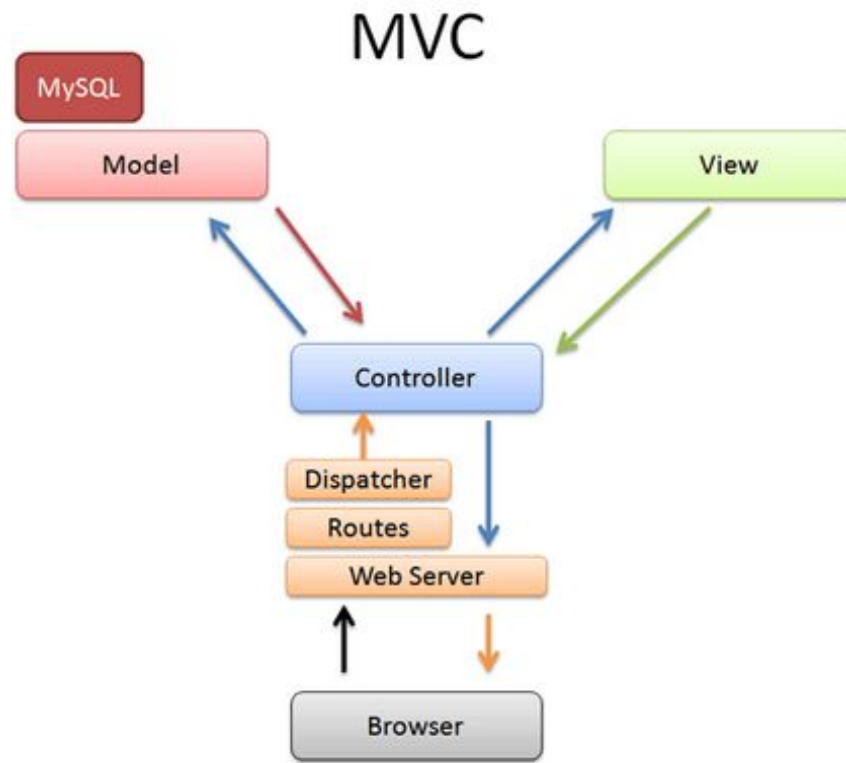
Once all the info is filled seller can click "list" button to list house.

Comments & feedback:



## 4. High-Level Architecture, Database Organization

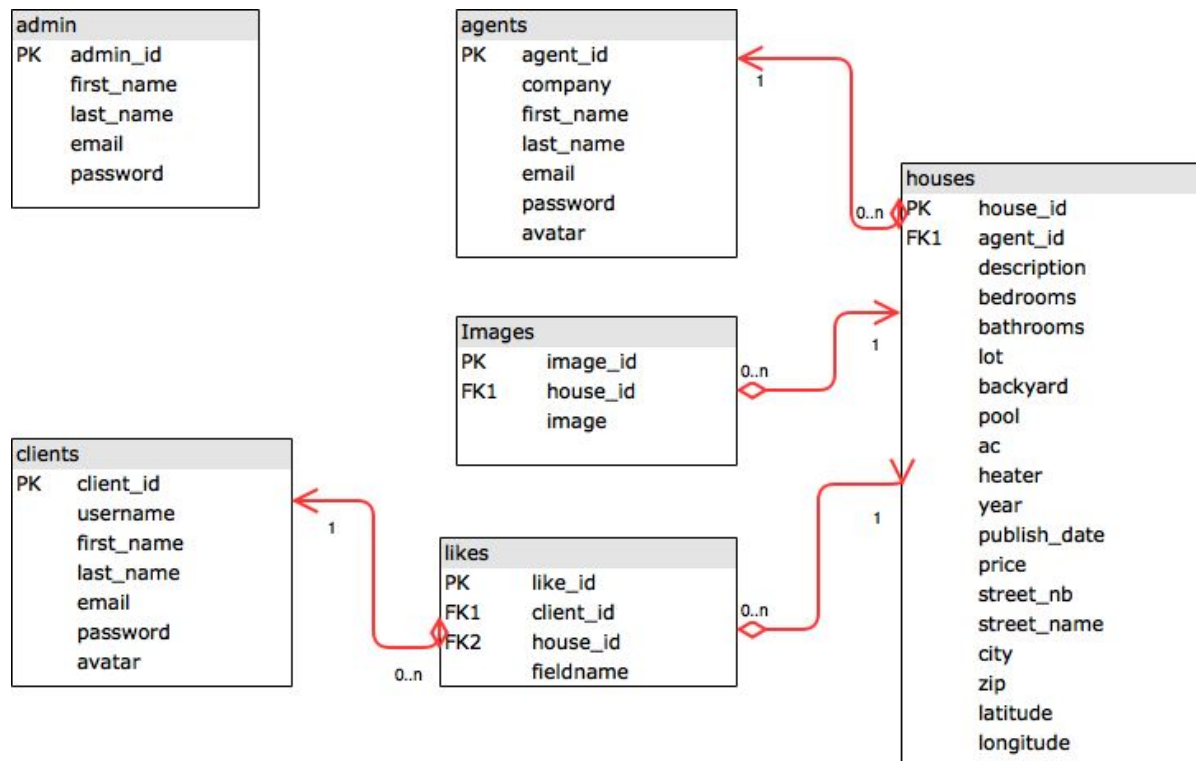
### 4.1 High-Level Architecture



We decided to develop an MVC compliant webapp. It will make the development modular in order to integrate changes easily. We chose to use Express.js mostly because it is already MVC oriented.

The **model** will be handled by MySQL database that will store all data, the **view** will be described in the view folder of express.js and will communicate using a custom API to the **controller**. Those files will be stored in the route directory.

## 4.2 DB Organization



## 4.3 Media Storage

Photos will be stored in the database directly inside BLOB fields. We are not going to authorize video uploads.

We are going to store GPS coordinates in two float type field for longitude and latitude.

#### 4.4 Search/Filter Architecture and Implementation

Registered and unregistered users will be able to search houses according to those criteria:

- a. Range Search/Ascend and Descend Filter
  - i. bedrooms
  - ii. bathrooms
  - iii. lot
  - iv. year
  - v. publish\_date
  - vi. price
- b. Boolean Search and Filter
  - i. backyard
  - ii. pool
  - iii. ac
  - iv. heater
- c. Text Matching Search, Not Filtered
  - i. city
  - ii. zip

All searches and browse will use SQL native function: 'LIKE' and 'SORT'.

Then if the client wants to reorder their results, the filtering will be applied on the data set received from the database and no more requests will be sent to the database. So as to increase the charging time and limit data usage.

## 4.5 Your Own APIs

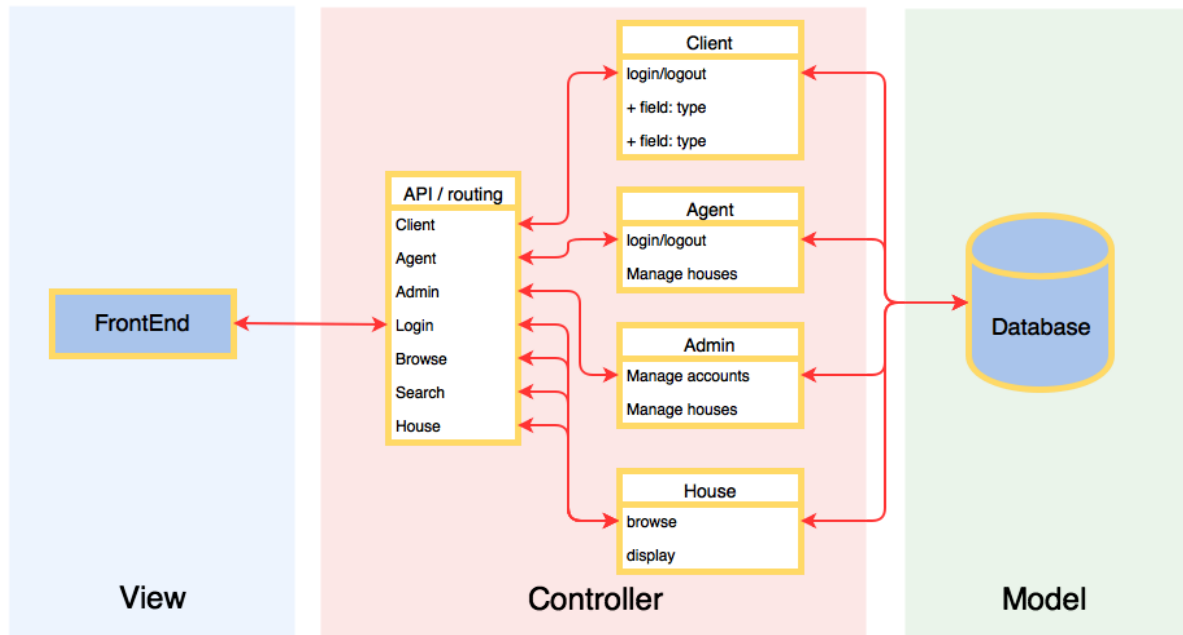
Target	Action	HTTP verb	Parameters	URL	Return
Client/ Admin/ Agent	login	POST	-username -password	/api/login/	Ok / Unauthorized
Client	create new client	POST	-ALL client table infos	/api/client/new/	Ok / Error
Client	delete client	POST	-client_id	/api/client/delete/	
Client	get all client infos	GET	-client_id	/api/client/get/	JSON all data
Client	get specific info	GET	-client_id -client DB field	/api/client/get/	JSON with the data
House	get all house infos	GET	-house_id	/api/house/get/	JSON with all infos
House	get specific house info	GET	-house_id -house DB field	/api/house/get/	JSON with the info
House	get images	GET	-house_id	/api/house/get/ images	media file
House	delete house	POST	-house_id	/api/house/ delete	OK
House	Create or modify	POST	-All house fields	/api/house/set	OK
Search	Search houses	GET	-Search terms	/api/search	JSON with house_id
Browse	Browse houses	GET	-All browse terms	/api/browse	JSON with house_id
Admin	Delete house	POST	-house_id	/api/admin/delete_h ouse	OK
Admin	Delete user	POST	-user_id	/api/admin/delete_u ser	OK
Admin	Delete agent	POST	-agent_id	/api/admin/delete_a gent	OK
Agent	get all agent infos	GET	-agent_id	/api/agent/get/	JSON all data
Agent	get specific info	GET	-agent_id -agent DB field	/api/agent/get/	JSON with the data

#### **4.6 Significant Non-Trivial Algorithm or Process**

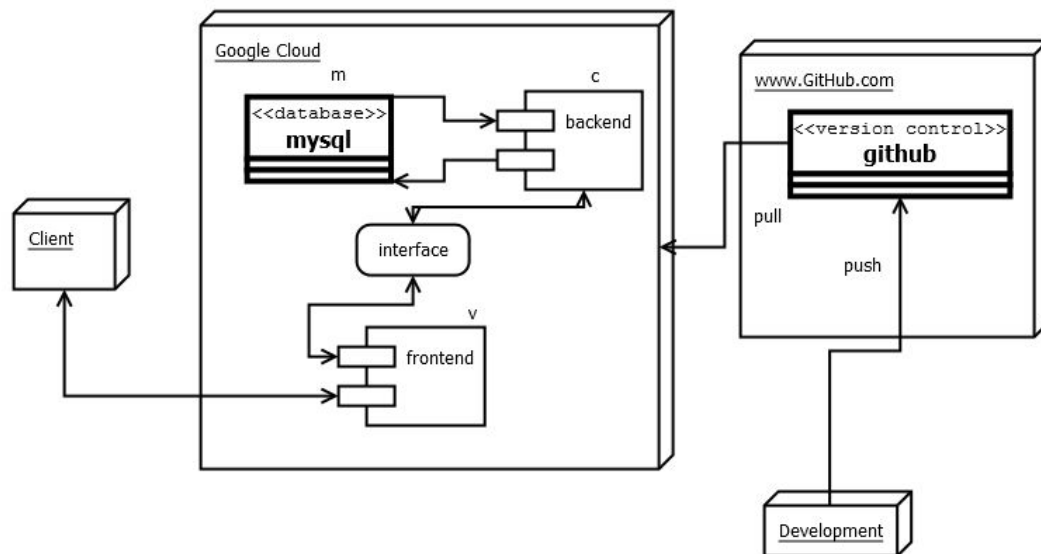
- a. *Neighborhood Search*: Google API will be used to find and convert neighborhood to ZIP code.

## 5. High-Level UML Diagrams

### 5.1 High-Level UML Class Diagrams



### 5.2 UML Component and Deployment Diagrams



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

- a. *Technical Risks:* None at the moment.
- b. *Legal/Consent Risks:* This is the only major risk we see right now, having legal/consent risks due to incorrectly posting people's houses on our website without their permission. We will try to resolve this risk by only posting pictures of our houses (so that way we can give consent) or using royalty free stock images, and also using addresses of businesses and not private properties.

These are the only 2 major risk factors we see affecting us. We have the utmost confidence in our skills, and feel that all of our team members are responsible enough to complete their work on time. We are not worried about the schedule as we feel that we have chosen our priorities wisely, and can finish all of the tasks we have listed as Priority 1. Finally, teamwork is definitely not an issue, as we feel that our team is very communicative and able to work well together.