SW Engineering CSC648/848 Section 02 Fall 2017

Essos

Real Estate Web Application

Milestone 2

October 27, 2017

Team 06

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Revisions

October 27, 2017	Initial Draft

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Data Definitions

Unregistered Guest: Does not require registration or login. These users can browse listings using search and listing filters. They may access all listing information and financial tools, but are unable to save listings to bookmarks or contact an agent.

Registered User: Requires registration and login. These users have access to all search and financial tool features. They may save listings into their bookmarks, and can contact the Agent in-site from a listing. Registration requires the following information:

- Email
- Name (First and Last -optional)
- Password

Agent: Requires registration and login. These users have access to all search and financial tool features. They are granted access to an Agent dashboard in which they may post any number of real estate listings. Registration requires the following information:

- Name (First and Last)
- Email
- Contact number
- Password

Admin: Requires authentication. Admins have access to full site databases via MySQL Workbench. They shall delete accounts and/or listings as per Essos's Terms of Use.

Listing: Real estate listing posted by an Agent account. These listings generate pages for properties that are up for sale through Esso. Listings contain the following information:

- Title
- Address (City, State, Zipcode)
- sqft
- Number of bedrooms and bathrooms
- Pictures (minimum of 2. 1 inside, 1 outside)max 10
- Price ($)
- Type (house, apartment, etc.)
- Description

Financial Tools: Financial widgets that offer different cost estimations for prospective buyers.

Bookmarks: Registered Users may save viewed listings for later viewing.

Agent Dashboard: Agent landing page with options to post, view, and edit listings; and reply to listing inquires.

Functional Requirements

Priority 1 - HIGH

Unregistered Guests

1. Application shall display new, featured, and pending sale listings.
2. Application shall display listing locations on Google Maps.
3. Application shall allow for listing search by city name or zip code.
4. Application shall allow search result filtering by city, zip code, number of bedrooms, number of bathrooms, and price.
6. Application shall allow guests to register for a User or Agent account.

Registered Users

7. Users shall register with their full name, email, and desired password.
8. Users shall be able to contact Agents from the listing page with a pre-filled description.
9. Users shall be able to view Agent responses to listing inquiries made from their account.

Agents

11. Agent accounts shall have access to an Agent Dashboard that provides the options to view messages, post listings, and edit existing listings.
12. Listings shall only be posted by registered Agent accounts.
13. Listings shall contain required information: address, square footage, number of bedrooms, number of bathrooms, asking price, property type, a minimum of 2 images, and a general description.
14. Listing inquiries shall be viewable by the posting Agent account.
15. Agents shall be able to edit their listings once posted.

Admins

16. Admins shall be able to view all database entities via Workbench.
17. Admins shall be able to delete listings and/or accounts, if necessary.

Priority 2 - MED

Unregistered Guests

4.1. Application shall also allow search result filtering by sqft and HOA fee.

Registered Users

10. Users shall have the option to save viewed listings into a collection of bookmarks.

Priority 3 - LOW

Unregistered Guests

4.2. Application shall also allow search result filtering by distance to nearest mass transit node.

5. Application shall offer a set of financial tools that guests may interact with to receive cost estimates, etc.

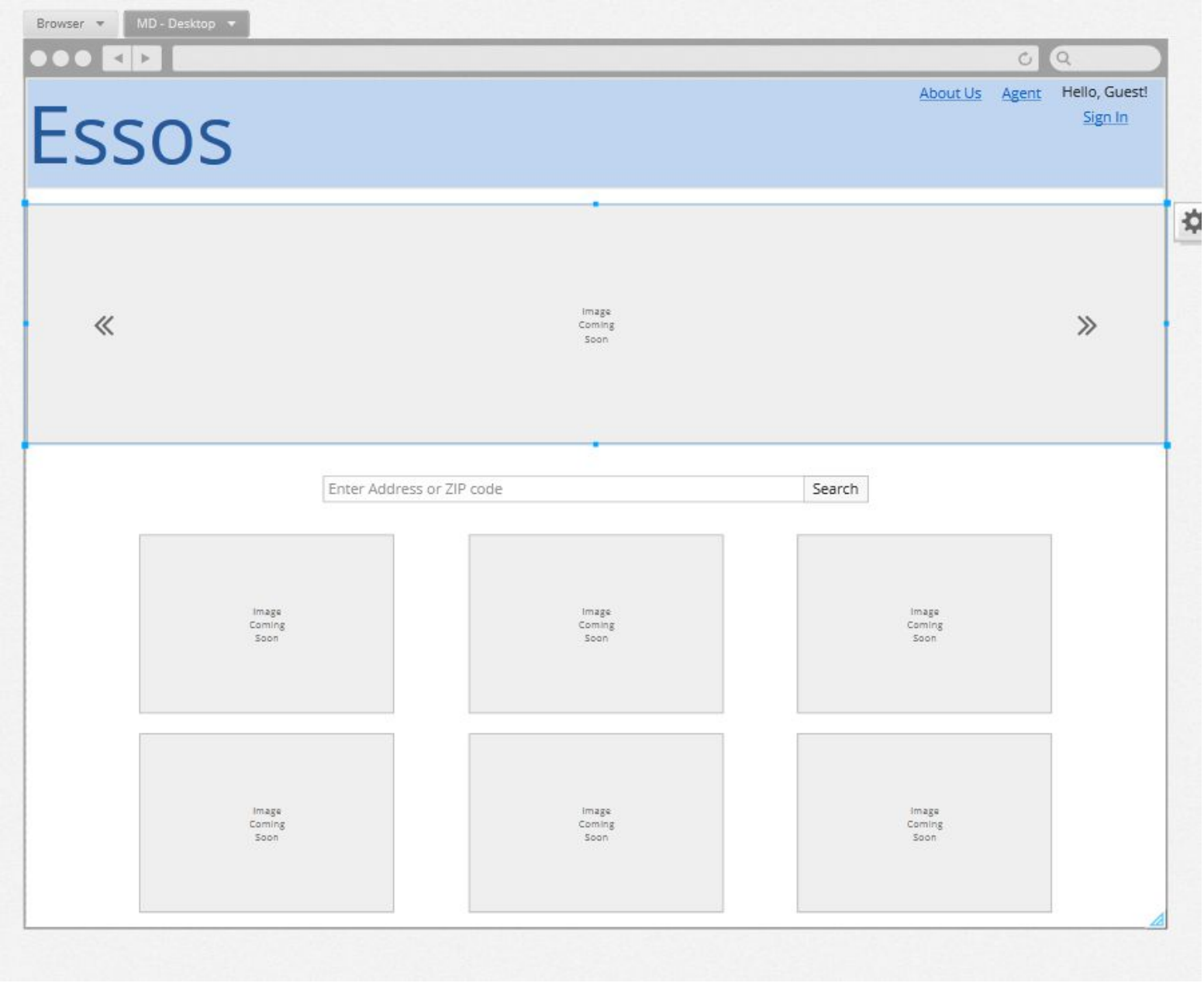
18. Application shall display an average Agent rating on listing pages.

Registered Users

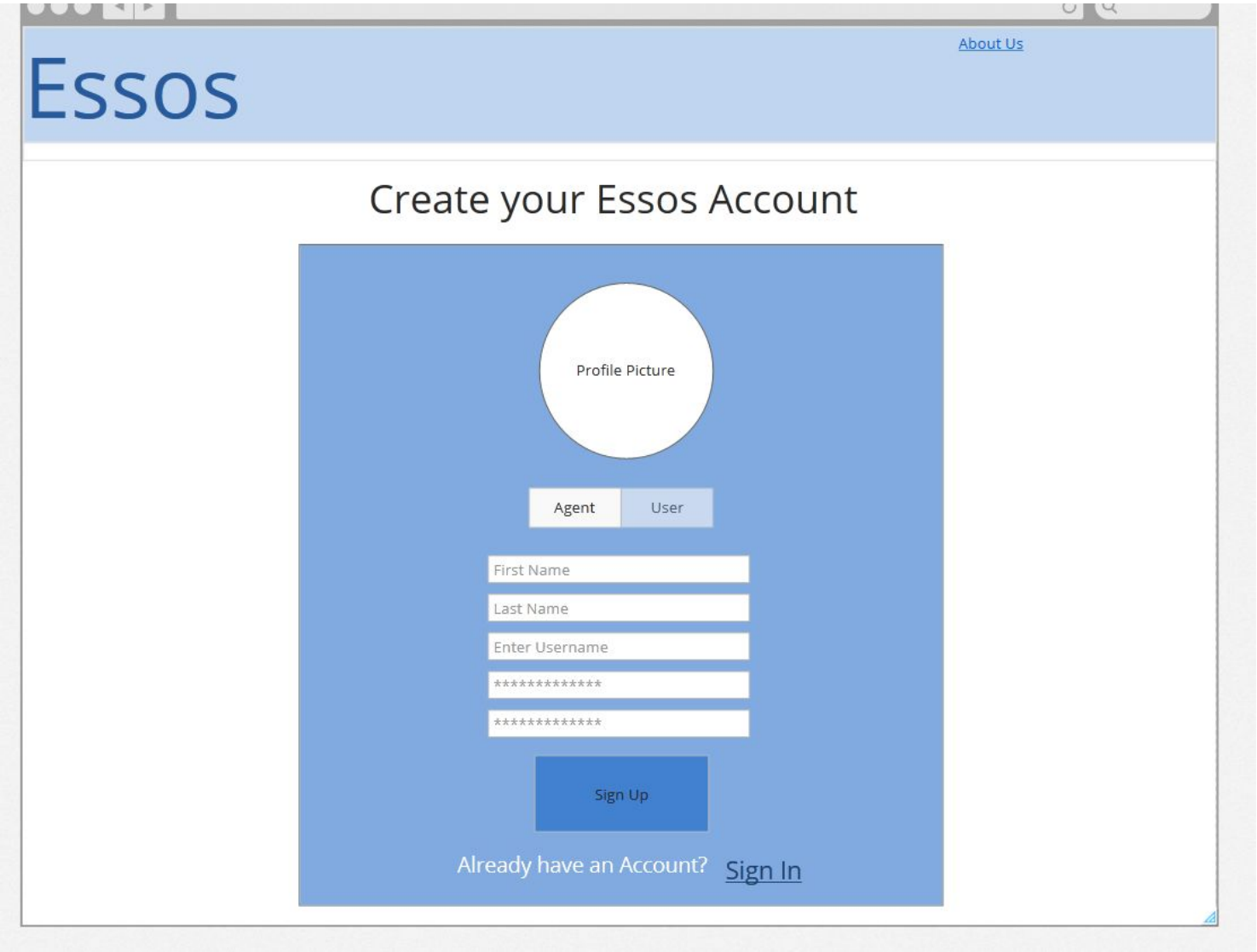
19. Users can rate Agents from listings 1 to 5 stars.

UI Mockups and Storyboards

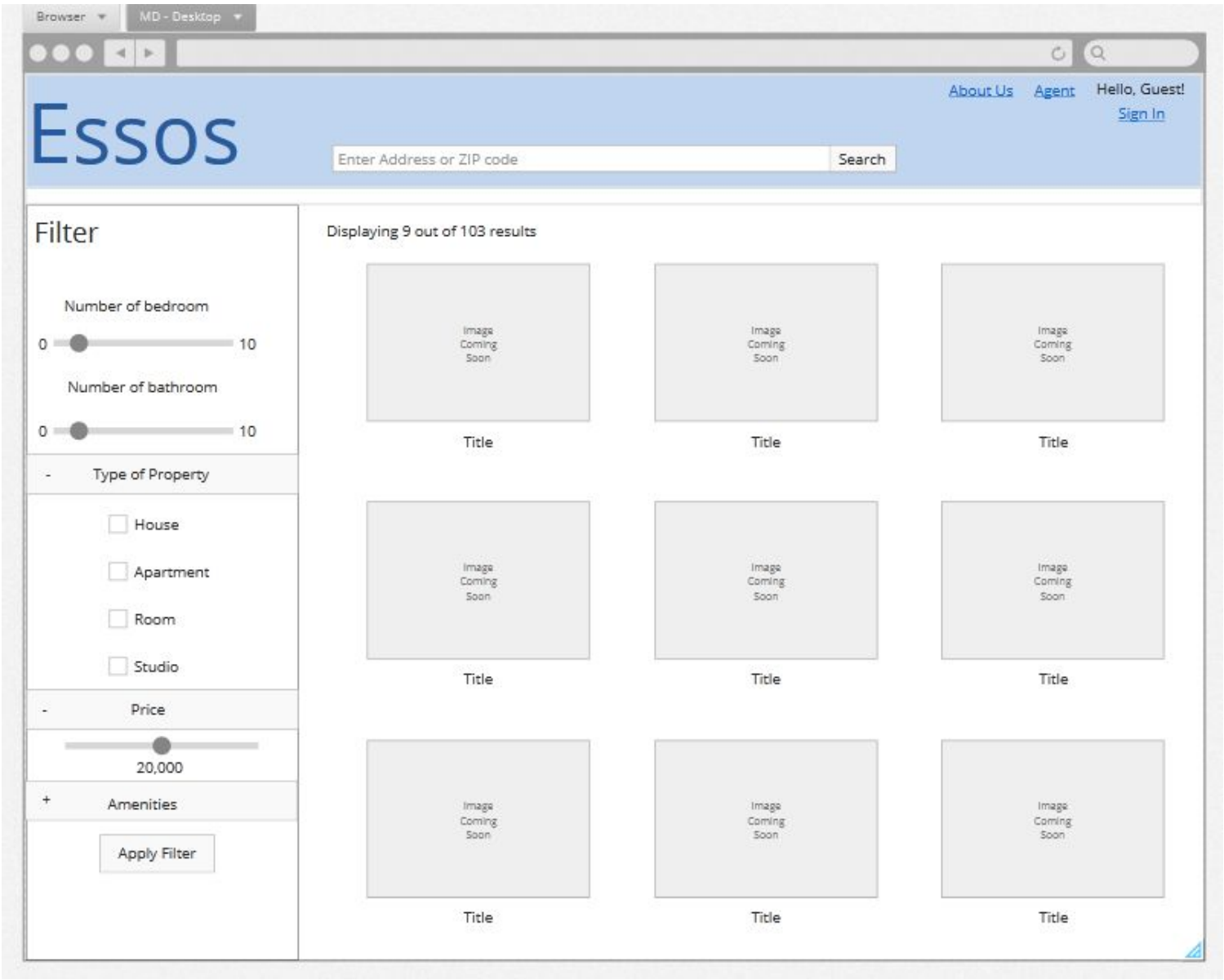
Landing Page



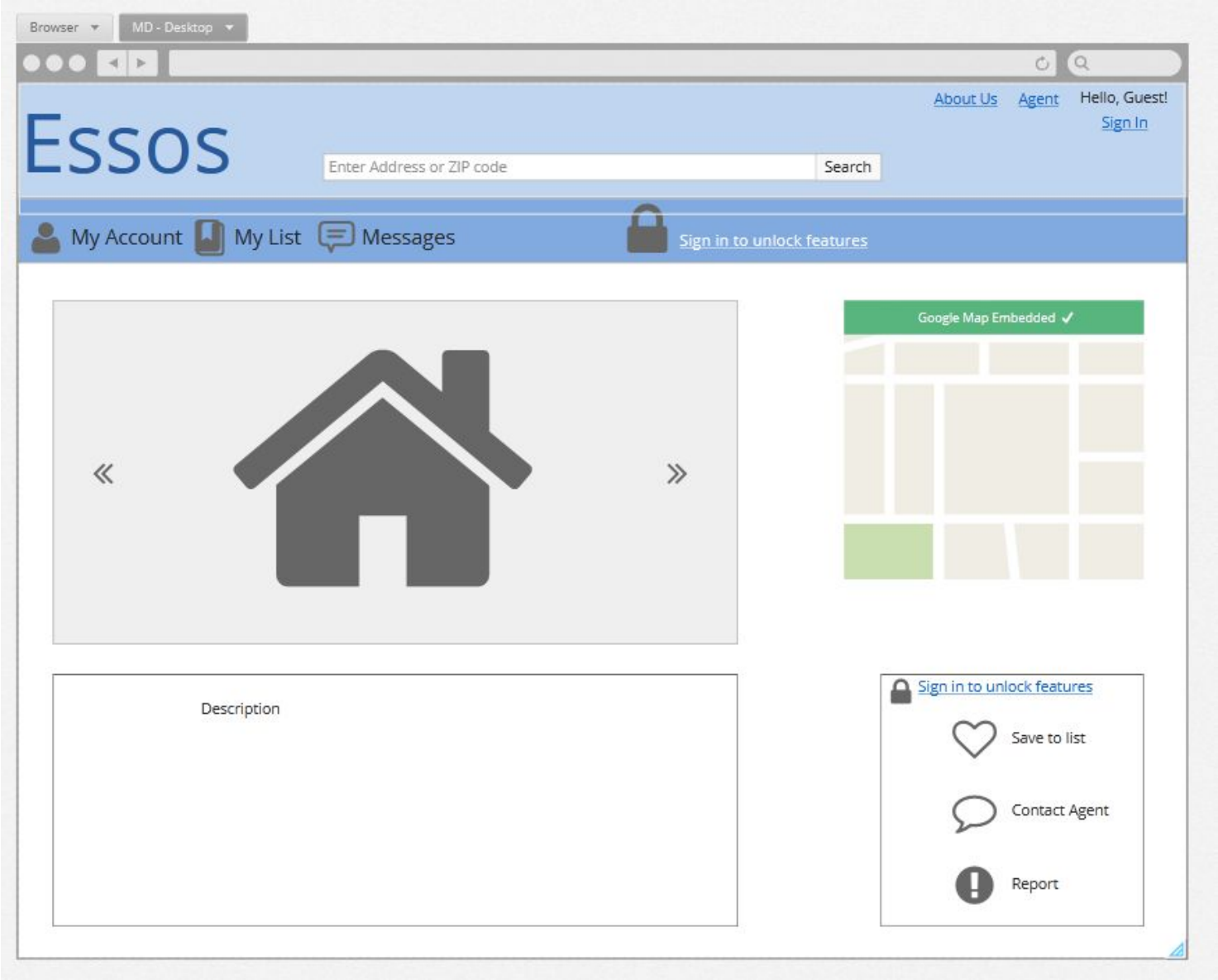
Registration/login page



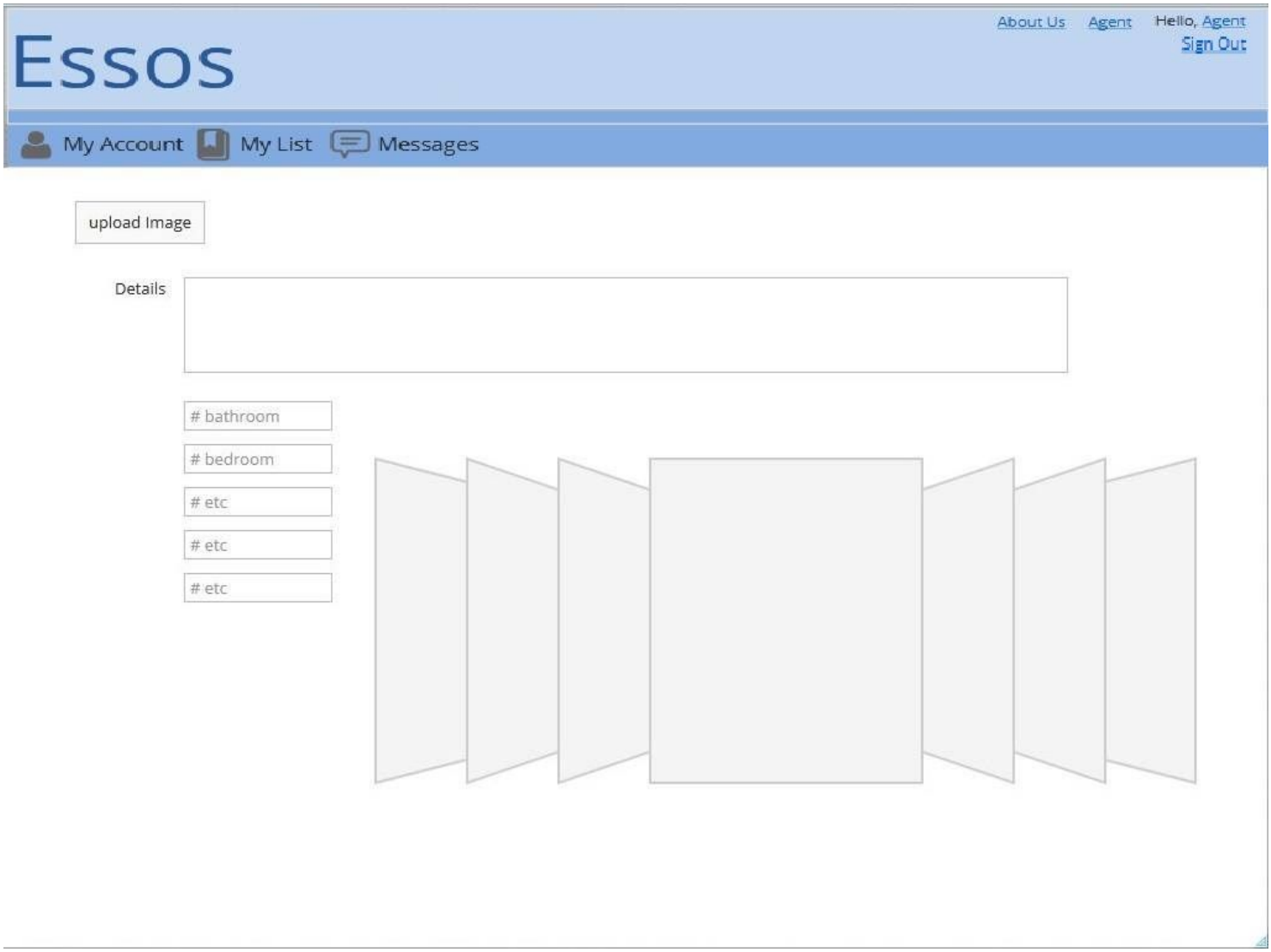
Search result page



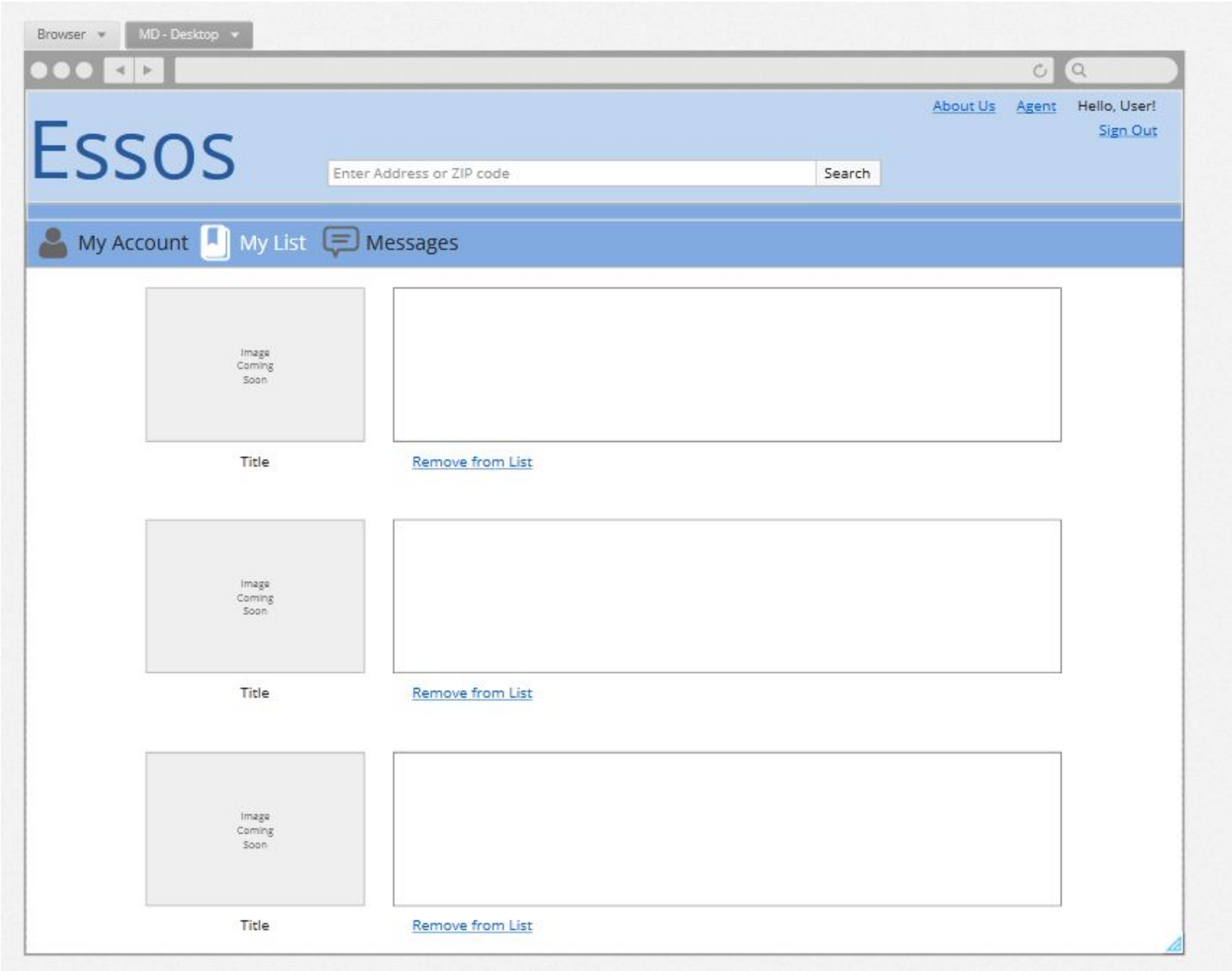
Individual listing page



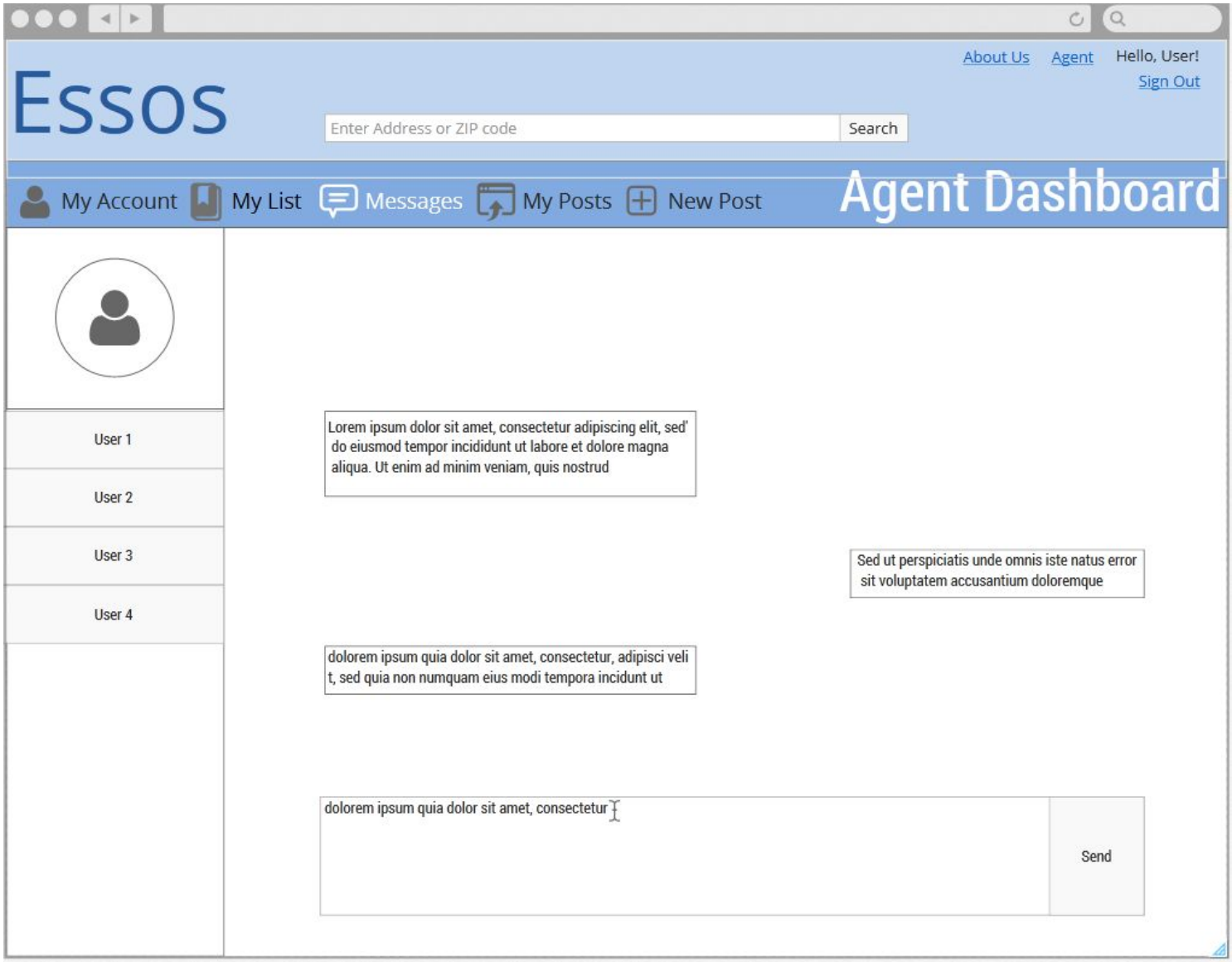
Agent listing page



User Dashboard

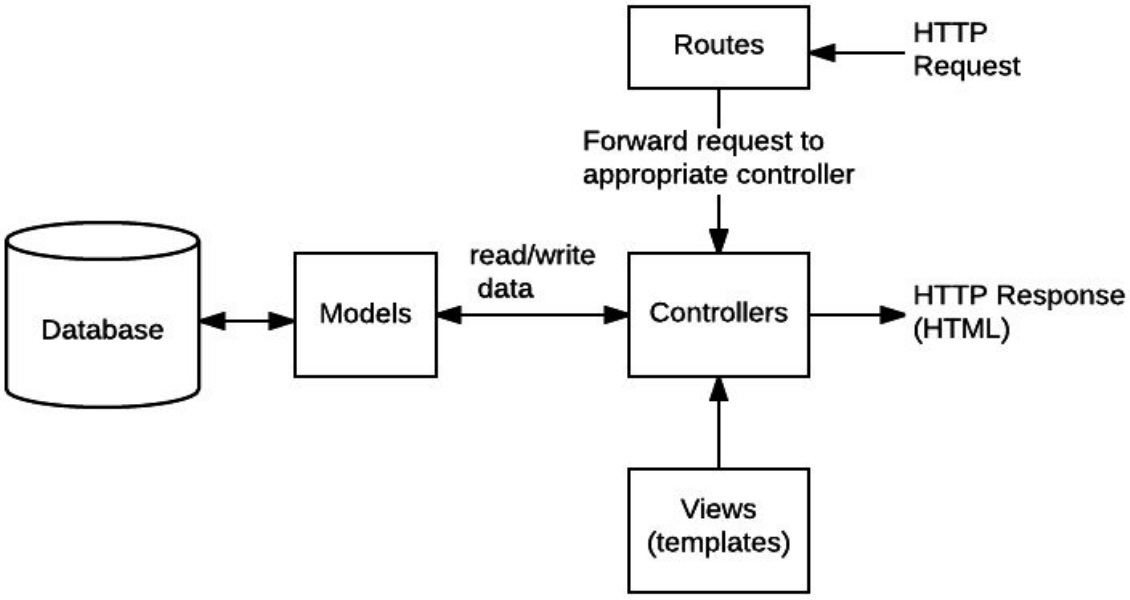


Agent Dashboard



High-Level Architecture

Our project will follow the general MVC pattern established by the Express framework.



Source: https://developer.mozilla.org/en-US/docs/Learn/Server-side/Express_Nodejs/routes

The diagram above illustrates the MVC pattern we will adhere to using Nodejs/Express when developing the Essos real estate web app. The Controller portion of our project will be the routing where a HTTP request will be made. Once a request has been made the controller will request the Model, represented by our MySQL Database and the information stored therein, and passes that Model to the Views portion of our project. The Views, in this case the Jade templating engine will then use the Model to form the HTTP response that the controller will send onward to the client to display on their screen.

Database Organization

Core Database Schema

listing	agent	user	password
-id (PK)	-agent_id (PK)	-user_id (PK)	-id (PK)
-type	-name	-name	-password
-sqrft	-email	-email	-user_id(FK)
-price	-phone	-phone	
-city			
-zipcode			
-image			
-description			
-agent_id (FK)			

Media Storage

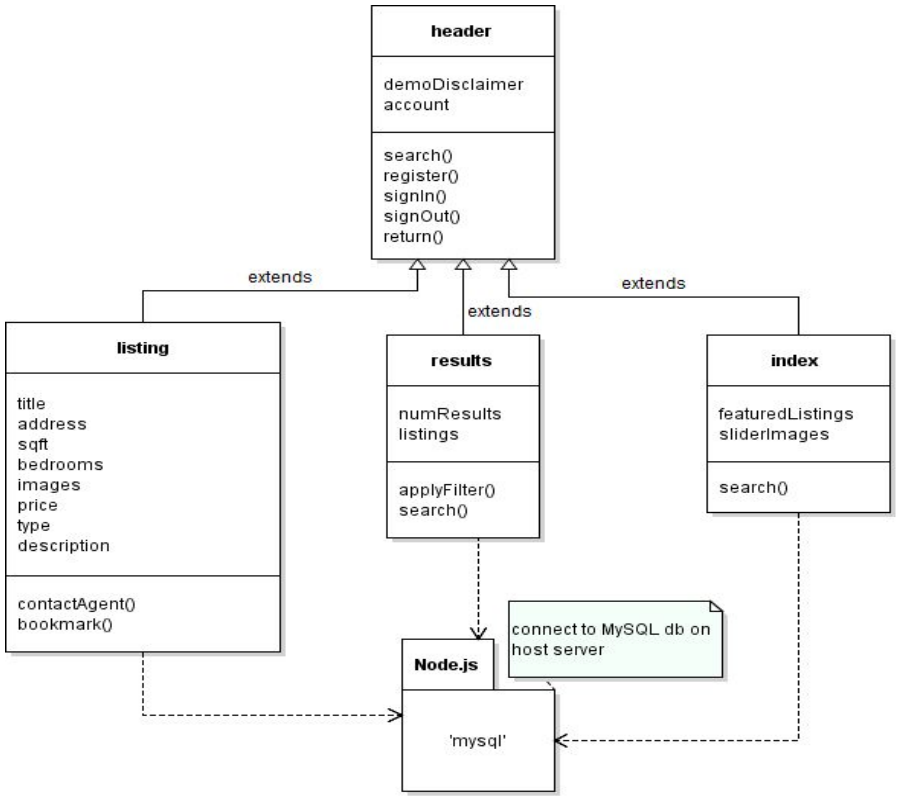
Images are in Jpeg format and range in size from 1MB to 8Mb. Every image will have administrative information, along with the ability to connect with and contact the agent. Furthermore, technical information on what kind of medium was used to capture the media as well as descriptive data such as names or specific details pertaining to who/what was being photographed. All of our medias are in color and will be stored in a *file system*.

Search/Filter Architecture

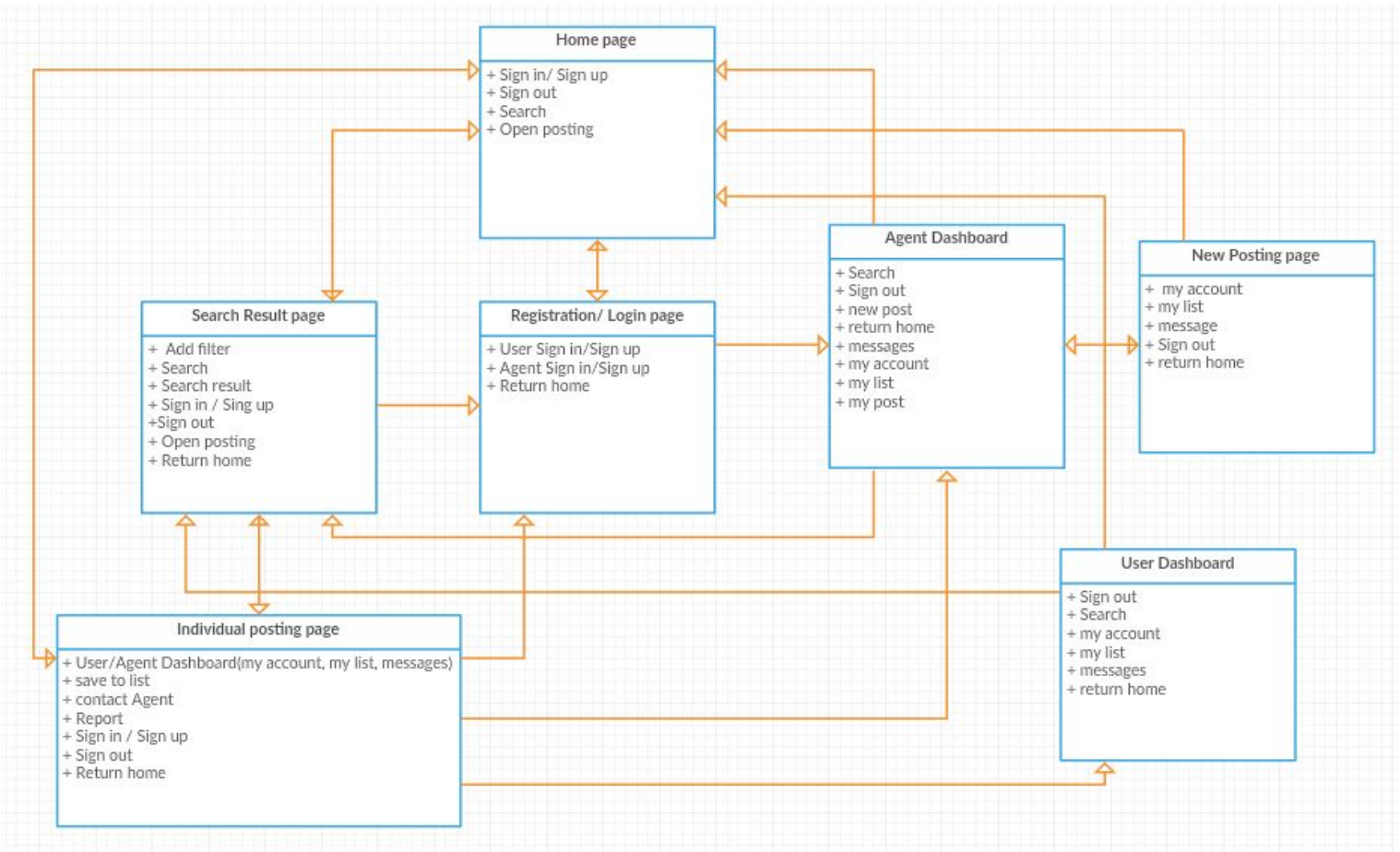
Users have the ability to use search terms relevant to cities, zipcode, and price, to name a few. Our search algorithm finds all items in our database that a best percent-like relevant to be search. If search fails, it displays featured items in our database.

UML Diagrams

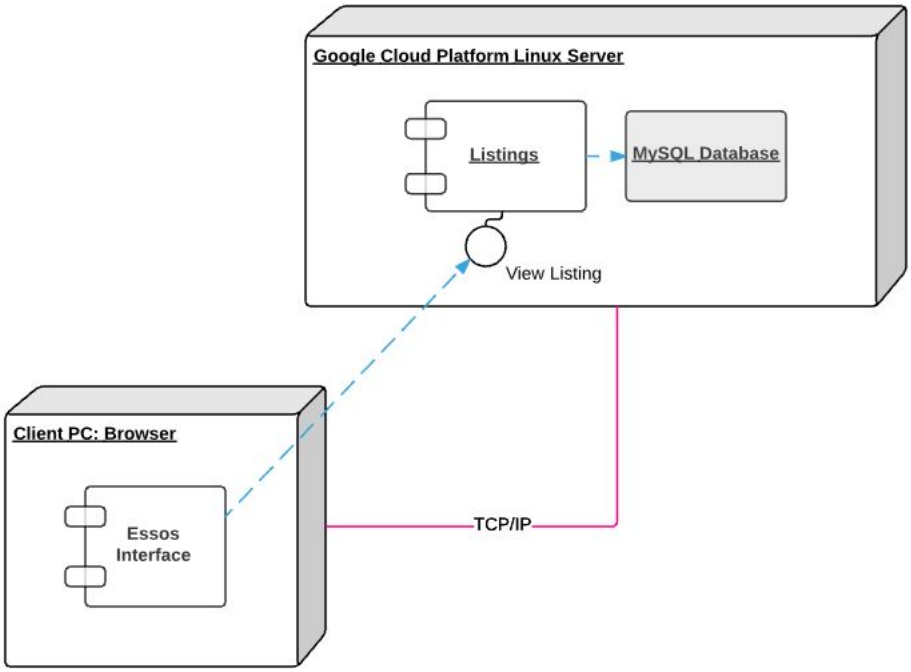
Class Diagram - High Level Search Functionality



Class Diagram - Views



Component and Deployment Diagram



Project Risk Assessment

Upon review of the organization of the Essos real estate web application and its development team, the following risks have been identified:

- *Skills risks*: the majority of the team is unfamiliar with the given development stack (node.js/express) for the project, and may need accomodate time to gather and learn from various resources

- *Schedule risks*: as the development team is comprised of senior level undergraduate students, scheduling conflicts may emerge due to individual projects or jobs

- *Legal/content risks*: this project requires the use of media (uploaded images) which may potentially infringe upon the rights of its owners

In order to resolve the identified risks, SCRUM meetings will be held between the team lead and the rest of the team weekly either online or in person to discuss any issues with the application development. At scheduled extended meetings, we will periodically review the coding procedures that need to be done, and research the methods of accomplishing them within the chosen framework and development stack. Code reviews will be conducted within the smaller teams to resolve any coding issues.

During the weekly SCRUM meetings, we discuss availabilities for the week and plan for any scheduling conflicts that may arise with any of the members. To ensure deadlines are met, tasks are assigned with soft deadlines depending on the availabilities discussed. An extended weekly meeting is typically scheduled to discuss issues in depth at these meetings.

For demo purposes, our project will use images of properties. In order to avoid any legal issues, all images must be reviewed by team leads before pushed to the live project site. The sources will be checked for the distributive rights of the images - only commercial-free (and no attribution required) images will be approved for demo use.