SW Engineering CSC648/848 Section 02 Fall 2017

UNLOCK.COM

Team 01

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Date:	Comments:

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1. <u>Executive Summary</u>

Unlock.com is a real estate website focused on one main goal: providing the simplest and most secure property buying or renting experience available.

The real estate market is currently being dominated by two major real estate websites, zillow.com and trulia.com. In terms of user experience, these two sites are the most friendly, but technically each site comes with it's own set of drawbacks. Zillow.com is not trusted by many real estate agents due to significant flaws with one of the sites main features, Zestimate. Zestimate is a tool which calculates the properties potential value, and many real estate agents have commented on the fact that it's highly inaccurate due to the fact that it only takes the location of the city into consideration. Things such as condition of the home and pricing in relation to similar homes around the area are outright ignored. Trulia.com is a constant victim of incorrect listings being displayed. A constant complaint our team has observed of the site is that a lot of times homes that are trying to be sold are listed as for rent. There are other more accurate sites than zillow.com and trulia.com out on the market but they are not as popular due to the fact that the user experience is not as interactive, for example realtor.com. Our team wants to capitalize on this discrepancy by combining the interactiveness and simplicity of sites such as zillow.com and trulia.com with the accuracy of sites like realtor.com into one single product, which will come to be known as unlock.com. We think if given the opportunity, we can make unlock.com a huge success. By focusing on taking over the majority of the users who visit zillow.com and trulia.com for their general property buying or renting purposes, we can dominate the real-estate market for years to come.

On unlock.com, the user will be provided with the best features available on the market. The user will be provided a search bar to enter the location they are interested in viewing a property in, either by cite and state or zipcode. The user will be provided a filtering tool to narrow down the list of options available in order to help them find the exact property they are looking for. The user will also be shown pictures and location of the property on a map so that way the user has a clear understanding of what the condition of the property is and where the listing is located.

As we previously discussed, on unlock.com we are interested in providing the most simple and secure property buying or renting experience available. An added feature that we will be implementing in our services is the verification of listing agents. In this day and age, we know that there are inevitable risks associated with online transactions. Our team wants to minimize this risk by providing our potential property buyers and renters with only verified real estate agents being allowed to list properties for either sale or rent on our site.

Now we know that trying to take over a market which is already being dominated by two major players is not an easy task, but we have a lot of confidence in being able to deliver a great product with the ability to entirely disrupt the market due to our software development team. Our team, being led by Sannuj Singhal, has extensive web development experience. Sannuj has worked, and succeeded, on delivering a major website before, and so have his front-end and back-end leads, Joseph Wibowo and Paul Fontaine, respectively. The rest of the team, comprised of Steven Huynh, Daniel Herrera, and Gurchetan Johal, all also have varying levels of experience in web development and have worked on delivering major projects before. With the chemistry this team has, there is no one better suited for the job.

2. <u>Use Cases</u>

In order to best explain the use cases for all possible types of users, we will be using three fictitious characters with various technical skill levels to describe the user experience:

1. John: Has a low technical-skill level
2. Mary: Has an intermediate technical-skill level
3. Mark: Has a high technical skill-level

2.1 Unregistered User

John is an unregistered user with a low technical skill level. He decides to visit unlock.com after talking to a friend about being interested in a new property and having the site recommended to him. After typing in the site's name through his browser's search bar, John arrives on the home page. John decides to use the *search features* available on unlock.com to search through the available *listings*. He enters his desired city location in the available *search bar,* and is taken to another page which shows the available *listings* in the area. On the *listings* page, John can further optimize his search by using the *search filter* to his preferred number of bedrooms and bathrooms, preferred price range, and etc. Once John choose's a *listing* which interests him, he can click on the *listing* to find out more information about it. He can see things such as the address of the property, minimum asking price, number of bedrooms and bathrooms, and other important information about the property. If John decides that the *listing* is of interest to him, he can choose to *message* the realtor. Once John clicks on this option, he is prompted to *sign-up* for unlock.com or he will not be allowed to proceed further.

2.2 Registered User

Once John is prompted to *sign-up* for unlock.com, he is asked for general *personal information* (such as first and last name, email, password, and whether he wants to register as a seller or buyer). John will also have the option of being able to put more *personal information* on his home *dashboard* if he decides. John can *flag* listings and real estate agents he finds inappropriate in order to inform the database administrator. John can also *save homes* he is interested in. Now that John is a registered user, John has the privileges of being able to *message* the real estate agent who has posted the listing plus all the previous privileges he had already being an unregistered user.

2.3 Unregistered Seller

Mary is a real estate agent with an intermediate technical skill level. She is working to grow her business by posting her available *listings* on various real estate listing sites. After hearing her friend, who also works in real estate, brag about the success she has had on unlock.com, Mary becomes interested and decides to post some of her available *listings* on the site. She types in the web address in her browser's search bar, and comes to the sites home page. She's not interested in navigating the site, she's busy and just wants to make money, but has all the same privileges as an unregistered user. Mary finds the *sell* option in order to be able to post her listings on the site. Once Mary clicks on this option, she is prompted to *sign-up* for unlock.com.

2.4 Registered Seller

Once Mary is prompted to *sign-up* she is asked for general *personal information* (such as such as first and last name, email, password, and whether she wants to register as a seller or buyer). Since Mary is interested in selling, and our site only allows verified real estate agents to sell, we take the extra step of having Mary enter her real estate license number. We will then compare her given real estate number with the numbers available in our realtor *database.* Once we are able to verify whether the real estate license number that Mary has gives us is indeed in our realtor *database,* we will allow her to post *listings* on unlock.com. Once Mary is verified, she is taken to her personal *dashboard* where she is also given the option to input more *personal information* about herself and her company in order to attract more clients. On this *dashboard* Mary also has the option to post *listings.* Mary can also *flag* user's she thinks are being inappropriate. In the *listing* Mary can choose to add pictures, numbers of bedrooms and bathrooms, write a personal note about the home, and etc. Mary can also choose to mark her listing as sold or rented after the action takes place, or delete her listing altogether. These are the privileges that Mary will have as a registered seller.

2.5 Admin

After a series of unfortunate events, Mark lost his job at Facebook and has now been hired as a database administrator at unlock.com. Due to his previous experience, Mark has a high technical skill level. Since Mark works for unlock.com, Mark is provided access to the database. On here, Mark can review the *flagged* listings. Then Mark can choose to either delete the offensive *listing* or choose to remove the *flag* if he thinks the *listing* does not need to be flagged. Mark can also choose to suspend the registered privileges, or delete the accounts, of either those users or sellers he finds are abusing the site or *flag* options.

3. Data Definition

1. *Search Features:* The tools used by the unregistered seller or buyer to look for available listings.

2. *Listing(s):* The property listed by the registered seller which shows pertinent information about it, such as numbers of bedrooms and bathrooms, pictures, and etc.

3. *Search Bar:* Used by all types of users to look for property within a certain area, either by state and city or zip code.

4. *Search Filter:* Used by the all types of users to narrow down the list of available listings to better help them find what they are looking for. Done by selecting number of bedrooms, bathrooms, features, and etc. they want in the property they are searching for.

5. *Message:* Contains information about the user sending the message, the user who will receive the message, and a personal note which conveys what they user sending the message wants to convey.

6. *Sign-up:* A sheet which taken in *personal information* from either the unregistered seller or buyer.

7. *Personal Information:* General information which can be used to identify either the user or seller.

8. *Dashboard*: The personal screen both registered sellers and buyers, as well as admin see, when logging into their personal sites on unlock.com.

9. *Database:* Area where all personal information about registered sellers and buyers, and listings is stored. Can only be accessed by Admin.

10. *Flag(ged):* Option which allows registered users and sellers to notify Admin of inappropriate content on site.

11. *Save Homes:* Registered users have the option of being able to save a home they are interested in to be able to view later.

4. <u>Initial List of Functional Requirements</u>

1. The Unregistered User shall be able enter state and city, and/or zip code to see available listings in the desired area.

2. The Unregistered User shall be able to choose a property based on their specifications, whether that includes the number of bedrooms and bathrooms they want, whether they want to rent or buy a property, or etc.

3. The Unregistered User shall be able to register for the website.

4. The Registered User shall be able to save their search results.

5. The Registered User shall be able to flag inappropriate posts.

6. The Registered Seller shall be able to post a listing.

7. The Registered Seller shall be able to edit their listing after the initial post.

8. The Admin shall be able to delete posts they find inappropriate.

9. The Admin shall be able to remove a flag from a post.

10. The Admin shall be able to delete and/or suspend accounts of Registered Users and Sellers they find acting inappropriately.

5. <u>List of Non-Functional Requirements</u>

1. Application shall be developed and deployed using class provided deployment stack.

2. Application shall be developed using pre-approved set of SW development and collaborative tools provided in the class. Any other tools or frameworks must be explicitly approved by Anthony Souza on a case by case basis.

3. Application shall be hosted and deployed on Amazon Web Services as specified in the class.

4. Application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of all major browsers: Mozilla, Safari, Chrome.

5. Application shall have responsive UI code so it can be adequately rendered on mobile devices but no mobile native app is to be developed.

6. Data shall be stored in the MySQL database on the class server in the team's account.

7. Application shall provide real-estate images and optionally video.

8. Maps showing real-estate location shall be required.

9. Application shall be deployed from the team's account on AWS.

10. No more than 50 concurrent users shall be accessing the application at any time.

11. Privacy of users shall be protected and all privacy policies will be appropriately communicated to the users.

12. The language used shall be English.

13. Application shall be very easy to use and intuitive. No prior training shall be required to use the website.

14. Google analytics shall be added.

15. Messaging between users shall be done only by class approved methods and not via e-mail clients in order to avoid issues of security with e-mail services.

16. Pay functionality (how to pay for goods and services) shall not be implemented.

17. Site security: basic best practices shall be applied (as covered in the class).

18. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development.

19. The website shall prominently display the following text on all pages *"SFSU Software Engineering Project, Fall 2017. For Demonstration Only"*. (Important so as to not confuse this with a real application).

6. Competitive Analysis

Features	Zillow	Realtor	Intero	Unlock
Houses suggestion	✗	✔	✔	✔
Map View	✔	✔	✗	✔
Manual Browse	✔	✔	✗	✔
Filter	✔	✔	✔	✔
Ease of use	✔	✗	✗	✔

After a deep analysis of the competition, our team noticed that all real estate websites available on the market lacked a complete one-stop solution for the user. Websites like zillow.com and trulia.com provide users with a great UI, but their key technical features either work incorrectly or are missing altogether. Realtor.com is an example of a website which has well working technical features, but the UI is not up to par when compared to zillow.com and trulia.com. Our website will combine a great UI along with well performing technical features to give the user a one-stop shop for all of their real estate needs.

7. <u>High-Level System Architecture</u>

1. Frameworks
    a. NodeJS
    b. ExpressJS
    c. BootstrapJS

2. APIs
    a. Google Maps
    b. Google Analytics

3. Tools
    a. MySQL Workbench
    b. Google Analytics

4. Supported browsers
    a. Google Chrome
        i. 6.0
        ii. 6.1
    b. Mozilla Firefox
        i. 55.0.3
        ii. 56.0

5. Supported platform
    a. Desktop
    b. Mobile

8. <u>Team</u>

1. *Team Lead:* Sannuj Singhal, in charge of delivering finished product

2. *Front-End Lead:* Joseph Wibowo, in charge of creating front-end

3. *Front-End Team Member:* Daniel Herrera, will work with Joey on front-end

4. *Back-End Lead:* Paul Fontaine, in charge of back-end

5. *Back-End Team Member:* Gurchetan Johal, will work with Paul on back-end

6. *Back-End Team Member:* Steven Huynh, will work with Paul on back-end

9. <u>Checklist</u>

1. Team decided on basic means of communications: DONE

2. Team found a time slot to meet outside of the class: DONE

3. Front and back end team leads chosen: DONE

4. Github master chosen: DONE

5. Team ready and able to use the chosen back and front end frameworks: DONE

6. Skills of each team member defined and known to all: DONE

7. Team lead ensured that all team members read the final M1 and agree/understand it before submission: DONE