Software Engineering CSC648/848 Spring 2019

BetterHome

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Team 43

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History Table (revisions):

Revisions	Date
1st	03/17/2019

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1. Executive Summary:

Team 43 is designing a full-stack web application titled “BetterHome” that will be the leading property marketplace dedicated to providing consumers with all the knowledge and services they need to buy, sell, or rent the place they call home. BetterHome will provide many services to users of all kinds, including landlord hosts, apartment / real-estate searchers and resellers. BetterHome will give property owners the ability to host their property on the website, and provide all general and customized information needed to make their property an attractive candidate for someone’s next home. BetterHome will allow searchers to browse the various property listings on the website with feature rich and detailed customization of search options, no matter if they are looking to buy or rent an apartment or house. The website will also provide this same service to “house-flippers,” or resellers, and will allow them to browse all listings with filters, all while being able to host a property up on the website and maintain each aspect simultaneously.

2. Use Cases:

Admin:
Tom the admin receives emails from clients complaining about a landlord that is discriminating against clients. After reviewing several emails as evidence, the Admin decides to take action and delete the offending users account.

Landlord (host):
Joe owns a house in San Francisco, but he is going to move to Seattle next month with his family. So he decides to sell the house. He registers a new account and he fills out the the property information and contact information.

Apartment Searcher:
Austin is moving to San Francisco to attend SFSU, and he is looking to rent an apartment close to campus. He is hoping to find an apartment below the price range of $1500 a month. He would like to have his own room and bathroom. Austin should be able to locate apartments within his requirements.

John has moved to the Bay Area from out of state for a new job. He is looking for a home that is reasonably close to his new workplace or is accessible to public transportation such as BART. In his search for property, he should be able to limit the scope of his search based on location.

Reseller:
Cole is in the business of buying old homes and reselling after refurbishing the property. When he looks for homes that are on the market, the two most important things for him to look out for are location and price. As is the nature of his work, he wants to be able to view the cheapest homes available with ease. While having images to preview the property are also important, he won't make a purchase before making a trip out to look at the property, so it is vital that he be able to contact the seller in order to arrange a meeting.

Handicap User:
Tom, a wheelchair user, is looking to rent an apartment. He uses a wheelchair because of his back injury from 2010 car accident. He is looking to rent an apartment that accommodate a wheelchair. He finds apartment that has a wider Entryways and hallways that will allow him to turn around in his wheelchair.

3. Data Definition (items and entities):

Admin:
User from BetterHome team that can maintain use information and ensure listings posted on our website are valid.

Client (Registered User):
User that has registered with the site, can access all listings on the site, can message the listing owners, and can post their own listings.

Guest User:
User can see the listings on the site without making an account, but cannot message listing owners nor access their contact information.

Privacy policy:
Policy to maintain and protect our user information.

Map View:
A list of all available home/apartment listings in the designated area.

Handicap:
Indicator on listings to show that they have handicap accessible pathways.

Listing:
- Photo:
Some photos to showcase the house/apartment.
- Price/Rate:
A general idea of how much each listing is.
- Address:
Area for where the listing is located.

BART Accessible:
Within a close proximity to a BART Station.

Availability:
Indicator to show that if the listing is available (could signify that an admin should take down the listing OR can just scrap this and have the owner take down the listing themself).

Rooms:
Amount of rooms available in the property listing.

Parking:
How much parking comes with the property.

Profile:
A place on our website that will show personal information of the user.

Help:
A brief explanation of how our website works.

4. Functional Requirements:

For Admin:

1. Admin shall be able to update/maintain user information.
2. Admin shall be able to delete Landlord and Clients.
3. Admin shall be able to lock and unlock Landlord and Clients.
4. Admin shall be able to find Landlord and Clients.
5. Admin shall be able to view gallery.
6. Admin shall be able to delete photos.
7. Admin shall be able to reset password for both Landlord and Clients.
8. Admin shall be able to access username and email of Landlord and Clients.

For Landlord:

1. Landlord shall be able to browse the website without login.
2. New Landlord shall be able to register.
3. Registered Landlord shall be able to post property descriptions.
4. Registered Landlord shall be able to post the location of the property.
5. Registered Landlord shall be able to post the price of the property.
6. Registered Landlord shall be able to post the city and zipcode of the property.
7. Registered Landlord shall be able to select if the property is a house or apartment.
8. Registered Landlord shall be able to select if the property is wheelchair accessible.
9. Registered Landlord shall be able to login.
10. Registered Landlord shall be able to add photos.
11. Registered Landlord shall be able to delete photos.
12. Registered Landlord shall be able to contact registered clients.
13. Registered Landlord shall be able to view gallery.
14. Registered Landlord shall be able to contact admin.
15. Registered Landlord shall be able to change the property status to available, pending, and sold.
16. Registered Landlord shall be able to update price, location, and pictures.

For Client:

1. New clients shall be able to register.
2. Registered clients shall be able to login.
3. Registered clients shall be able to sign out.
4. Registered clients shall be able to modify their profile.
5. Registered clients should be able to add the listing as favorite .
6. Registered clients should be able to revisit the favorite .
7. All clients shall be able to browse the website without login.

8. All clients shall be able to view the sale listing.
9. All clients shall be able to view the sold listing.
10. A free text search box shall be displayed to all clients.
11. The default display in the free text search box shall be “address, neighborhood, zip”.
12. All clients shall be able to search the listing by city.
13. All clients shall be able to search the listing by price range.
14. All clients shall be able to search the listing by property type.
15. All clients shall be able to modify the last search
16. The search results shall be able to be sorted by relevance.
17. All clients should be able to view the search results in a map view based on current location.
18. All clients shall be able to contact the landlord.
19. All clients should be able to contact the admin.
20. Listings thats are similar to a viewed listing should be displayed to all clients
21. A Q&A page shall be provided for all clients.

5. Non-Functional Requirements:

Security:

1. Login shall be required for Clients and Admins.
2. Username shall be the Client’s email.
3. Password shall be encrypted when stored.
4. Client’s session shall end upon leaving the site.
5. Client’s session shall only end by code design.

Performance:

1. Loading time for site shall be less than 3 seconds for any screen.

Capacity:

1. The total data storage allowed by the web site shall not exceed of 80 % of the server capacity for this site.
2. The web site shall be prepared to support scalability for adding future new features.
3. The web site shall be capable to handle at least 50 Clients simultaneously.

Reliability:

1. Downtime for maintenance shall be less than 3 hour a month.
2. Downtime for maintenance shall not affect the main functionality of the site.
3. In all cases, downtime for maintenance shall be informed to the Client through email.

Recovery:

1. In a total failure case, the whole site should be put down to revision.
2. If broken, the mean time to recovery shall not excess of one day.

Data Integrity:

1. Database tables shall be backed up every week.
2. Administrator shall be able to execute a recovery when needed.
3. Image Sizes shall be limited up to 1 megabyte.
4. Images shall be uploaded in correct format (jpg, jpeg, or pdf).

Compatibility:

1. The site shall be compatible with the last version of Microsoft Edge browser.
2. The site shall be compatible with the last version of Safari browser.
3. The site shall be compatible with the last version of Firefox browser.
4. The site shall be compatible with the last version of Chrome browser.
5. Third party applications shall not be able to modify any content that may affect the site compatibility.
6. The site shall be ready to support with any or minimal changes any other compatibility that may be added in future versions.
7. The site should be compatible to escalate to new relational databases.

Conformance with Coding Standards:

1. Architecture and design standards shall meet all the requirements listed under the High Level Architecture section of this document.
2. Only working code that meets all the code standards shall be submitted to the project repository.
3. Any working code shall be tested and debugged before being considered working code.
4. Any internal errors or exceptions returned by the code shall be stored in a log.
5. Any error that may affect the functionality of the site shall be reported to the Client.
6. Any error shall be handled in a way that does not affect the functionality of the site.
7. The whole production cycle of this site shall be finished 2 weeks before the delivery date.
8. This site shall not be launched without all the priority one features completed and tested.

Look and Feel Standards:

1. The application and its layouts shall look professional.
2. The site shall be simple enough to handle by all the parties involved.
3. Elements on screen shall have the correct density to meet the compatibility standard of the browsers.

4. Elements on screen shall have rich and beautiful colors for Client delight.
5. The site shall be able to work correctly without mouse interaction.
6. The site shall be able to work correctively without keyboard interaction.
7. Elements in screen shall be resized automatically without Client interaction when being loaded in all the different platforms supported by the site.

Internationalization / Localization Requirements:

1. Default language shall be English.
2. The site shall support scalability to add other languages.
3. The site shall support geolocation in order to show listing locations.

Website Policies:

1. A link to the policies of this site shall be always visible in all its pages to be accessible by all the parties.
2. Clients' data shall not be sold to third parties.
3. Clients and Landlords data that do not add any functionality to the system shall not be collected.

6. Competitive Analysis:

	SMCHousing	Trulia	Zillow	Apartments	BetterHome
Search For Property	+	+	+	+	+
Post Listings	+	+	+	+	+
Set Favorites	-	+	+	+	+
View accessibility (Handicap /BART)	+	-	-	-	+
Show Property Status	+	+	+	+	+

Competitors:
http://smchousingsearch.org/
https://www.trulia.com/
https://www.zillow.com/
https://www.apartments.com/

Most of our competitors have a great deal of functionality and features so our goal as a team was to highlight and emphasize the features they don't have. One of the ways we tend to accomplish this is to have a few unique search terms. All of these home searching websites provide the essential functions of being able to search/post properties to be sold or rented out. SMCHousing focuses on providing an online house search service for people in the San Mateo county. On top of their service, they provide housing tools such as a Moving Cost Calculator and Rental Checklists to help people in the moving process. Trulia provides a community aspect to the home searching market by providing information on the area around the house, such as schools to the neighborhood or crime rates around the house. All these sites provide their own uniqueness to the home searching market, but they always lack in an area that we feel is just as important. That is to see if a home provides accessibility options for new homeowners, whether it be in BART accessibility or disabled accessibility. BetterHome intends to include all these important features, as well as add more accessibility options.

7. High-level system architecture and technologies used:

1. Application shall be developed using a variation of the MEAN stack consisting of a MySQL database, Express/Node.js backend, and an Angular/HTML/CSS frontend.
2. Application shall be hosted and deployed on Google Cloud Platform.
3. Data shall be stored in the MySQL database hosted by Google Cloud Platform.
4. Application shall be developed using the latest Webstorm version 2018.3.
5. Any other tools or frameworks shall be approved by the Team Lead and either the backend lead or frontend lead as is relevant.
6. Application shall be viewable and accessible on standard browsers up to the two latest version of: Mozilla, Safari, Chrome, and Edge.
7. Privacy of all users shall be protected and all privacy policies shall be appropriately communicated to the users.
8. Application shall be simple and intuitive to use for all potential users.

9. Google Analytics shall be added for reported web traffic to the website.
10. Each page shall display “SFSU Software Engineering Project, Spring 2019. For Demonstration Only" so as to not confuse potential users.
11. Modern SE processes and practices must be used as specified in the class, including collaborative and continuous SW development, using the tools approved by the instructor.

8. Team:

· Taso Grigoriou – Team Lead
· Henok Kassegn – Front-End Team Lead
· Sawyer Nixon – Back-End Team Lead
· Cole (Michael) Tormey – GitHub Master / Front-End Developer
· Austin Sy-Velasco – Back-End Developer / Document master
· Liwang Gao – Front-End Developer

9. Checklist:

· Team found a time slot to meet outside of the class.

DONE

· Github master chosen.

DONE

· Team decided and agreed together on using the listed SW tools and deployment server.

DONE

· Team ready and able to use the chosen back and front end frameworks and those who need to learn are working on learning and practicing.

ON TRACK

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

DONE

· Github organized as discussed in class (e.g. master branch, development branch, folder for milestone, documents, etc).

DONE