SW Engineering CSC648/848 Section 01 Fall 2017
HOMIEZ
Team 15 – International team

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Summary of Content

1. Executive Summary

As many are aware, finding the right house and/or apartment is just a pain. Because of this, the sales are lower and the housing market is very limited. The need is an area that allows real estate agents to list residential housing and grants potential buyers the ability to seek this housing based on their preferences or needs.

The solution? **HOMIEZ**! HOMIEZ is a real estate website that brings agents and those who are seeking homes together in one place. This website is easy-to-use, hassle-free, and easy-to-manage. It allows real estate agents to list houses and apartments, including their features such as number of bedrooms, the type of flooring and many more. At the same time, HOMIEZ empowers potential home owners to easily search homes and/or apartments based on zip code, price, and housing features. It also enables potential home owners to interact with real estate agents as easy as never seen before.

Some key advantages of this website are the ability to find homes for sale in a map. It also allows users to filter houses and apartments based on their preferred location, housing features and/or housing prices. Furthermore, it not only enables users to message real estate agents directly, it also improves the way of scheduling a viewing appointment by its innovative calendar integration.

HOMIEZ will help to greatly increase the housing sales due to the improved matching of agents with buyers. Therefore, this gives people the opportunity to find the home of their dreams.

The HOMIEZ Company is a small student startup from San Francisco State University lead by Mena Morkos. We are a mix of frontend and backend developers that have a wide variety of background in Computer Science and Engineering. We produce for our clients engaging user-friendly web application, thus helping companies to enjoy a flying start by bringing their brand to the internet.

2. Use Cases

2.1 Unregistered User:

- Skill Level
  - Beginner
- Who they are
  - Prospective home buyer or renter
  - First time visiting the site / Has no enquiries yet
- User tasks
  - Views and browses listings
  - Looks for listings on maps
  - Filters listings by a range from a zip code, by price, by number of rooms, by size, by furniture…
- User Errors
  - Usage of wrong keywords
- Frequency and importance
  - When someone is looking for a place to rent/live he/she is going to use the site very often and frequently (probably once a day)
- Scenario
  - An Unregistered User visiting the website for the first time. He / she looks for housing in a certain zip code. The Unregistered User finds a house he / she likes to view. The Unregistered User presses the contact button, a window to login respectively register appears.

2.2 Registered User

- Skill Level
  - Beginner
- Who they are
  - Prospective home buyer or renter
  - Coming back to the site after registering
- User tasks
  - All the tasks which Unregistered Users have and additional…
  - … Managing enquiries
    - Can see realtors contact info and can send realtors messages
    - Have their own inbox where they receive replies from realtors
    - Can schedule viewing appointments
- User Errors
  - Usage of wrong keywords
- Frequency and importance
  - When someone is looking for a place to rent/live he/she is going to use the site very often and frequently (probably once a day)
- Scenario
  - The Registered User manages its enquiries by answering to messages or by scheduling a viewing with the unique calendar integration of HOMIEZ.

2.3 Real Estate agent

- Skill Level
  - Low to average
- Who they are
  - Professional real estate agent
- User tasks
  - Uploads and manages listings
  - Manages customer relationship
- User Errors
  - Incorrect listings regarding contact info, address, image…
- Frequency and importance
  - Very often, it is part of their daily job
- Scenario
  - A real estate agent that logs in to post a new listing. The agent can enter details like address and area as well as uploading images. Then, the agent goes to its dashboard to check how many times the already existing listings were seen. Afterwards, he / she goes to his / her inbox to check new messages and follows up on old ones. In the end he / she checks the calendar to see if there are new viewing appointments.

2.4 Administrator

- Skill Level
  - Skilled // can be trained if needed
- Who they are
  - Maintenance of website
- User tasks
  - Manages listings
  - Manages users
  - Updates website information
- User Errors
  - Incorrect deletes listing or accounts
- Frequency and importance
  - Administrator makes sure that the website is well maintained and up-to-date, it is their daily job
- Scenario
  - The Administrator receives a message that a Registered User needs their password reset, so he / she resets the password for the Registered User. Afterwards, the Administrator receives a message about an inappropriate listing. The Administrator deletes the listing and maybe deletes the Real Estate Agent that posted it.

3. Data Definition

- ACTORS
  - Unregistered User
    - An Unregistered User looking for housing *(see Use Case 2.1)*
  - Registered User
    - A Registered User managing its enquiries *(see Use Case 2.2)*
  - Users
    - Term used for referring to "Unregistered User" and "Registered User" at the same time
  - Real Estate Agent
    - A Real Estate Agent managing its listings *(see Use Case 2.3)*
  - Administrator
    - An Administrator making sure that the website is well maintained and up-to-date *(see Use Case 2.4)*
- Dashboards
  - Real Estate Agent Dashboard
    - Real Estate Managers can manage their messages and listings
  - Registered User Dashboard
    - Registered Users can manage their favourites, requests and messages
- LISTINGS
  - Apartment
    - A listing at the website. Element contains the following attributes:
      - size in square feet
      - address
      - number of bedrooms
      - number of bathrooms
      - kitchen available
      - living room available
      - furnished
      - parking possibilities
      - for rent
        - lease
        - security deposit
        - monthly rent
      - for sale
        - price
        - fees
      - image *(optional)*
        - maximum file size
      - video *(optional)*
        - maximum file size
  - House
    - A listing at the website. Element extends "Apartment" and contains the following additional attributes compared to "Apartment":
      - number of floors
      - size of property

4. Initial list of functional requirements

4.1 Backend

1. Searching
    - Search shall query the database for listings matching desired criteria
        - location
            - zip code
            - city
            - address
        - type of accommodation
            - apartment
            - house
        - number of bedrooms
        - number of bathrooms
        - size in square feet
            - housing space
            - property *(only for houses)*
        - furnished
        - parking possibilities
        - number of floors *(only for houses)*
2. Logging in
    - Registered Users attempting to login shall query the database to check for their proper credentials. Once verified, they shall be able to access their account
3. Store/Upload/Delete home listings
    - Real Estate Agents shall be able to store and upload information regarding home listings on the sql-database
    - Real Estate Agents shall be able to delete their listings after posting
    - Administrators shall be able to delete listings
4. Store/Upload/Delete user information
    - Users and Real Estate Agents shall be able to create new accounts (upload)
    - Registered Users and Real Estate Agents shall have their accounts stored on the sql-database
    - Administrators shall be able to delete user information
5. Resetting passwords
    - Administrators shall be able to reset Registered User passwords
6. Messaging
    - Registered Users and Real Estate Agents shall be able to speak to each other via messaging by having it be sent to the database and back
7. Dashboard
    - Real estate managers shall be served relevant information from the database in regard to their listings
    - Registered users shall be provided their messages and requests from the backend

4.2 Frontend

1. Browsing
    - Users shall be able to view and access listings by housing address
2. Filtering
    - Users shall be able to screen listings when browsing by housing features such as number bedrooms/bathrooms, listing price, square feet, etc.
3. Messaging
    - Real Estate Agents and Registered Users shall be able to communicate with each other through messaging
4. Google Maps Integration
    - Users shall be able to view listings on a map based on the address of listings
5. Login
    - Registered Users and Real Estate Managers shall be able to login and to access their dashboard
6. Dashboards
    - Real Estate Managers shall be able to manage their listings and their messages
    - Registered Users shall be able to manage their requests and their messages

5. List of non-functional requirements

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 shall 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

	Map search	Browse	Filtering	User Dashboard	Viewing scheduling
HOMIEZ	++	++	++	++	++
REALTOR	-	++	++	+	-
HOTPADS	++	+	++	+	-
ZILLOW	++	+	+	++	+

++ market leadership; + feature available; - feature not available

Our USP is the combination of the advantages of our competitors. Whereas REALTOR is excelling in browsing and filtering, HOTPADS and ZILLOW both offer a convenient map-searching option. Furthermore, ZILLOW's user dashboard is very easy-to-use but their filtering lacks some important options. Therefore, none of our competitors offers all the mentioned features at the same time. Moreover, REALTOR and HOTPADS only allow to contact the real estate agent, whereas ZILLOW offers basic online viewing scheduling. HOMIEZ however, will allow to schedule a tour without the annoying waiting for conformation by calendar integration.

7. High-level system architecture

7.1 The Code

- Node
- Express
- Handlebars
- Bootstrap
- Less

7.2 The APIs

- Google Maps
- Google Analytics

7.3 The Tools

- WebStorm
- Sublime
- MySQL Workbench
- Nginx
- Github
- SSL

7.4 Requirements for Supported Browsers

Every browser has their quirks, and with that, what they choose to and not support. To build our application, these are the minimum requirements needed from our supported browsers:

- CSS
- HTML 5
- SVG (Basic support)
- JS API
- JavaScript

7.5 Guaranteed Supported Browsers

Chrome

Versions supported:

- 60
- 61

Mozilla

Versions supported:

- 54
- 55

Safari

Versions supported:

- 10.1
- 11

8. Team

Mena Morkos	- *Team lead*
Andrew Patterson	- *Backend lead*
Norald Alejo	- *Frontend lead*
Benedikt Anselment	- *Frontend team member*

9. Checklist

- Team decided on basic means of communications
  - DONE
- Team found a time slot to meet outside of the class
  - ON TRACK
- Front and back end team leads chosen
  - DONE
- Github master chosen
  - DONE
- Team ready and able to use the chosen back and frontend frameworks
  - ON TRACK
- Skills of each team member defined and known to all
  - DONE
- Team lead ensured that all team members read the final M1 and agree/understand it before submission
  - DONE