RECycle

SW Engineering CSC 648/848 Section 01 Fall 2017
Team 13

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10/2/2017	Version 1.0 (First Draft)
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10/5/2017	Version 1.2 (Requests Incorporated into Doc)

1. <u>Executive Summary</u>

RECycle (short for Real Estate Cycle) is our prospective website to monitor the natural cycle of real estate- from putting a property up for sale to the perusal of said property by the prospective buyer, to the then eventual purchase of said property, RECycle will be the best place for buyers and sellers alike.

RECycle's feature list will pride itself on offering a more personalized user experience while also offering the user to do more than other competitors offer. RECycle will feature <u>better than average communication</u>, in that buyers and sellers will be able to instant message each other at the touch of a button. Buyers will be able to <u>purchase properties without the hassle of an account</u>, because no one likes having to see the register screen when they're trying to purchase a product. RECycle will be <u>personalized for each individual user</u> in that users who make an account can choose to have their home page of featured listings reflect their personal tastes of what they like to see in a house. Users of RECycle will be able to rate individuals who they do business with through a reputation system and may block users who they wish to never do business with again. Sellers on RECycle will be able to <u>promote their property</u>...for a fee. Sellers can have their property in the featured list on the front page by paying an extra fee, 2% of the final sale price.

While other competitors offer a 'good enough' real estate shopping experience, none offer the quality of life improvements that RECycle provides. RECycle will differentiate itself from competition by offering a social experience for buyers and sellers that also allows them to easily engage in the cycle of real estate without the typical hassles. Sellers have the ability to buy their way to success if they so wish.

The team behind RECycle is made of (surprisingly) only 5 developers! Our team leader is Jeremy Rodgers. Our back end lead is Sabiha Barlaskar, and our front end lead is Kachi Lau. Filling out the back end and front end positions are Parker Gray and Risha Shah respectively.

2. Use Cases

1. **Buyer** - John wants to **buy a property** and he visits **RECycle** with all his requirements and specifications in mind. The website allows him -to search for properties he wish to purchase through a variety of means - locational (**zip code, city, counties** acceptable), descriptional (*sort* or *filter* based on desired traits, ie 2 **bed** 2 **bath**, **pool**, large **backyard**, etc), or search for a property based on the user who is selling it, and all this without the need to **register**. If he is seriously interested in buying a particular property, he is prompted to create **an account** with the website. Should he create an account, he can also engage with sellers in a more interactive manner than usual (through **instant messaging**), or a more impersonal manner (leave only his phone number/email for a particular seller for contact without registering). John will be able to see on his **dashboard** on his account profile what properties he is currently in progress for. John will also be able to rate sellers based on their efforts and professionalism after the purchase is completed.

2. **Seller** - Mary, the **seller of a property** is able to put up a property of her desire with the touch of a button on the homepage (**after signing in**, Mary can press the '**Sell property!**' button in the bottom left corner of the page.). She will be able to provide meticulously detailed descriptions of her property, with menus on the sell page of a house containing menus particular to each room and its details (complete with pictures of the room and what the room contains) as well as an 'overall' look at the house that can feature a **floor plan** as well as choice exterior and interior shots. Mary can then see her listings and contacts in the **dashboard** on her account profile. She will also be able to put her property in the Featured section of the **homepage** for a fee.

3. **Site Admins** - Joe has been appointed as the site admin of the website. He will be able to log in using the **log in portal** and be greeted with an **admin-specific GUI** that allows him to perform general administrative tasks, ie **banning users, removing false properties from listing, viewing statistics for the website**, etc.

3. Data Definition

1. Types of users:
   a. **Browser**: Can just view the website to get an idea about the market trends
   b. **Selling Agent**: Needs to register. Can add house details, can remove house details, can modify the house details.
      - Name,
      - ID,
      - Location,
      - Years of experience,
      - Reputation(E, G, F)(/Rating),
      - Photo,
      - Contact Info,
      - House Listed

   c. **Buyer**: Has to register to purchase a property. He can buy house or contact the seller to have a look at the house.
      - Name,
      - ID,
      - Location,
      - ContactInfo,
      - Interested property name,
      - Photo.

   d. **Admin**: Admin can ban users, remove properties from listing, view statistics for the website.
      - Name,
      - ID,
      - Admin specific GUI,
      - Log in portal

2. **Property details:** Contains Details of the property
      - Property location/address (elaborated on below),
      - Size in square feet,
      - Price,
      - Number of bedrooms,
      - Bath, Kitchen,
      - Lot size,
      - Date of construction,
      - Style of the house,
      - Backyard,
      - Pool,
      - Images of house

3. **Address details**: Contains the address details
      - Zipcode,
      - City,
      - Street,

- Country,
- Apartment number/House number

4. Initial List of Functional Requirements

Buyer

1. The buyer shall be able to search the website for a property using zipcode, name of the city

2. The buyer shall be able to filter the search details by price, the area of the property, the number of rooms and the year of construction

3. The buyer shall be able to register and create an account for himself/herself

4. The buyer shall be able to contact a customer service representative through interactive messaging

5. The buyer shall be able to send message or email to the seller/real estate agent

6. The buyer shall be able to see a list of featured properties in the home page

7. The buyer shall be able to rate a seller

8. The buyer shall be able to edit his/her profile

Seller

9. The seller shall be able to register and create an account

10. The seller shall be able to add/delete/modify details of the property

11. The seller shall be able to edit his/her profile

12. The seller shall be able to contact a customer service representative through interactive messaging

Admin

13. The admin shall be able to add/delete/modify the details of property

14. The admin shall be able to suspend a seller/buyer if needed

15. The admin shall be able to respond a seller/buyer

16. The admin shall be able to contact a seller/buyer by message

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 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

Competitors

1. Redfin - https://www.redfin.com/
2. Homefinder - http://www.homefinder.com/
3. Zillow - https://www.zillow.com/

Features	Redfin	HomeFinder	Zillow	RECycle
Feature listing	-	-	++	+
Personal Dashboard	-	-	+	+
Customer service messaging	-	-	-	+
Browse by satellite map	-	-	+	-

Surprisingly, many of the premier real estate services do not have much in the way of ease of access improvements such as customer service messaging and personal dashboards. Our site plans to incorporate such quality of life improvements as its primary draw. Our site will be defined by its ease of use relative to other sites because of the incorporation of quality of life improvements for end users. The site also caters to providing assistance to the users, through a messaging service that is provided even for non account holders.

7. High-level system architecture

- Back-end framework: Node JS

    Node.js is a free open-source framework that can run Javascript code on the server side. It is very powerful because it has different features such as non-blocking and event driving which make the server keep running without stop. Further, it is very easy to learn and allow the user to write clean code in their programs.

- Front-end framework: Bootstrap, Stylus

    Bootstrap is the most popular HTML, CSS, Javascript framework on the client side that allow the user to develop responsive, mobile projects on the web.

- Tools being used: MYSQL Workbench

    MySQL workbench is a free tool that allow user to model data , build SQL queries, manage MySQL servers easily on the database.

- APIs used: Express js

    Express js is a free open source framework for node js that can allow the user to build their own web applications and APIs.

- Browsers supported:
    - Firefox
        - 54
        - 55
    - Chrome
        - 60
        - 61
    - Safari
        - 9
        - 10

8. Team Members

Team Lead
Jeremy Rodgers

Front End members
Kachi Lau (Front End Lead)
Risha Shah

Back End members
Sabiha Barlaskar(Back End Lead)
Parker Gray

9. Checklist

- Team decided on basic means of communications - **Done**

- Team found a time slot to meet outside of the class - **Done**

- Front and back end team leads chosen - **Done**

- Github master chosen - **Done**

- Team ready and able to use the chosen back and front end frameworks - **Done**

- 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**