Milestone 1

SW Engineering CSC648/848 Spring 2019

Team 101

Project/application title and name

Revisions
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1. <u>Executive Summary</u>:

A good marketing platform should be simple, easy, and intuitive for every type of customer. Zephyr aims to achieve all three of these traits through one comprehensive website. On this website, prospective landlords can post apartment listings, while San Francisco State University students can rent, view, review and rate these apartments with ease. Here in San Francisco, finding a good and comfortable place to live can be an endless struggle that can take up more time than someone has. Our team is presenting a new avenue for SFSU students in which they can view a variety of posted apartments in a well curated environment. Safety is one of the biggest concerns with typical exchange websites. To minimize any potential risks, our website requires every user to register with the site to use any communication features, with student users specifically requiring an SFSU email connected to their account.

Students on Zephyr can browse by category, search for specific items, and filter through the listed postings to find the right apartment for them. Students and landlords may also choose to send messages directly to help coordinate time and location. Zephyr administrators will be able to filter out inappropriate or misplaced content to keep the site running clean. Prospective students can browse freely, as an account sign-in will only be required for certain features, such as posting or messaging. This helps bring traffic to the site without completely walling unregistered users out and ensures safety.

As students ourselves, we understand the struggles and frustrations of college life. We are designing Zephyr with these challenges in mind to deliver the best platform for current and future students of our campus.

We still to figure our unique product feature for this project that differentiative it for the current market to attract customers.

2. <u>Personas and User Stories:</u>

<u>Persona 1</u>: Jennifer Li

Seventeen-year-old Jennifer Li recently graduated from High School in Los Angeles and is looking forward to attending SFSU after her summer vacation ends. Jennifer enjoys reading books and hanging out with her friends Joanne and Emily whenever she can. Jennifer comes from an immigrant Chinese family, of which she would be the first generation to go to college. And for this reason, Jennifer's parents always pushed her to be a very studious kid, due to them wanting a better life for their daughter. With deciding to be a Biology major out of the way, Jennifer still knows she has a lot of planning to do, as she prepares for the inevitable long car ride up to SF. She wonders how much her financial aid is going to cover for her tuition, where is she going to stay, and most importantly, how much is that going to cost?

<u>Persona 2</u>: Yorkie

Yorkie just graduated from a high school in New York City, she loves living in big cities. She did a lot of research on the universities she might be going to. She found out that San Francisco is very similar to New York and at the same time, very different as well. Yorkie ultimately decides to attend SFSU. She also likes walking on the beach in her free time just to relax her mind.

<u>Persona 3</u>: Ferrari

Ferrari is a junior in SFSU, he is an immigrant from Vietnam. He came to the U.S. four years ago. He attended high school in Sacramento because that was where his family lives. He got accepted to SFSU three years ago and is currently living in an apartment in the Sunset District. He works five days a week to pay his bills. But he plans to take six classes in the coming semester, so he must reduce his work schedule down to three days a week. He can't afford his current apartment anymore.

<u>Persona 4</u>: Samantha White

Samantha White is currently in her second year at SFSU. She's a tall, attractive brunette who is working towards a bachelor's degree in sociology. Born a New Yorker, Sam (what her friends call her) knows what it's like to live in a big city and has the work ethic to get by. She keeps up with all her coursework, while at the same time, maintaining a part-time job at the

Chipotle in the Stonestown Mall. During her free time, she likes being on her iPhone X, texting her friends, checking Facebook and Instagram, and facetiming with her boyfriend. She enjoys using her phone so much, that she often writes her essays on it. With the semester coming to an end, and finals wrapping up, Sam now lives with her boyfriend for the time being, due to the lease on her apartment expiring in a couple of days. Sam has the entirety of Winter break to find a new apartment to live in.

Persona 5: Jason

Jason is an 18-year-old international student from China. He has never been in the U.S. before and doesn't know how life would be like in San Francisco. Jason comes from a family that is super rich in China. His parents also want him to become independent and know how to take care of himself, so they send him abroad and let him study in SFSU.

User Story 1: Jennifer Li (Category: Infrastructure, Priority: high)

When searching for apartments on the web, Jennifer is worried about meeting a landlord in person, unless she is sure that what's posted on the site is verified in some way. As a 17-year-old girl, she is also wary about calling or emailing many random strangers just to inquire about potential listings. She'd rather have the website facilitate communication by letting her message landlords through the site itself.

User Story 2: Samantha White (Category: Infrastructure, Priority: low-medium)

While in bed, next to her passed out boyfriend, Sam is looking for apartments on her phone. She had a bad experience living in her previous apartment and wants to let other SFSU students know how noisy and unmaintained it was. To make sure she finds a better apartment, Sam prioritizes apps with a ratings and review system.

User Story 3: Ferrari (Category: Search, Priority: high)

With the price range feature offered by our website, Ferrari can find cheaper apartments easily by putting the price range of the apartment for rent. Now Ferrari can reduce his work hours every week and still be able to afford his apartment and focus on studying.

User Story 4: Yorkie (Category: Search, Priority: medium)

By using the filter to locate apartments near some special area like Ocean Beach or Fisherman's Wharf, Yorkie can find an apartment that best suits her interests. By renting an apartment near a beach, this will make her hobby of walking on the beach more feasible and convenient.

User Story 5: Jennifer Li (Category: Search, Priority: medium)

Jennifer meets with her friend Emily and asks what colleges she got accepted to. At first, Emily wanted to go to UC Davis, but didn't think her financial aid could cover the whole cost of tuition. So, she decided to go with her backup plan of SFSU. Excited at the fact that they are now attending the same school, Jennifer and Emily knew they wanted to room together as well. Knowing how hectic SF might be, the two need a housing website that can help them search for criteria such as, apartments close to campus, the number of bedrooms there are, and their size.

User Story 6: Jason (Category: Other, Priority: low)

By having the website in multiple languages, our website is perfect for students from other countries like Jason who speaks Chinese.

3. <u>Data Definitions:</u>

<u>Key Entities:</u>

UnregisteredUser - *UnregisteredUsers* can search for an apartment based on selected desired criteria. Certain content will be hidden for *UnregisteredUsers*, such as the reply button, the exact location of the *listing*, and potentially pictures will be blurred.

RegisteredUser - *RegisteredUsers* will have the access to the same search as *UnregisteredUsers* but will also be able to reply to *listings* and will not have address blocked or pictures blurred.

Landlord - The *Landlord* has access to the same unrestricted search as the *RegisteredUser* but can also request to post a new *listing* that must be approved by the *Admin*.

Admin - The *Admin* has the same search and post ability as the *Landlord*. When the *Landlord* requests to post a new *listing*, the *Admin* can approve or deny it. The *Admin* can also delete *listings*

<u>Data Items:</u>

Listing - Created by a *Landlord*, and can contain pictures, descriptive tags for searches (including price), an address, and a description. For initialization, a main picture(file), address(String), price(int), and room count(int(s)) (bed and bathrooms) are required.

StudentRegistration - The way for an *UnregisteredUser* to become a *RegisteredUser*. This would be initialized with a SFSUemail(String) and a password(String).

LandlordRegistration - The way for an *UnregisteredUser* to become a *Landlord.* This would be initialized with an email(String) and a password(String), and would need to be approved by an *Admin*.

Search (?) - Returns an array of *Listing*s based on *SearchCriteria*. Would be initialized/called with selected *SearchCriteria*.

SearchCriteria - Checkboxes that would determine the results of a *Search*

4. Initial List of Functional Requirements:

Priority 1:
HomePage:
1. Homepage will allow user to register/login and browsing apartments' information.
2. Homepage will allow user to use search functionality.

Unregistered User:
1. Unregistered users shall be able to view everything on the homepage.
2. Unregistered users shall be able to sign up with an email and password. And the email should be verified as SFSU student.
3. Unregistered users shall be able to search for apartment information.
4. Unregistered users shall be able to check the apartment information as well as housing description. (search bar or filter)
5. Unregistered users shall be prompted to sign up in order to contact with landlord.

Registered User:
Student:
1. Registered users shall have the same functionality as registered users.
2. Registered users shall be able to login with their email and password.
a. Student users will be verified with valid SFSU email address.
b. And system will send confirmation email to finish the registration.
3. Registered users shall be able to contact landlord or acquiring landlord information.

Landlord:
1. Landlord users should be able to post/remove/modify their posts.
2. Apartment information can contain photos and description.
3. Landlord users should be able to receive message/email from students.

Admin:
1. Admin user shall have the same functionality as registered users.
2. Admin user shall review the content posted by landlord and approve/disapprove the post.
3. Admin user shall remove the post.
4. Admin user shall notify landlords the post has been approved/disapproved.

Search functionality:
1. Search functionality should be able to adjust price range.
2. Search should be able to adjust price range, the number of bedroom/bathrooms, room size and distance to the university.

Priority 2:
1. Registered users shall have their profile.
2. Registered users can star the apartment information.
3. Admin user can have a pipeline to approve/disapprove the post.
4. Live chat system between landlords and students.

Priority 3:
1. Recommendation system based on students' profile.
2. More specific options under search functionality.

3. Registered users can review apartments.

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

1. Application shall be developed, tested and deployed using tools and servers reviewed by Class TA (Nicholas Olegovich Stepanov) in M0 (some may be provided in the class, some may be chosen by the student team, but all tools and servers must be reviewed by class TA).
2. Application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of two major browsers.
3. Data shall be stored in the team's chosen database technology on the team's deployment server.
4. Privacy of users shall be protected, and all privacy policies will be appropriately communicated to the users.
5. Application shall be very easy to use and intuitive.
6. No email clients shall be allowed
7. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated.
8. Site security: basic best practices shall be applied.
9. Before posted live, all content (e.g. apartment listings and images) must be approved by site administrator.
10. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development.
11. The website shall prominently display the following exact text on all pages "SFSU Software Engineering Project CSC 648-848, Spring 2019. For Demonstration Only" at the top of the WWW page. (Important so as to not confuse this with a real application).

6. Competitive Analysis:

Competitors' features	Planned features
Zillow Zestimate	Average price of rental in area
Save for later function	Compare multiple apartments side by side
Mobile friendly	Mobile friendly
Verified users	Verified users + user ratings
Pictures of rental	Pictures + apartment ratings

	Zillow	Craigslist	Westlakevillageapts	Oursite
Filters	x	x	x	x
Verified users	x			x
Focused on rentals			x	x
Focused on SFSU students				x

Zillow is a very refined site, to compete with them our site would need a competitive edge against theirs. Zillow is a site that allows users to buy, sell or rent houses or apartments. Their site includes a map that pinpoint exactly where apartments are. They also have search

filters such as newly listed, number of bedrooms, pricing, apartment size. While we can make some functions the same as theirs we would need to come up with some of our own to draw in more users. For example, Zillow's zestimate, which is an estimate market value using their formula. Since our site is targeted for college students to rent apartments, we are thinking of giving the ability for renters to write reviews on that apartment. We want to have students rate landlords and landlords rate students. This rating system would help make sure that both parties' safety and overall quality. This rating system should give us an advantage over the competitors as it is focused more on the end users.

Craigslist is a community site for people to post advertisement locally, users can buy, sell or trade locally. While Craigslist is not focused on apartment rentals they have a section dedicated to housing. The down side of Craigslist is that users are not verified and anyone with an email can post. Our site would differ from Craigslist because we are an apartment rental site and not just a buy/sell site, this would offer a more refined search result. Our site is also tailored more towards SFSU students by verifying users and landlords.

www.westlakevillageapts.com is a local apartment website. All their apartments available for rent are located at Westlake in Daly City, California. All their housing is owned by Gersonbakar a real estate broker and no other housing can be listed. To apply for rental there is an application a user's need to download and fill out by hand and brought into their office. Our site will differ from this one by allowing different apartments or housing to be posted as long as they are verified, and renters and landlords can communicate through the site instead of in person. This allows the process of getting an apartment faster and more convenient.

7. <u>High-Level System Requirements:</u>

Server Host: AWS Server t2.micro 1

Operating System: 64Bit Amazon Linux/4.8.0

Database: MySQL 5.6.41

Web Server: Nginx 1.14.2

Server-Side Language: Node.js 10.15.1

Additional Technologies: Frontend Framework: React 16.8.0

Backend Framework: Express 4.16.4

IDE: Visual Studio Code/WebStorm

Web Analytics: Google Analytics

8. <u>Team:</u>

1) Jiannan Li
- [Team Lead, GitHub Master, Backend]

2) Tigist Ambaw
- [Backend]

3) Bijan Mahdavi
- [Backend Lead]

4) Canbin Mei
- [Scrum Master, Backend]

5) Sydney Lou Morano
- [Frontend Lead]

6) Brendan Ng
- [Frontend]

7) William Xie
- [Frontend]

8) Samuel Zaffanella
- [Frontend]

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 frontend frameworks and those who need to learn are working on it

  DONE

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

  DONE