

Online Off-Campus Housing Search Program

Software requirements

Team Quebec

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Introduction

Purpose

The purpose of this program is to assist college students in searching for off-campus housing near UofSC Columbia's campus. This program aims to filter housing on the following qualities: financials, amenities, transportation, distance from campus, and reviews. Additionally, the program would help real estate agents and landlords assist renters in finding their desired housing by providing information on their listings. This would solve the issue students run into when venturing off campus, finding their first off campus housing or alternate off-campus housing. Resolving this issue would lead to less frustration and stress in the off-campus housing search, creating potentially better leases across the board for students who could get earlier deals, and overall better knowledge of where one would live off campus.

Scope

This document is intended to:

- Describe the stakeholders and personas to which this project relates to
- Identify any constraints and solutions
- Describe both functional and non-functional requirements needed
- Depict the business use cases of this project
- Give any necessary definitions or acronyms
- Give a competitive analysis on 3 products and what suggests for this project

Stakeholders

- Students
- USC Housing
- Parents
- Real Estate Agents
- Landlords
- Builder
- Property Managers
- Columbia Residents

Personas .

S t u d e n t



Derek Baker.

Age: 20

Work: Student

Location: Columbia SC; 650 Lincoln

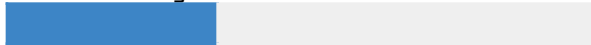
Wishes.

*"I just wanna
get off campus
man"*

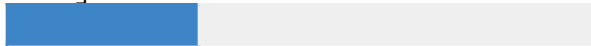
- Derek is looking for affordable off-campus housing
- Derek is looking for housing with a shuttle
- Derek wants to live in a safe community
- Looking for a sizeable kitchen

Stats.

Familiarity with the Area



Money



Social



Party Animal



Bio

Derek came to the University of South Carolina from Idaho and has recently grown upset with on-campus housing. While he loves being on campus, he desires the freedom that comes with off-campus living. Derek wishes to leave campus yet stay close, in order to enjoy the best of both worlds. He also wishes to live in an apartment with a large kitchen and natural lighting. With a limited supply of money, an unfamiliarity with the environment, and the desire to party and socialize, Derek is looking for an off-campus housing that fits his needs.

P a r e n t



Delilah Walters.

Age: 39

Work: Office Worker

Location: Columbia SC; 960 Lakers RD

Wishes.

"I want to see my children flourish in a new home"

- Wants her son to live in an academic-focused environment with no distracting parties
- Insists there be a gym for her son to use.
- Is familiar with certain areas of Columbia and would prefer her son to live in those areas.

Stats.

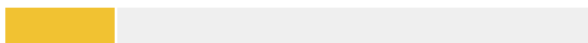
Familiarity with the Area



Money



Social



Party Animal



Bio

Delilah is a mother who wants the best for her son Jacob, who is moving off-campus this upcoming semester. As a strict mother, she prefers her son focus on academics and less on social life and prefers his future off-campus living follow a similar style. She also wishes for her son to bulk-up and believes a gym would help greatly. She also thinks there should be a pool as Jacob has a love of swimming. She's doing her best.

Real Estate Agent



Kent Wheatly.

Age: 42

Work: Real-estate agent

Location: Columbia SC; 64 Mahria PL

Wishes.

*"We'll find you
a new home
together"*

- Kent desires a way to sell to all customers pursuing off-campus housing
- Kent wishes for a steady stream of customers
- Kent wishes for the accessibility to find what customers are looking for

Stats.

Friendliness



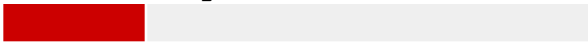
Experience



Customer Satisfaction



Affordability



Bio

Kent is a real estate agent who wishes for a program that can aid him in his job to help people of all backgrounds find off-campus housing, even non-students. While Kent may not be the most affordable agent, he has overwhelming customer satisfaction and experience, not to mention a friendly smile. Kent hopes for a program that can keep him a steady stream of customers with its efficiency and accessibility.

Constraints

Scheduling - Team members have classes at a variety of times and the project must be done within this semester.

Monetary - Team does not have money to work with for this project.

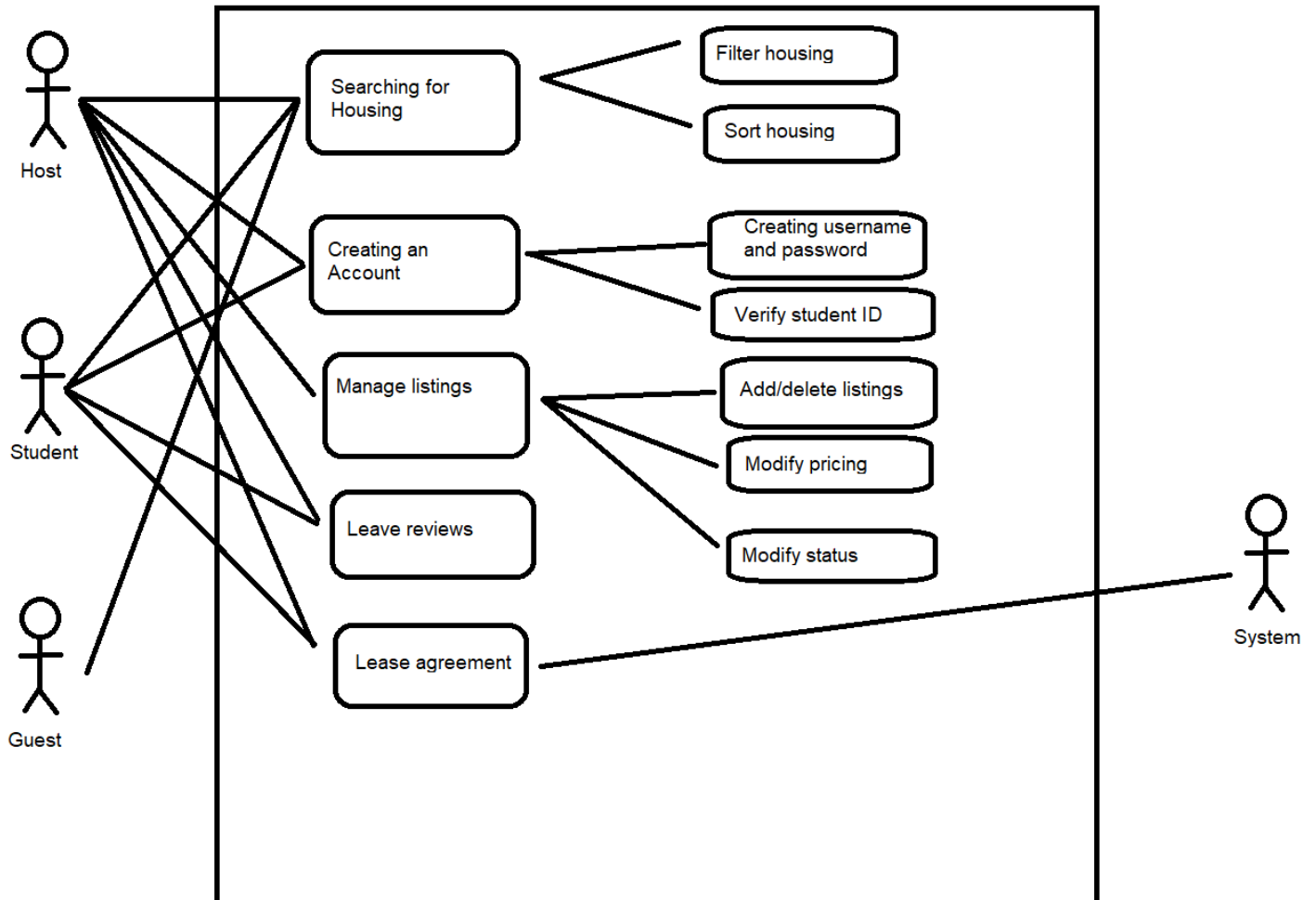
Technical - Can only be done in java.

Organizational - Staff limited to only 4 students.

Overall Description

This must exist in the current house searching environment. It should be coded and implemented in such a way that students will be able to have access to this on the web wherever. The current system for house searching is on a central windows computer that distributes to the web a website from which students can access the search program via the search program webpage link. This webpage is where all actions on the portal will take place.

Business use case



Functional Requirements

Feature 1: Creating an account

- 1.1: The user shall choose between creating a student or host account
- 1.2: The user shall verify that they are a student via their student ID
- 1.3: The user shall create a username
- 1.4: The username created shall be between 6-12 characters
- 1.5: The user shall create a password
- 1.6: The password created shall be between 6-12 characters
- 1.7: The password created shall be hashed and stored in a secure database
- 1.8: The user shall list their first and last name

Feature 2: Log-in credentials

- 2.1: The user shall use their login credentials to access host/student features, according to their account type
- 2.2.: The user shall input their login information into the login page

Feature 3: Bookmarks

- 3.1: The system shall store users' bookmarks in a list on their profile
- 3.2: The system shall display the number of bookmarks a listing has obtained on the listing page
- 3.3: The system will add bookmark total as a flag
- 3.4: The user shall be bookmark listings
- 3.5: The user shall be able to remove bookmarks from listings

Feature 4: Leave reviews

- 4.1: The users may leave ratings of listings on a scale from 1-10
- 4.2: The system will limit reviews to 300 characters
- 4.3: The system will display username alongside review
- 4.4: The student user will be able leave reviews for listings
- 4.5: The student user will be able to leave reviews for hosts
- 4.6: Student and host users will be able to leave reviews for renters

Feature 5: Search

- 5.1: The user will be able to sort listings based on flags
- 5.2: The user will be able to filter listings based on wants or needs
- 5.3: The user will be able to search for particular hosts
- 5.4: The user will be able to search by address

Feature 6: Contact

- 6.1: The system will generate lease agreements for matched host and student
- 6.2: The user will be able to notify hosts of interest in listing

- 6.3: The system will see all notifications
- 6.4: The system will redirect notifications to hosts or students
- 6.5: The host will be able to contact students who have shown interest in listings

Feature 7: Profiles

- 7.1: The system shall display first and last name of user on their profile
- 7.2: The system shall display username on user profile
- 7.3: The system shall display account type on profile between host and student
- 7.4: The system shall display listings available for each host account
- 7.5: The user profiles shall be set to private by default
- 7.6: The host shall only see the profiles of interested students
- 7.7: The host accounts shall always be set to public
- 7.8: The system shall store user phone numbers
- 7.9: The system shall store user address

Feature 8: Listings

- 8.1: The host shall post listings of available properties
- 8.2: The listing shall have the following required public fields
 - 8.2.1 The listing must have a valid address
 - 8.2.2 The listing must have number of rooms
 - 8.2.3 The listing must have rent prices
 - 8.2.4 The listing must have property type
 - 8.2.5 The listing must state a security deposit if required
- 8.3: The listing shall have the following required default private fields that may be enabled as listing flags
 - 8.3.1: The host must enter an occupancy clause
 - 8.3.2: The host must enter whether parking is available
 - 8.3.3: The host must enter whether smoking or vaping is allowed
 - 8.3.4: The host must enter if pets are allowed
 - 8.3.5: The host must enter maintenance requirements for the tenant
 - 8.3.6: The host must enter insurance requirements for the tenant
 - 8.3.7: The host must enter a tenant improvement clause
 - 8.3.8: The host must enter environmental disclosures
 - 8.3.9: The host must enter a sublease clause
 - 8.3.10: The host must enter utilities requirements
- 8.4: The listing shall be able to add any of the additional listing flags listed in Feature 9
- 8.5: The system shall be able to take information from user profiles, listing information, and additional input from the host to generate a lease agreement.
 - 8.5.1: The host must enter is the property is purchasable by the tenant
 - 8.5.2: The host must enter the day the rent is due
 - 8.5.3: The host must enter forms of payment allowed
 - 8.5.4: The host must enter a rent increase clause

- 8.5.5: The host must enter a late payment clause
- 8.5.6: The host must enter a notice clause.
- 8.5.7: The host must enter a dispute resolution clause
- 8.5.8: The host must enter a lease renewal clause
- 8.5.9: The host must enter an inspection report clause.
- 8.5.10: The host may enter additional clauses.

Feature 9: Listing Flags

- 9.1: The host will be able to provide a flag of amenities for their listings
- 9.2: The host will be able to provide a flag of bookmarks on their listings
- 9.3: The host shall add public listing fields as flags

Non-Functional Requirements

- **Look and feel requirements** - The user-interface must be beginner friendly and easy to navigate for all users. Fairly decorative and eye catching.
- **Usability requirements** - The library system should be flexible and allow users to locate what suits them.
- **Performance requirements** - The library system should be able to run on library machines but may have functionality beyond them in the future. Fast loading times.
- **Maintainability and support requirements** - The library should be able to run on Windows and Linux systems and should have technical support with regular bug fixes.
- **Security requirements** - User information shall be stored and only accessible via the user's respective account.
- **Cultural requirements** - User's shall not be discriminated against for disabilities, gender, race, sexuality, or anything else.
- **Legal requirements** - The library system will abide by state and local laws.

Definitions & Acronyms

Term	Definition
Hosts	Users who rent out property.
Renters	Student users who rent from hosts.
Tenant Improvement Clause	Will state whether or not a renter will be able to make changes to a property and if so, what changes.
Environmental Disclosures	Will state the year range the rental property was built, 1978 or before, 1979 or 1980, or 1981 or later.
Utilities Requirements	Will state the utility responsibilities of the tenant and landlord.
Insurance Clause	Will state the insurance responsibilities of the tenant and landlord.
Maintenance Clause	Will state the maintenance responsibilities of the tenant and landlord.
Rent Increase Clause	The minimum required days before a host can implement a rent increase.
Late Payment Clause	If included, will state the fees and rules regarding an insufficient check or late payment
Notice Clause	This will consist of required days of notice for property visits and lease termination
Dispute Resolution Clause	If included, will state how disputes must be resolved whether by mediation, arbitration, or mediation then arbitration.
Lease Renewal Clause	Will state whether or not the lease is renewable and restrictions regarding renewal.
Inspection Report Clause	Will states whether or not an inspection report will be taken.

Competitive Analysis

Summary

	Strength	Weakness	Focus
Zillow	+modern look +abundance of filters +Caters to variety of people	-Nonessential scope -Overwhelming amount	People searching for housing in general
Craigslist	+Variety of items +Search/filter system simple	-outdated design -unsecure	Anyone on an online marketplace
USC housing portal	+Caters to university students specifically +Simple website, easy navigation +Updates accordingly	-available mostly for freshmen -no direct info on housing, rates, or rooms	UofSC students

Going off of the comparative analysis of other search systems, a goal would be to have a modern look on the program. This would help people understand and navigate the website easily. Additionally, the use of filters would help searchers find the type of housing that suits them. It is important to note that this program should only function as an off-campus housing search program. This program is meant to target people looking for off-campus housing, particularly students of USC and as such, could be implemented on USC's webpage similar to how you can reach the USC housing portal on their webpage (through a series of links). Displaying housing information of a particular complex/neighborhood one finds, via the search, would be vital to help the user understand a small overview of the housing without having to go to the housing's respective webpage.

zillow

Strengths.

Has lots of filters. Some filters include price, number of bedrooms/baths, home type, space, year built, basement, stories, whether or not there is a 3D tour, days on Zillow, view, and other amenities.

Stays up to date. For example, they offer a 3D tour of home. The whole website has a clean, fully-realized look.

Friendly to renters and other stakeholders. For example, they provide different portals for property managers, landlords, advertisers, builders, etc.

Weaknesses.

Nonessential scope. Zillow has an overwhelming number of listings. Additionally, the boundaries do not make sense for college students because it is more focused on the city boundaries (which can seem arbitrary), rather than providing a search boundary that fits the need for college students.

Overwhelming in its features and filters, many of which might not be too important for the average college student. Additionally, this contributes to making the view of the website too crowded.

Audience/Focus.

The audience seems to be generic people involved with listing, selling, renting, and building houses, along with advertisers.

craigslist

Strengths.

Varied. Listings contain a wide variety of housing options, with many of them being very low-cost. The listings also provide a place to search for people searching for roommates. It also does not require payment to be made with cash and favors for rooms are commonplace on Craigslist.

Search and filter system. The site allows users to filter out listings according to distance from zip, price, number of bedrooms, number of bathrooms, square footage, availability, as well as having additional filters for pets, furnishings, smoking, accessibility, and fees

Weaknesses.

Scams. Craigslist is not well moderated and therefore is ridden with scammers, posting misleading listings for rooms and apartments that may not actually be available. Many listings on there also lead straight to roomster, in a ploy to take advantage of roomster's affiliate program.

Outdated Design. The website has not had any major updates since the early 2000s, and has a general outdated feel to it. This makes it feel quite crowded.

User Submitted. Since all the listings are user-submitted, there are an abundant amount of mis-listings, or duplicate listings meant to bump their post in the results page. This makes it difficult to parse through the listings even with the existing filters.

Unsecure Contact. Craigslist does not vet listings or provide a secure way for users to contact one another so listings often just state a phone number for renters to contact and can be quite dangerous.

Audience/Focus.

This site is a very broad service, acting as a national classifieds page. The site doesn't focus on specifically real estate, it more just gives a place where anything and everything can be sold and bought.

usc housing portal

Strengths.

Modern and specific styling - the portal was updated as recently as last year (2019) and is styled to show UofSC spirit with phrasing like “Welcome home” and “gamecock” throughout the page to make prospective students staying on campus feel at ease with housing at UofSC

Easy navigation - each tab is shown at all times in the portal across a red header, leading to easy switches amongst parts of the portal

Updates to reflect what process USC housing is at - i.e. will have a move-in tab when near move-in, will have a move-out tab when near move-out.

Is specifically made for USC students - no other types of people could use the portal, thus eliminating any potentially non-USC related people living on campus

Two factor authentication - keeps accounts on the portal secure

Weaknesses.

Does not guarantee housing at any particular residence hall - only allows preferences

No filters on the types of housing - redirects you to the UofSC main webpage to look up the housing yourself. As such, where one might live and what the rates are could be hard to find if coming straight from the portal. Details on housing buildings are also limited to just the name, no specifics on room styles.

Parts of housing application come in after completion and particular dates but no word of that happening is on the page after completing application

Has preference for incoming freshmen, as the university promises to have incoming freshmen on campus. As such, students of other classes may find that they have a worse chance of getting housing on campus

Audience/Focus.

UofSC students, particularly incoming freshmen. Property owners.