

Theme: Rating Website**Group Name:** Landlord Ratings**Members:** Iseah Olguin, Johnathan Smith, Marci McBride**1. Background:**

Socorro is a small community with a high demand for rentals, especially those that are near campus. Often landlords view this as the perfect opportunity to rent their homes, sadly without keeping up with basic home maintenance.

The goal of our group project is to help other techies be informed about their soon-to-be landlord prior to signing their lease. The webpage will contain a map of Socorro that will allow its users to put in a pin on the location of their rental. It will then allow the user to rate their landlord by completing a form made from a set template. Furthermore, depending upon time, we will add features such as *Google Maps* integration and verification of email addresses from the domain student.nmt.edu. With these extended features -- the website will become more dynamic and enhance the users' experience.

2. Website Analysis**2.a. The following is a list of five existing websites that are relevant to our theme:**

- I. [Yelp.com](#): A star rating system is utilized to show the overall rating of restaurants.
- II. [Angie's List](#): Verification process eliminates false reviews and guarantees true, credible reviews.
- III. [Glassdoor.com](#): Set template forms to create uniform information -- gathered from users.

IV. Foursquare City Guide: Users are able to discover new places because of recommendations from other users.

V. Tripadvisor.com: A map is used to show the exact location of reviews.

VI. Airbnb.com: An interactive map allows users to hover over pins and see the basic information of a rental.

2.b. The following are functions our website will have:

- I. Star Rating -- simplistic overall rating of landlord (easy to understand).
- II. Reviewers must enter a tech email to verify they are a tech student.
- III. Users will have to input their information into a form in order to provide more detailed description of review and rating.
- IV. Utilize a static map to indicate the location of the house with a pin placed by the user.
- V. Use Google Maps' API in order to create an interactive map.

2.c. The following table compares the above information.

Functions	Landlord Ratings	Yelp	Angie's List	Glass Door	Foursquare City Guide	Trip Advisor	Airbnb
Star Ratings	V	V		V		V	V
Email Verification	O	V	V	V	V	V	V
Set Templates	V		V	V	V	V	V
Static Map	O						
Interactive Map	X	V			V	V	V

V: Able to perform the task

X: Unable to perform the task

O: Able to perform the task with poor interactive design

3. Storyboard

3.a. Who will use the website?

This website will be designed with New Mexico Tech students in mind and would therefore be used by fellow students. Furthermore, anyone thoroughly interested in moving into the Socorro area who would like to know specifics about their landlord, prior to signing a lease, would also be a great candidate for our website.

Users:

- NMT students
- General Public

3.b. NMT Student Storyboard

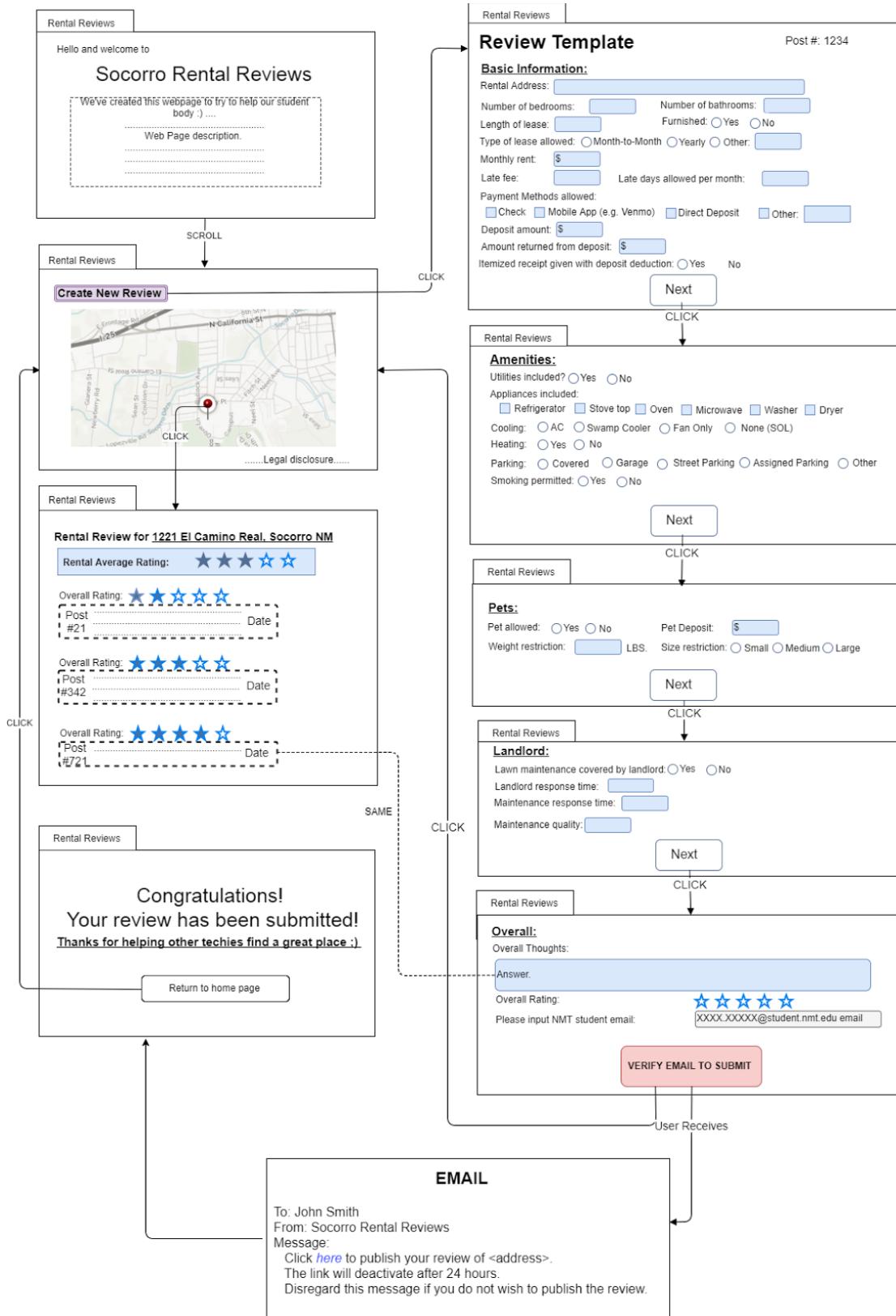
New Mexico Tech Students will be able to access and view reviews on our “Socorro Rental Reviews” website. They can scroll down on the main page to access a map interface which will allow students to click on individual pins to view the property address in Socorro. From the property pin, they will be able to view posted reviews of that specific property, with descriptive posts as well as an overall rating, denoted with star ratings one through five.

From the main Rental Review page, above the property labeled map, there is another option that allows NMT students to contribute a review of a property. They may submit a new review simply by clicking on “Create New Review”. This web page will have a Review Template with multiple questions regarding the landlord and policies upheld by the agreed contract. This Review Template is easily completed as each section has its own corresponding questions.

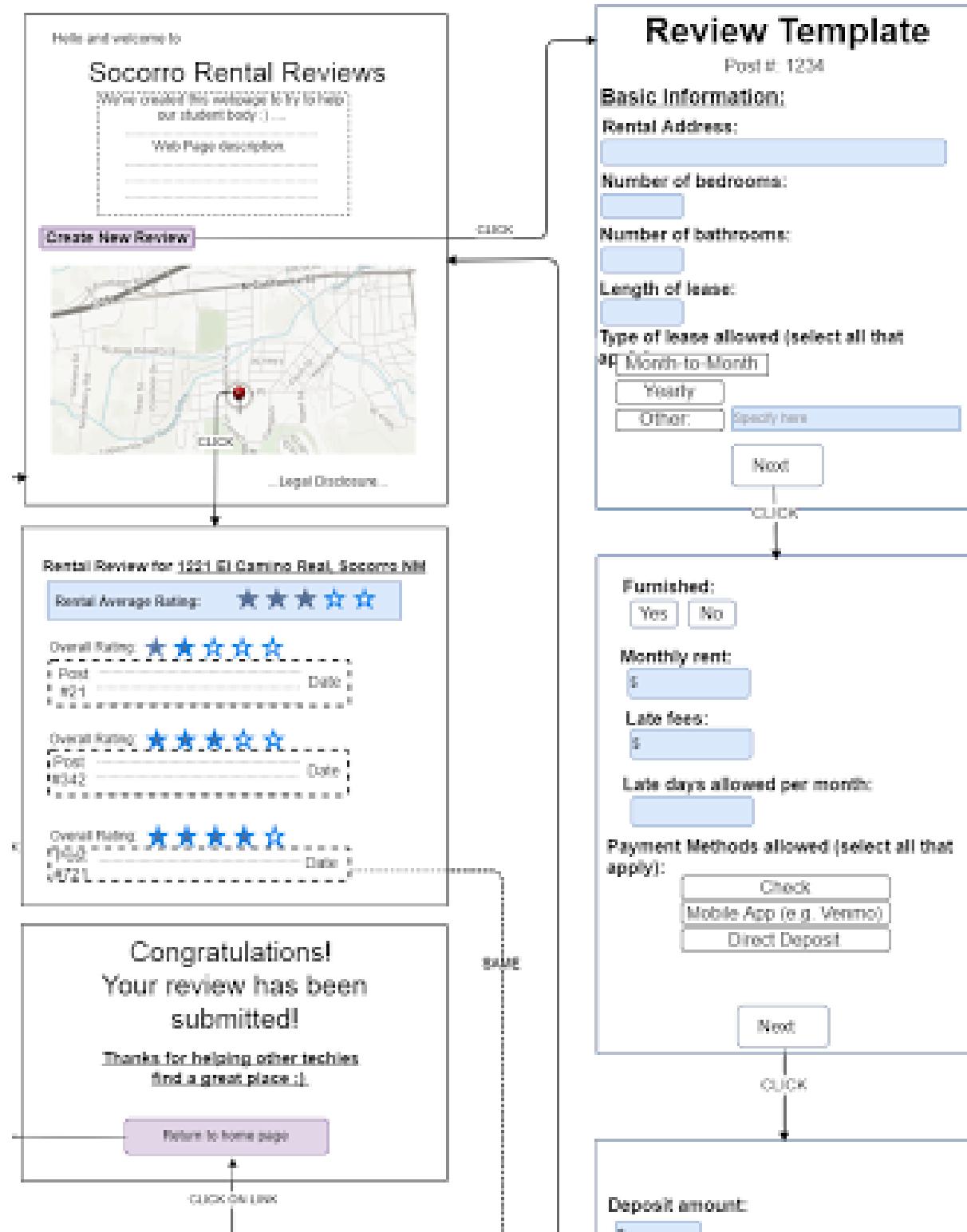
Following this rigorous set of questions, the user is greeted with an overall star rating. This is used to determine a quick average for the searched landlord/property.

If the user submits a valid NMT student email address, then they will receive an email with a link which they must click to verify that they are a NMT student. Then their post will be published and they can access their published review by going to the map and clicking on the pin where there rental property is located.

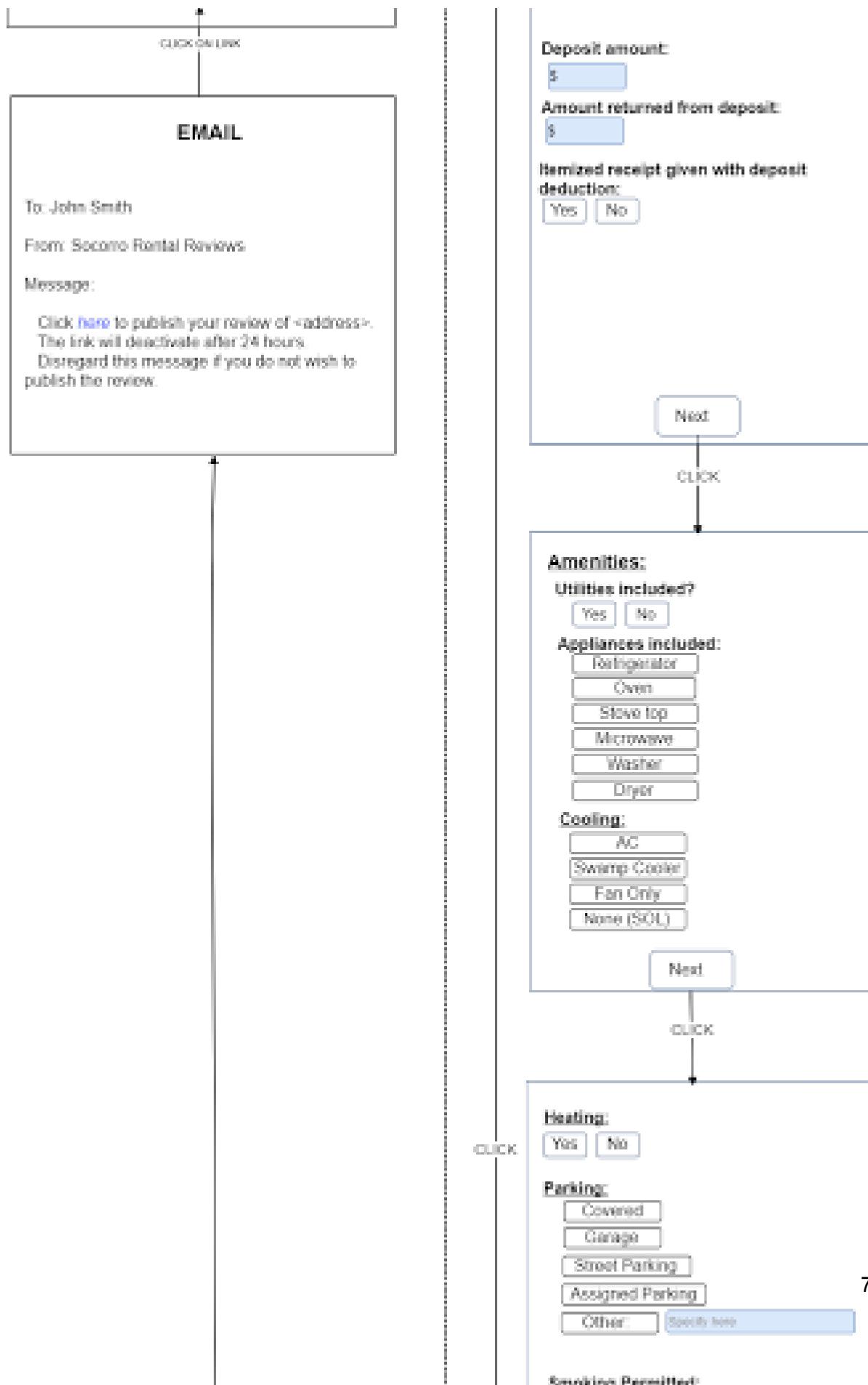
3.b.i. Desktop Website Layout

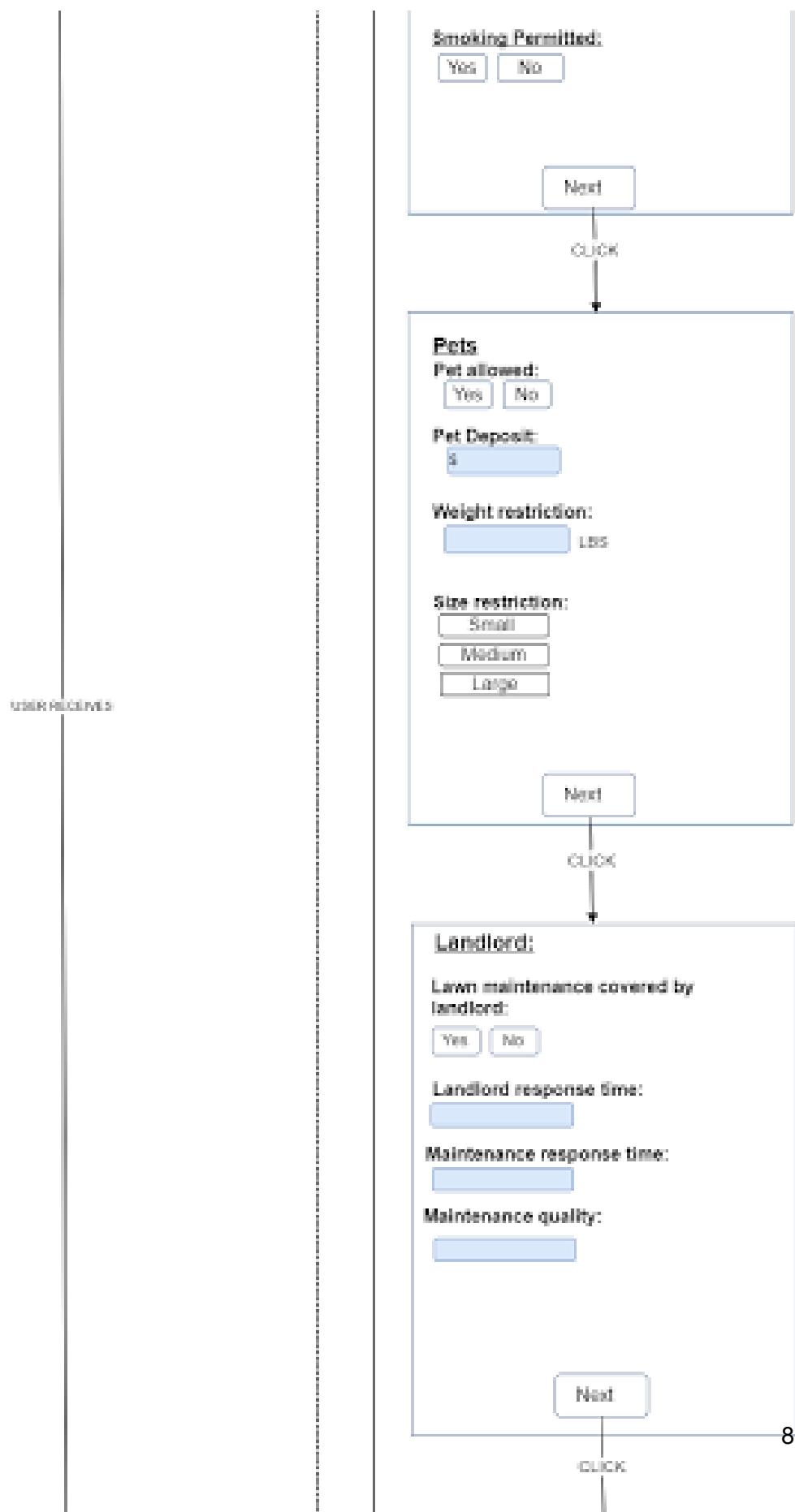


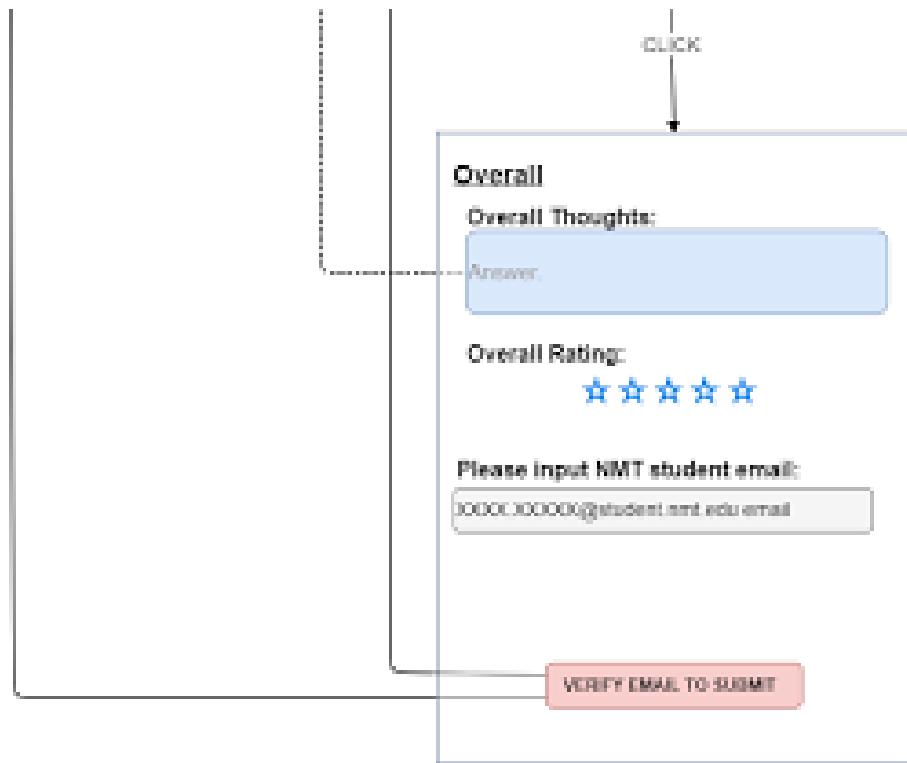
3.b.ii. Mobile Website Layout



Continued on the next few pages







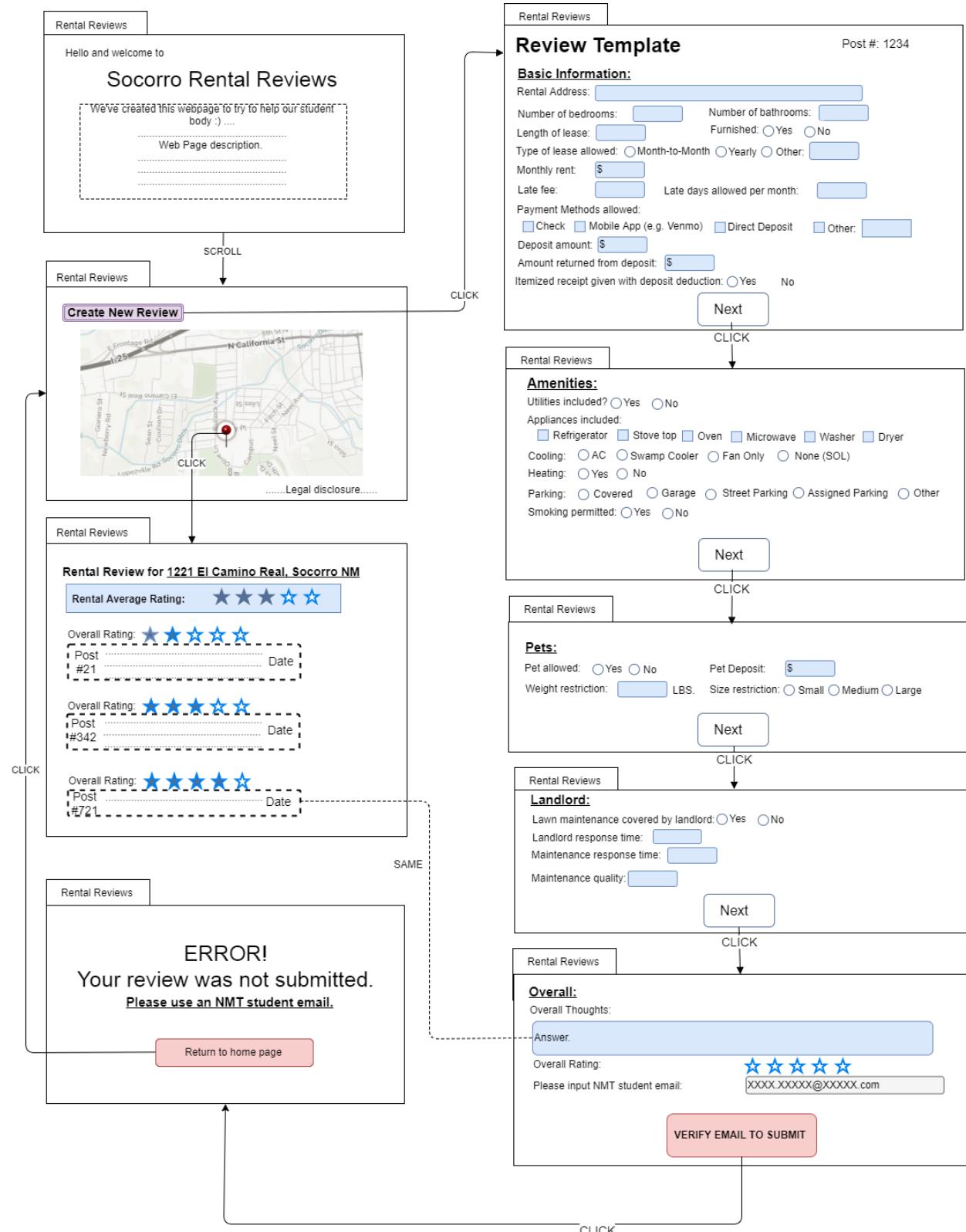
3.c. General Public Storyboard

The general public will be able to access and view reviews on the “Socorro Rental Reviews” website. They will be able to scroll down the main page, interact with the map, click on different pins on the map to view the reviews, and even look at the review template form.

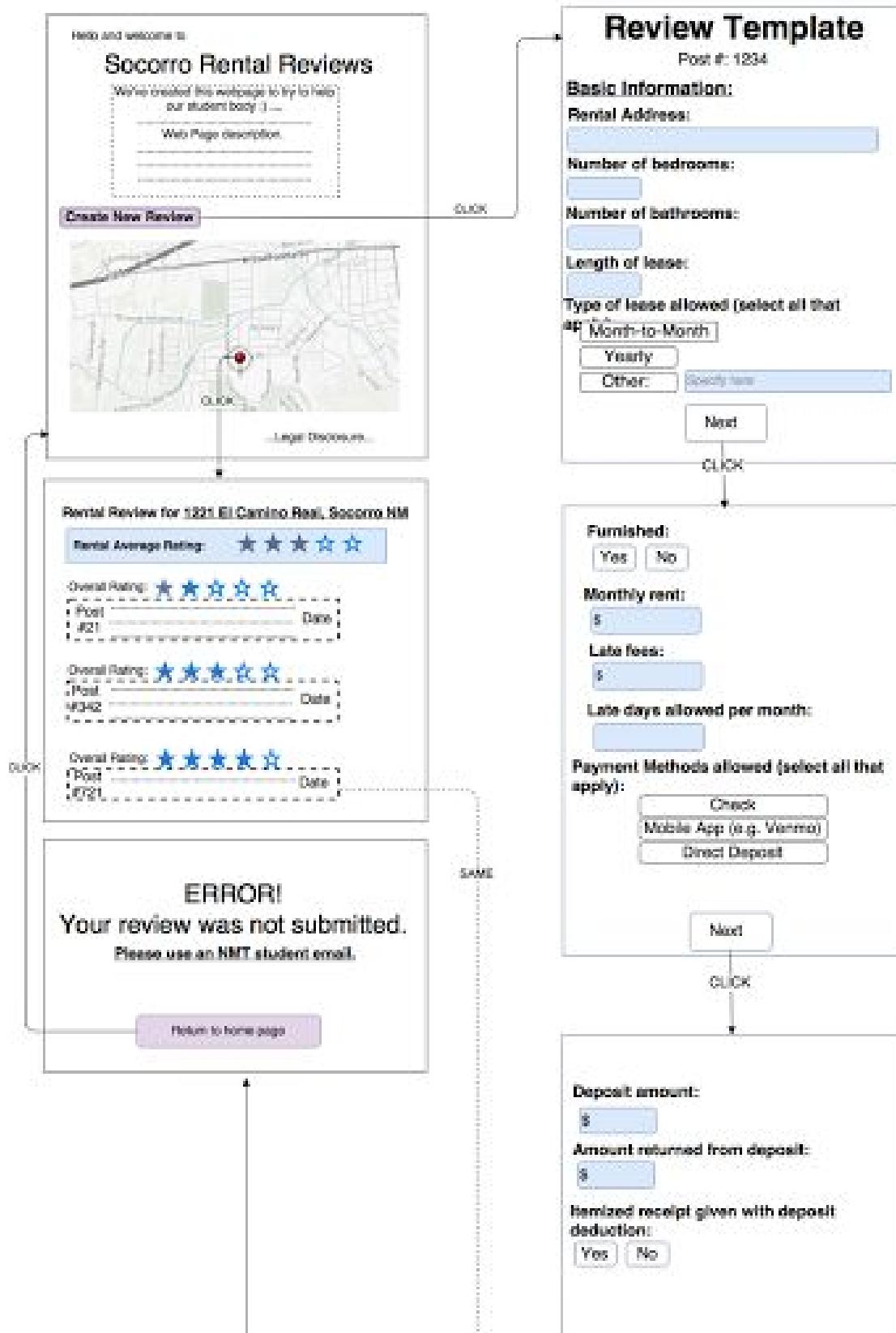
The general public, however, will not be able to create or post reviews without a New Mexico Tech student email. If the user submits the review form by clicking the “Verify Email to Submit” button with an email address that is not a New Mexico Tech student email address, a page will appear telling them there is an error and that a NMT student email address is required to submit and publish their review.

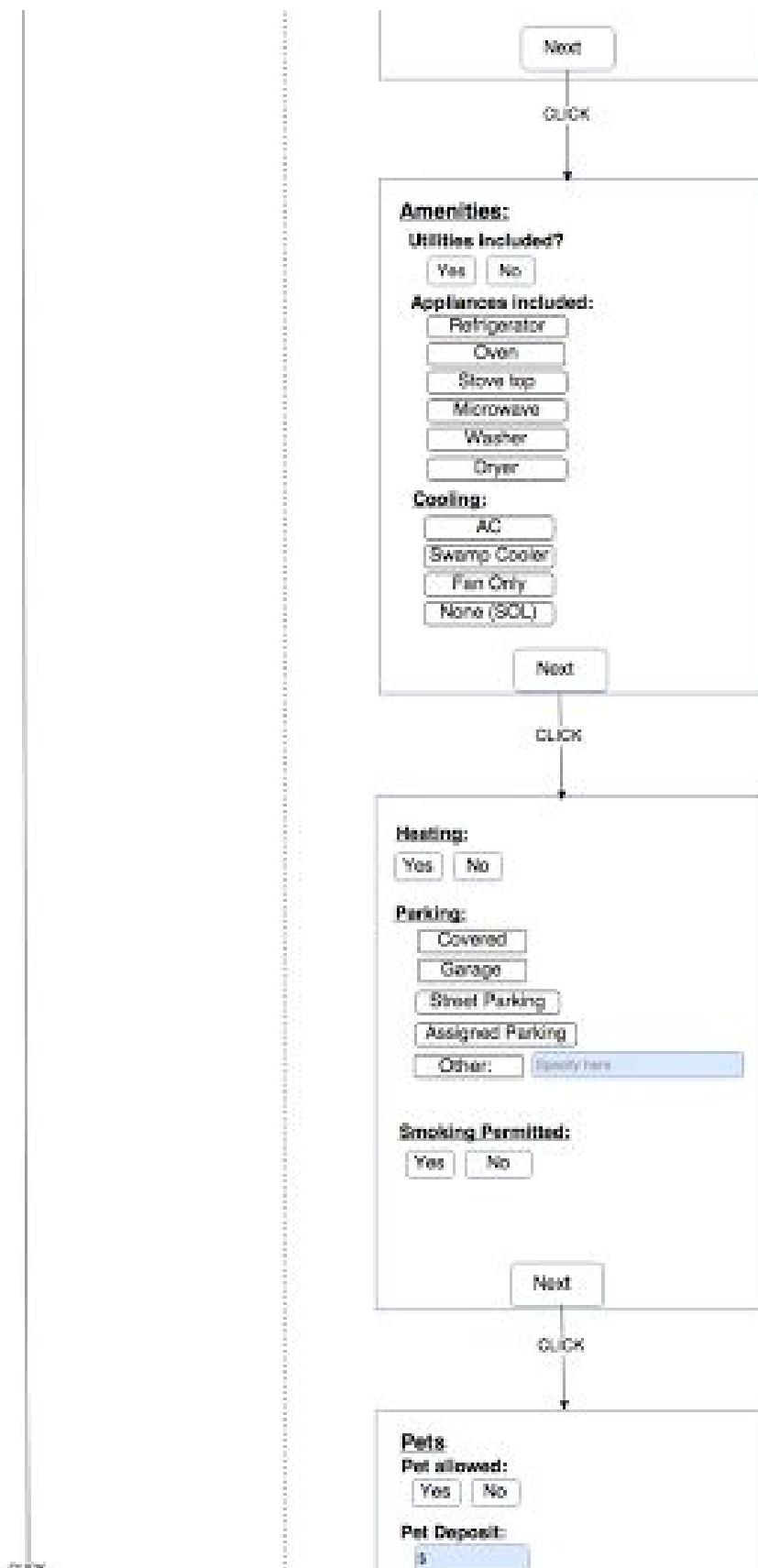
Once the user is on the error page, they can click on “Return to Review Template” to return to the review template form and enter their NMT student email address if possible.

3.c.i. Desktop Website Layout



3.c.ii. Mobile Website Layout





CLICK

Pet Deposit:

Weight restriction:
 lbs

Size restriction:
 Small
 Medium
 Large

Next

CLICK

Landlord:

Lawn maintenance covered by landlord:
 Yes No

Landlord response time:

Maintenance response time:

Maintenance quality:

Next

CLICK

Overall

Overall Thoughts:

Overall Rating:

Please input NMT student email:

VERIFY EMAIL TO SUBMIT

3.d. Storyboard links

For better quality, check out our storyboard links:

3.d.i. New Mexico Tech Student Storyboards:

[Desktop Version](#)

[Mobile Version](#)

3.d.ii. General Public Storyboards:

[Desktop](#)

[Mobile Version](#)

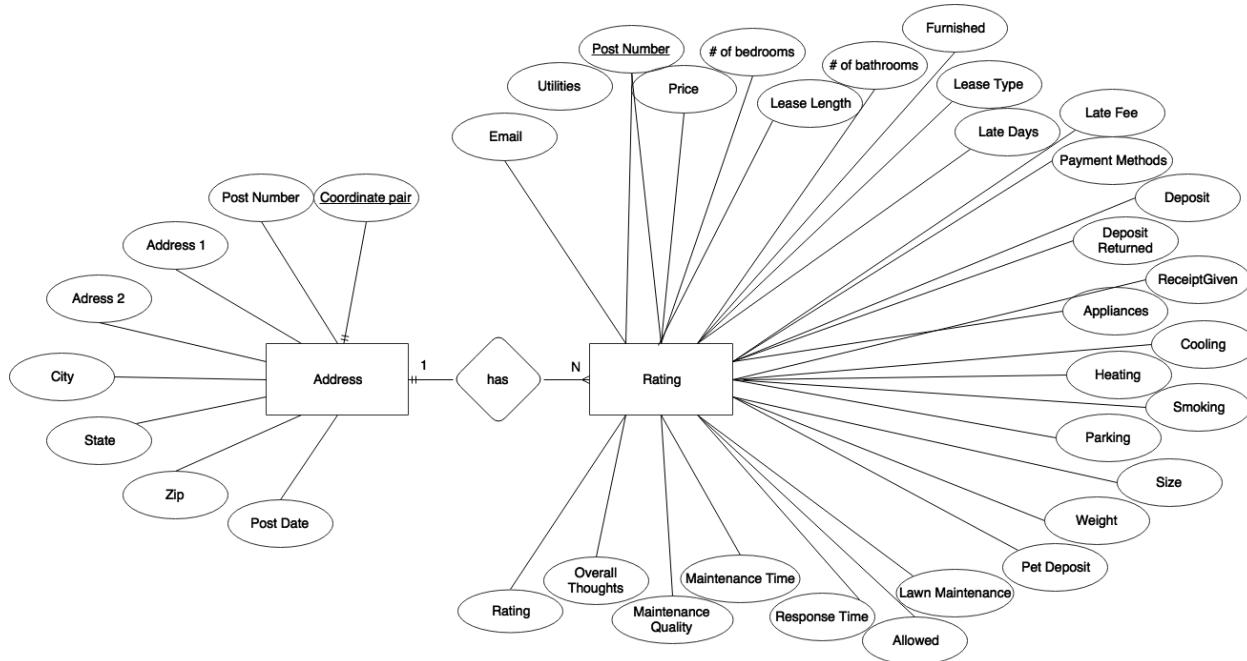
4. Entity-Relationship Diagram

4.a. ER Diagram

I. Prolog

Based on our website storyboard and prototype, we have created our ER diagram which will illustrate the logical structure of the database and show the relationship of the entity sets stored in our database. Following each column within the table design will aid in the creation of each field name on the database. For example, identifying each of the field's data types and leaving notes in the comments field will reduce complications and will aid overall the process of designing our database.

II. The ER Diagram



4.b. Table Design

“address” Table

Primary Key	Field Name	Data Type	Non-null	Unique	Binary	Foreign Key	Comments
V	coordinatePair	varchar(128)	V				Latitude and Longitude coordinates for the address
	postNumber	int	V	V		V	Unique number per post
	address1	varchar(255)	V				First line of the address
	address2	varchar(255)					Second line of the address. Not always needed
	city	varchar(255)	V				City of the rental
	state	varchar(255)	V				State of the rental
	zip	int(8)	V				Zip of the rental
	postDate	timestamp	V				Timestamp of when the user posted review

“rating” Table

Primary Key	Field Name	Data Type	Non-null	Unique	Binary	Foreign Key	Comments
V	postNumber	int	V	V		V	Unique identifier per post. Corresponds to an address in the address table
	email	varchar(320)	V			V	Retrieve user(s) email
	price	int	V				User input field for price rental
	bedrooms	int	V				Number of bedrooms
	bathrooms	int	V				Number of bathrooms
	leaseLength	varchar(128)	V		V		How long the lease is.
	furnished	boolean	V		V		Is the rental furnished.
	leaseType	bit	V		V		Month-to-month, yearly, other. *checkboxes
	lateFee	int	V				What is the fee if the rent is paid late?
	lateDays	int	V				How many days after the rent is due is allowed

							before incurring penalties.
	paymentMethods	bit	V		V		How can rent be paid? *checkboxes
	deposit	int	V				Deposit amount
	depositReturned	int	V				How much was returned from the deposit after the lease was up?
	receiptGiven	boolean	V		V		Was an itemized receipt given with deposit deduction upon lease termination?
	utilities	bit	V		V		Are utilities included in the rent?
	appliances	bit	V		V		What appliances are in the unit? *checkboxes
	cooling	bit	V		V		What kind of cooling is available? *checkboxes
	heating	boolean	V		V		Is there heating?
	parking	bit	V		V		What kind of parking is

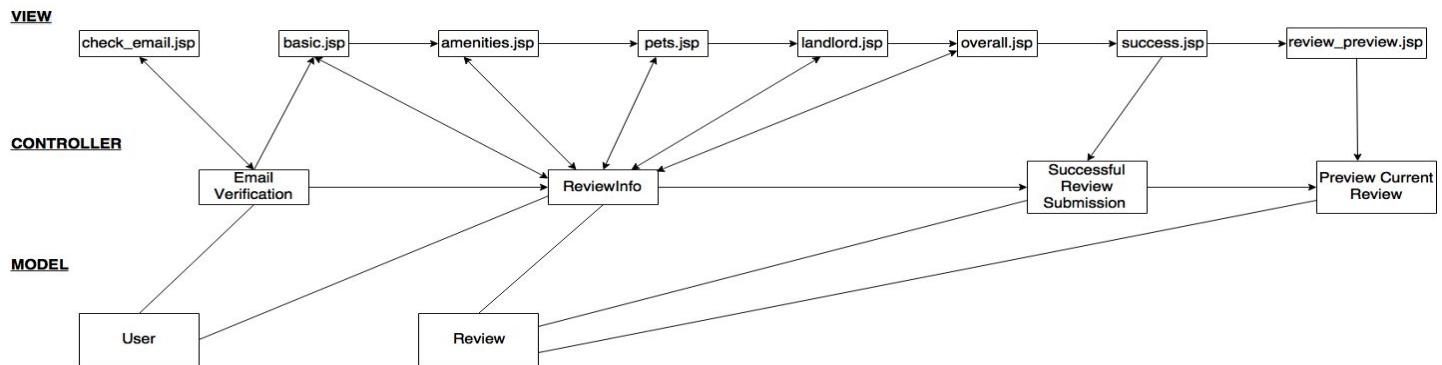
							there? *checkboxes
	smoking	boolean	V		V		Is smoking permitted?
	petsAllowed	boolean	V		V		Are pets allowed?
	petDeposit	int	V				What is the pet Deposit?
	petWeight	int	V				What is the maximum weight allowed?
	petSize	int	V				What is the maximum size allowed?
	lawnMaintenance	boolean	V		V		Is the lawn maintenance covered by the landlord
	responseTime	int	V				Landlord Response time to maintenance issues
	maintenanceTime	int	V				How soon is maintenance response time
	maintenanceQuality	varchar(140)	V				Maintenance quality given.
	overallThoughts	varchar(140)	V				What are your overall thoughts of the rentals?

	overallRating	int(5)	V				5 Star ratings
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***Checkboxes** - Each checkbox option will be stored as a bit (0 or 1). The value 0 will be used to indicate that the option was not selected and the value 1 will be used to indicate that the option was selected.

5. System Architecture

5.a. System Architecture Figure



5.b. System Architecture Explanation

Our system architecture is logically sequential and follows an agile methodology of development. Initially, the New Mexico Tech student must enter their student email in order to verify they are a student, thus they will find themselves at *check_email.jsp*. If this email is valid then they will be forwarded to the first page of the review template, *basic.jsp*. This page has simple questions you would expect to see regarding a rental property or should highly consider when trying to rent or buy real estate. Our main controller *ReviewInfo* retrieves and sends data to and from each review form -- *amenities.jsp*, *pets.jsp*, *landlord.jsp*, and *overall.jsp*. Each of which are more detailed questions regarding the property up for review. Once the review is complete, you will be lead to the *success.jsp* page which simply gives acknowledgement to the user that their review has been received. Thereafter, they will be returned back to the home page and will

be able to click on their pin (the location in which the users have left a review) and view their review. Thus, we have our model *Review* -- as it is its own entity -- and we do not have to link this review to the exact user, but merely to the property itself.

This is an agile based system because we are able to modify each file without directly manipulating other files. It is much simpler to utilize this method as we might need to change certain forms or append more to our overall system.

6. System Snapshot

The following are screenshots of our website demonstrating our overall system. Each section contains details on what the user would expect to see when navigating through our website.

Storyline

Suppose you want to leave a review for your current rental property -- either warning fellow techies about your current landlord or you would love to brag about the gem you have found in Socorro. Moreover you are just simply interested in a rental property and are trying to gather information from a valid source -- and who would be better to trust than other techies? Thus, you find yourself at our website: [***Socorro Rental Reviews***](#).

Landing Page:

SOCORRO RENTAL REVIEWS

About

Socorro is a small community with a high demand for property rentals among us New Mexico Tech students, especially those that are near campus. Often landlords view this as the perfect opportunity to rent their homes, sadly without keeping up with basic home maintenance.

The goal of this website is to help other techies be informed about their soon-to-be landlord and rental property prior to signing their lease.

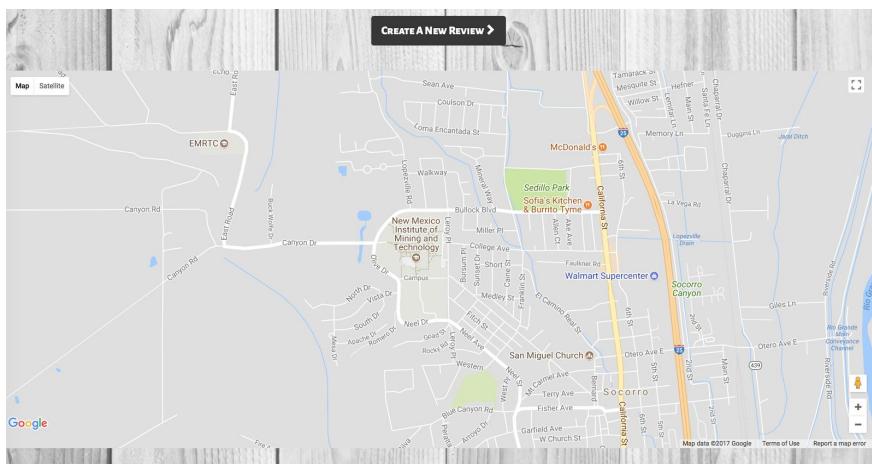
So please help by leaving a review about your current home! This will help all other students know what to expect.

Click on the pins on the map below to look at the reviews left by other techies for their property rental. Or Click on "Create A New Review" to help out and review your place.

Please Note

In order to leave a review, you must have a New Mexico Tech email address.

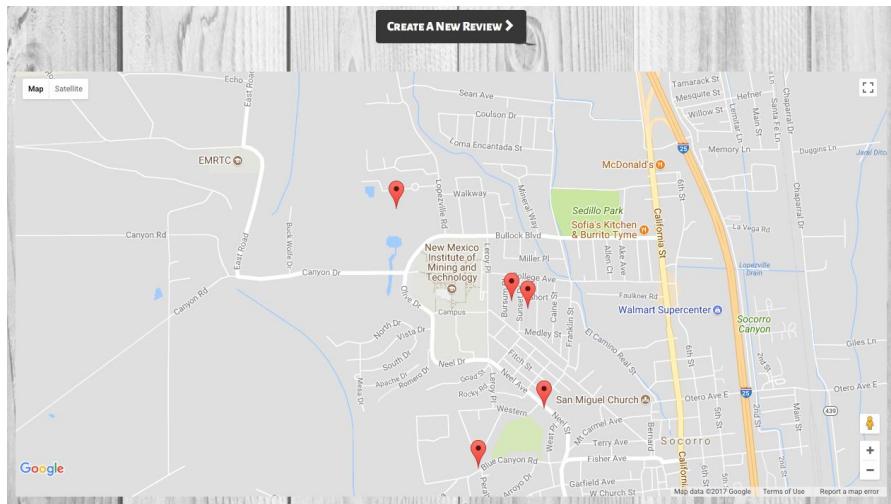
CREATE A NEW REVIEW >



When you first arrive at our landing page – you will be greeted with an ***About*** section which reiterates what we are doing for our community. You will also have the ability to ***Create A New Review*** and will be able to interact with our integrated map.

Interaction with the map includes moving around Socorro to find reviews listed for a property or when you are finished with a review, you will be able to see it as a red pin where,

geographically, the property will be represented by its latitude and longitude coordinates. These red pins are displayed below.



Email Verification:



However, let us assume you would like to create a new review for your current rental property and thus will click **Create A New Review**. This will lead you to our email verification page, wherein you must verify that you are a *New Mexico Tech* student. This ensures that the quality of each review is unique and honest. If you are not a *New Mexico Tech* student then you will not be

able to move onto the review templates after this page. Yet, if you are a student and this is verified, then you will be forwarded to the first form.

Basic.jsp:

The screenshot shows a web page titled "SOCORRO RENTAL REVIEWS" with a sub-section "Review Form". Below this, there is a section titled "BASIC INFORMATION:" containing several input fields for rental address details. The background of the page features a faint, textured image of a landscape.

BASIC INFORMATION:

Rental Address
Enter your address here, the rest of the fields below should autocomplete

Rental Street Address

Rental Unit:

Rental City

Rental State

Zip Code

Rental Country

Price per Month

\$ Round to nearest dollar

Number of bedrooms:

1

Number of bathrooms:

1

Length of your lease:

e.g. One Year

Furnished:

Yes
 No

Type of lease allowed:

Month-to-Month
 Yearly

Late fee:

\$ Dollar amount

Late days allowed per month:

Payment Methods allowed:

Check
 Mobile App
 Direct Deposit

Deposit amount:

\$

Amount returned from deposit:

\$

Itemized receipt given with deposit deduction

Yes
 No

NEXT >

This is the first form to be filled out. It is a casual set of questions you would expect to ask the landlord when gathering information to rent their property. The address data in the beginning will be auto-populated as soon as you enter in the location of the property. However, more detailed information requires input -- such as *Price per Month* and *Late days allowed per month*. It should be noted that each question must have a response before being allowed to continue onto the next form -- for each of the rental review questions. After entering the information concerning your rental, you may continue by clicking the *next* button at the bottom of the page.

Amenities.jsp:

SOCORRO RENTAL REVIEWS

Review Form

AMENITIES:

Utilities Included:

Yes
 No

Appliances Included:

Refrigerator
 Stove top
 Oven
 Microwave

Cooling:

AC
 Swamp Cooler
 Fan Only
 None

Heating:

Yes
 No

Parking:

Covered
 Garage
 Street Parking
 Assigned Parking

Smoking Permitted:

Yes
 No

NEXT >

2nd section out of 5 complete... We promise the rest aren't as long :)

[Legal Disclaimer](#)

This second form is aimed to clarify the amenities offered within your rental. Most of these fields are straight forward -- and in most cases, more than one option may be selected.

Pets.jsp:

The screenshot shows a web form titled "SOCORRO RENTAL REVIEWS" with a background image of a desert landscape. The form is a "Review Form". The "PETS:" section contains the following fields:

- Pet Allowed:** Two radio buttons: Yes and No.
- Pet Deposit:** A text input field with a dollar sign prefix and a dropdown arrow, labeled "Dollar amount".
- Weight Restriction:** A text input field with a dropdown arrow, labeled "Max lbs allowed", followed by a unit label "lbs".
- Size Restriction:** Three checkboxes: Small, Medium, and Large.

A "NEXT >" button is located at the bottom left of the form area. At the bottom right, there is a note "3rd section out of 5 complete... :)" and a link "Legal Disclaimer".

Moving forward, we are focused on the regulations of pets within your rental property. Again we are intending to be exact and detailed in the review process and knowing about pet restrictions is another large concern amongst most students attempting to rent. If pets are not allowed at the rental, the three following questions concerning pet deposit, weight restriction, and size restriction are hidden and not required to be answered.

Landlord.jsp:

SOCORRO RENTAL REVIEWS

Review Form

LANDLORD:

Lawn maintenance covered by landlord:

Yes
 No

Landlord response time:

Number of Days

Maintenance response time:

Number of Days

Maintenance quality:

140 Character Limit

NEXT >

The second-to-last form is rather short and is a simple evaluation of your landlord. Four elementary questions -- each of which are very important to know as lack of quality in a landlord could result in a terrible renting experience. You are given a chance to explain maintenance quality here. Please elaborate on your experiences as extensively as possible.

Overall.jsp:

The screenshot shows a web form titled "SOCORRO RENTAL REVIEWS" and "Review Form". The background features a grayscale image of a desert landscape.

OVERALL:

Overall Thoughts:

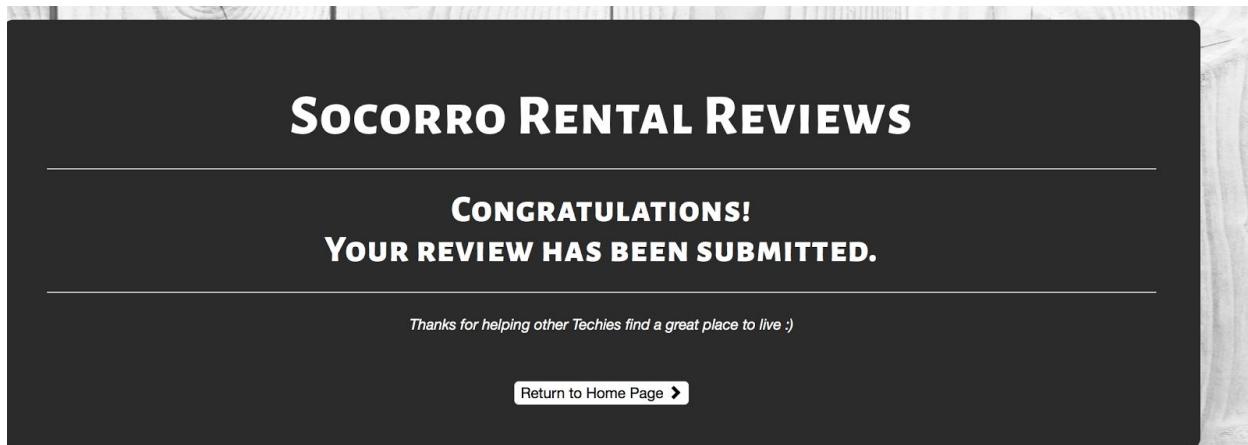
Overall Rating:

NEXT >

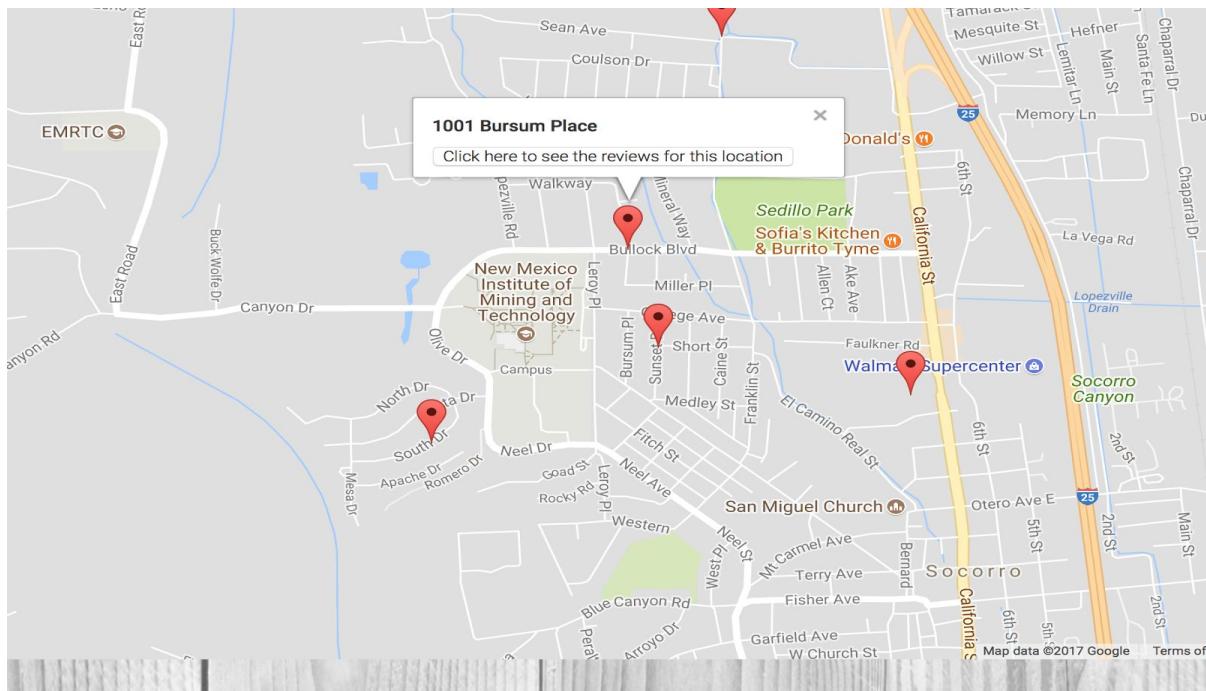
You are finished with the review! :)

Legal Disclaimer

The last form you will be directed to is an overall review page. It is not necessarily a form, but more so an open model in which you may express your overall thoughts. You are limited to 300 characters which enables you to give the gist of your rental experience but lengthy enough to give important details. Also, to summarize your rating -- with a ranking set of emojis -- you may choose which best represents how you felt your experience was when renting this current property.

Success.jsp:

After you finish the preceding forms, you will find yourself at this success page. This is an acknowledgement page notifying you that your review has been submitted and posted for your rental property. Once you click the ***Return to Home Page*** button you will be redirected to our landing page, and now your review will appear as a red pin on the interactive map as displayed below.



By clicking on the red pin, you will see it has the address of your rental property as well as a link to all the reviews for that location, including the review you have just created.

Review_preview.jsp:

The screenshot shows a mobile application interface for viewing rental reviews. At the top, a large header reads "SOCORRO RENTAL REVIEWS". Below the header, a title bar says "Rental Review for 1001 Bursum Place". A main content area displays a single review post. The post includes "Post #18" and "Price: \$465". It features a "Rental Rating:" followed by a yellow smiley face emoji. Underneath, there's an "Overall thoughts:" section containing the text: "I love the location of this property, which is probably why I deal with the crazy amount of traffic and the overall price." To the right of this text is a "More▼" button. At the bottom of the screen, there's a "BACK" button and a footer note: "Created by techies - To help out other techies".

Once you click on this link then you will be forwarded to the review(s) for the chosen rental property. The review posts themselves will be displayed in the order date in which they were posted -- as newer posts will be appended to the bottom. As you can see, the quick view of each post has the post number, price per month, as well as the chosen emoji representation, and the overall thoughts.

Rental Details	More▼
Number of bedrooms: 3	
Number of bathrooms: 2	
Length of lease: one year	
Place furnished: No	
Type of lease allowed: Yearly	
Late Fee: \$35	
Late days allowed per month: 5	
Payment methods allowed: Direct Deposit, Mobile App & Checks	
Deposit amount: \$200	
Amount returned from deposit: \$200	
Itemized receipt given with deposit decution: No	
Utilities Included: No	
Appliances Included: Refrigerator, Stove Top, Oven, Microwave	
Cooling: AC	
Heating: Yes	
Parking: Street Parking, Assigned Parking	
Smoking Permitted: No	
Are pets allowed: Yes	
Pet deposit amount: \$0	
Pet weight restriction: 145	
Pet Size Restriction: Large	
Lawn maintenance is covered by landlord: No	
Landlord response time: 31	
Maintenance response time: 60	
Maintenance quality: The overall maintenance quality is decent. When it gets done, that is.	

If you click the *more* drop down button, then you will see the full details given for each response post -- as seen above.

After you are done reading each review and are satisfied with the investigation of the rental property, you may press the *back* button to navigate to our landing page.

It should also be noted that if you must advance to the landing page during the process of filling out a review form or at any time – simply clicking our banner '**Socorro Rental Reviews**' will advance you there.

The following are screenshots for a storyline -- on a rental for a house on 1212 Sean Av.



The screenshot shows a form titled "BASIC INFORMATION:" with a background image of a snowy landscape. The form fields are as follows:

- Rental Address: Sean Avenue, Socorro, NM, United States
- Rental Street Address: Sean Avenue
- Rental Unit: (empty input field)
- Rental City: Socorro
- Rental State: NM
- Zip Code: 87801
- Rental Country: United States
- Price per Month: \$ 1100 (with a dropdown arrow icon)

Price per Month

\$ 1100

Number of bedrooms:

3

Number of bathrooms:

2

Length of your lease:

one year

Furnished:

Yes
 No

Type of lease allowed:

Month-to-Month
 Yearly

Late fee:

\$ 25

Late days allowed per month:

2

Payment Methods allowed:

Check
 Mobile App
 Direct Deposit

Deposit amount:

\$ 700

Amount returned from deposit:

\$ 350

Itemized receipt given with deposit deduction

Yes
 No

NEXT >

AMENITIES:

Utilities Included:

- Yes
 No

Appliances Included:

- Refrigerator
 Stove top
 Oven
 Microwave

Cooling:

- AC
 Swamp Cooler
 Fan Only
 None

Heating:

- Yes
 No

Parking:

- Covered
 Garage
 Street Parking
 Assigned Parking

Smoking Permitted:

- Yes
 No

NEXT >

PETS:

Pet Allowed:

Yes
 No

Pet Deposit:

\$ 100

Weight Restriction:

200 lbs

Size Restriction:

Small
 Medium
 Large

NEXT >

LANDLORD:

Lawn maintenance covered by landlord:

Yes
 No

Landlord response time:

2

Maintenance response time:

7

Maintenance quality:

Maintenance is taken care of within a week's notice. Overall quality of maintenance is done quite well.

NEXT >

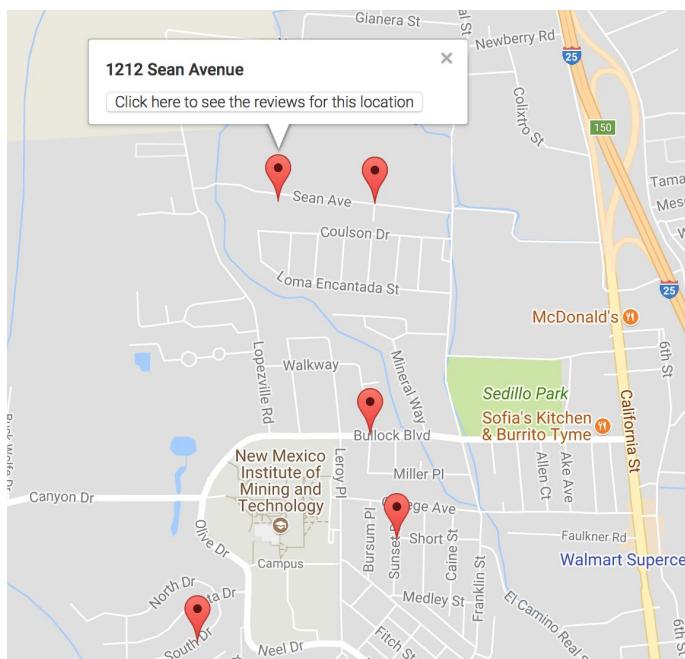
OVERALL:**Overall Thoughts:**

The house is quite far but overall quite beautiful, and the current landlord is decent at maintaining the property.

Overall Rating:**NEXT >****SOCORRO RENTAL REVIEWS**

CONGRATULATIONS!
YOUR REVIEW HAS BEEN SUBMITTED.

Thanks for helping other Techies find a great place to live :)

Return to Home Page >

— Rental Review for 1212 Sean Avenue —

All Rental Review for 1212 Sean Avenue

Post #26
Price: \$1100

Rental Rating: 😊

Overall thoughts:
The house is quite far but overall quite beautiful and, the current landlord is decent at maintaining the property.

Rental Details		More▼
Number of bedrooms: 3	Number of bathrooms: 2	
Length of lease: one year	Place furnished: No	
Type of lease allowed: Yearly	Late Fee: \$25	
Late days allowed per month: 2	Payment methods allowed: Direct Deposit & Checks	
Deposit amount: \$700	Amount returned from deposit: \$350	
Itemized receipt given with deposit decution: No	Utilities Included: No	
Appliances Included: Refrigerator, Stove Top, Oven, Microwave		

Cooling: AC
Heating: Yes
Parking: Garage, Street Parking
Smoking Permitted: No
Are pets allowed: Yes
Pet deposit amount: \$100
Pet weight restriction: 200
Pet Size Restriction: Large
Lawn maintenance is covered by landlord: No
Landlord response time: 2
Maintenance response time: 7
Maintenance quality: Maintenance is taken care of within a week's notice. Overall quality of maintenance is done quite well.

Frequently Asked Questions

Where do I find my posted review?

You may click on the ***Return to Home Page*** hyperlink or our banner '**Socorro Rental Reviews**'. Once you are at the landing page then scroll down, toward the map. There you will find your red pin at that property's location. Clicking on the current pin will allow you to choose the "***Click here to see the reviews for this home***" hyperlink -- and will immediately direct you right to your post as well as others that may have left a review for that property.

How do I post a review?

You can post a review by clicking the "Create A New Review" button that is located below our about section and above our interactive map.

7. Conclusion

7.a. Summary of Completion

The features we integrated within our system are as follows:

- Implementation of an overall rating that is easy to understand
 - We incorporated this by creating several sets of questions one would likely want to know when searching for a rental property. We also integrated emojis into our rating system. This is a simple and interactive way of representing a user's overall experience.
- Tech email verification
 - In order to submit a review, each user must enter their student email to verify they are in fact a student at Tech. This keeps integrity within our website, as we only allow our fellow techies to post reviews.
- Set templates for Detailed Reviews and Ratings
 - Each user will be requested to fill out four separate sets of questions and an overall review which includes a comment box and an emoji descriptor.
- Marker Placement within Map
 - The interactive map utilized enables users to truly see the location of their property within Socorro. By storing the latitude and longitude coordinate pairs within our database, we can retrieve all the locations that have reviews and place a marker on the map. This creates a chance for the user to read other reviews posted for various properties around Socorro.
- Google Maps' Application Program Interface

- We thought we would be unable to perform this task; however, integration with Google Maps API allowed us to go beyond our goals and create an interactive map with accurate markers.
- Used Prepared Statements
 - We utilized prepared statements to try and prevent SQL injections.

7.b. Future Updates

Although the functionality of our website is great, we always aspire for more from our system.

Three main goals for the future of our website would be:

1. Email Verification to Users:

We were unable to send an email verifying each user's submitted email. Instead we are currently parsing the string entered to make sure it is valid by ending with "@student.nmt.edu". However, sending an email to our users is more sophisticated and would be a practical advancement for our website.

2. Login for Various Users:

This feature was not implemented because we did not necessarily have the traffic volume that requires a login scheme. However, we do see a need for one in the future of our website, as a user may need to go back and edit an erroneous post they may have submitted or to simply delete their post.

3. Rental Reviews Expansion:

Our website could potentially be used beyond the scope of Socorro; however, our users would no longer be limited to only *New Mexico Tech* students. We would

essentially require both the Email Verification and the Login system integration to be complete at this time of extension.

References

- I. <https://www.airbnb.com>
- II. <https://www.angieslist.com>
- III. <https://foursquare.com>
- IV. <https://www.glassdoor.com>
- V. <https://www.google.com/maps>
- VI. <https://www.tripadvisor.com>
- VII. <https://www.yelp.com/>