

Redesign of the Starlight Inn Huntington Beach Website

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Executive Summary

Goal

We set out to evaluate and redesign the Starlight Inn Huntington Beach website (<http://starlightinnhuntingtonbeach.us>). After our evaluation of the website, we found that the type and quality of information the website provides as well as the hierarchy of information displayed were the main problems. We did further testing to inform us on what redesigns were appropriate and came up with the following suggestions.

Methods

Here were the methods used:

- Competitive Analysis
- User Studies: Interviews + Survey
- Usability Study: Usability Tests + Cognitive Walkthroughs

Findings

Specific issues found:

1. Misleading labels
2. Disorganized information
3. Lack of feedback
4. Lack of error prevention
5. Lack of conventional standards

Redesigns based on issues:

1. Clarify Labels
2. Reduce Clutter
3. Provide Feedback
4. Add Contact Information
5. Enlarge Images

Deliverables

This report will deliver the following:

- A detailed analysis of direct and indirect competitors' websites and their target users;
- Findings on Starlight Inn's target population and booking websites' general audience;
- Three personas representing our stakeholders;
- Findings on Starlight Inn's website usability;
- Five themes of problematic design elements discovered through usability study; and
- Five evidence-based redesigns.

Introduction

The Product

The product that we redesigned is the official website for Starlight Inn at Huntington Beach (<http://starlightinnhuntingtonbeach.us/>). The website can be found simply by searching the name and location on a search engine. Not much is known about this place as the about page of the motel is not functional. Based on the lack of proper presentation online, it is likely a small business owned by a private party.

Given the lack of documentation on the business or its owners, we are not able to say for sure how old it is or what, if any, changes were made. According to information recorded on Google Maps, our product has been around since at least 2008. At that time the place looked very similar to how it looks now.

The original product allows anyone who is interested to view hotel related information, to book a room, and to contact them for further information. On this website, users can find information including:

1. Ratings from TripAdvisor.com and from unknown sources;
2. The postal address of the inn;
3. Interior and exterior pictures of the hotel;
4. Three separate embeds of Google Maps with the hotel focused at the center;
5. Types of room available;
6. A short paragraph of the services provided and landmarks around the hotel;
7. A list of hotel and room amenities;
8. A list of hotel policies; and
9. A short paragraph describing the City of Huntington Beach.

Services that the website provide include:

10. Changing the preferred currency, which will be used to show the predicted reservation price;
11. Booking rooms with self-selected check-in date, check-out date, number of rooms, number of adults, and number of children;
12. Showing the average reservation price for both types of room based on information entered;
13. Contacting the hotel using a contact form;

14. Viewing your reservation by entering a special ID provided and the email address used to book a room; and
15. Subscribing to the inn for news and offers.

Our Goal

After our initial evaluation of the website, we discovered that a few aspects of the site violate basic interface design guidelines. There are two areas of improvement in the website that stand out the most:

- The type and quality of information the website provides; and
- The hierarchy of information displayed.

To confirm that the areas we identified as problematic are perceived in the same way as users with no UX design experience, we conducted user research to understand how these problems are perceived by users. These forms of research included both interviews, and surveys. From the resulting data, we furthered our redesign process by constructing various usability tests.

To ensure that all of our redesign suggestions for these problematic areas are evidence-based, we conducted user studies and cognitive walkthroughs in these confirmed problem areas. With a deeper insight provided by these usability tests, we were able to produce evidence-based redesigns. Though we aimed to provide plans for improvement, our intentions throughout the process was not to uproot the website completely or severely change the processes that are already in place. Instead, we aimed to provide redesigns for already existing features of the website.

Competitive Analysis

Abstract

To have a better understanding of Starlight Inn and where it stands, we first conducted a competitive analysis. Competitive analysis will help us evaluate the competition, such as what competitors are doing right, wrong, and reasons customers would go to Starlight Inn.

The following are procedures we followed when conducting our competitive analysis:

1. Defining direct or indirect competitors according to value proposition and user base.
2. Evaluating advantages and disadvantages of each competitor.
3. Evaluating the user base of each competitor.

What did we do?

We first came up with a list of possible competitors that offered similar services to consumers, which is to allow consumers to book and edit reservations for a place to stay overnight.

These competitors included the Huntington Beach Inn, Hyatt Regency: Huntington Beach Resort and Spa, Expedia, and Airbnb. We learned that the Huntington Beach Inn and Hyatt Regency were direct competitors, while Expedia and Airbnb were indirect competitors. Following this, we analyzed the different services each competitor offered along with what they were doing right, wrong, and the user base.

What did we uncover?

We discovered some characteristics of our competitors in comparison to Starlight Inn. Huntington Beach Inn provided more functionalities for consumers than Starlight such as a guide of things to do around the area, select room filters, and the ability to compare select rooms. Hyatt Regency provided services beyond the scope of the main value proposition such as external reservations (restaurant or catering booking). Expedia acted like a search engine for users to find places to stay at with its price matching feature and Airbnb listed places to stay at rather than a primary location. Although they had different value propositions than Starlight Inn, they had features that potentially caused Starlight Inn's users to choose to stay elsewhere.

Direct Competitors

Huntington Beach Inn

Link: www.huntingtonbeachinn.com

Description

Huntington Beach Inn is a booking website for Huntington Beach Inn, a hotel also located in the same city as Starlight Inn. Users are able to look at available rooms and book them.

Value Proposition

Similar to Starlight Inn's booking website, the value proposition of this website is to allow customers to book, modify, or cancel reservations in the hotel. In addition to allowing customers to browse through available rooms and rates, the website provides additional details about their services and amenities as well as photos of the rooms just like Starlight Inn.

Advantage

This competitor provides more functionalities than the final product. For one, it also provides a guide of things to do around the area as a way to get the customers interested in activities to book a room. Furthermore, Huntington Beach Inn's website allows customers to select a wider range of room type filters and the ability to select rooms they want to compare whereas Starlight does not offer these features.

User Base

This website has the same user base as Starlight Inn's website consisting of all people looking for a hotel to reserve such as tourists of the city, people traveling for business or vacation, or people in the city.

Hyatt Regency: Huntington Beach Resort and Spa

Link: <https://bit.ly/2IYr6qC>

Description

The Hyatt Regency is a resort that is also located in Huntington Beach. On its website, users are able to book rooms to stay in, or cancel reservations they have previously made, amongst many other things.

Value Proposition

The primary value proposition of both the websites for the Starlight Inn and the Hyatt Regency is to offer users who are looking for places to stay in Huntington Beach details about the rooms available, and to give them the ability to reserve a room or cancel a reservation they have previously made.

Advantage

The functionalities and feature sets that make up the primary value proposition for both websites are largely the same. On both websites, users are able to check rates for rooms, make or cancel reservations, review images of rooms available, read about the property's policies and amenities, see other customers' reviews, and access contact information for the property.

The difference between the two websites is that the Starlight Inn stops after providing the minimum, necessary services that the user would be looking for, while the Hyatt Regency offers additional features that are beyond the scope of the primary value proposition. For example, Hyatt Regency allows users to sign up and become members of the "World of Hyatt" to gain access to more deals and discounted rates, and collect points for future rewards. Additionally, the Hyatt Regency website allows its users to make reservations at on-site restaurants, book spaces for weddings or conferences, and book catering services.

The overall quality and aesthetic of the Hyatt Regency website is also noticeably better than that of the Starlight Inn. The organization of the information on the Hyatt website is more clear. Even the pictures provided on the Hyatt website are much higher quality than those provided on the Starlight Inn website.

User Base

The Hyatt Regency and Starlight Inn share the same user base. Even though the Hyatt Regency offers other services like wedding accommodations and spa services, its main purpose is to provide all the same services that the Starlight Inn does. The additional features and services are just away to attract more customers' for the main goal of selling more rooms to people looking to stay in Huntington Beach.

Indirect Competitors

Expedia

Link: www.expedia.com

Description

Expedia is a travel booking website, on which flight and hotel booking are the primary functions. Searching for a hotel on Expedia.com, we can enter a destination, a hotel name, an airport, a train station, a landmark, or an address. Expedia immediately provides a list of hotels sorted by recommendation. The website then allows users to customize how the results should be filtered and sorted.

User Base and Value Proposition

The main difference between Expedia and our product is that Expedia, like a search engine, provides a variety of choices, while our product is built solely for one hotel. Expedia and Starlight Inn share a common user base, which is anyone looking for somewhere to stay in Huntington. However, the target audience is slightly different for the products. While Expedia is focusing on travelers who do not have a hotel preference, Starlight Inn is focusing on returning customers and customers who already know about the hotel. Despite of this difference, Expedia.com is still an indirect competitor to StarlightInnHuntingtonBeach.us because Expedia's price matching feature may cause travelers to choose hotels other than Starlight Inn.

Airbnb

Link: www.airbnb.com

Description

Airbnb is a website that connects people with available living spaces (spare rooms in their home or a full apartment/home) with other people looking for a place to stay in that area. The user base is similar to that of the main product. It consists of people looking for a place to stay in Huntington however, it is not limited to this location.

User Base and Value Proposition

Airbnb offers a slightly different product in that it does not have a central property location but rather multiple postings in the areas. This can be looked at as either a positive or a negative. On one hand, being flexible with where you stay can be appealing to those who may not like the location of the property you have available. From another perspective, specific location choices are not always available as they are based on

community postings. Our product will always (assuming it's not fully booked) have the same location available.

User Study

Abstract

We aim to tailor the functionality and information presentation to the users' wants and needs. To do that, we need to conduct a user study. User studies will allow us to gain more insight on our users to further understand how they think.

Our methods of user studies include surveys and interviews, which focused on the following high level questions:

1. What is our user base?
2. How does travel fit into their lives, in general?

We then identified factors that may help us answer those questions. The following statements summarize our main objectives in this study:

- Discover how traveling and vacationing fits into a person's lifestyle;
- Discover pain points that people experience with booking websites;
- Discover appreciated features users enjoy during their booking process; and
- Understand the process people go through in order to pick the booking platform to use.

After identifying the objectives, we began to build our interviews and surveys. We structured our questions by keeping them simple and straight to the point. We avoided biased or leading questions, and included follow up questions that help guide the participants towards staying on task and on topic with our objectives.

Who did we analyze?

For our research on user population we conducted eight interviews and sent out a survey receiving thirty-four responses, twenty-nine of which were useful to us.

We were able to uncover some trends, however they are likely skewed due to the fact that the majority of our participants were students at University of California, Irvine (UCI). As such, these statistics and findings are skewed more towards the student market segment of hotel booking. This consists of unmarried, full-time students between the age of eighteen to twenty-four.

What did we uncover?

We observed a few characteristics that are common across a majority of our participants. Those characteristics include:

- Our user population mainly travels for vacation purposes;
- They book through third-party websites for convenience in comparisons, mainly in price;
- The most influential information for a hotel are reviews, then pictures, and finally textual descriptions of the hotel;
- The most important functional aspects are efficiency, ease of use, and information availability;
- Ultimately, users value the content displayed on the page more than the functionality or features the page may support; and
- Price seemed to be the most important decision factor.

Target Population

Starlight Inn's target population includes those who are on a budget or are looking for a quick, convenient place to stay in Huntington Beach. Some groups we analyzed when considering which umbrella term to use on the whole target population include:

- Tourists;
- Travel salesmen; and
- People desperate for housing, either because they have been displaced from their home unexpectedly, or because they have last minute travel plans.

Some groups that we analyzed that are not the target audience include:

- Users of mainstream booking services like Expedia or Booking.com; or
- Customers that are looking towards other properties at higher price points, such as, resorts.

The direct stakeholders of this project will be the owners of Starlight Inn at Huntington Beach, the staff who work at the Inn, as well as the people who stay at the inn. Some indirect stakeholders can include many businesses in the area, depending on who stayed at the inn. Touring points, parks, and other landmarks profit when tourists stay at the inn. Businesses and their customers profit when travel salesmen stay at the inn.

Methods

To define our user base and to understand how travel fits into their lives, we decided to use interviews and surveys. Through both methods, we only kept answers from people who have booked, or have tried to book, a hotel at least once.

Interviews

Our first method was conducting interviews; a total of eight interviews. Our interviews averaged thirty to forty-five minutes long. The interview protocol mostly consists of open-ended questions, and accounted for a few different directions that the participants could have gone in by providing multiple sets of follow up questions (The full script is available in *Appendix 2.0 Interview Protocol*).

To ensure that we were interviewing people generally from the right audience, we filtered potential participants before recruiting them. We would ask, “Have you ever booked, or tried to book a hotel before?” If they answered yes, then we would proceed to ask them if we could interview them.

We analyzed our data by using an affinity diagram. Each team member created as many sticky notes needed per set of interview notes. Then, we consolidated our findings, sorted our notes into common groups, and analyzed the different categories that surfaced.

Surveys

Our second method was sending out surveys. Our team collaboratively came up with a collection of questions to deploy. The platform we used to make our survey was Google Forms. Our survey takes about five minutes to complete, and is composed of mainly closed-ended questions, with a few open-ended questions mixed in as well (The question list is available in *Appendix 3.0 Survey Questions*).

We recruited participants mainly by messaging people directly, asking if they could fill out the survey, or by posting the survey link on various social media platforms asking those we are connected with to fill out the survey.

To analyze our data, we made mostly bar graphs to clearly compare our quantifiable data. For free response questions, we categorized them and created general terms or phrases that encompass the general answers for that question.

Findings

From the interviews and surveys, we uncovered the general preferences of booking methods. The problematic design elements that we eventually decided to mend began to surface in this stage as well. Details about our findings from each activity are discussed in this section.

Interview Results

Our interviews focused on gathering rich data and gaining deeper insight on our objectives. In total, we conducted eight interviews. Our findings helped us grasp a better understanding of how travel fits into people's lives, their likes and dislikes of the booking process, and the general approaches people take to booking a hotel room. Through the analysis of the interview results, we found many characterizing facts that helped us understand our target audience on a deeper level. Some topics that our key phrases cover include website aesthetics, booking process preferences, and the effects price has on making a booking decision.

The majority of the categories that surfaced while creating the affinity diagram fell under the topic of website aesthetics. The category titles include the following:

- Too much information on a website creates clutter and makes my task harder;
- Pictures greatly influence my decision on a hotel;
- Information on booking website should be organized and concise; and
- I start my search with Google

Some of the recurring topics and points of interest that kept on coming up in interviews included pictures, website aesthetic, and also the importance of reviews. Most of our participants heavily stressed their reliance on third-party booking services for the purpose of price comparison.

Survey Results

Our surveys focused on collecting more quantifiable data. Our survey questions aimed to collect some data on demographics while also focusing on gaining more clarity on our objectives. Our key findings cover the effects price, location, duration of stay, availability of amenities, and website aesthetics have on people's booking decision and overall experience. In total, we received thirty-four responses, twenty-nine of which were useful to us (five participants had not booked a hotel before and took the survey anyways). The following sections depict our main findings.

Demographics

From the survey result, we can tell that our respondents are mostly young adults at an age range of 18 to 24 years old (See Figure 1.1). That may cause part of our findings, those dependent on information collected from the survey, to only reflect young adults' perspective.

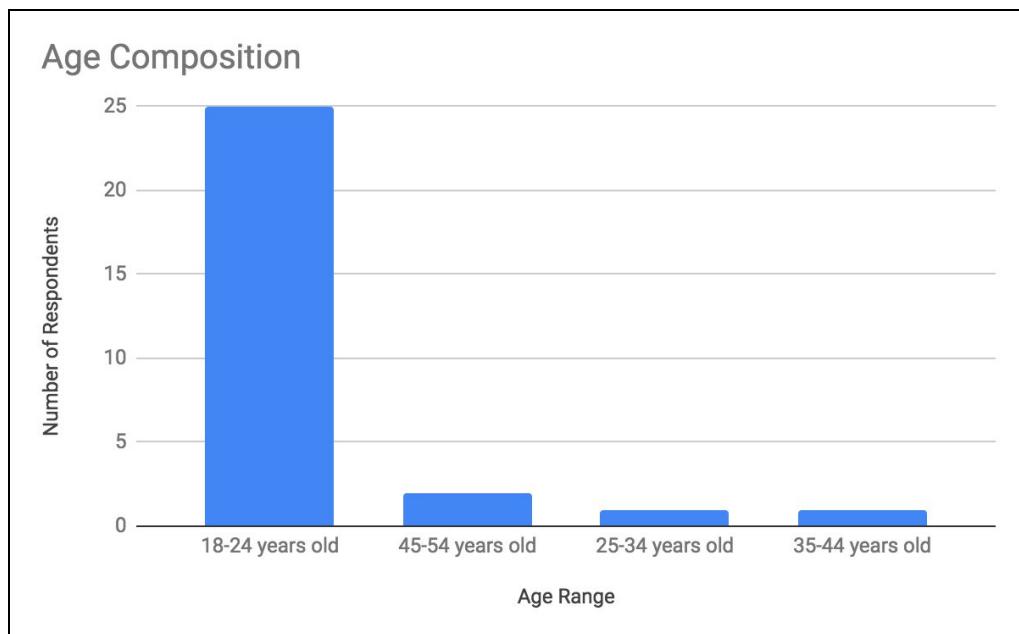


Figure 1.1: This bar chart shows the age range that our respondents fall in. There are twenty-five respondents that are between 18 to 24 years old; two that are between 45 to 54 years old; one that is between 25 to 34 years old; and one that is between 35 and 44 years old.

There are not enough respondents from other age ranges for them to be representative of the population. Therefore, our finding that 100% of the respondents prefer booking a hotel online rather than through other approaches may only apply to the young adults.

The gender composition of our survey is visualized with a pie chart in Figure 1.2. We provided the choices “Prefer not to answer” and “Other” for those who don’t identify through the gender binary; however, all of our respondents identified as either male or female. The choice to include “Other” was done in order to see what people would put. If they put something that was clearly a joke, for example, we would take a look at their other responses to verify their validity.

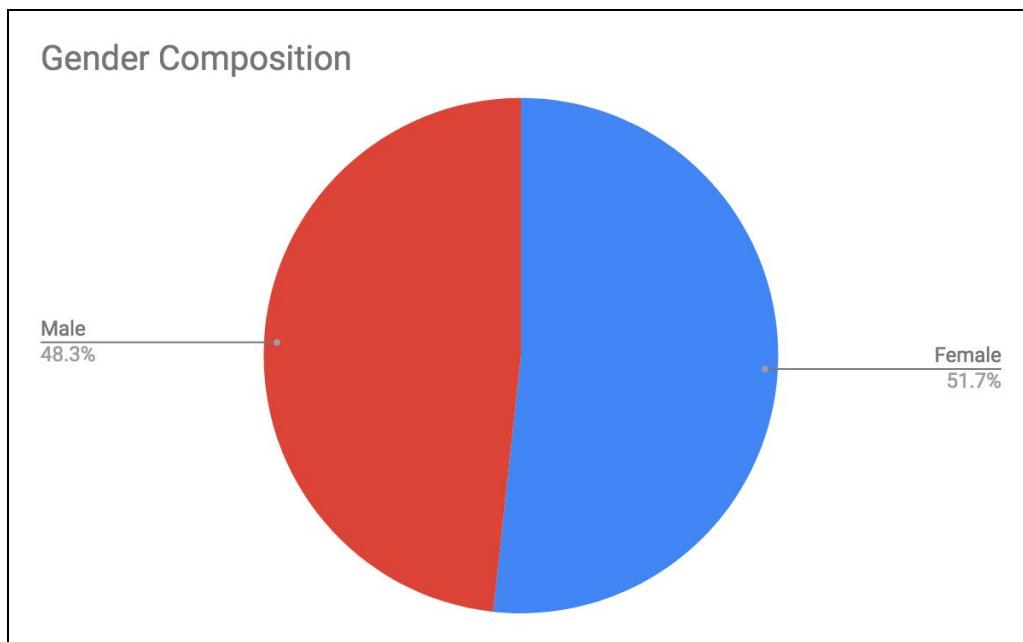


Figure 1.2: This pie chart shows the gender composition of our respondents. 51.7% of all respondents identify as female, while 48.3% identify as male.

We also collected data on the marital status of our respondents (Shown in Figure 1.3). We asked for the information in hopes that their answers could provide some insight on whether they differ in experiences or preferences. However, like the problem we had with age range, most of our respondents are single. That means that our conclusion cannot be representative of an entire population since it's not coming from a very diversified group when it comes to marital status.

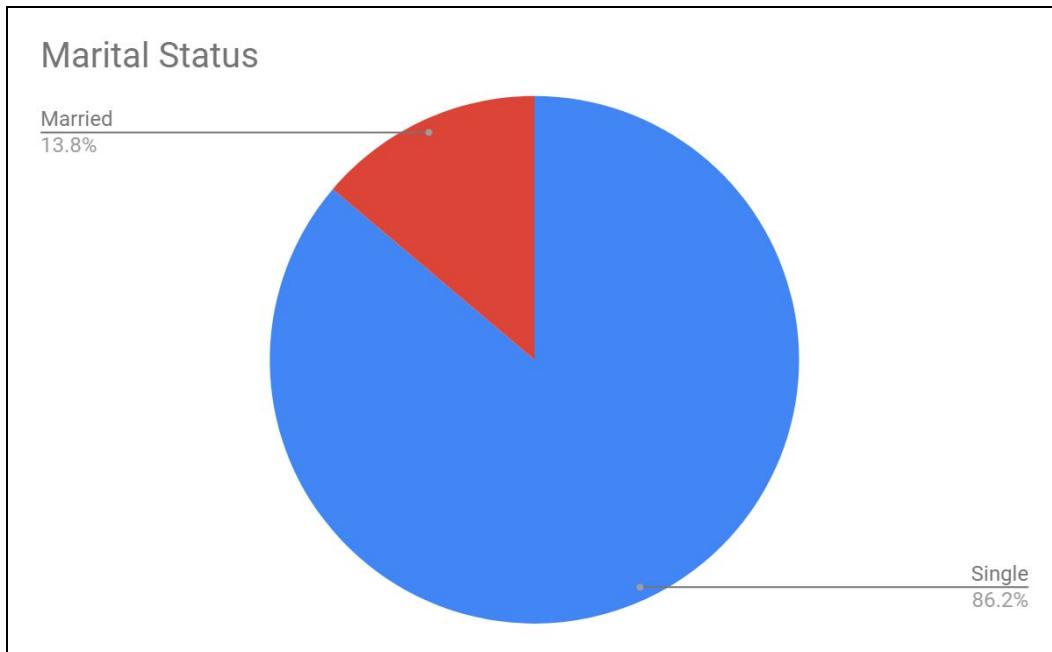


Figure 1.3: This pie chart shows the marital status of our respondents. 13.8% of all respondents report that they are married, and 86.2% report that they are single. We suspect that our results were so unbalanced because we were working mainly with the student population.

We asked for respondents' current employment status to get a sense of their background, as well as possibly gain some insight on their availability and ability to travel. Looking at Figure 1.4, a lot of our respondents are students. However, giving the overwhelming amount of students that took the survey, there wasn't a lot of data to compare against.

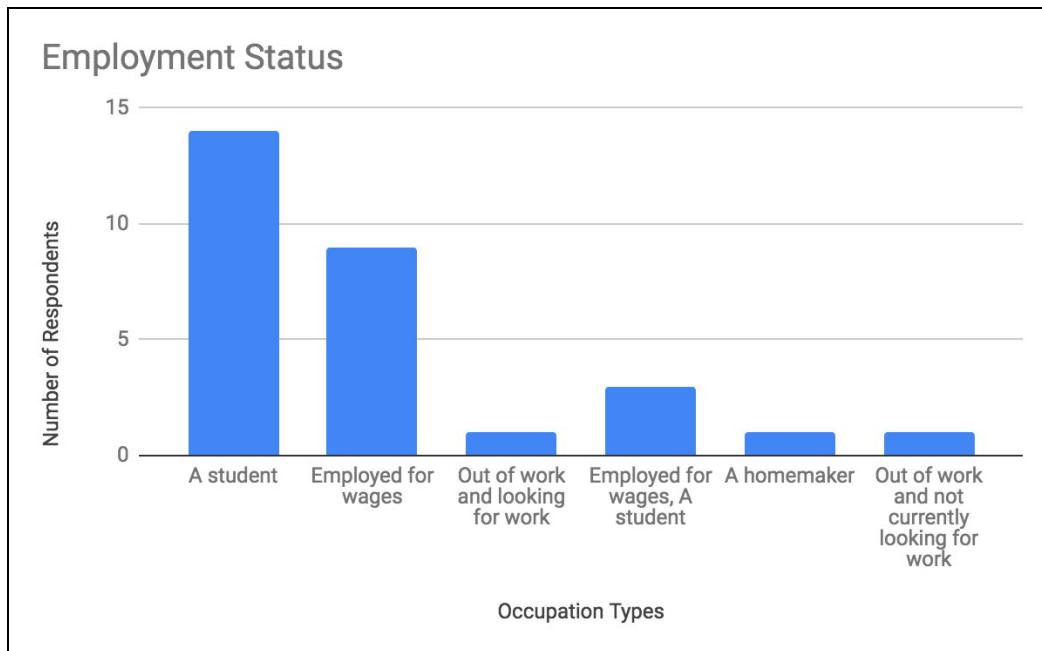


Figure 1.4: This bar chart shows the current employment status of our respondents. Fourteen respondents report to be students; nine are employed for wages; one is out of work and looking for work; three are student workers; one is a homemaker; and one is out of work and not currently looking for work.

Preferences

One of our objectives is to understand how travel fits into peoples' lives. To gain more insight, we asked what is the main reason for people to travel. As seen in Figure 1.5, the vast majority of our respondents travel because of vacation. Again, we believe that the results are so swayed towards just vacationing because the majority of our respondents came from the student body. Most students would not be working professionally yet, and thus would not have to travel because of work or business meetings.

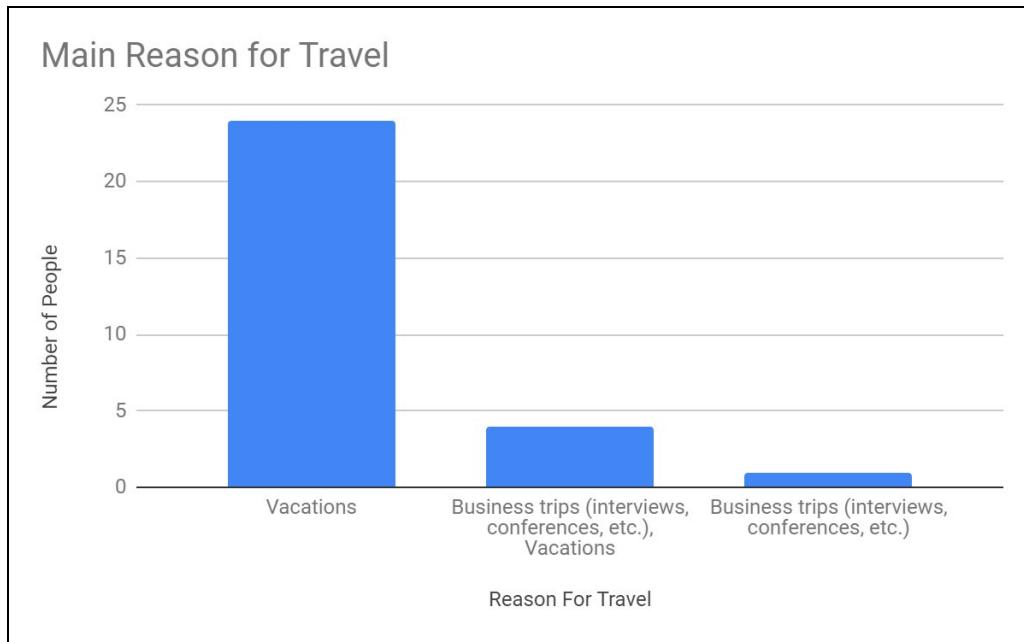


Figure 1.5: This bar chart shows the main reasons that our respondents travel. Twenty-four respondents answer that they only travel for vacation purposes. Four answer that they often travel for both vacation and business trips. Only one respondent answers that he or she mainly travels for business trips. No respondent answered that they traveled for emergency purposes.

Another relationship we wanted to see was between the respondent's duration of stay and the quality or types of amenities they look for in hotels. There were no significant findings for this question due to the relatively small amount of data we capture. As shown in Figure 1.6, the majority of our respondents looked for hotels to stay in for multiple nights at a time. Only around 4 respondents stayed for one night.

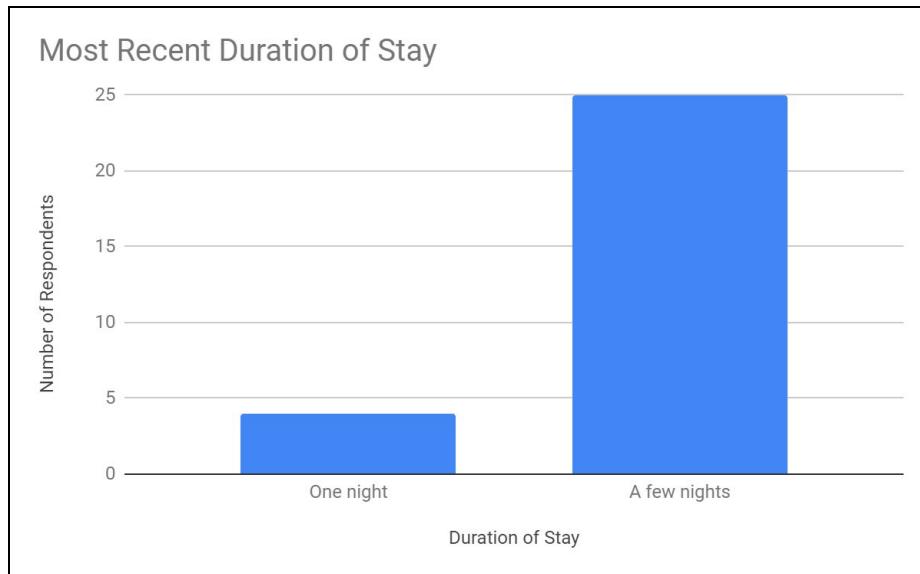


Figure 1.6: This bar chart shows our respondents' duration of stay in hotel(s) for the most recent travel. Four respondents reports that they only stayed for one night. Meanwhile, twenty-five responded that they stayed for more than one night, but less than one week.

Another important aspect we wanted to analyze was how users typically go about booking their rooms, whether it is normally through the hotel's direct website or through a third-party service. This information would be important to know, since having the users' platform preference would give us better insight on what type of features they like to have available. As seen in Figure 1.7, the majority of our respondents used a third-party website to book their hotel room the last time they traveled. Paired with our findings from our interviews, we can conclude that this can be because of the user's desire for convenience. It can also be because they like to compare prices when looking for hotels, which is an easier task on third-party websites than just going to each individual hotel's website.

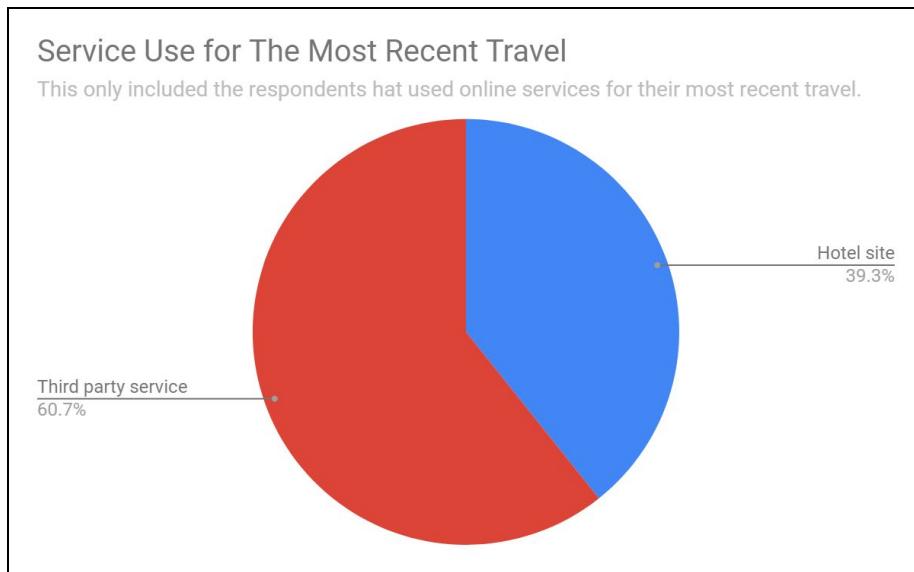


Figure 1.7: This pie chart shows how our respondents booked hotel for their most recent travel. This chart was created with one response eliminated, because the respondent believes that the question is not applicable to his experience. Of the twenty-eight respondents, 60.7% reports that they used a third-party service, or platform, to complete their booking processes, and 39.3% reports that they used the hotel's official website.

Because our main product is a website, we wanted to know what types of content on the page most significantly influences their decision to book a hotel. As seen in Figure 1.8, the most influential information on a website is reviews, followed by pictures, and then textual descriptions. The importance of pictures and reviews was also heavily emphasized in our interviews, as users often stressed that they would not book a hotel that advertised low quality pictures of the property or poor reviews. Users tend to put a lot of weight on what they see and what other people say about the property.

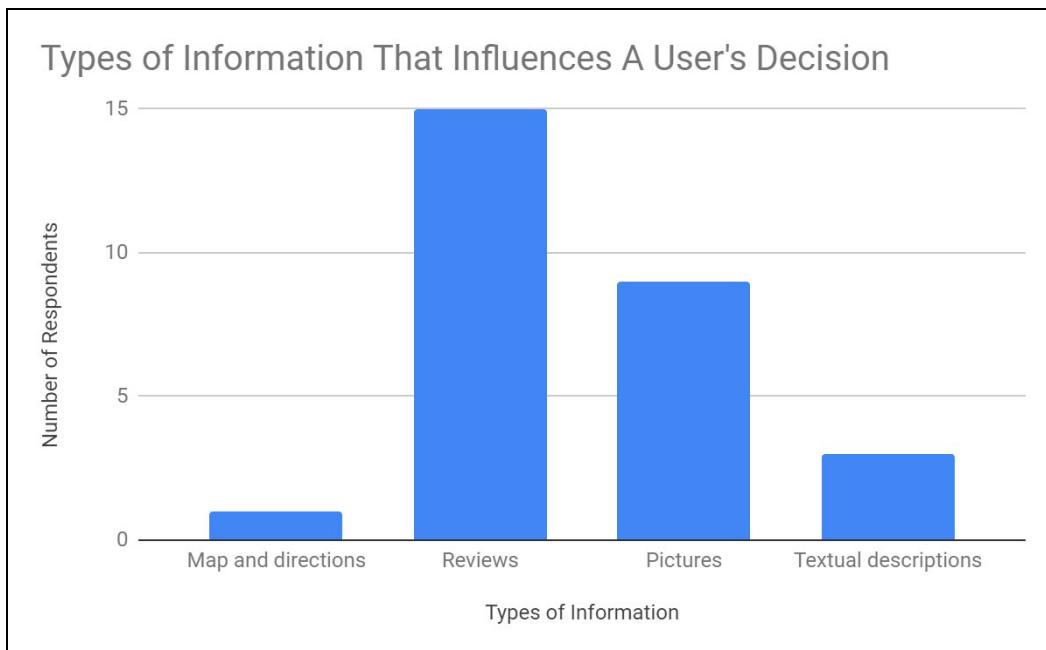


Figure 1.8: The bar chart shows the type of information that influence our respondents' final decision on whether they should book a specific hotel. One respondent reports that map and directions affect his or her choice; fifteen report that customer reviews do; nine think pictures do; and three think textual descriptions do.

Alongside the content on the page, we also wanted to see what types of functionality users value on a booking website. Respondents either responded with efficiency, ease of use, or information availability. Our reasoning for these choice was that either the users like a very quick booking process, which may demand more skill from the users and have higher levels of complexity when using the system. Or, the users would like the system to be very simple and easy to use, which may compromise some of the system's efficiency. Or lastly, the users may value the availability of the information they would like the most. As seen in Figure 1.9, most respondents valued information availability the most. While all these factors are ultimately very important to our respondents, the results in Figure 1.9 indicate to us that users value the the content displayed on the page more than the functionality or features that the page may support.

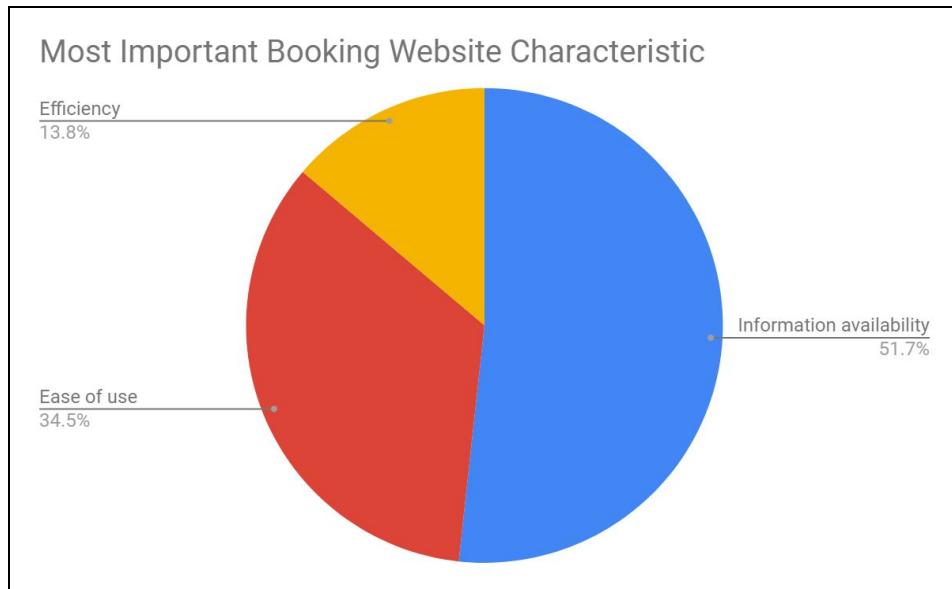


Figure 1.9: This pie chart shows the characteristic that our respondents think is most important to any booking website. Of the twenty-nine respondents, 13.8% thinks efficiency is the most important; 34.5% thinks ease of use; and 51.7% thinks information availability.

Out of all the factors and based on interviews conducted with participants, price seemed to be one of the most important. As a way to gauge the level of importance of price on customers, we asked respondents to rate its importance on their booking decision on a scale from 0 to 5, where 5 represents very important. We limited the rating to a scale of 5 to get more accurate ratings over a scale of 10. Our results gathered from the survey in Figure 1.10 shows a bar chart that indicates that users highly value price when making a booking decision.

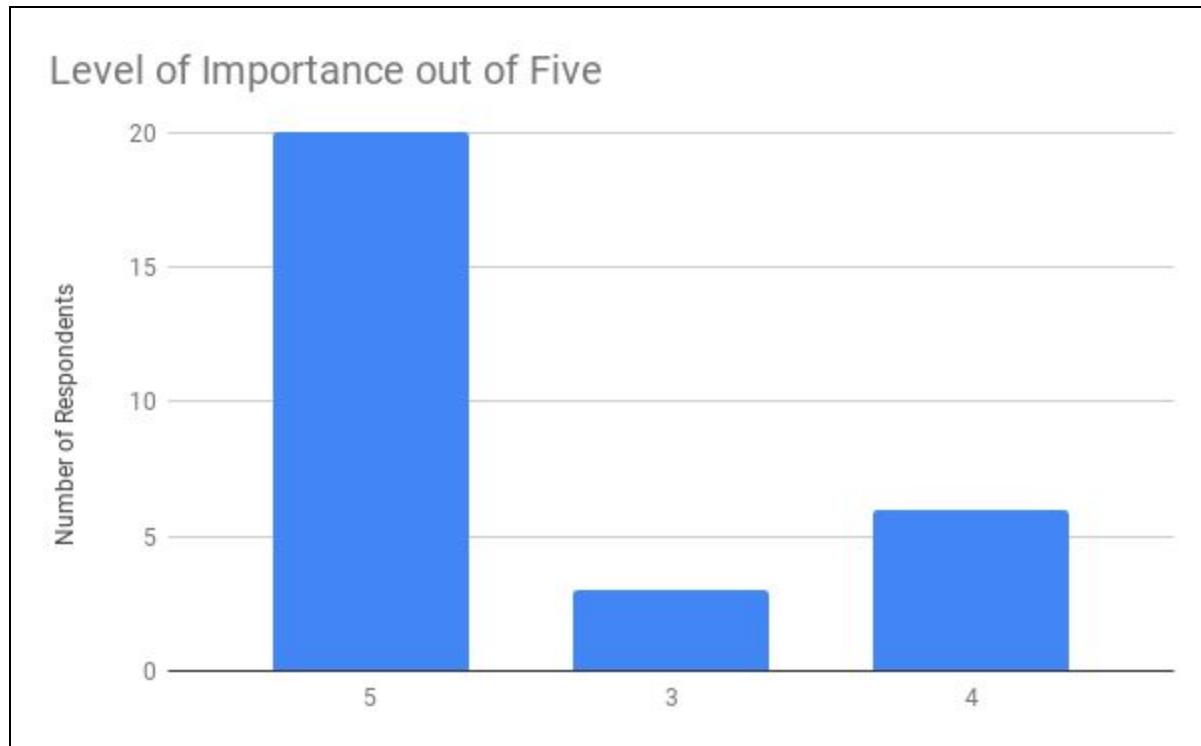


Figure 1.10: This bar graph shows how respondents rated the level of importance price has on their booking decision. Of the twenty-nine respondents, 10.3% said they would rate it a three, 20.7% would rate it a 4, and 69% said they would rate it at the max, a 5 out of 5.

Personas

Based on our user studies, we developed three personas that represent our target users. The three personas are Karen Chen, Jim Othy, and Angie Howard. The following table provides thorough descriptions of each persona, which were used to inspire the redesign, and keep the main desires of the user in focus while the redesigns were in development.

Name (Age)	Description and Skill Sets
Karen Chen (20) 	<p>Karen is an undergraduate college student majoring in Biological Sciences.</p> <p>Karen has experience booking hotels online in the past but is by no means an expert. She travels occasionally for school purposes. When she books, she likes intuitive interfaces and takes her time in the process. She wouldn't mind using other approaches to book a hotel if it's necessary. As a college student with no financial support from her family, she has to travel on a tight budget.</p> <p>Scenario: Karen will be out of town for a weekend conference for women in STEM. She does a lot of planning to ensure she books a hotel in an area where she can easily travel to the conference. She looks at amenities such as WiFi to be able to complete her work. Proximity to transportation is also important because she does not have a car.</p> <p>Goals:</p> <ul style="list-style-type: none">• Would like to find cheapest hotel offerings.• Wants to ensure that the hotel she goes to offers free wifi at least. <p>Tasks:</p> <ul style="list-style-type: none">• Compare prices of multiple hotels to make sure the price is competitive.• Verifies proximity to the places she is visiting <p>Roles:</p> <ul style="list-style-type: none">• Student: A full time undergraduate college student interested in biology.• Part-Time Worker: She works in order to make money for tuition and rent

Jim Othy (35)



Jim is a full time employee at a small accounting firm with a B.A. in Business Economics.

Jim travels regularly for business meetings and likes to be able to quickly access information without being bogged down by clicking onto other pages. He prefers websites that have minimalist design and show only the crucial information.

Scenario:

Jim opens an urgent email to find that he needs to meet with a client within the next few days. Because it is holiday season, he is concerned that he won't be able to get a convenient flight, or reasonable price for a place to stay. Untrusting of third-party booking services, Jim finds a small inn located near his meeting place. He goes on the site to check out reviews, pictures, and amenities provided. Once he's satisfied with the price, he proceeds to check out if the inn offers a room on the night he needs it. Seeing an opening, he selects the room, enters his information, and secures his room for the night.

Goals:

- Aims to find a hotel close to his meeting spot and close to the airport.
- Would like to book his room efficiently since he is given short notice of the meeting.

Tasks:

- View hotel's proximity to the airport.
- Compare prices of multiple hotel room offerings.

Role:

- Accountant: Prepares asset, liability, and capital account entries by compiling and analyzing account information.

Angie Howard
(19)



Angie is an undergraduate college student with an undeclared field of study.

Angie likes booking small, spontaneous trips around California and as such is experienced in hotel booking. She likes to have copious amounts of information available such as amenities. Her dad works at a Fortune 500 company so money is never an issue.

Scenario:

Angie has recently gone on spring break and is looking to spend some time away. She discovers that all the popular hotels in the area she wants to visit are fully booked. She has no option but to stay at a smaller hotel in the area. Wanting more information on the smaller hotel, Angie goes to the direct website to learn more. There, she reads about attractions in the area, amenities offered, and popular activities to do around the hotel. Convinced, she checks for open nights and books her room for her next getaway.

Goals:

- Have a good time
- Find new and exciting places to stay

Tasks:

- Cross check reviews of different locations
- Find open hotels to book at desired times

Role:

- Student: spends most of her time hanging out and studying with friends.

Usability Study

Abstract

With a better understanding of our users, we wanted to see if Starlight Inn's website functionality properly lines up with the expectations of our users. We want both designers' and users' reactions and input on the following areas of the website:

- Layout of information;
- Available functionalities; and
- Discoverability of information

What did we do?

To gather users' responses, we constructed a usability test that consists of four tasks. Separately, we showed five participants our four scenarios, one at a time. We instructed them to do what they believe will accomplish the goals as suggested in each scenario. We also requested that they follow the think aloud protocol, so we can note their thoughts.

During the test, we had one member act as the notetaker, whose job is to write down what the participants say and whether they have accomplished the tasks. We had another member act as the facilitator, whose job is to give instructions and observe participants' reactions revealed through facial expressions and body language.

To gather designers' responses, we conducted a cognitive walkthrough that consists of three tasks. Together in person, we figured out possible ways to accomplish each task and used UX design knowledge to comment on problematic elements encountered.

What did we uncover?

The usability tests revealed many negative aspects about the aesthetics of the website. They also revealed that smoking preference and cancellation policy are hidden to the users. Other than those two issues, our participants were not challenged by the functionalities of the website.

Issues uncovered in the cognitive walkthroughs include the following:

- The general layout of a page could be inconsistent to other pages;
- Several labels and icons do not conform to standards; and
- The same piece of information can be found in multiple locations.

Methods

To test the UX design of Starlight Inn's website, we invited potential users to participate in usability tests and completed cognitive walkthrough in a group.

From the usability tests, we provided all of the scenarios either on a separate screen or on paper, so participants could refer to them while they are performing the tasks. We carefully worded the scenarios to avoid instructing the participants (See *Appendix 5.0 Task Descriptions & Evaluation Protocol* Section 5.1 to 5.4 for the scenarios and their corresponding tasks).

From the cognitive walkthrough, we came up with tasks to focus on and went through each step of the tasks as a group. We recorded comments and critiques during the walkthrough, and reflected on the major action sequences at the end of each task (See *Appendix 5.0 Task Descriptions & Evaluation Protocol* Section 5.4 to 5.6 for the tasks).

Usability Test

Planning

Our first method of choice was usability tests. We developed our tests by first establishing some high level goals and experiences that our users would value. From there, we developed scenarios and tasks that captured the high level goals and experiences, then we mapped out the inputs, assumptions, steps, alternative steps, and success criteria for each task that we created.

To prevent the usability tests from taking more than forty-five minutes to complete, we only kept four out of all the potential tasks that we listed. The following table shows the tasks in the order that we asked our participants to complete them:

Task Number	Goal
Task 1	Book a room that allows smoking for one adult two weeks from now for a total of two nights.
Task 2	Find pictures of queen room with two queen beds.
Task 3	Find the cancellation policy.
Task 4	Contact the hotel.

Our success criteria for the tasks above goes as follows:

Task Number	Success Criteria
Task 1	<ul style="list-style-type: none">• Achieve the goal• Understand where they go to find the smoking information• Completed process within 10 minutes
Task 2	<ul style="list-style-type: none">• Achieve the goal• Useful and accurate information is gained from the pictures (e.g. the type of room it is)
Task 3	<ul style="list-style-type: none">• Achieve the goal• Find the policy without outside hints or guidance
Task 4	<ul style="list-style-type: none">• Found the “Contact Us” section on the top of the page• The items are findable

Further details on the tasks is available in *Appendix 5.0 Task Descriptions & Evaluation Protocol* Section 5.1 to 5.4.

The participants in our usability tests came entirely through our connections at UCI, resulting in participant types that ranged from student to professor (The participant log is available in *Appendix 7.0 Usability Test Log*). We recruited simply by asking the people we know or the professors we were connected with to participate in the study. In total, we had five participants for our usability tests. Each of our tests averaged twenty minutes, excluding ice breakers.

Executing

For each session, we would have one team member act as the facilitator and direct the meeting, and another team member act as a scribe so that the facilitator could focus fully on interacting with the participant.

The facilitator would ask the participant to follow the think aloud protocol so that the scribe could note the reasoning behind the participant’s actions. In addition, the facilitator would ask the participants to reflect on the process at the end of each task, to better understand the reasoning behind their immediate, more emotional reactions to each step they took (The general script is available in *Appendix 6.0 Usability Test Scripts*).

Analyzing

Individually, we listed out all of the notable actions, thoughts, and challenges that we discovered. We tagged each note by participant number and categorized them by task number.

Then, we went over the notes, one at a time, and grouped notes that share the same problematic design element. We struck out possible “outliers” -- notes that could only be found from one participant -- without getting rid of them entirely. We considered them more as secondary problems to solve than as insignificant findings, since we didn’t have sufficient data to suggest that they are unique problems faced by particular individuals.

After organizing the notes by similarity, we went over the groups and identified common themes. Finally, we prioritized the themes by severity in a descending order.

Cognitive Walkthrough

Planning

Our second method of choice was cognitive walkthroughs. Similarly to our usability tests, we developed our cognitive walkthrough tasks by establishing high level goals and experiences that the users would value. And from that, we would create the tasks needed to run our cognitive walkthroughs.

We selected three tasks from our potential task list. The following table shows the tasks in the order that we completed them:

Task Number	Goal
Task 1	Book a non-smoking room for one adult two weeks from now for a total of two nights.
Task 2	Get the price estimate for a room of two adult two weeks from now for a total of two nights in Vietnamese Dong.
Task 3	Contact the hotel.

Further details on the tasks is available in *Appendix 5.0 Task Descriptions & Evaluation Protocol* Section 5.4 to 5.6.

We selected Task 1, which is similar to but simpler than Task 1 in our usability test, because we wanted opinions from both end users and user interface designers about the core function of the website.

Task 3 of our cognitive walkthrough overlaps with Task 4 of our usability tests. We decided to make contacting the Starlight Inn the overlapping task between our tests for a few reasons. We acknowledge that using cognitive walkthroughs and usability tests each have their tradeoffs. Cognitive walkthroughs allow for expert analysis, but lack the insightfulness of a user's fresh take on a product that usability tests provide. For an action sequence as short and simple as this one, we decided that it would be the most vulnerable to our biases and assumptions. So, we decided to also run it through usability tests to ensure that we are not overlooking anything too obvious, or to uncover any user preferences that we may have made incorrect assumptions on.

Executing

Each session involved all four of our team members. Each member would rotate through the three following roles:

- One instructor, who reads out the goals and directions;
- One actor, who acts as instructed and shares predictions on what users will or will not do;
- Two scribes, who take notes on actions and reactions.

Each session lasted about twenty minutes on average. As the actor moved through the task, the scribes would take note of each action the actor performed.

At the end of each session, we would go through and collaboratively answer the four following questions for each major step in the action sequence:

1. What is the user trying to achieve at this point? (What is their goal? Why is it their goal?)
2. Are the necessary actions obviously available in the interface?
3. Once users see the control, will they recognize that it does what they want? In other words, does the label for the correct action match the user's goal?
4. If the user performs the correct action, will they get good feedback and not try to undo or redo the action?

Analyzing

We analyzed the cognitive walkthrough results using a very similar method that we used for usability tests.

Individually, we read through the answers to the questions listed in the previous section one set at a time. We wrote down the problems that had occurred or might occur. We categorized the notes by task number. For some tasks, we had subcategories that contain problems that we were aware of but were not encountered because of the way the actor was instructed.

Then, we roughly grouped notes that share the same problematic design element. We did not strike out any note this time, because they were all noted for violating design principles.

Finally, we went over each group and placed them under appropriate themes that we came up with previously.

Findings

From conducting our cognitive walkthroughs and usability tests, we uncovered five main areas of improvement for Starlight Inn's website. These areas include the topics of misleading labels, disorganized information, lack of feedback, lack of error prevention, and lack of conventional standards. The following sections will elaborate on our findings in each area.

Misleading Labels

The Show Price button which appears at the top of the homepage doesn't actually show prices. Instead, it takes the user down to the booking section of the page where they are presented with fields to enter check-in/check-out dates, a search button, and more Show Price buttons. But once again, the additional Show Price buttons are misleading, as they also do not show prices. If clicked, an error message appears, forcing users to fill out their dates, and click "Search" first.

This issue was encountered by Participant 3 of our usability test when she was trying to compare queen and king rooms in Task 2 (*Appendix 5.2 Task 2 Usability Test*). She wanted to see if she could get a price estimate for the queen room, clicked on Show Price, and showed confusion as to why it didn't show the price of the room.

Another example of a misleading label is the About tab located at the top of the page. Typically, an About tab would bring the user to a location where they can read additional information about the site. However, this tab provides no additional service. In reality, it functions exactly like the home button, taking the user to the top of the homepage. Because of this, it is a redundant tab that adds no additional value to the site. Furthermore, it is very inconsistent in its reliability, as its functionality depends on the page user is currently on when they are trying to click it. Through testing, we discovered that this tab only works when we are on the My Booking page. On all other parts and pages of the site, the About tab is either nonfunctional or not visible, as the tabs disappear when scrolling down the page.

This issue was encountered by Participant 2 of our usability test when she was conducting one of the tasks. She was on the homepage trying to find more information about the hotel when she clicked the About tab and questioned why it was not working. As explained earlier, it seemed unresponsive since she was already on the home page.

Finally, the Contact Us tab located at the top of the page is misleading because of method of communication it provides. We had Participants 2, 3, and 5 all click on this tab at some point and were surprised to find a form submission. They all commented that a phone number would be preferable and expected, stating things like “they should have a phone number” (*Participant 2*), “I would probably go on Google to look for the hotel’s phone number” (*Participant 3*), and “so I need to find the number” (*Participant 5*). Two participants even went as far as suggesting having a chat option to be able to instant message a representative a question (*Participants 1 and 2*).

Disorganized Information

Another main theme in our findings is information organization. Through both our testing methods, we found that the way Starlight Inn sorts its content slows users down in their attempt to complete their tasks, and hurts their overall experience with the site.

Instead of displaying the information that users would want upfront and obvious, the condensed masses of information on the website actually end up hiding a lot of things that users would need. Some of the concrete examples of this usability issue were gathered in the cancellation policy task, the smoking preferences task, and the change of currency preference task.

During Task 3 (*Appendix 5.3 Task 3 Usability Test*) of the usability tests, there were two ways to successfully find the cancellation policy:

1. Search for rooms, and hover over the “[i]” under the “Conditions” column to see the cancellation policy for that room; or
2. Select “Book Now” to proceed with the booking process and find the cancellation policy towards the bottom of the checkout page.

The majority of users bypassed the first, more convenient option because they did not notice it. Four out of six of the participants even attempted to look for this policy before searching for a room, by going to the Policies tab at the top of the homepage.

Generally, our participants had to try a few different paths to find the policy, revealing that this important information is located far from where they would expect to find it. This adds a lot more unnecessary time and inconvenience to the task, which takes away from the system’s ease of use and ultimately hurts the user’s experience with the system.

For the tasks involving smoking (*Appendix 5.0 Task Descriptions & Evaluation Protocol* Section 5.1 and 5.5), the main issue was similar to those found in Task 3. Smoking policies were not where the users typically expected to find them. All participants except one tried finding the smoking policy under the general amenities list or the amenities list provided under a specific room. But, smoking preference can be found inconveniently at the end of the booking process.

The change of currency preference task (*Appendix 5.0 Task Descriptions & Evaluation Protocol* Section 5.6) in combination with our competitive analysis informed our decision to replace the existing currency label with an icon more representative of the functionality.

Lack of Feedback

When evaluating the website, we found that Starlight Inn does not fulfill the golden rule in interface design of offering informative feedback. Although none of the participants from our usability test found any problem with the page, we were able to discover several issues through our contact us task in the cognitive walkthrough.

One example of this recurring theme is found in the Contact Us page of the website. During our cognitive walkthrough, our third task involved contacting the hotel. We discovered that when users select the Contact Us section, the page does not have a header or title informing the user that they are on the right page. Additionally, there is little to no feedback to inform the user if their input for each text box was correct. For example, there is no check mark or sign of confirmation when the user enters valid or invalid input. If a user enters letters for the phone number text box or an invalid email, the system does not inform the user that the information they put was incorrect until they attempt to submit the form. In which case, the system doesn't allow the user to submit the form, and simply highlights the incorrect section in red without providing an explanation for why the input is incorrect (e.g. the format users need to follow to enter the information and the type of character they should be using) or directions on how to fix it as seen in Figure 2.1 below.

The screenshot shows the 'Contact Us' section of the Starlight Inn website. At the top, the hotel's name 'STARLIGHT INN HUNTINGTON BEACH ★★' and address '18382 Beach Boulevard, Huntington Beach, US' are displayed. Below this is a form with four input fields:

- A first name field containing 'john'.
- A last name field containing 'lo'.
- An email field containing 'ranarixyl-7320@yopmail.c' which is highlighted in red, indicating an error.
- A phone number field containing 'kl' which is also highlighted in red, indicating an error.

At the bottom of the form is a green 'SEND' button. Below the form, there is a footer bar with a newsletter sign-up section. It includes a mail icon, the text 'NEWS & OFFERS', a text input field for 'Email Address', and a green 'SUBSCRIBE' button. The footer also contains the copyright notice 'Copyright© 2019 - All Rights Reserved'.

Figure 2.1: After hitting the Send button, the website merely provides feedback indicating that the input is incorrect by highlighting the email and phone number section in red. No

dialog is shown to explain to the user how to fix their input such as what is considered a correct email, that the phone number needs to be in numbers instead of letters, and the format for entering a correct phone number. It also fails to detect that their question is an invalid input and provide feedback about it.

Another example of a lack of feedback is apparent in the Booking section of the website. In our first cognitive walkthrough task (book a non-smoking room for one adult two weeks from now for a total of two nights), we noticed that the booking form also failed to provide feedback on the user's input for each text box, similar to the contact us form. For instance, as seen in Figure 2.2, the screenshot of the booking form below, the form does not inform the user if their input is valid.

The screenshot shows a booking form for Starlight Inn Huntington Beach. The form includes fields for traveler information, room details, and payment information. On the right side, there is a summary of the stay and total charges.

Who's traveling?
Please tell us who will be checking in. Must be 21 or older.

Room 1:

FIRST NAME *	LAST NAME *
Josh	Ban

Credit card Information for payment.

VISA	MasterCard	AMEX	Discover
CARD TYPE *	CARD NUMBER *		
Visa	56		
EXPIRATION DATE *	EXPIRATION YEAR *		
12-Dec	2033		
CARDHOLDER NAME *	CARD CVV *		
Josh Ban	6788		

Credit card information is required in order for us to guarantee your reservation. Your credit card will not be charged until your arrival at the hotel or the cancellation deadline has passed. We protect your credit card information. [See Privacy Statement](#)

Billing Address

DETAILS OF STAY

Starlight Inn Huntington Beach
18382 Beach Boulevard
Huntington Beach

1 Room: King Room
2 Nights: 2019-02-25 - 2019-02-27
Total Guest : 2

Mandatory Hotel Fees: Collected by hotel

Dates	Avg Rates/Room
02 / 25 / 2019	USD 75.00
02 / 26 / 2019	USD 75.00
Tax Recovery Charges and Fees	USD 21.00

TRIP TOTAL CHARGES USD 171.00
Trip charges are displayed in USD

Figure 2.2: The booking form does not inform the user whether their inputted information is correct. In this case, the user entered an invalid card number and cvv number but the form does not inform the user about their mistake.

Lack of Error Prevention

Another theme we discovered through our cognitive walkthroughs is the lack of error prevention, an important rule in the eight golden rules of usability. When trying to book a room in the booking form or trying to contact the hotel using the contact form, the site does not offer ways to prevent errors in user input.

As mentioned before about the lack of feedback when filling out the Contact Us and the booking form, the site does not inform the user why their input is invalid. This ties into the lack of error prevention because the site does not define the acceptable and unacceptable values for each text box as seen in Figure 2.1 and 2.2. For instance, there is no question mark icon shown next to a text field explaining what kind of information to input (e.g. number of characters, type of characters, format); this is a feature most sites have when there are forms to fill out as a way to prevent users from entering invalid information.

Moreover, another issue we noticed regarding error prevention is the site's Check Your Dates feature. The purpose of this section is to allow users to input check-in and check-out dates as well as room occupancy and the number of rooms to search and check whether the hotel has available rooms for booking. Under the Adults and Rooms click down bars, the site allows users to select up to 10 rooms and 20 adults. However, specifying the number of rooms and people doesn't always work. Putting a high number of either one of these values will return no results. For instance, booking 10 rooms is possible through phone calls, but the website will not show you available rooms for the same duration of stay. Therefore, the site fails to prevent these errors by allowing users to select more values than what the system can handle as seen in Figure 2.3 below.

The screenshot shows a hotel booking interface. At the top, there's a banner with a photo of a hotel sign for 'STARLIGHT MOTEL' and a room interior. To the right, a green box says 'Fabulous! ☀ 40 %' and another box shows check-in at 14:00 and check-out at 11:00. Below the banner is a map. The main search area has fields for 'Check-in' (03/10/2019), 'Check-out' (03/11/2019), 'Rooms' (10), 'Adults' (20), and 'Childs' (0). A 'SEARCH' button is next to it. To the right, a green box says 'REMEMBER PRICE GUARANTEE - when you book with us!' Below the search area, a red box displays the message: 'We have no availability for this hotel between 03/10/2019 To 03/11/2019' with a 'Change Date' link. Underneath, a section titled 'Near By Hotels' lists 'Best Western Surf City' with a rating of 'Excellent 8.5' and 291 reviews.

Figure 2.3: When the user selects 10 rooms and 20 adults, the system does not list any availability. It fails to prevent this error by allowing the user to select this many rooms and adults.

Lack of Conventional Standards

The last theme we explored was the lack of conventional standards. The problems that we found are not necessarily faults in the system, but they are inconvenient factors negatively affecting the user experience.

One challenge that all five of our usability test participants faced was that images are hard to see because of their sizes. On the homepage of Starlight Inn's website, there is a collection of images that visitors can click through. The image area is divided into two sections, top and bottom, as shown in Figure 2.4.



Figure 2.4: This is a portion of Starlight Inn's homepage. Website users can click the thumbnails at the bottom to see a slightly enlarged image on the top.

There are three problems that we discovered, the first being that the images are still small even when it is shown on the top section. That became a problem for Participant 3 when she was trying to distinguish all of the queen room photos from the collection above.

The second problem is that, unlike the competitors that we analyzed, the images do not play on their own. The website requires visitors to click through the images one by one, by clicking the arrows in either section. Furthermore, the small thumbnails of images at the bottom hints that visitors are able to go through more images by each click. Yet, visitors still have to go through one image at a time, because clicking the green arrows only moves one image forward or backward.

The last problem has to do with the sections only being partially linked. Clicking a small thumbnail at the bottom updates the upper section by refocusing to the enlarged version of the image selected. However, selecting an image will not change the thumbnail to accurately reflect the user's current position in the collection.

Images of rooms can also be found under the Amenities drop down from the search result. The room images are presented in small tiles as shown in Figure 2.5. It is difficult to take closer looks of the room interior because of the image size.



Figure 2.5: The photos of the room interior are shown under the Room Images section. They cannot be enlarged. Some, but not all, of the images can be found in the collection on homepage as shown in Figure 2.4.

Another area that was lacking in its conformity to conventional standards was the Contact Us section. The only way to contact the hotel is to fill out the form found in the Contact Us page. Each of our participants shared their preferred contact methods as mentioned in the Misleading Labels section. From all of their suggestions, we have discovered two common points: they want immediate feedback and they want more contact options. What the website currently has satisfies neither of those requirements. There is no way for the users to know when and whether they will get a reply, and the user is also not provided with any other alternative to contacting the hotel through the website.

Redesign

Abstract

The redesign report provides all of the issues addressed, redesign ideas considered, processes used, and evidence behind final redesign decisions for the Starlight Inn's website.

Using the results from the usability tests and cognitive walkthroughs, we identified five main areas of improvement for the website. The five targets we produced, in order of most to least important, include the following:

1. Provide clearer label names to ensure that they accurately reflect the content or button's action;
2. Provide more feedback on the Contact Us page;
3. Reduce the amount of information presented on the home page;
4. Add phone number, postal address, hours of operation into contact us page; and
5. Enable the users to enlarge the images of the hotel.

The high-level process we put each of the above targets through includes the following steps:

1. Using pencil and paper, individually produce twelve sketches total;
2. From the sketches, select and combine features to move forward with;
3. Develop wireframes with the selected features using an online prototyping tool, Moqups (<https://moqups.com/>); and
4. Refine the wireframes to produce the final, high-fidelity mockups.

Redesign One: Clarify Labels

Provide clearer label names to ensure that they accurately reflect the content or button's action

Problem

The labels of some buttons and tabs are misleading, causing the user to go to the wrong areas in search for the information they need, or performing extra tasks that distract from their main objective.

Evidence

Cognitive Walkthrough

During task 1 of our cognitive walkthrough, which was to book a non-smoking room for one adult two weeks from now for a total of two nights, we encountered the problem of misleading labels, particularly the Show Price button that is located in different places on the homepage. When attempting to find out the price of rooms to get an estimate before booking, we discovered that the Show Price buttons had no actual functionality and only resulted in more extra tasks. When the button was selected, we noted that no price would be shown. In order to find out the price estimates, it was actually required to first enter required check-in/check-out, rooms, and guests to search for rooms before prices would be shown. Thus, the Show Price button only distracted the main objective by causing confusion and extra unnecessary clicks.

Additionally, we also encountered the problem with unclear labels when completing the cognitive walkthrough task of getting a price estimate for a room of two adult two weeks from now for a total of two nights in Vietnamese Dong currency. The button to change currency is located at the top right of the page and is labeled USD. Although it is highlighted in green, it can be easily overlooked unless the user is specifically looking for the function. Aside from that issue, the design of the button gives little hints about its purpose. The button is labeled as "USD," but it is impossible to know what it does unless it is clicked. A drop down with the description, "Choose your preferred currency," appears only after the button is clicked.

Usability Evaluation Report

This problem was identified as an issue from usability tests. As mentioned in our usability evaluation report, when trying to complete the task of booking rooms, 4 out of 5 users thought ‘show price’ would give an estimate for hotel costs; this clearly indicates the button label does not accurately communicate its functionality to most users. When users clicked this button, they would not be shown a price for the room type. Instead they would have to click on the check in and check out dates first before proceeding. This led to confusion because users expected the action to reflect the button’s label. Clearly, the presence of the “Show Price” buttons adds no value to the user’s experience as these users wasted time in their task by clicking these buttons since they believed it would present them a price.

In addition, one of the tasks users had to complete was booking for a room that allows smoking. We noticed that all five participants had a hard time finding the smoking policy, with three users that concluded that only non-smoking rooms were available because the amenities section listed non-smoking rooms with no other information about smoking rooms. Users only found the option to select a smoking room when they got to the booking form.

Seeing our users take the wrong paths allowed us to see where they expected to find this information, influencing our ultimate goal to rename labels in a way that would not mislead them.

Process

Throughout the redesign process, we had a range of sketches and designs proposed:

- Under room availability section, replace adults and childs drop down menu for with “Guests.”
- Combine check-in and check-out fields into a duration of stay.
- Make check-in and check-out use the same calendar (2-month view).
- Show search result/room detail ONLY after user clicked “Search.”
- Change USD to the swapping symbol for currency
- Remove the “Show Price” button on the top of the page and from the check available rooms section since the button does not provide functionality.

After going over each member’s ideas we decided on the following redesigns:

- For the navigation bar, we changed the icon for the currency option from USD to a more universally understood icon to make it easier for users to tell what the button does. The icon that shows two currencies being swapped was taken from icon scouts, an online source icons used in designs.
- For the booking process, we removed the Show Price button at the top of the page and moved the booking area up because the button had no real functionality since users have to search for rooms before finding out about the price.
- In the checking for room availability section, we changed adults and childs label to “Guests” because the cost for adults is the same for children.
- In the checking for room availability section, we added smoking and non-smoking preference radio buttons to make it clear to users that they have the option.
- For the check-in and check-out date selections, we decided to display both calendars at the same time rather than displaying the calendar for check-in date first and then displaying the calendar for check-out date next. In a sense, this would allow users to view both date selections on the calendar.
- Initial search results such as king and queen bedroom are removed before dates are entered and a search is pressed.
- Removed the “Reservation” column label because it serves no purpose as a label in the checking for room availability section.

Results

The following sketch (Figure 3.1.1) is a sketch depicting the idea of providing clearer labels for the navigation bars. The main idea we took from this sketch was to change the currency button to a clear icon that better indicates the affordance to change currency.

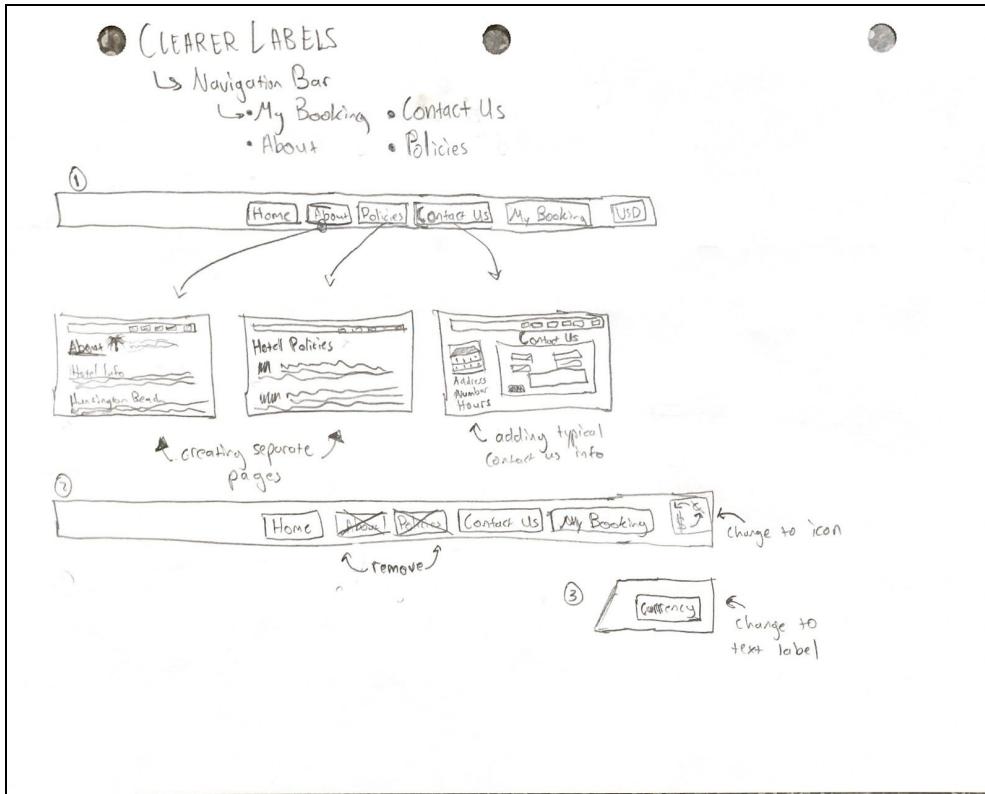


Figure 3.1.1: Sketch one shows the navigation bar with their respective added or re-designed pages linked to them. The about page is a new page that contains stuff like hotel info and huntington beach info from the homepage. Hotel policies adds a new page with all the policies and leaves only top/common ones on the homepage. The contact us form includes the addition of typical contact us information (address, number, and hours). In sketch two we see the ditching of the about and policies tab all together and change of the USD label to an icon.

The following sketch, Figure 3.1.2, goes over the idea of having clearer labels by removing the Show Price button because of its misleading label.

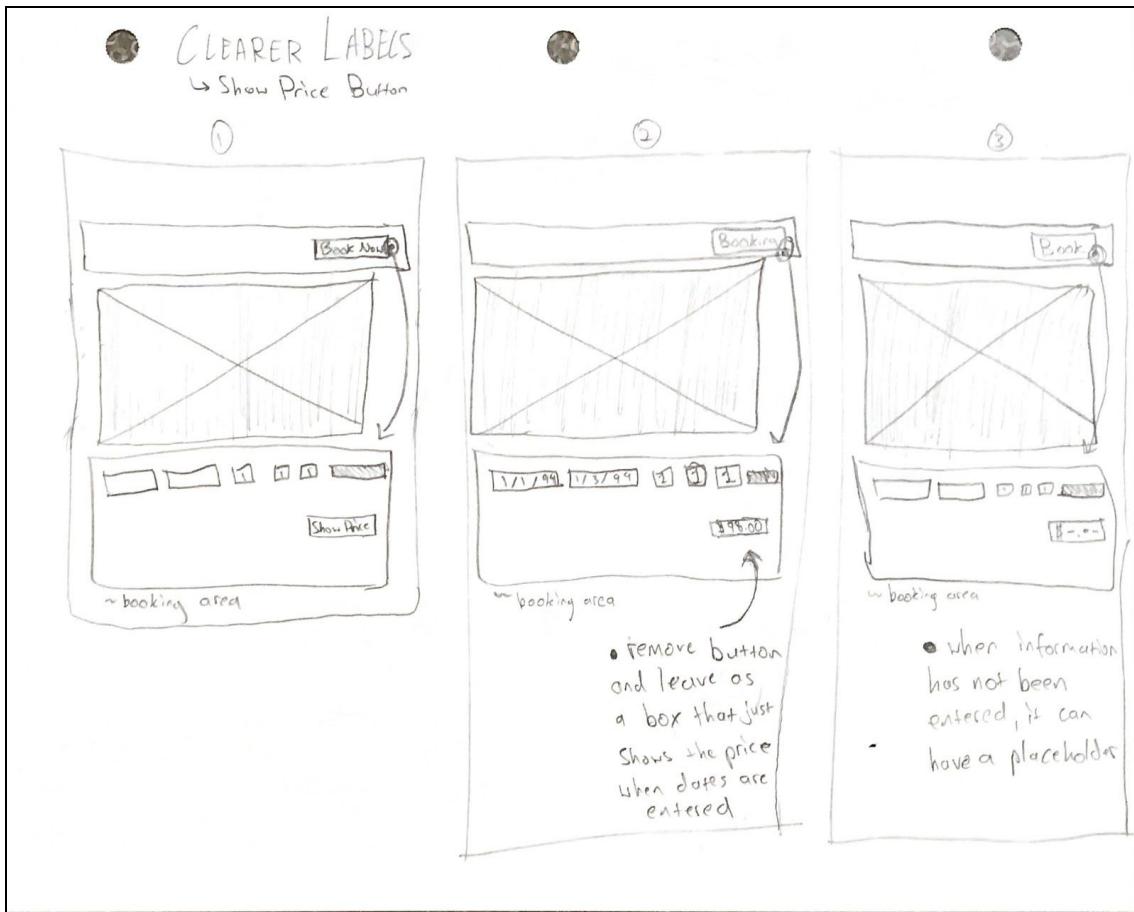


Figure 3.1.2: Sketch one renames the show price button at the top to “Book Now”. Sketch two renames the show price button to “Booking” and changes the second show price button to a box that will show the price when dates are entered. Sketch three renames the show price button to “Book” and leaves the second show price as a placeholder, updating it to show the price once dates have been selected.

The following sketch, Figure 3.1.3, is an idea to select both check-in and check-out dates on the same calendar. It also features the idea to add smoking preference buttons to make it clear to users that they have the option and to remove the show price buttons.

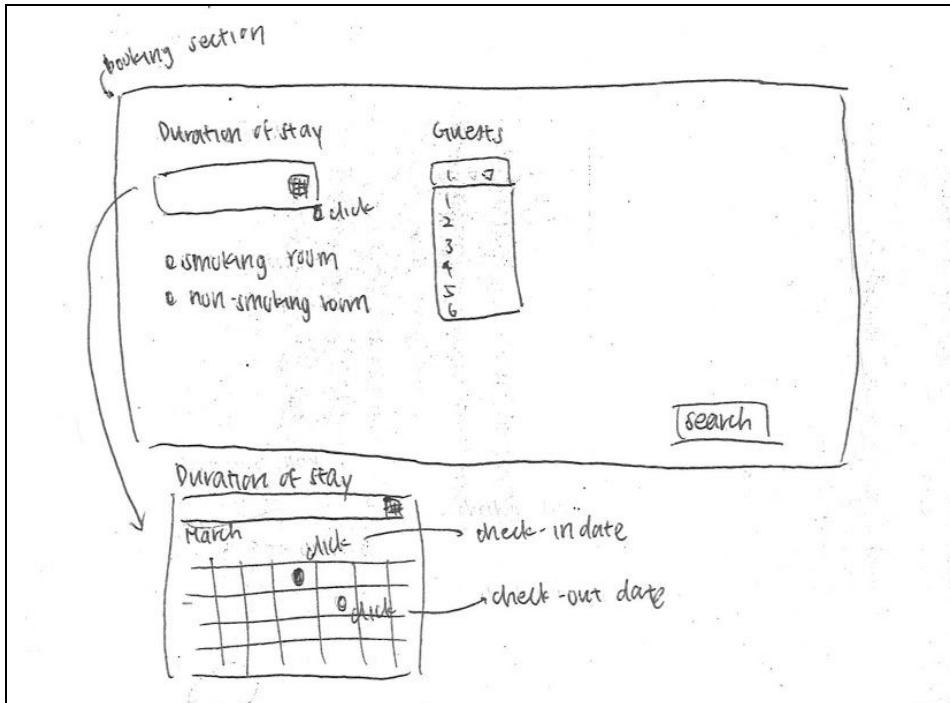


Figure 3.1.3: This is a redesign of the room availability section. It has eliminated the room information section, which had the “Show Price” buttons. The idea is to allow users to select check in date and check out date one calendar.

After consolidating ideas from sketches we made two wireframes as seen below. The first wireframe, Figure 3.1.4, incorporated the new currency icon, a join check-in and check-out option, and the removal of the show price buttons. The second wireframe, Figure 3.1.5, was just a more detailed version.

The digital wireframe illustrates a user interface for a hotel booking system. At the top, there is a header bar with links for Home, About, Policies, Contact Us, My Booking, and a user icon. Below the header is a large empty rectangular area, likely a placeholder for a main content or advertisement.

Search Form:

Check-in	Check-out	Rooms	Guests
3/31/2019 <input type="button" value="▼"/>	4/1/2019 <input type="button" value="▼"/>	1 <input type="button" value="▼"/>	1 <input type="button" value="▼"/>

Below the search form is a calendar grid for March 2019 and April 2019. The calendar shows dates from March 1 to April 27. The date "March 31, 2019" is highlighted in the March grid, and "April 01, 2019" is highlighted in the April grid. A "Search" button is located to the right of the calendar.

Booking Section:

The title "Booking section (search criterias)" is displayed above a table for room selection.

Room Type	Room Name	Max Occupancy	Conditions	Rate Per Night
	Queen Room	4		<input type="button" value="Book Now"/>
	King Room	2		<input type="button" value="Book Now"/>

Figure 3.1.4: This is a digital wireframe that combines ideas from all the sketches above. Here, the currency icon is changed from USD to the universally used icon and the check-in and check-out date selection is on a calendar feature that lets the user see both dates on the calendar. The filter for guests is set to “Guests” instead of Adults and Childs. The Reserve label is also removed.

The wireframe shows a web browser window with the URL <http://starlightinnhuntingtonbeach.us>. The page title is "STARLIGHT INN HUNTINGTON BEACH ★★". Below the title is the address "18382 Beach Blvd, Huntington Beach, CA 92648". The main content area is titled "Check Room Availability". It features a date picker with "Check-in" set to "3/31/2019" and "Check-out" set to "4/1/2019". There are dropdown menus for "Rooms" (set to 1) and "Guests" (set to 1). A "Search" button is present. Below the date picker is a calendar for March 2019, with the 31st highlighted. The available rooms section lists two types: "Queen Room" and "King Room", each with a small placeholder image of a mountain and moon.

Room Type	Room Name	Max Occupancy	Conditions	Rate Per Night
Queen Room		4	Free Cancellation! PAY AT THE PROPERTY No prepayment needed	USD 85.00
King Room		4	Free Cancellation! PAY AT THE PROPERTY No prepayment needed	USD 90.00

Figure 3.1.5: This wireframe is our final draft before creating the high fidelity mockup of the homepage. The section for users to check room availability is titled. Conditions and rate per night is kept the same as the initial website design. The Gallery tab of the menu bar is also added, this change was made due to another redesign explained later.

Figure 3.1.6 below is a final high fidelity mockup of the website for Starlight Inn. It is a colored mockup with a similar layout to the wireframe but more detail and color. Similarly to the wireframe, we changed the currency icon to a more clear icon that better demonstrates the affordance to change currency. However, for the final mockup, we decided to remove room types from showing until users make a search for room availability. We also included a smoking preference as an option so it is clear that users can select a preference.

The screenshot shows the Mozilla Firefox browser window with the URL <http://starlightinnhuntingtonbeach.us>. The page title is "STARLIGHT INN HUNTINGTON BEACH ★★". Below the title is the address "18382 Beach Blvd, Huntington Beach, CA 92648". A "Check Room Availability" form is displayed, with fields for Check-in (3/31/2019), Check-out (4/1/2019), Rooms (1), Guests (1), and Smoking Preference (radio buttons for Smoking Room and Non-smoking Room). A green "SEARCH" button is at the bottom right. Below the form are two images: one of the hotel's exterior sign and another of a guest room interior. A "Amenities" section lists various services with corresponding icons.

Amenity	Description
	Free Internet
	No Smoking Rooms/Facilities
	Air Conditioning
	24 Hour Front Desk
	Heater
	TV (Satellite & Cable)
	Refrigerator
	On Site Parking
	Family Rooms
	Vending Machines
	WiFi
	Wake Up Service
	Bathroom
	Desk

Figure 3.1.6: This is the final high-fidelity mockup for the homepage. The overall style of the website is preserved. Besides filling in the details, the main difference between this and our final wireframe is: the smoking preference is now included in the booking section.

Figure 3.1.7 and onwards is the flow showing how the homepage looks like before any selections are made. The default check-in and check-out dates are set to the current and next day.

The screenshot shows the homepage of the Starlight Inn Huntington Beach website. At the top, there is a navigation bar with links for Home, About, Gallery, Policies, Contact Us, and My Booking. A search icon is also present. Below the navigation bar, the hotel's name "STARLIGHT INN HUNTINGTON BEACH ★★" is displayed, along with its address "18382 Beach Blvd, Huntington Beach, CA 92648". A "Check Room Availability" form is prominently featured, with fields for Check-in (3/31/2019), Check-out (4/1/2019), Rooms (1), Guests (1), and Smoking Preference (radio buttons for Smoking Room and Non-smoking Room). A "SEARCH" button is located at the bottom right of the form. Below the form, there are two images: one of the hotel's exterior sign and another of a guest room interior. A section titled "Amenities" lists various facilities with corresponding icons.

Amenity	Description
	Free Internet
	No Smoking Rooms/Facilities
	Air Conditioning
	24 Hour Front Desk
	Heater
	TV (Satellite & Cable)
	Refrigerator
	On Site Parking
	Family Rooms
	Vending Machines
	WiFi
	Wake Up Service
	Bathroom
	Desk

Figure 3.1.7: The prefilled check-in date will be the current date according to the date and time found on user's device. The prefilled check-out date will be the day after the check-in date. To change dates, the users can click anywhere in the field.

Below is figure 3.1.8, which shows our incorporate final design of the check-in and check-out calendar selection feature. When check in is selected, both calendars for check-in and check-out pop up so users can view their selected dates easily.

Check Room Availability

Check-in	Check-out	Rooms	Guests	Smoking Preference
3/31/2019 <input type="button" value="▼"/>	4/1/2019 <input type="button" value="▼"/>	1 <input type="button" value="▼"/>	1 <input type="button" value="▼"/>	<input type="radio"/> Smoking Room <input type="radio"/> Non-smoking Room

March 31, 2019							April 01, 2019						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
3	4	5	6	7	8	9	1	2	3	4	5	6	
10	11	12	13	14	15	16	7	8	9	10	11	12	13
17	18	19	20	21	22	23	14	15	16	17	18	19	20
24	25	26	27	28	29	30	21	22	23	24	25	26	27
31							28	29	30				

SEARCH




Amenities

-  Free Internet
-  No Smoking Rooms/Facilities
-  Air Conditioning
-  24 Hour Front Desk
-  Heater
-  TV (Satellite & Cable)
-  Refrigerator
-  On Site Parking
-  Family Rooms
-  Vending Machines
-  WiFi
-  Wake Up Service
-  Bathroom
-  Desk

Figure 3.1.8: A two-month view of the calendar will appear as a drop down under the check-in date and check-out date fields. The check-in date and check-out date fields share this calendar drop down, so it will not be reloaded when the user jumps from one field to another. The selected dates are highlighted in black.

Figure 3.1.9 below shows the screen after users have selected check in and check out dates. The calendars collapse and they can select other drop down menus. The cursor is on guests to show current action.

The screenshot shows a web browser window for Mozilla. The URL is <http://starlightinnhuntingtonbeach.us>. The page title is "STARLIGHT INN HUNTINGTON BEACH ★★". Below it is the address "18382 Beach Blvd, Huntington Beach, CA 92648". A navigation bar includes Home, About, Gallery, Policies, Contact Us, My Booking, and a user icon. The main content area has a black header "Check Room Availability". It contains fields for Check-in (3/31/2019) and Check-out (4/1/2019), a Rooms dropdown (1), a Guests dropdown (1, with a cursor icon pointing to it), and a Smoking Preference section with radio buttons for Smoking Room (selected) and Non-smoking Room. A green "SEARCH" button is at the bottom right. Below this is a grid of two images: a blue sign reading "STARLIGHT INN 18382" and a photo of a hotel room with two beds. At the bottom are sections for "Amenities" with icons and descriptions.

Amenity	Description
	Free Internet
	No Smoking Rooms/Facilities
	Air Conditioning
	24 Hour Front Desk
	Heater
	TV (Satellite & Cable)
	Refrigerator
	On Site Parking
	Family Rooms
	Vending Machines
	WiFi
	Wake Up Service
	Bathroom
	Desk

Figure 3.1.9: Here the user is trying to change the number of guests from the prefilled value one (1) to another number. The user can open the drop down menu by clicking anywhere in the field.

Figure 3.1.10 shows the flow from selecting a drop down menu for guests and selecting a number.

The screenshot shows a web browser window for Mozilla at the URL <http://starlightinnhuntingtonbeach.us>. The page title is "STARLIGHT INN HUNTINGTON BEACH ★★" and the address is "18382 Beach Blvd, Huntington Beach, CA 92648". A navigation bar includes links for Home, About, Gallery, Policies, Contact Us, and My Booking, along with a user icon. Below the title, there's a "Check Room Availability" section with input fields for Check-in (3/31/2019) and Check-out (4/1/2019), a "Rooms" dropdown set to 1, a "Guests" dropdown currently showing 1 (with 2 highlighted in black), and a "Smoking Preference" section with radio buttons for Smoking Room and Non-smoking Room. A green "SEARCH" button is visible. Below this section are two images: one of the hotel sign and another of a guest room interior. The "Amenities" section lists various services with corresponding icons, including Free Internet, No Smoking Rooms/Facilities, Air Conditioning, 24 Hour Front Desk, Heater, TV (Satellite & Cable), Refrigerator, On Site Parking, Family Rooms, Vending Machines, WiFi, Wake Up Service, Bathroom, and Desk.

Figure 3.1.10: A drop down menu appears for the number of guests. The minimum number is one (1), while the maximum number is six (6). When hovering over a choice, the choice is highlighted in black. After making a selection, the number shown in the field will be updated to reflect user's selection.

Figure 3.1.11 below focuses on the option to select smoking preferences.

The screenshot shows a web browser window for Mozilla. The URL is <http://starlightinnhuntingtonbeach.us>. The page title is "STARLIGHT INN HUNTINGTON BEACH ★★". Below it is the address "18382 Beach Blvd, Huntington Beach, CA 92648". The main content area has a black header "Check Room Availability". It includes fields for "Check-in" (3/31/2019), "Check-out" (4/1/2019), "Rooms" (1), "Guests" (2), and "Smoking Preference" (radio buttons for "Smoking Room" and "Non-smoking Room", with "Non-smoking Room" being selected). A green "SEARCH" button is at the bottom right. Below the form are two images: one of the hotel's exterior sign and another of a guest room interior. The "Amenities" section lists various services with corresponding icons.

Amenity	Description
	Free Internet
	No Smoking Rooms/Facilities
	Air Conditioning
	24 Hour Front Desk
	Heater
	TV (Satellite & Cable)
	Refrigerator
	On Site Parking
	Family Rooms
	Vending Machines
	WiFi
	Wake Up Service
	Bathroom
	Desk

Figure 3.1.11: The user must choose their smoking preference before they can search for rooms. The preferences are presented with radio buttons, which hint that it is an exclusive or selection -- the user must choose one and only one option. The radio button will update to reflect user's selection.

After selecting all the room preferences, the user can finally hit search as seen in Figure 3.1.12 below.

Mozilla

<http://starlightinnhuntingtonbeach.us>

Home About Gallery Policies Contact Us My Booking

STARLIGHT INN HUNTINGTON BEACH ★★

18382 Beach Blvd, Huntington Beach, CA 92648

Check Room Availability

Check-in 3/31/2019	Check-out 4/1/2019	Rooms 1	Guests 2	Smoking Preference <input type="radio"/> Smoking Room <input checked="" type="radio"/> Non-smoking Room
SEARCH				






Amenities

	Free Internet		On Site Parking
	No Smoking Rooms/Facilities		Family Rooms
	Air Conditioning		Vending Machines
	24 Hour Front Desk		WiFi
	Heater		Wake Up Service
	TV (Satellite & Cable)		Bathroom
	Refrigerator		Desk

Figure 3.1.12: Having filled out all of the information, the user can now click “Search” for a list of rooms that match his or her search criteria.

Finally, this is the high fidelity mockup of how the screen appears after users have entered room preferences and selected search. Now, the available rooms are displayed along with occupancy, conditions, rates per night, and the option to book now.

The screenshot shows a web browser window for Mozilla. The URL is <http://starlightinnhuntingtonbeach.us>. The page title is "STARLIGHT INN HUNTINGTON BEACH ★★". Below it is the address "18382 Beach Blvd, Huntington Beach, CA 92648". A navigation bar includes links for Home, About, Gallery, Policies, Contact Us, My Booking, and a currency converter icon.

Check Room Availability

Check-in	Check-out	Rooms	Guests	Smoking Preference
3/31/2019 <input type="button" value="▼"/>	4/1/2019 <input type="button" value="▼"/>	1 <input type="button" value="▼"/>	1 <input type="button" value="▼"/>	<input type="radio"/> Smoking Room <input type="radio"/> Non-smoking Room

SEARCH

Available rooms for 3/31/2019 to 4/1/2019

Room Type	Room Name	Max Occupancy	Conditions	Rate Per Night
	Queen Room	2	 Free Cancellation! PAY AT THE PROPERTY No prepayment needed	USD 85.00 Book Now
	King Room	2	 Free Cancellation! PAY AT THE PROPERTY No prepayment needed	USD 90.00 Book Now

Figure 3.1.13: The search result list appears only after the user clicked “Search” and all the fields are valid. In this case, there are only two rooms that satisfy user’s search criteria. Overview information included in the search results list include: thumbnail of the room interior, room name, maximum capacity, policies that apply, rate per night, and “Book Now” buttons.

Redesign Two: Provide Feedback

Provide more feedback on the Contact Us page

Problem

The lack of informative feedback is a clear issue in the system. The main area where this is a concern is on the Contact Us page.

The form consists of the following fields:

- First Name
- Last Name
- Email Address
- Phone Number
- A large text area with placeholder text: "Write what do you want..".
- A green button labeled "SEND".

Figure 3.2.1: This image depicts the necessary fields for sending a message to Starlight Inn.

The screenshot shows a contact form for 'STARLIGHT INN HUNTINGTON BEACH'. At the top, it displays the hotel's name and address: '18382 Beach Boulevard, Huntington Beach, US'. Below this is a large input field divided into four sections: 'Name' (containing 'Jim'), 'Email' (containing 'jim@bp'), 'Subject' (containing 'what?'), and 'Message' (containing 'Othy'). The 'Email' field is highlighted with a red border, indicating it is the incorrect field. At the bottom of the form is a black 'SEND' button.

Figure 3.2.2: This image depicts how, even though many fields may be incorrectly filled out, only one incorrect field will be outlined in red, and no informative feedback is provided.

For the Contact Us page, the system only provides one method of contacting them, which is by sending a message to them directly through the site. As depicted in Figure 3.2.2, the system does not notify the user if the type of information they enter is valid until after they hit the Send button. Furthermore, the feedback the system does provide is very minimal. It simply outlines one incorrect field in red but does not notify the user of why it is wrong, or more importantly, how to fix it.

Evidence

Eight Golden Rules of Interface Design

We identified this as an issue because it is a clear violation of the eight golden rules of interface design. More specifically, it violates the rule of offering informative feedback.

If users enter valid information, there is no feedback such as a check mark or any other symbolic indicator to confirm with the user that they have entered valid information. Similarly, if a user enters invalid information (e.g. an invalid email or letters in a phone number), the system does not inform the user about their mistake until they attempt to submit the form. It is only after the user selects Submit that the site checks each box for validity. When there are invalid entries, the system only outlines one incorrect field in red, instead of highlighting all

incorrect fields and informing the user of why their input is invalid, and how to fix it.

Universal Usability

Another issue with this simplistic feedback is its lack of consideration for a more diversified user base. For example, this simple feedback can be problematic for users that are color blind and are unable to clearly see the red outline. It is also another widely known concept to design for universal usability, which is another motivating factor to provide feedback more informative than a colored outline.

Cognitive Walkthrough

The screenshot shows a web page for 'STARLIGHT INN HUNTINGTON BEACH' with a rating of two stars. The address is listed as '18382 Beach Boulevard, Huntington Beach, US'. Below the header, there is a form with several input fields. The first field contains 'asdf'. The second field contains 'asdf'. The third field contains 'asdf@j.com'. The fourth field contains 'asdf'. Below these fields is a large text area containing 'asdf'. At the bottom of the form is a submit button with a yellow and black chevron pattern, indicating that the user's actions have been received.

Figure 3.2.3: This image displays how the page responds when processing this invalid information. The submit button changes print to show that the user's actions have been received.

The screenshot shows a contact form for 'STARLIGHT INN HUNTINGTON BEACH ★★'. The address '18382 Beach Boulevard, Huntington Beach, US' is listed below the title. The form consists of several input fields: 'First Name' and 'Last Name' in separate boxes, 'Email Address' and 'Phone Number' in another set of boxes, and a large text area labeled 'Write what do you want.' At the bottom left is a black 'SEND' button. Below the button, a message says 'Your message was successfully sent.'

Figure 3.2.4: This image demonstrates the false positive the system delivers. The invalid information above was successfully processed.

Other motivations for this redesign came from our cognitive walkthroughs. Our third task was to contact the hotel. During this task, we discovered that not only does the Contact Us page lack informative feedback, but it also is lacking in the strength of its checking methods. Because of the system's checking methods, it is capable of providing false positive confirmations to the user. To send a message, the user simply needs to fill out fields for their first name, last name, email, phone number, and the message they would like to send. Different types of characters are required, depending on the field. However, instead of checking for specific types of text, the only checking the system performs is to see that the field is not empty. Not wanting to use our own personal information, we put in random information not thinking that it would work, however it actually went through. As depicted in the two images directly above, users can enter letters for phone numbers and invalid emails, and still send their message "successfully."

Process

There were not too many design ideas that we had to iterate through in order to decide on our final redesign idea. Some of the ideas that we were considering, however, include the following:

- Provide X marks or check marks that indicate if the user's input is valid.
- If a user's input is invalid, provide a pop up error message that will explain why the input is valid, and how to fix it.

- Disable the submit button until all required fields contain valid information.
- Provide a confirmation message at the end of sending a message so the user knows that their message was successfully completed and sent.
- Highlight the tab that the user is currently on in the navigation bar.
- Eliminate the ability of user's to send a message directly through the site to avoid the need to check input, and instead simply provide contact information for users to utilize outside of the hotel's site (email, phone number, etc.).

Our final redesign includes the following actions:

- Move labels from inside the textboxes to the top of the boxes, and provided sample text inside.
- Add question mark buttons beside text fields that explain what kind of input is considered valid.
- Provide live feedback to the user by placing checks or x's beside the fields they have filled out, indicating whether that field currently contains valid or invalid information.
- Provide confirmation dialog window after the user presses Send, telling user that their message has been sent successfully and when to expect a reply by.

Our final redesign is essentially a combination of many of the team member's initial ideas to improve this section. Our first decision to move labels was made because of expert opinion, with the following three decisions made because of evidence found in the cognitive walkthroughs or because of the concept of universal usability. Many of our ideas ended up being very similar. For the ideas that were different, each approached the issue from a very different angle, and did not put us in a position to pick between solutions. They were all changes that were easy to combine, which is why we decided to include many of the initial ideas in the final redesign.

Results

Sketches:

The following image (Figure 3.2.5) is a sketch depicting the idea of providing informative feedback through question marks. As seen in many other platforms, the idea was that if the user hovers over the question mark, they will receive additional information about the field that the question mark is next to.

Lack of Error Prevention

D) Contact Us

Contact Us

- Phone # Available time)
- Email ~~~@gmail.com
- Contact Form (Online)

First Name *	Last Name *
<input type="text"/>	<input type="text"/>
Email address *	Phone # *
<input type="text"/>	<input type="text"/>
Inquiry *	
<input type="text"/>	
<input type="button" value="Submit"/>	

Figure 3.2.5: This is an idea to help prevent errors in the Contact Us form. Asterisks are added next to each text box to make it clear to the user that they need to fill out each box. Each input box also has a question mark icon that users can hover their mouse over to get an explanation of what input is required such as the type of characters.

The following sketch, Figure 3.2.6, further demonstrates the action of hovering over the question mark. It also suggests emphasizing the border of a text box if its entries are considered invalid.

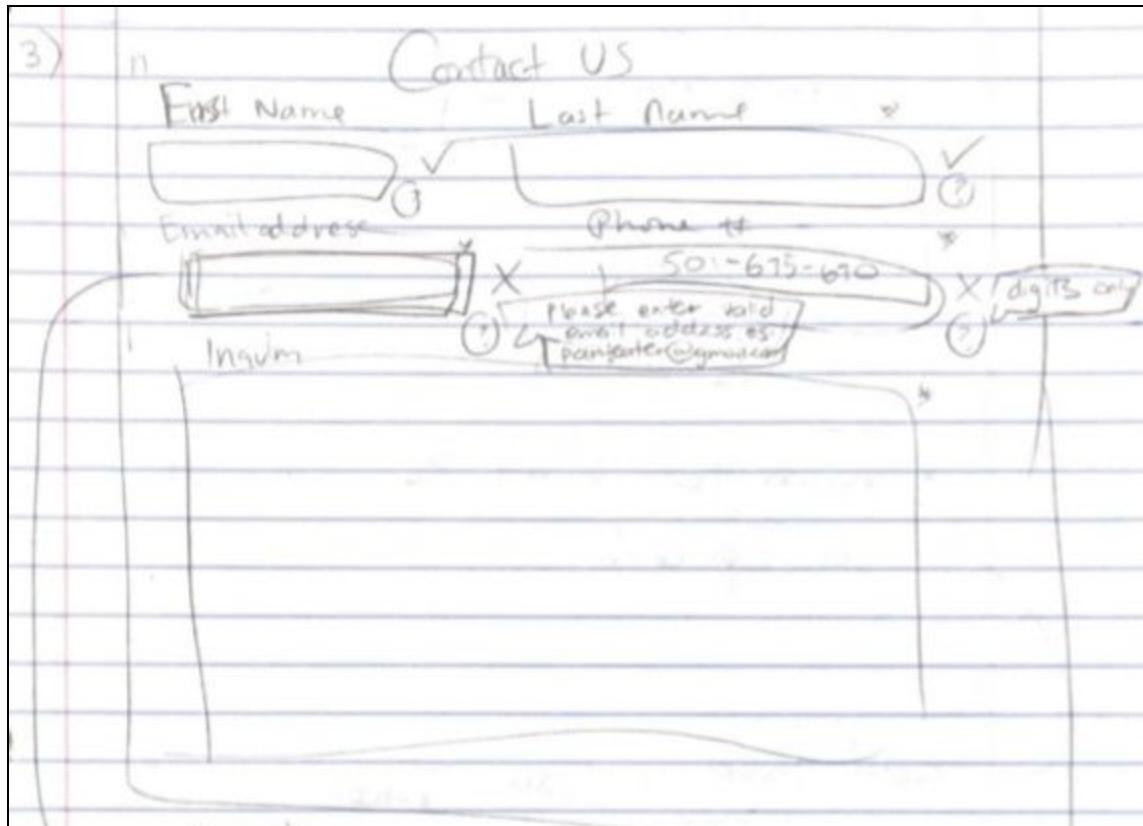


Figure 3.2.6: The idea of this sketch is to prevent errors made in the Contact Us form by adding confirmation icons next to each input box to inform the user if their input is valid before submitting the form to prevent errors. Each box also has a question mark users can hover over for an explanation. When users enter the wrong information the explanation of their error pops up so users can know how to fix it before submitting the form.

Figure 3.2.7 emphasizes the idea of providing checks or x's besides fields as a form of feedback. The idea is to provide live feedback by placing an x besides a box if its content is invalid, or a check besides a box if its content is valid.

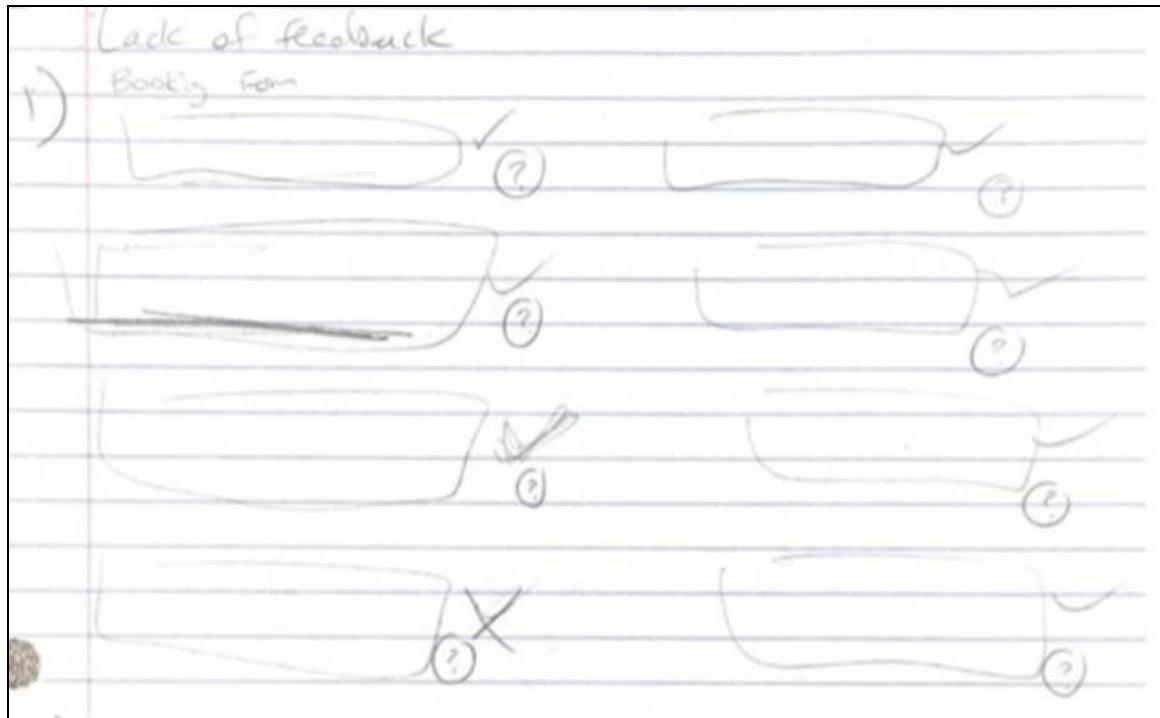


Figure 3.2.7: The idea of this sketch is to improve the lack of feedback in the booking form. The booking form shows a check mark or x mark to indicate if inputted values are correct to inform the user of their input.

Again, Figure 3.2.8 demonstrates the form of feedback through checks and x's. We provide multiple sketches of the same idea, as they came from multiple members of our team and was an idea that we all came to agree on naturally.



Figure 3.2.8: The idea of this sketch is to improve the lack of feedback in the contact form. The contact form shows a check mark or x mark to indicate if inputted values are correct to inform the user of their input.

The sketch in 3.2.9 demonstrates a form of feedback through highlighting the tab that the user is currently on. This way, the user does not have to try to recall where they are on the website, they can just look at the navigation bar and see where they are.

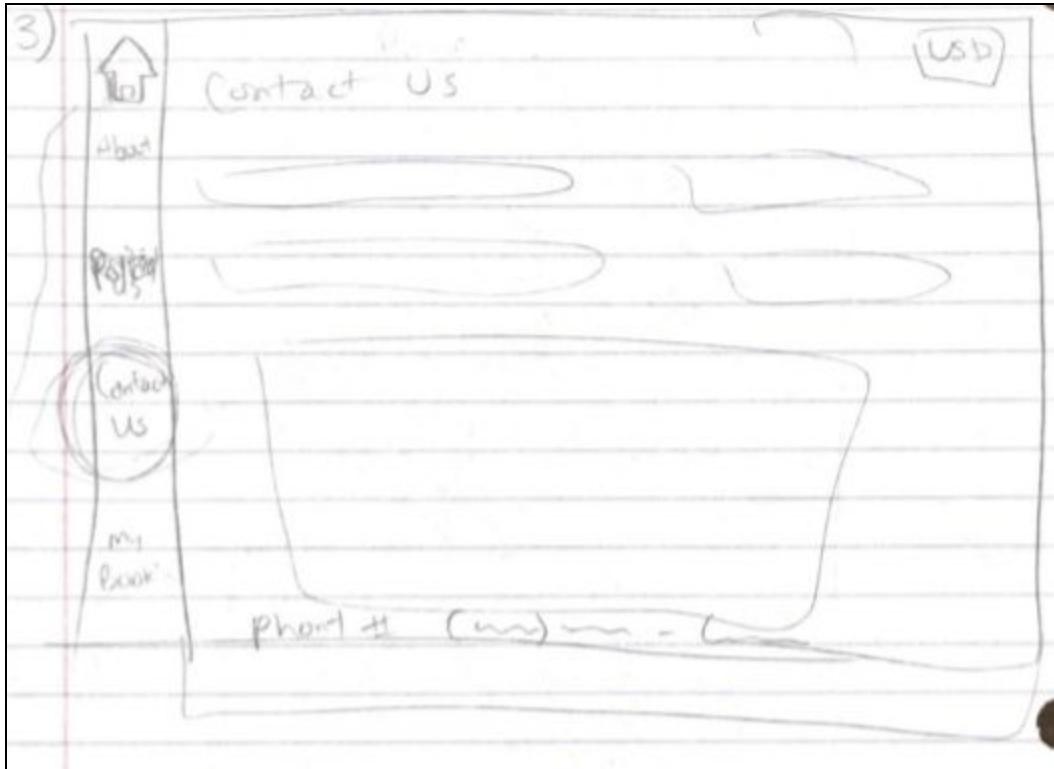


Figure 3.2.9: The idea of this sketch is to improve the lack of feedback on the menu bar. When users select a tab on the menu bar, the name of the tab is not highlighted to inform the user that it has been selected. This sketch moves the menu bar to the left side. When users select on a tab such as Contact Us, it will be circled to indicate what page the user is on.

While figure 3.2.10 demonstrates similar concepts as above, it also presents a new idea in this area. It presents the idea of disabling the Send button on the Contact Us page until all required fields contain valid information. It also demonstrates feedback through error messages. If the user inputs something wrong, a message will pop up for that field explaining why it is wrong, and how the user should fix it.

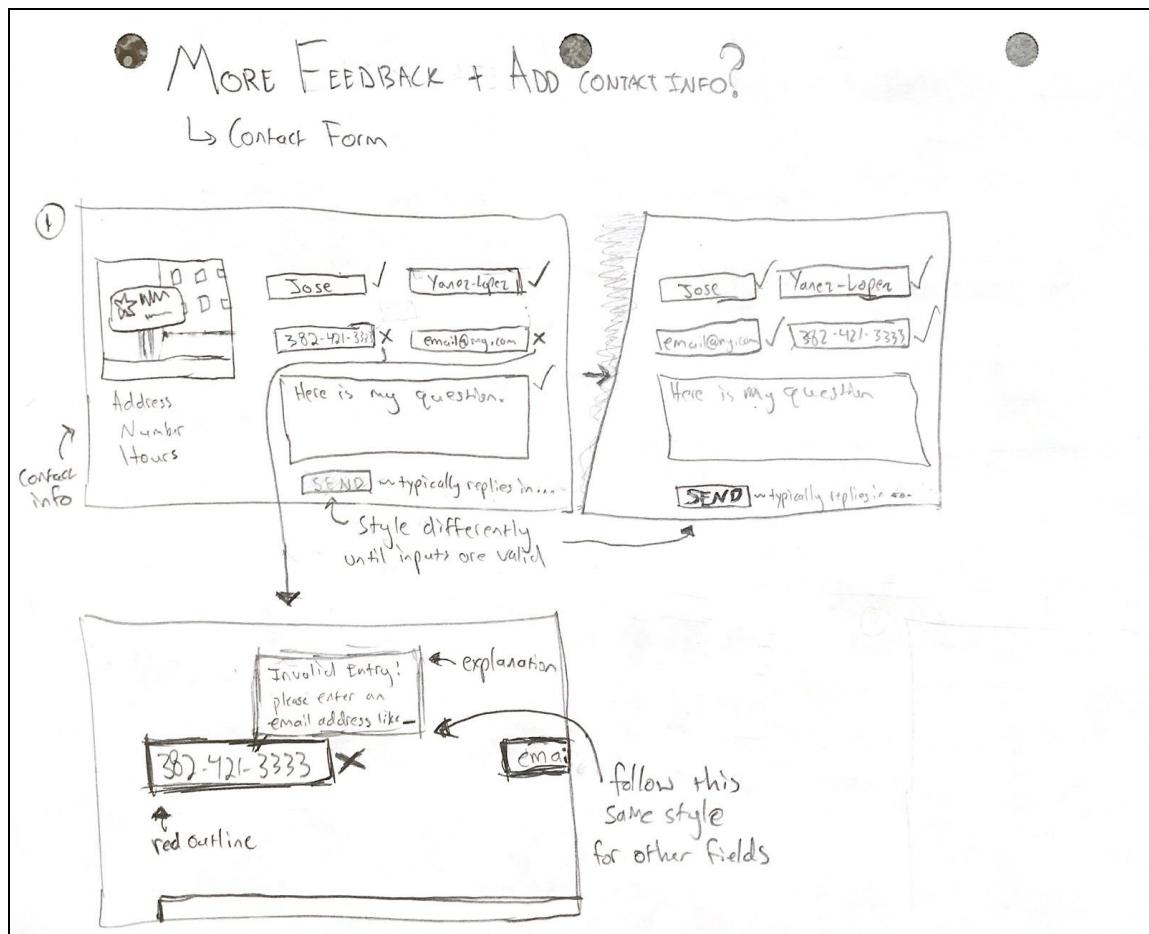


Figure 3.2.10: Sketch one adds verification to the fields on the Contact Us form and removes button functionality until all the inputs are valid. It also adds more contact information to the left of the form. The sketch branching to the right shows what it looks like after inputting all correct information, emphasizing the button being clickable once input is verified. The sketch branching below shows an example error message detail, informing the user what is wrong about their input.

Figure 3.2.11 is the first wireframe for this redesign. It more formally demonstrates the method of feedback through hovering over a question mark.

Wireframes:

The wireframe shows a contact form with the following fields:

- First Name:** Input field containing "Jim". A tooltip above it displays "explanation explanation explanation explanation explanation".
- Last Name:** Input field containing "Othy".
- Email Address:** Input field containing "abc@xyz.com". A question mark icon is positioned next to the input field.
- Phone Number:** Input field containing "(123) 456 - 7890". A question mark icon is positioned next to the input field.
- Questions or Comments:** A large text area with placeholder text "Write a message".
- SEND:** A button at the bottom left.

Figure 3.2.11: This is the initial mockup for the contact page, showing example text in the fields as well as the question marks that provide explanations when hovered over.

Figure 3.2.12 demonstrates the other imperative segments for this redesign, which were to provide meaningful error messages for incorrect fields, and provide signifiers and live feedback through x's and checkmarks.

The wireframe shows two fields with feedback icons:

- Email Address:** Input field containing "(909) 303 - 4040". An error icon (X) is displayed next to the input field. A tooltip above it displays "explanation explanation explanation explanation explanation".
- Phone Number:** Input field containing "(909) 303 - 4040". A success icon (checkmark) is displayed next to the input field.

Figure 3.2.12: This demonstrates the checking functionality that displays an X or check next to fields, depending on the legality of their contents.

High Fidelity Mockups:

Figure 3.2.13 is a polished demonstration of the question mark feature that we decided to integrate into the redesign. It also illustrates how we decided not to go with disabling the Send button until all fields contained valid information. Due to expert opinions, we decided that disabling a Send button may do more harm than good in the end, as it is very prone to buggy JavaScript implementation, and could also potentially confuse the user in cases where all fields are seemingly filled out right, but the message still would not send.

The screenshot shows a web page titled "STARLIGHT INN HUNTINGTON BEACH ★★". The page has a black header bar with links to Home, About, Gallery, Policies, Contact Us, and My Booking. Below the header, the address "18382 Beach Blvd, Huntington Beach, CA 92648" is listed. The main content area is titled "Contact Us". It contains several input fields: "First Name" (with value "Robert"), "Last Name" (with value "Bobby"), "Email Address" (with value "abc@xyz.com"), and "Phone Number" (with value "(123) 456 - 7890"). A tooltip is visible over the "Email Address" field, stating: "Please enter a valid email we will be able to contact you through.". At the bottom of the form is a green "SEND" button.

Figure 3.2.13: This image demonstrates how users are able to hover over the question marks to receive more information on the corresponding field.

Figure 3.2.14 is a polished display of the live checking feature. With every field correctly filled out, a check mark will appear next to each field.

The screenshot shows a web browser window for Mozilla with the URL <http://starlightinnhuntingtonbeach.us>. The page title is "STARLIGHT INN HUNTINGTON BEACH ★★". Below it is the address "18382 Beach Blvd, Huntington Beach, CA 92648". A navigation bar includes links for Home, About, Gallery, Policies, Contact Us, My Booking, and a user icon. The main content area is titled "Contact Us". It contains the following fields:

- First Name: "Jim" with a checkmark ✓
- Last Name: "Othy" with a checkmark ✓
- Email Address: "Jimothy@gmail.com" with a checkmark ✓
- Phone Number: "(626) 142 - 2234" with a checkmark ✓
- Questions or Comments: A text area containing "Are there pets allowed in any of the available room?"
- A green "SEND" button at the bottom left, which has a hand cursor icon pointing to it.

Figure 3.2.14: This image displays the live checking the system performs, by providing the check marks besides the fields that contain valid information. This image also demonstrates how the send button will be enabled once check marks appear next to all fields.

Figure 3.2.15 demonstrates another idea of providing a confirmation message after successfully submitting a message to the website. Though this idea was not originated in the sketching phase, our team collectively think of this way of providing feedback while creating our other high fidelity mockups, and believed it to be another good idea to add to our ultimate redesign.

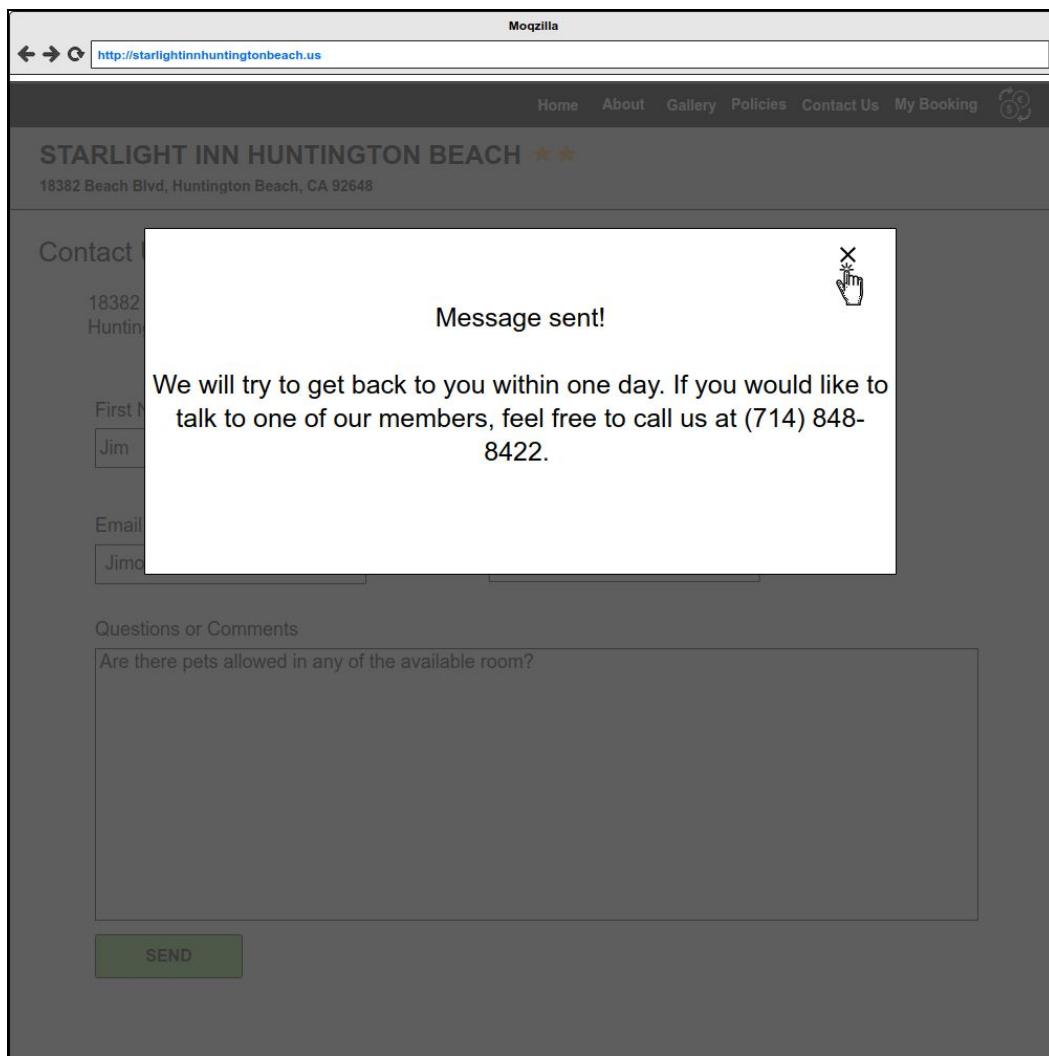


Figure 3.2.15: This image displays the confirmation message the user will receive after successfully submitting their message.

Finally, Figure 3.2.16 demonstrates the final step in a successful flow of sending a message. Once the user exit out of their confirmation message, they will return back to the Contact Us page with all fields reset to its original state, ready to send a new message if needed.

The screenshot shows a web browser window for Mozilla. The URL bar displays <http://starlightinnhuntingtonbeach.us>. The page title is "STARLIGHT INN HUNTINGTON BEACH ★★". Below the title, it says "18382 Beach Blvd, Huntington Beach, CA 92648". A navigation menu at the top includes Home, About, Gallery, Policies, Contact Us, My Booking, and a search icon. The main content area is titled "Contact Us". It contains the address "18382 Beach Blvd Huntington Beach, CA 92648", the phone number "(714) 848-8422", and the hours "Hours: Thursday ... AM - PM +". There are input fields for "First Name" (containing "Robert") and "Last Name" (containing "Bobby"). Below these are fields for "Email Address" (containing "abc@xyz.com") and "Phone Number" (containing "(123) 456 - 7890"). A large text area labeled "Questions or Comments" has the placeholder "Write a message". At the bottom is a green "SEND" button.

Figure 3.2.16: This image displays the end of the flow. This is what the user will see after clicking out of their confirmation message. The Contact Us page will be reset and ready to send another message if needed.

Redesign Three: Reduce Clutter

Reduce the amount of information presented on the home page

Problem

There is too much information that clutters the homepage, making it difficult for the user to locate the information that they are trying to find.

Evidence

Usability Evaluation Report

This was identified as an issue based on our usability tests. As mentioned in our usability evaluation report, we often saw users scrolling up and down the page multiple times trying to locate the information they needed. During the usability tests that required users to book a room and locate information about various policies, four participants mentioned how cluttered or disorganized the site is, adding to the difficulty in completing their tasks. The amount of content that is currently provided on the homepage ultimately provides too much information for the users to sift through when looking for the information they need.

During these tests, not only did we notice that the clutter on the homepage made it more difficult for the users to locate particular pieces of information, but it also revealed to us where the users expected to find the information instead. This insight helped us in developing our redesign, as we had a better idea of where users are more likely to look for high profile amenities or policies. As discussed in our report, three users attempted to click on the policies tab to locate the policy they needed, which is why we decided to relocate all policies to their own tab instead of having a few sprinkled in less discoverable spots throughout the booking process.

Cognitive Walkthrough

Some tasks in our cognitive walkthroughs also involved searching for particular policies during the booking process. Even through our own experience, we found that the clutter on the homepage added to the time it took for us to complete our task.

Process

Some of the initial ideas we went through while coming up with this redesign include the following:

- Move photos and reviews into its own tab labeled “Photos+Reviews” to reduce clutter on the homepage. Move policies onto its own page as well to reduce clutter.
- Moving the hotel info under the image gallery next to the map showing where the hotel is located, making the hotel name bigger and centered to highlight its hierarchical importance
- Removing the booking section and placing policies and amenities side by side, renaming the show price button to “Book Now!” and linking it to a new separate booking page, creating a slideshow with 3 images at the top of the page and below it listing nearby landmarks or what to do around here and directions to the hotel.
- Reducing clutter by reorganizing the amenities and policies sections to be more concise. The elaborated information for policies would be on a separate page.

Our final redesign idea ended up including the following:

- Moving all information about policies into its own individual Policies tab.
- Consolidating all amenities information into one area on the homepage, instead of supplying it in multiple areas throughout the homepage and booking process.
- Adding a Gallery tab to contain most of the images, while only keeping a few on the homepage to advertise the property.

Overall, we decided on the actions that make up our final redesign for a few reasons. Through surveys, interviews, and the example of many other competing booking websites, we discovered the importance and impact of pictures, so we decided to keep a few key pictures on a short slideshow at the top of the homepage. But with the intention of reducing the clutter, we decided to create a separate tab for the entire collection of pictures called Gallery. Through our own opinions and observation through cognitive walkthroughs, we noticed a lot of redundancy in how the amenities are currently listed on the homepage, which is why we decided to consolidate all of that information into one area instead on the page.

Results

We began the process with the layout shown in Figure 3.3.1. While most of this layout was not used, we liked that the amenities had been consolidated under one heading.

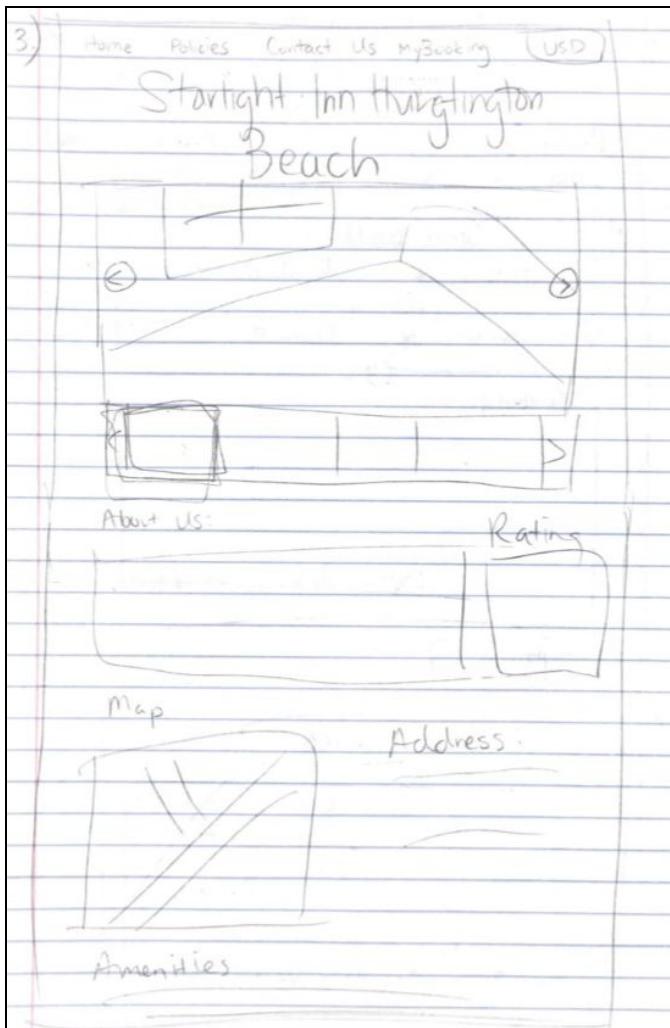


Figure 3.3.1: This is an idea to reorganize the homepage. The name of the hotel is made bigger and centered at the top of the page to highlight its hierarchical importance. Images that are currently selected on the slideshow are highlighted in an outline so the user won't be confused. The hotel info section is renamed About Us and the hotel rating is placed next to the hotel info so that users can easily see how well the hotel is rated.

We took this idea and similarly applied it to the policies section shown in the higher quality mock up in Figure 3.3.2. We also decided to put less emphasis on some of the more secondary information like the about us, random ratings, map and address.

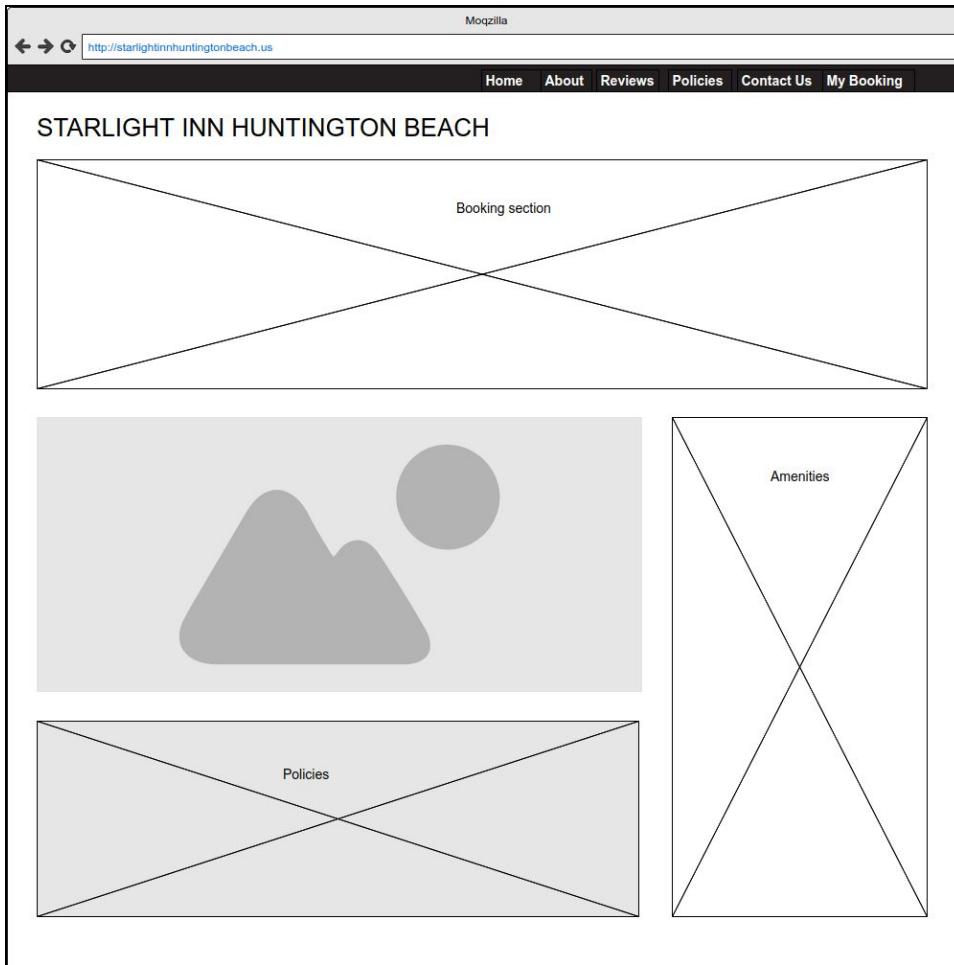


Figure 3.3.2: This is our wireframe. We have divided up the locations to place each piece of information on the homepage. Although there are some details added to the navigation bar, they are added just so we know what it is for.

Finally, we decided to move the policies to their own page (Figure 3.3.4) accessible through the policies tab because it was a lot of information and would clutter the homepage. As seen in Figure 3.3.3, the booking section is the highlight as it gets interacted with the most. We retained some photos on there to advertise the property. Amenities got cleaned up and had icons added for further understandability.

The screenshot shows the final design of the Starlight Inn Huntington Beach website. At the top, there is a navigation bar with links for Home, About, Gallery, Policies, Contact Us, My Booking, and a user icon. Below the navigation is the hotel's name, "STARLIGHT INN HUNTINGTON BEACH ★★", and its address, "18382 Beach Blvd, Huntington Beach, CA 92648". A booking form titled "Check Room Availability" allows users to input check-in (3/31/2019), check-out (4/1/2019), rooms (1), guests (1), and smoking preference (Smoking Room or Non-smoking Room). A green "SEARCH" button is located at the bottom right of the form. Below the form are two images: one of the exterior sign reading "STARLIGHT INN 18382" and another of a guest room interior with a double bed, television, and desk. At the bottom, a section titled "Amenities" lists various features with corresponding icons, including Free Internet, No Smoking Rooms/Facilities, Air Conditioning, 24 Hour Front Desk, Heater, TV (Satellite & Cable), Refrigerator, On Site Parking, Family Rooms, Vending Machines, WiFi, Wake Up Service, Bathroom, and Desk.

Figure 3.3.3: This is the final design of the homepage. We have the booking section on the top, image slideshow under it, and Amenities at the bottom of the page.

The screenshot shows a Mozilla Firefox browser window with the URL <http://starlightinnhuntingtonbeach.us>. The page title is "STARLIGHT INN HUNTINGTON BEACH ★★". The address bar below it says "18382 Beach Blvd, Huntington Beach, CA 92648". A black navigation bar at the top includes links for Home, About, Gallery, Policies, Contact Us, My Booking, and a user icon. The main content area is titled "Policies". It contains several sections with bolded policy names and their descriptions:

- Smoking Policy**: < will need from hotel >
- Pre Pay Policy**: Your charge card will be used to guarantee the reservation. The hotel will charge you for room and tax. No deposit will be billed. The hotel reserves the right to authorize your credit card before check-in. If you don't check to the hotel to the first day of your reservation and you don't alert the hotel beforehand, the hotel reserves the right to cancel your reservation and might charge you a penalty.
- Photo Policy**: The reservation holder must present a valid picture ID and credit card in check. The charge card is required for any additional hotel specific service fees or incidental fees or fees that may be charged by the hotel to the customer at checkout. All these #START_PHOTO#charges#END_PHOTO# might be mandatory (e.g., hotel fees) or optional (parking, telephone calls or minibar fees) and are not included in the room rate.
- Children Policy**: All kids are welcome. All kids under 13 years stay free of charge when using existing beds. All further older kids or adults are charged USD 20 per person per night when using existing beds. Children's cots/cribs are not available. There is no potential for extra beds in the room.
- Preatuthorize Policies**: The hotel reserves the right to pre-authorise credit cards before arrival.
- Extra Charge Policy**: USD 11.57 tax per area is deducted from the rate.
- Online Policy**: WiFi can be found in all areas and is at no cost.
- Parking Policy**: Free public parking is possible on site (reservation is not needed).
- Pets Coverage Policy**: Pets Aren't allowed.
- Summary Excluded Policy**

Figure 3.3.4: This is the final design of the new policies page. We added a smoking policy.

Redesign Four: Add Contact Information

Add phone number, postal address, hours of operation into Contact Us page

Problem

The are actually three different ways to contact Starlight Inn using the features on the official website. However, the contact information is widely scattered and we argue that most of it is hidden.

The first contact information is postal address, which can be found:

1. Under the heading “STARLIGHT INN HUNTINGTON BEACH” on the homepage, the Contact Us page, and the My Booking page (underlined in red in Figure 3.4.1);
 2. In a Google Maps pop up that appears at the click of the “Show Map” link on the homepage (boxed in red in Figure 3.4.1);
 3. In a Google Maps pop up that appears at the click of the out-of-focus map embedded by the hotel images section on the homepage (boxed in red in Figure 3.4.1); and
 4. In a Google Maps preview that is located towards the bottom of the homepage.
- Besides location one and location four listed on the list above, we argue that address at the other two locations are *hidden*, since there are not enough hints for users to immediately notice it. Another problem with postal address is that users today are not likely to send physical letters for inquiries. This trend greatly decreases the value in postal address as a piece of contact information.

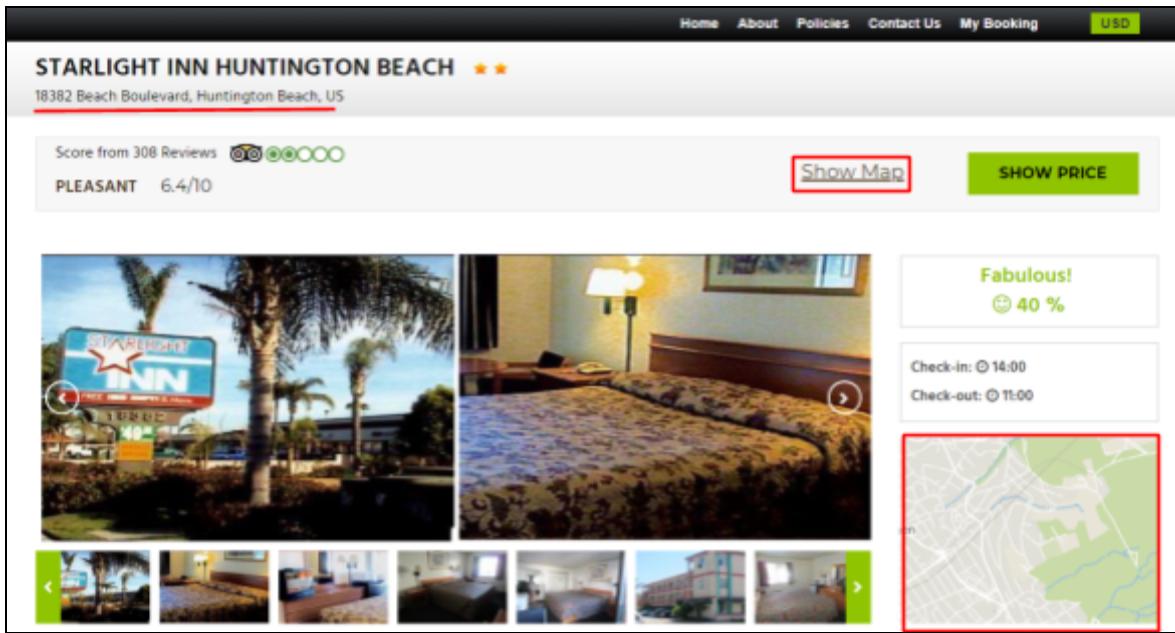


Figure 3.4.1: This is a screenshot of Starlight Inn’s official website. The first bullet point above refers to the information underlined in red on the upper left corner of the screenshot. The second bullet point refers to the link boxed in red on the top. The third bullet point refers to the unsuccessfully embedded map at the bottom right corner of the screenshot.

The second contact information is phone number, which can be found in any of the embedded Google Maps by clicking the “View larger map” link to be redirected to Google Maps’ website. Although this information can be found through Starlight Inn’s website, we do not consider this piece of information available on Starlight Inn’s website.

The last contact information should be more accurately phrased as contact method, than as an information. It is the contact form located on the Contact Us page.

Because the contact information and method are either undesirable or hidden, we have decided to include this problem as one of our six redesign targets.

Evidence

At the beginning when we were exploring the website, we have noticed that the Contact Us page only has an email form that users can use to communicate with the inn. As users, we find this unusual, since previous hotel websites that we had experience with provide more than one communication channels. We were unsure if this inconvenience would affect the majority of the users, so we put it through multiple tests. From multiple

participants, we found evidence that prove the lack of contact options a problem worth solving.

Competitor Analysis

As mentioned above, we believe Starlight Inn's website differs from the norm observed from multiple direct and indirect competitors.

One of the direct competitor we analyzed is the Huntington Beach Inn (<http://www.huntingtonbeachinn.com>). In their Contact page as shown in Figure 3.4.2, users can immediately find the inn's postal address and local phone number. The contact form can also be found if they followed the "REQUEST FOR PROPOSAL" link.

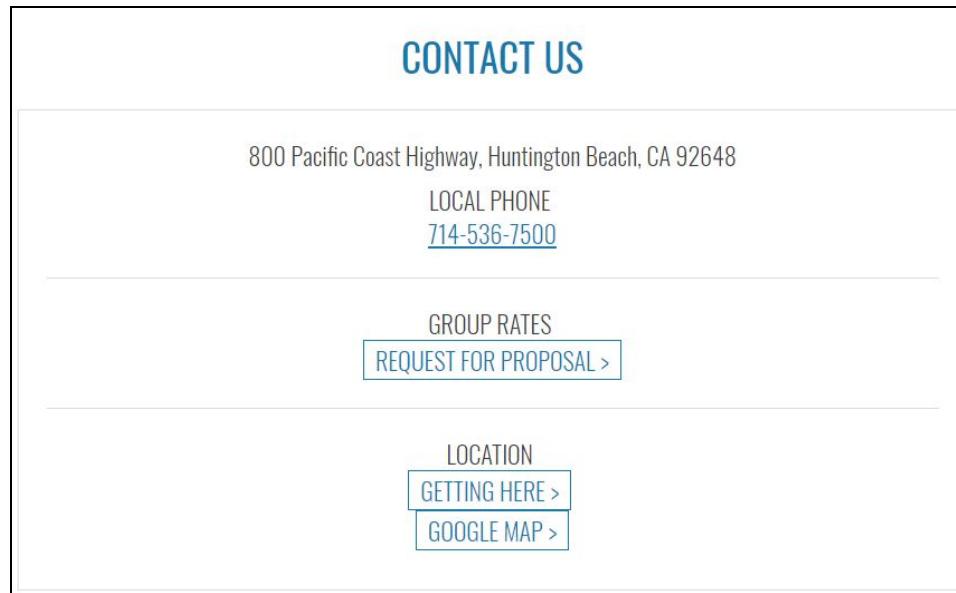


Figure 3.4.2: This is a screenshot of Huntington Beach Inn's Contact page (<http://www.huntingtonbeachinn.com/contactus.php>). All of the contact information is neatly organized on the same page.

Another direct competitor, Hyatt Regency: Huntington Beach Resort and Spa (<https://bit.ly/2IYr6qC>) does the same, but make it even more immediately available. On the homepage, the resort clearly shows an embedded Google Maps, the postal address, the phone number, the region email address, and a link that directs users to more detailed information. In addition to that, the resort also allows users to connect with it through multiple social media platforms.

On the other hand, both of the indirect competitors that we analyzed have several communication options available for hotels and hosts. Expedia (<https://www.expedia.com/>) provides hotels' phone numbers in the search result, and further information can be found after selecting a hotel from the results list. Airbnb (<https://www.airbnb.com/>) provides hosts' contact information if the users log in to the website.

Interview

Although the interviewees were not asked to comment about their preference in contact options, five of our eight interviewees expressed that they would call the hotel if they faced challenges while interacting with a hotel's website.

Usability Tests

As we wrote in our usability evaluation reports, all five of our participants had questions they wanted answered at some point of the tests. They wanted to directly speak to the hotel front desk but were unable to because the phone number was not listed.

For instance, during one of the usability tests, the participant was unable to find information about smoker rooms and tried to find the phone number to call but could not find it because it was not listed.

When asked to find a way to contact the hotel, another participant directly expressed disfavor in the contact form presented on the Contact Us page. He said that he would like to get immediate feedback or reply, so contact options such as a live chat or phone number will be ideal.

With all of the evidence summarized above, we have agreed that the Contact Us page should be redesigned.

Process

All group members agreed to consolidate all of the contact information on the Contact Us page in our individual sketches. Our sketches vary by arrangement and inclusion of small elements, but all included postal address and phone number.

One element that we have considered including is an embedded Google Maps focusing on Starlight Inn. This could be helpful for users to refer to when they are looking at the

postal address. However, we decided to exclude it from the final design because we will have a map in the About page.

Another element that we have considered is including the email address, so the users can email the inn whenever they want on their emailing applications. This will prevent them from having to visit the site to send the email. We decided to leave this out of our final design, because we do not have enough evidence to suggest that providing the email address is better than providing the contact form.

Our final design is to have postal address, phone number, hours of operation, and a contact form.

Results

We started with the idea in the following sketch, in which all communication channels are introduced on the same page:

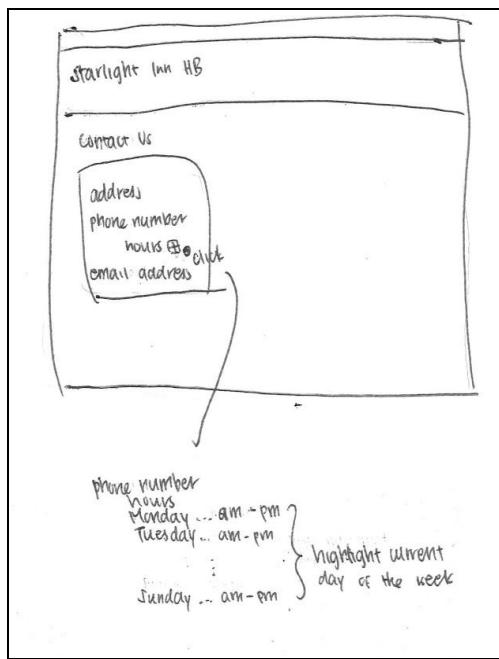


Figure 3.4.3: The idea focuses on another standard that should be implemented -- providing phone number and the hours that they will be answering calls.

In our wireframe shown in Figure 3.4.4, we organized contact information by the order that we observed from competitor's websites:

1. Postal address;
2. Phone number and hours of operation as an expandable list with the current day of the week highlighted;
3. Email address.

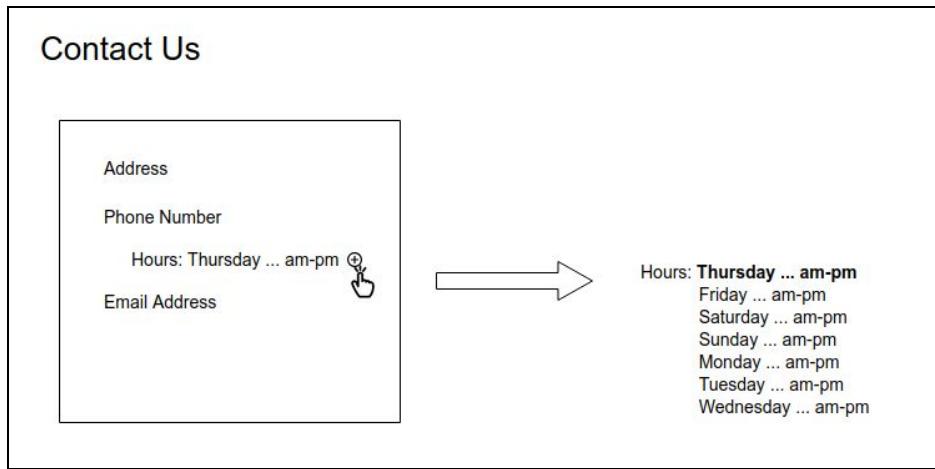


Figure 3.4.4: A digitized version of the combination of redesign ideas collected from the group members' individual sketches. Other details of the page is excluded on purpose, for this redesign target is focusing on the contact information rather than the final look of the page.

After deeper discussion on the wireframe and review of other sketches, we decided to keep the contact form and remove the email address.

We borrowed the idea from the following sketch:

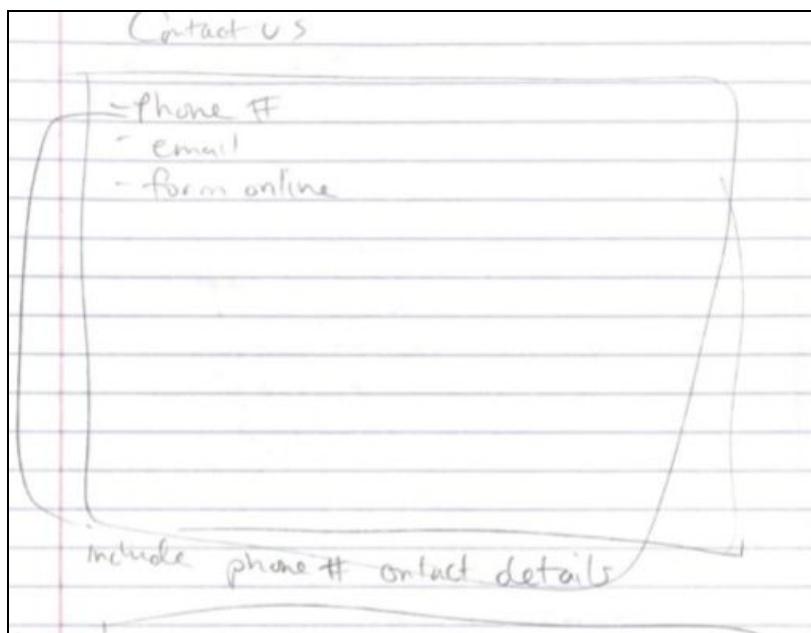


Figure 3.4.5: This is the second sketch dealing with the lack of conventional standards. Hotel websites usually offer their users phone numbers as an option for contact. This idea adds the phone number and email in addition to the contact form already available in the Contact Us page.

That became our only modification on the wireframe. The final design of the contact information to include and their organization can be seen in the image below:

The screenshot shows a web browser window with the URL <http://starlightinnhuntingtonbeach.us> in the address bar. The page title is "STARLIGHT INN HUNTINGTON BEACH ★★". Below the title, it says "18382 Beach Blvd, Huntington Beach, CA 92648". A navigation bar at the top includes links for Home, About, Gallery, Policies, Contact Us, My Booking, and a currency icon. The main content area is titled "Contact Us". It displays the postal address "18382 Beach Blvd Huntington Beach, CA 92648", the phone number "(714) 848-8422", and the hours "Hours: Thursday ... AM - PM". Below this, there is a contact form with fields for First Name (containing "Robert"), Last Name (containing "Bobby"), Email Address (containing "abc@xyz.com"), and Phone Number (containing "(123) 456 - 7890"). There is also a large text area labeled "Questions or Comments" with placeholder text "Write a message" and a green "SEND" button.

Figure 3.4.6: This is the final design of the contact information layout. In the box above the contact form, there is the postal address, the phone number, and the hours of operation. Below that, there is a contact form, where users must fill in appropriate information in each field to send a message.

To find out the hours of operation for other days of the week, the user can click the plus, or expand, symbol:

The screenshot shows a web browser window with the URL <http://starlightinnhuntingtonbeach.us> in the address bar. The page title is "Moqzilla". The main content area displays the "STARLIGHT INN HUNTINGTON BEACH" logo with two yellow stars, the address "18382 Beach Blvd, Huntington Beach, CA 92648", and a "Contact Us" section. In the "Contact Us" section, there are fields for First Name (Robert), Last Name (Bobby), Email Address (abc@xyz.com), and Phone Number ((123) 456 - 7890). Below these fields is a large text area labeled "Questions or Comments" with the placeholder "Write a message". A green "SEND" button is located at the bottom left of this area. To the right of the phone number field, there is a small icon of a hand pointing to a plus sign (+), indicating that clicking it will expand the list of hours of operation.

Figure 3.4.7: This image shows a user clicking the little plus symbol at the end of the day's hours of operation. Doing so will expand a list of hours of operation.

After clicking the expand symbol, hours of operation for all days in the week will be shown as below:

The screenshot shows a web browser window with the URL <http://starlightinnhuntingtonbeach.us>. The page title is "STARLIGHT INN HUNTINGTON BEACH ★★". Below the title, it says "18382 Beach Blvd, Huntington Beach, CA 92648". A "Contact Us" section is visible, containing fields for First Name (Robert), Last Name (Bobby), Email Address (abc@xyz.com), and Phone Number ((123) 456 - 7890). A large text area for "Questions or Comments" is present with the placeholder "Write a message". To the right of the contact form, there is a list of days and their operating hours. The current day, Thursday, is bolded and placed at the top of the list. The list includes:

Hours: Thursday	... AM - PM
Friday	... AM - PM
Saturday	... AM - PM
Sunday	... AM - PM
Monday	... AM - PM
Tuesday	... AM - PM
Wednesday	... AM - PM

A green "SEND" button is located at the bottom left of the comment area.

Figure 3.4.8: This image shows the expanded list of hours of operation. The current day of the week is bolded and placed on the first row.

The order of the days will depend on the current day of the week, with the current day on the first row. Once the list is expanded, the expansion symbol will disappear. The user will not be able to collapse the list, unless the page is reloaded.

Redesign Five: Enlarge Images

Enable the users to enlarge the images of the hotel

Problem

The images on Starlight Inn's website are all small. There are only two places where images are shown on the website: image section on the homepage and the Amenities drop down in search results.

On the top of the homepage, there is an image section (as shown in Figure 35). When users click on the thumbnail below, the image will be projected to the top, where two images are shown at the same time. In this case, the image is enlarged, but the image still isn't big enough to show the details.



Figure 3.5.1: This is a screenshot of the image section on Starlight Inn's homepage. Users can click through the images using all four arrows.

After entering the search conditions in the booking section and selecting “Search,” users can click the room name link or expand the Amenities drop down (both boxed in red in Figure 3.5.2) to view images of a specific room type. The problem here is: the images cannot be enlarged. The thumbnail in the “Room Type” column is clickable, but nothing happens when it is clicked. The images shown under the “Room Images” are not clickable.

Room Type	Room Name	Max Occupancy	Conditions	Avg rate per night	Reservation
	King Room - Non-refundable	2	Non-refundable [i] PAY AT THE PROPERTY - no prepayment needed.	USD 80.00 Exclude Tax Recovery & Service Fees	BOOK NOW
Amenities: <ul style="list-style-type: none"> + TV + Private bathroom + Carpeted + Air conditioning + Heating + Wake-up service + Refrigerator + Satellite Channels + Desk + Cable Channels + Toilet + Bath or Shower 					

Figure 3.5.2: This is a screenshot of the search result on Starlight Inn’s website. The first red box on the top that reads “King Room - Non-refundable” is a link that will expand the room details section (highlighted in blue). The second red box on the bottom is an Amenities drop down that also expands the room details section.

Users often wanted to get a clearer look at the property by clicking on the images provided, but were unsuccessful in their attempts. So, we decided to make this one of our redesign targets.

Evidence

We did not find this to be a problem until we heard about it from our interviewees. Some commented briefly on the matter, while others expanded their thoughts on the problem. Because of that, we decided to find out more about what people think about the images.

Interview and Survey

During the interview, we asked our interviewees to quickly browse through the website and share any thoughts that came to their mind. None of the interviewees reported problems on the images there. Then, we asked the interviewees to take closer looks as if they were considering to book a hotel there. All of our interviewees then report that the “images are too small” or the image quality is “ghetto looking.”

Because of these responses, we decided to add the option “Pictures” to our survey question “If you’ve used a booking website before, what type of information on the site influences your decision the most?” There are nine out of twenty-nine respondents selected “Pictures” as the most influential decision factor.

Usability Test

There are also a couple of hints collected from our usability evaluation report. All of our participants during our usability tests attempted to click on the images in hope they could get a better view. After clicking the image and not getting the desired response of viewing the image, they showed signs of confusion on their face or muttered utterances about why it wasn’t pulling up the picture.

Because of these evidence, we have decided to redesign the way images are presented. However, since the matter isn’t crucial, we ranked it with the lowest priority.

Process

To solve this problem, we first sketch out our ideas individually. From the individual sketches, we can tell that most of our ideas come from what have already been implemented on a variety of websites, which is not restricted to hotel websites.

Since our ideas are already similar, we selected the one that we like the most. Then, we look through our competitor’s websites again and make minor adjustments to our wireframe.

One idea that appears in multiple individual sketches is to make the images large enough that the users don’t have to click to enlarge. We left this idea out of our redesign because the page will be too long, and we are afraid that users may be discouraged to scroll through the whole page.

The idea that we finally settle on is to have images in a grid form. When an image is selected, it will be enlarged and shown as a pop up on the same page. Users will be able to click through the images by selecting the left or right arrow on the sides of the pop up. They will also be able to exit the pop up view by clicking the shaded background around the pop up window.

We are using the Gallery page to show all of the features that we have designed for pop up feature. However, it is important to note that users will be able to enlarge all images on the website, regardless of the page they are on. However, if images are not put in

consecutive order, users will not be able to move from one image to the next using the direction arrows.

Results

We chose the following base sketches (Figure 3.5.3 and Figure 3.5.4) to be the main style that we want to include in our redesign:

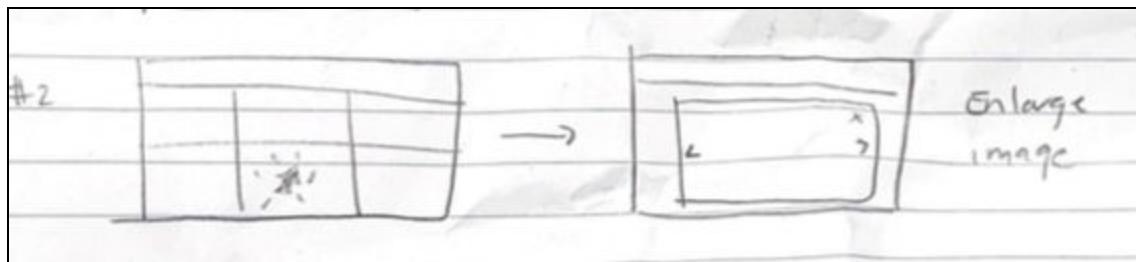


Figure 3.5.3: The idea in this sketch is to enable the users to enlarge an image by clicking on it. This feature is currently available on most other booking platforms, but not for Starlight Inn.

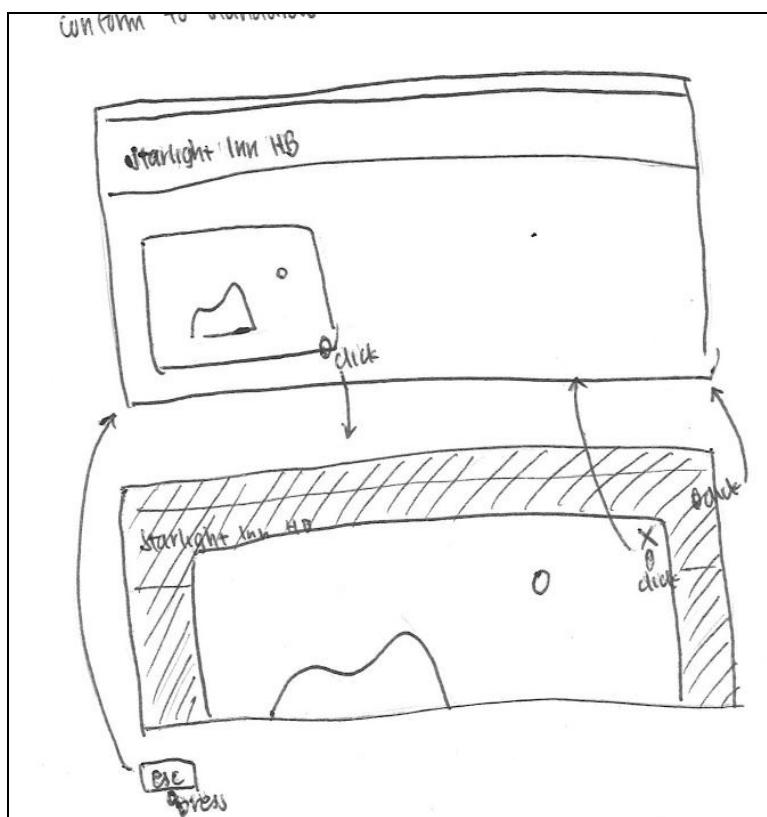


Figure 3.5.4: The image enlarges as a pop up on the same page when clicked by the user. Clicking the X mark on the upper right corner of the image or the shaded background, the user can return to original page.

The image below shows the action of enlarging an image (see Figure 3.5.5). Clicking an image from the grid will bring up a pop up window that lies on top of the current page. By clicking the shaded background, users can return to the grid view page.

The left arrow, or a less than symbol (<), on the image brings user to the previous image. In the case of our wireframe, users will be shown an enlarged first image of the first row. When the users is on the very first image of the page, the left arrow will be disabled.

The right arrow, or a greater than symbol (>), on the image brings users to the next image. In the case of our wireframe, users will be shown an enlarged third image of the first row. Clicking the arrow again will show users the first image of the second row. When the user is on the very last image of the page, the right arrow will be disabled.

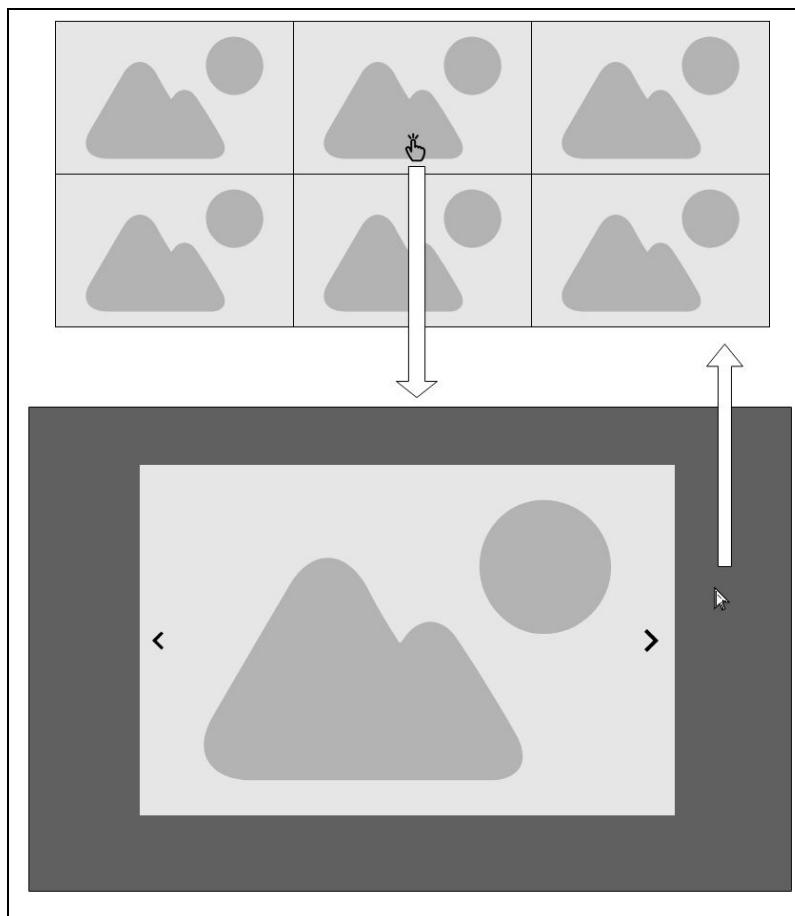


Figure 3.5.5: This is a wireframe that is also a digitized version to one of our individual sketches. On the top of the wireframe, six images are shown in a grid. The clicking cursor shows that the second image of the first row is selected. After the selection, a pop up window appears as shown in the bottom half of the wireframe. Clicking anywhere on the

shaded background will bring users back to the grid view shown on the upper half of the wireframe.

The following images are the final designs of the Gallery page. Figure 3.5.6 - 3.5.8 shows the action sequence to enlarge an image. First the user have to navigate to the Gallery page shown below:

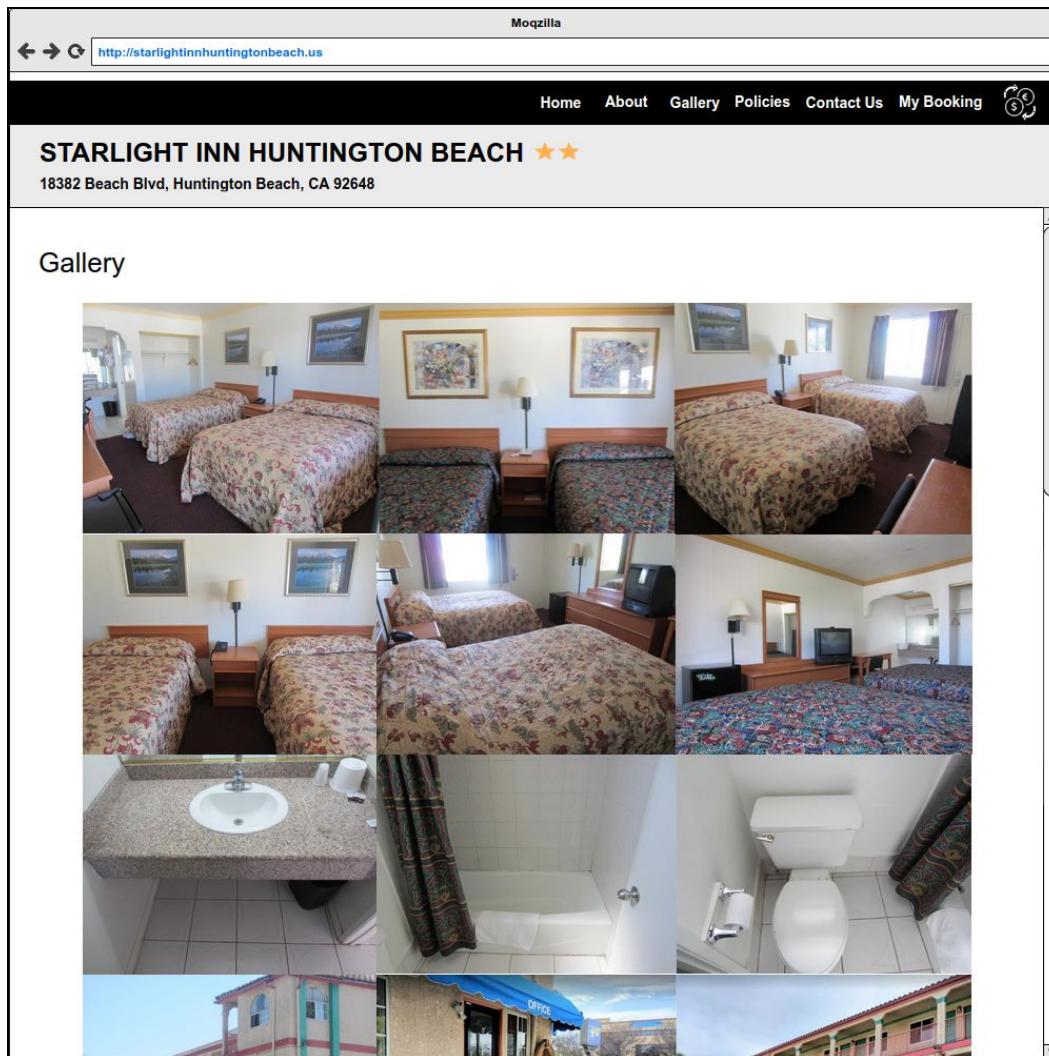


Figure 3.5.6: This is the final design of the Gallery page. Thumbnail images are shown in grids.

Then, the user should select the image to enlarge. In Figure 3.5.7, the user is clicking the second image in the first row:

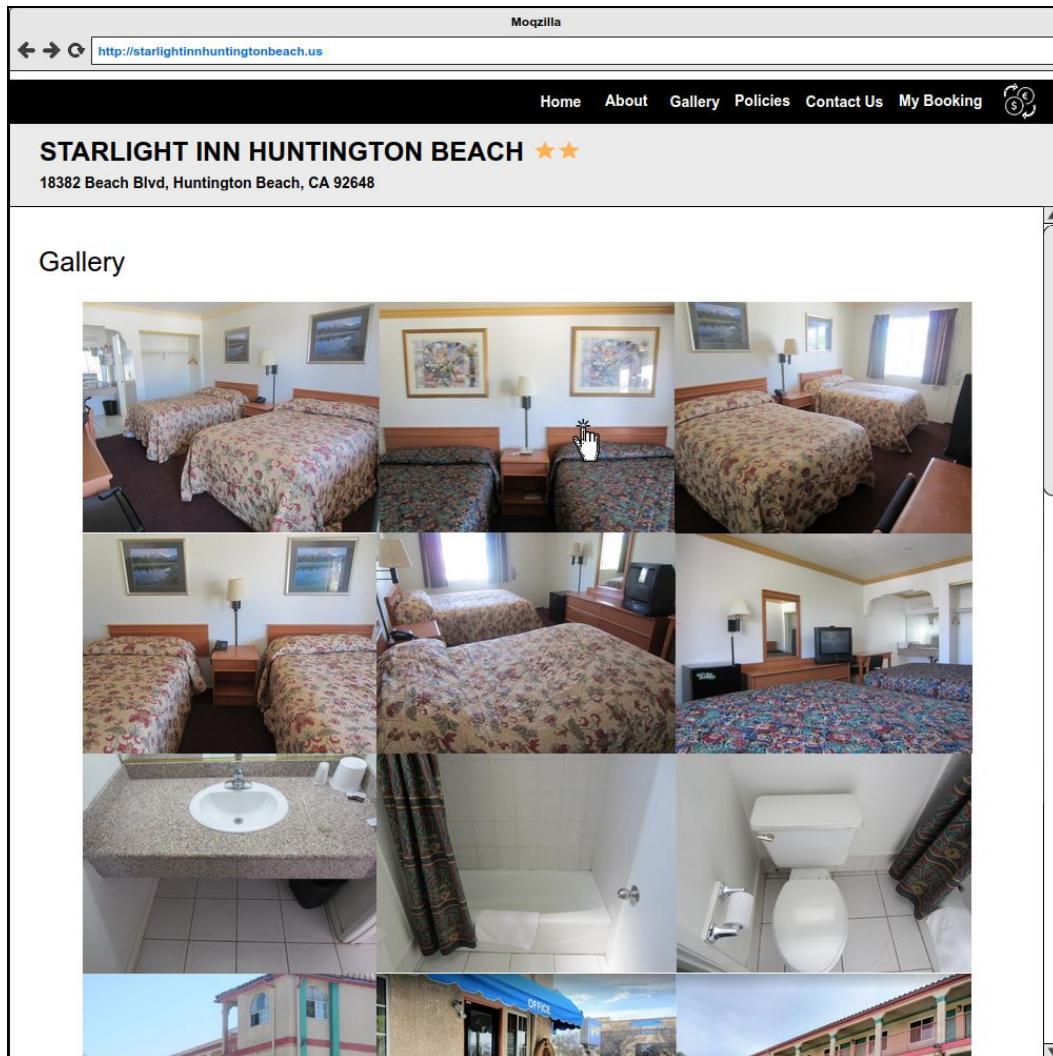


Figure 3.5.7: This image shows the action that triggers the pop up window. In this case, the user is clicking on the second image of the first row.

Finally, a pop up window of the enlarged selected image will appear:

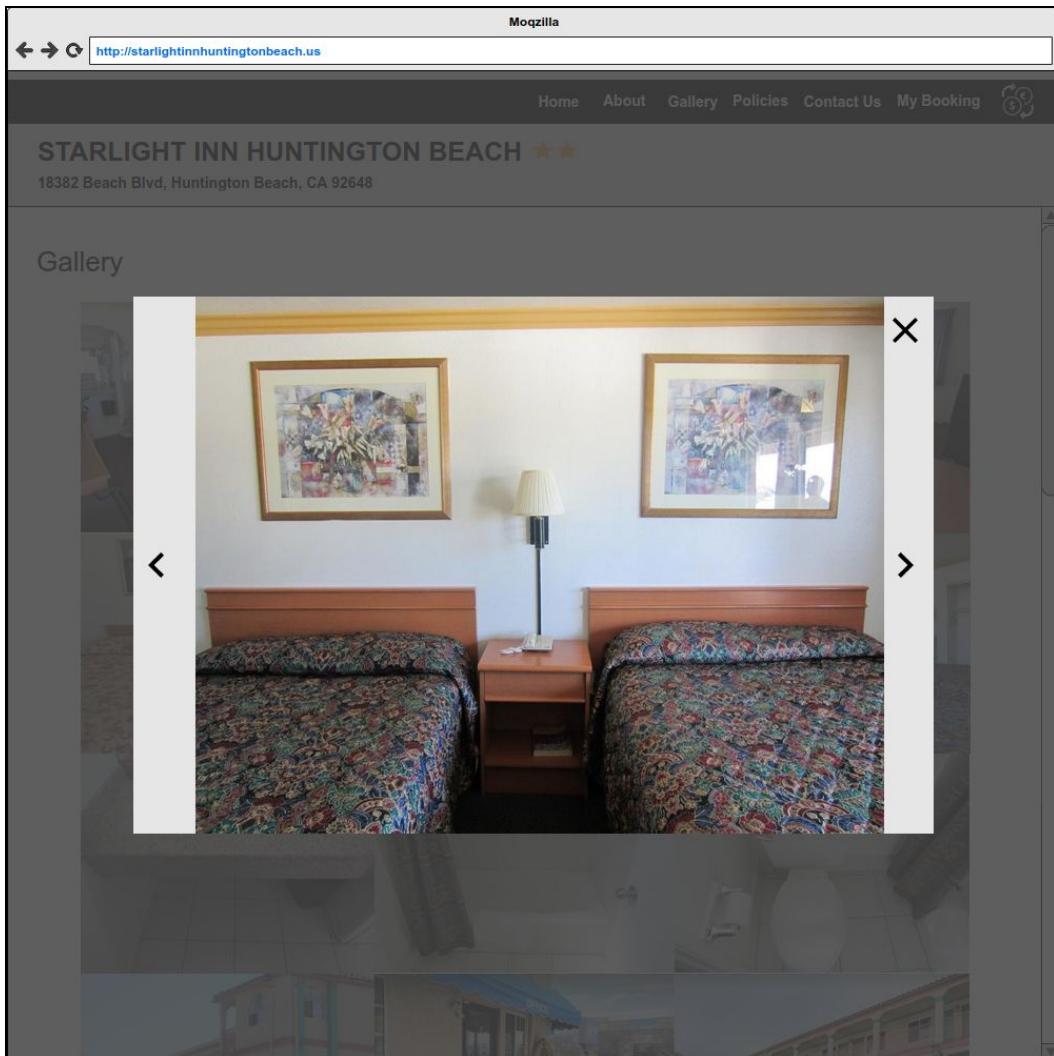


Figure 3.5.8: This image shows the pop up window that is centered to the webpage. The Gallery page, the heading ribbon, and the navigation bar are all shaded to provide the users with a full screen experience. The image enlarged should be the image that is selected in the previous step (shown in Figure 3.5.7).

There are two different ways to exit the pop up window. The first method is to click the X mark on the upper right of the pop up; the second method is to click anywhere on the background (See Figure 3.5.9).

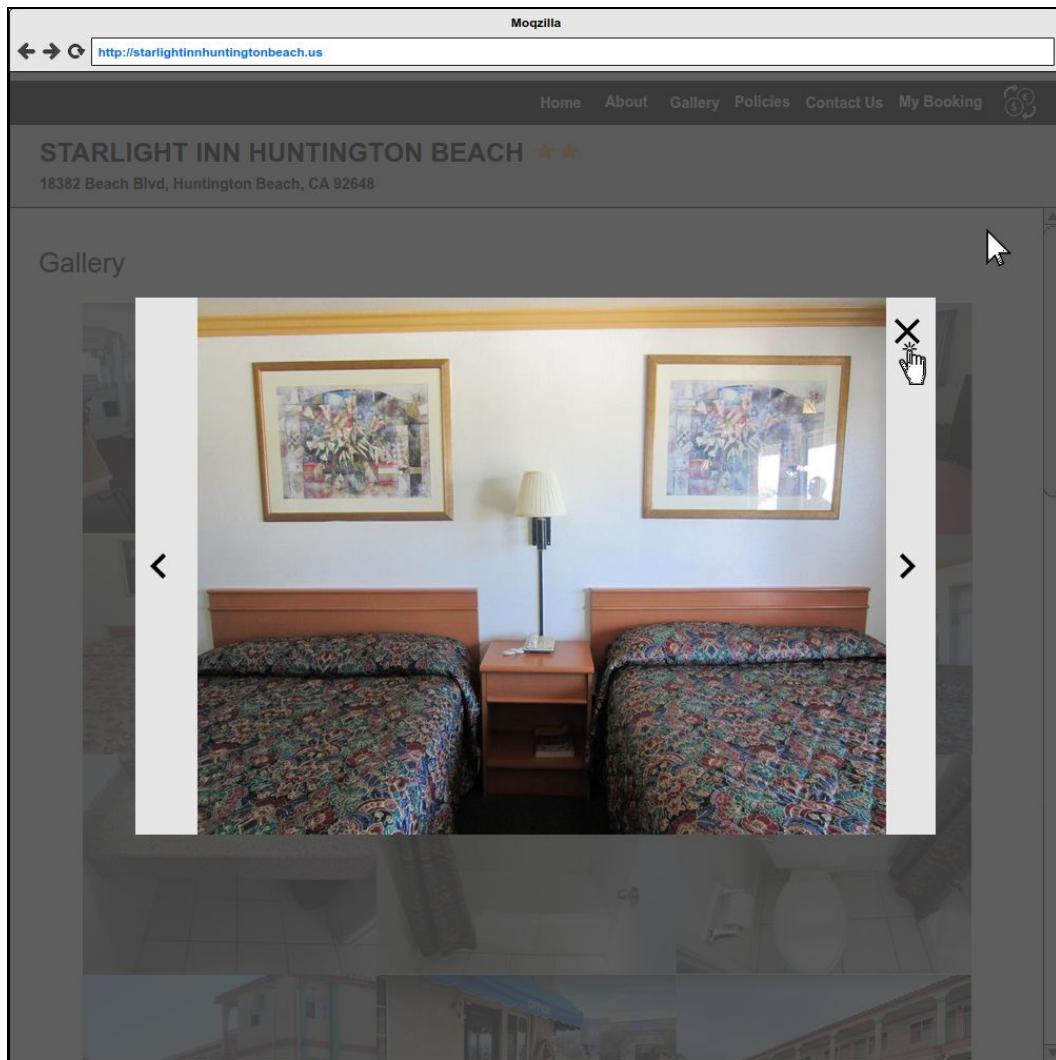


Figure 3.5.9: There are two actions shown in this image, but both allows the user to close the pop up window. Hovering the cursor over the X mark on the upper right corner will show a clicking cursor, which suggests that it is a button.

After doing either of the actions above to exit the pop up window, the user will be brought back to the Gallery page with thumbnails in Figure 3.5.6.

Going back to the pop up window shown in Figure 3.5.8, if the user wants to view the previous image, they can easily click the left arrow shown below:

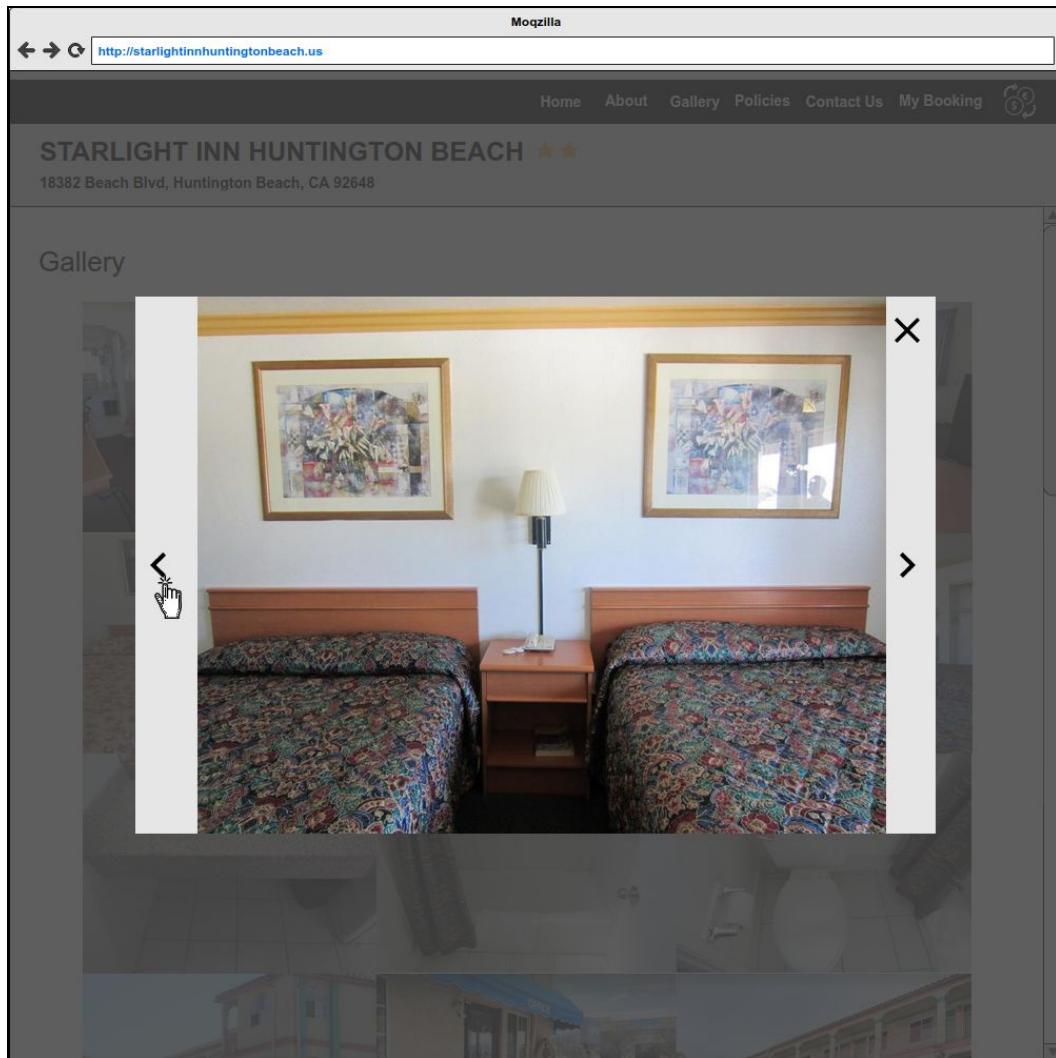


Figure 3.5.10: The action shown in this image allows users to view the previous image according to the queue on the grid view. By clicking the left arrow, the user will be presented the enlarged version of the previous image (refer to Figure 3.5.6). By clicking the right arrow, the user will be presented the enlarged version of the next image (refer to Figure 3.5.6).

Another way to achieve the same goal is to follow the previous steps of exiting the pop up window and selecting the previous image to open another pop up window.

After completing the step described above, the user will be presented the previous image, as shown below:

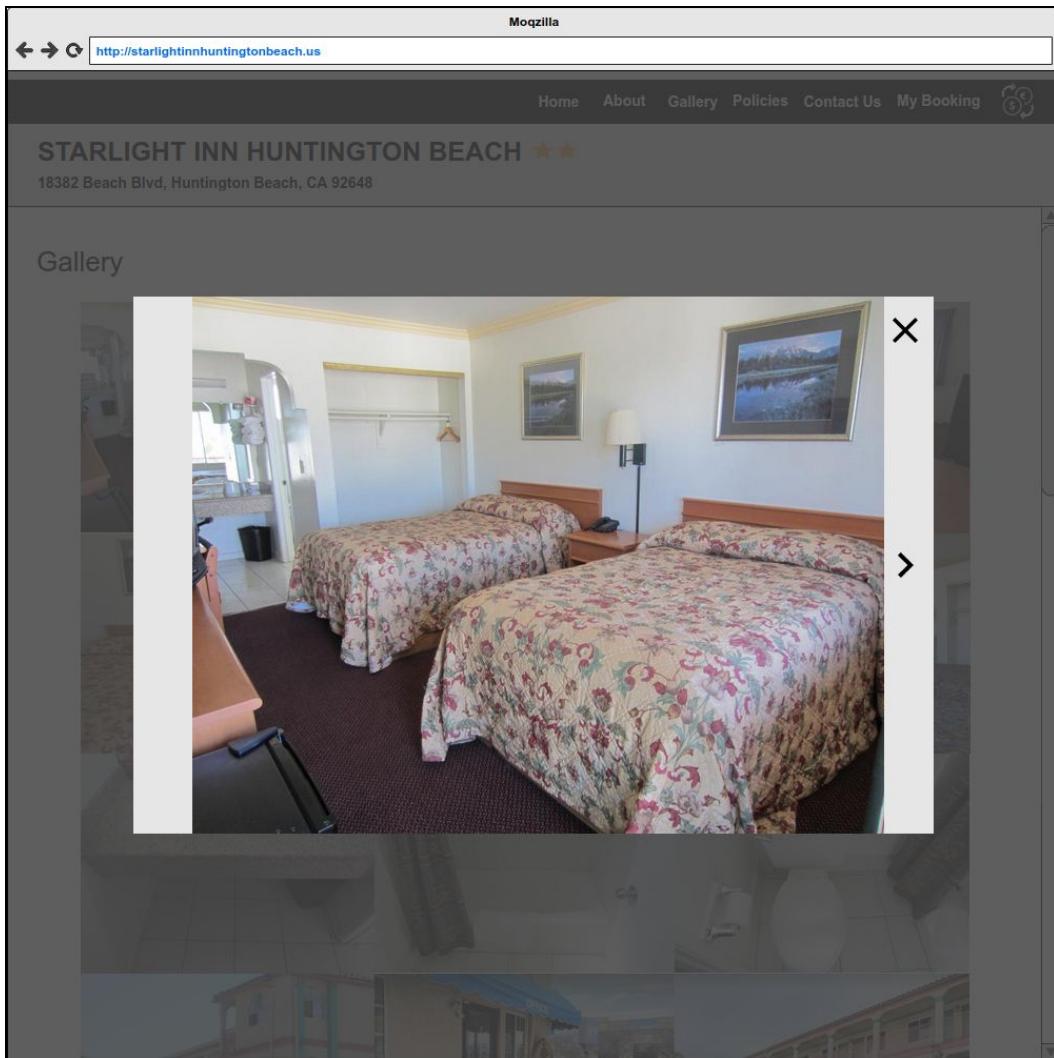


Figure 3.5.11: This image is the result of the action done in Figure 3.5.10. There is no left arrow, because there is no preceding image. There is a right arrow, because there is a following image.

Note that the left arrow is absent from this image. The reason is that there is no preceding image. The same logic applies to the right arrow. If there is no following image, then there will be no right arrow.

Heuristic Evaluation

We have evaluated our redesign using Jakob Nielsen's 10 heuristics of user interface (UI) design (<https://www.nngroup.com/articles/ten-usability-heuristics/>). We went through the principles and critiqued our product to uncover potential usability issues. Detailed examples for each heuristic the helped lead to the following conclusions are available in *Appendix 8.0 Individual Heuristic Evaluation Notes* Sections 8.1 to 8.4.

1. Visibility of system status

The redesign did well on showing the system status. When the system is loading, there will be spinning wheels that let users know the system has received the action request, and is currently processing it. When the system loaded quickly, the page (or a portion of the page) will be reloaded to hint that the content has changed.

As the product originally was, the redesign will also be highlighting user selections and reflecting them in appropriate fields. For example, the dates selected on the calendar drop down will be highlighted and filled into the check-in and check-out fields automatically in proper format.

There is little room for improvement with the limited functionality the product provides. Although the visibility of the product may not be perfect, it is good enough to satisfy user needs.

2. Match between system and the real world

The redesign speaks in user's language fairly well in all of the pages. The phrases mirror what are actually used in real life. For instance, in the search result, there is a column of prices labeled "Rates Per Night." Although none of the labels are in full sentence, their purpose can easily be identified.

Originally, the column where "Book Now" buttons are located in the search results were labeled "Reservations." We found that label to be an inaccurate description of what the functions do, so we eliminated the label without replacing it with a substitute. This may decrease the accessibility of our website, but is currently the best solution that we had.

There are definitely some room for improvement. One element that we can fix is to give the “Book Now” column a label. Another element that could be fixed is the name of the My Booking page. It can cause confusion for first time users, since its purpose cannot be immediately recognized.

3. User control and freedom

Overall, the system does a good job at maintaining user control and freedom. For booking a hotel room, for example, the user is able to opt out at any point without any penalty or inconvenience. The same idea applies to other simple functionalities like looking for available rooms, sending a message through the Contact Us page, or viewing pictures. The users are able to begin whichever process is available on the site, and easily exit at any point if they want to.

With the limited amount of functionalities that are provided, not much is needed in order to maintain user control and freedom. With the functionalities that are there, there is no distinguishable room for improvement that could grant the users further control or freedom when using the system.

4. Consistency and standards

Overall, the system does a good job of maintaining its consistency with general, and commonly practiced standards. Some examples of this include providing commonly desired information on the Contact Us page (including phone number, hours of operation, email, and address), using a universal symbol to represent the change of currency function, and providing an image gallery to advertise different areas of the property.

One way in which this website is inconsistent with other commonly practiced standards is in its aesthetic design. Though it is simplistic and successfully functional, its aesthetics appear to be outdated when compared to other, more modern sites. This can be remedied simply by selecting better fonts, implementing a more meaningful color scheme, and using pictures of higher quality.

5. Error prevention

Given that our redesigns revolved around fixing unclear labels and providing the user with more feedback, we performed very well in this heuristic. We successfully eliminated situations where users would commit an error, such as attempting to get information for a room before entering check-in and check-out dates. In areas where error prevention

already existed, such as in the contact us form, we added more information so the user would know what is being asked of them, hopefully reducing the number of mistakes they commit.

6. Recognition rather than recall

The site by nature does not have much you need to remember to operate it. The redesigns that we introduced furthered this so we did not have any areas in which the user would need to remember what goes where or what anything means. In cases where more information may be needed, such as for the text fields in the contact us form, we have added the relevant information. In other parts of our redesigns where not many actions could be performed, such as our gallery, it was self explanatory. We also leveraged universal icons, such as a question mark for clarification, where we could to reduce the amount of text we had while still retaining the message.

7. Flexibility and efficiency of use

This heuristic did not apply to any of our redesigns, because our product treats all users equally. To book a room, they will have to go through the same steps, regardless of their experience with the website or knowledge with technology. The reason we did not allow experienced users to go through the process more quickly is the simplicity in current interaction method. Booking a room only required four steps:

1. Enter search conditions and search;
2. Select a room;
3. Fill in billing information; and
4. Confirm booking.

There is little room to make interaction more flexible, because each step largely depended on previous inputs. Furthermore, it can be difficult to make the operation of the website more efficient than it is in the redesign. Since the core functions are located on the homepage, allowing users to travel through the pages efficiently does not necessarily affect the booking process.

8. Aesthetic and minimalist design

Overall, the system does a good job with its minimalist design. A lot of unessential information in the homepage is removed, to present only core functions of the website. All amenities are consolidated in their own section with icons to aid in identifying what is offered and policies are placed in their own page, which aids in decreasing the amount of

information presented on the homepage. The Contact Us page only presents the minimal amount of information required: address, hours of operation, phone number, and contact form. The Gallery page only includes a heading and images themselves. Enlarged photos have a minimalist design with the photo, exit icon, and arrows for moving back and forth. However, the overall aesthetic of the system is not very pleasing because the focus was on functionality.

As mentioned, the overall aesthetic of the site is not very pleasing (looks outdated) because its focus is mainly on simplicity and efficiency; this is a possible room for improvement. Keeping the green, white, and black color scheme, we could possibly make interface changes to display information to be more aesthetically pleasing by using more appealing fonts, buttons, and images.

9. Help users recognize, diagnose, and recover from errors

Overall, the system does well in helping users recognize and fix errors, especially when it comes to invalid input. For example, when filling out the contact form, each text field performs live feedback to the user with check marks or x's to indicate if an input is valid. Additionally, if users try to submit forms with incorrect information, the system would highlight fields that are invalid and provide messages explaining what is wrong and how to fix it. Furthermore, when users try to search for available rooms before filling out necessary information, the check-in/ check-out calendar is displayed to signal to the user that they need to input the necessary information.

At the moment, there is little room for improvement because of the simplicity of the system. There aren't many areas where errors can be made and potential errors from forms and room searching have been addressed.

10. Help and documentation

The system does a good job at providing help and documentation where necessary. Though few places require help and documentation, those that do need it implement insightful and helpful help and documentation. One good example of good help and documentation can be found in the Contact Us page, where help and documentation are provided both in the form of question marks that users can hover over for more information, and also in the form of informative error messages that will appear when the user enters invalid information in the message form. These error messages inform the user both of what is wrong, and how they can go about fixing the error.

Aside from the example provided above, additional help and documentation is not provided for areas of the website that are not as interactive. One helpful way to implement help and documentation for less interactive areas on the site is to include a FAQs that would provide information commonly needed by users.

Conclusion

At the beginning of this project we set out to learn about the Starlight Inn Huntington Beach website and discover what changes could be made to provide the user with the best experience possible. We began by first looking to the website's competitors who could inform us what works as well as what to avoid in our design. Then we turned to the audience and began learning about the types of users that would want to use the website and for what reasons. After doing research on our users and their potential needs, we turned back to the website to see what could be done for them. We applied principles of human-computer interaction design to inform us on possible pain points and opportunities for increasing user experience. We took that information, built tests to determine what specific changes would be appropriate and finally, began implementing them through various iterations of designs.

At each step in this project, we called upon our experience as designers but also tossed that aside to see things from a different point of view. After all, what we've learned is that what designers believe to be a good change may have unintended consequences. With this in mind we didn't end the project once the final designs were created. We also conducted evaluations of our own redesigns to learn about what mistakes were made in order to learn from them. As a bonus, we conducted an accessibility report on the original design for the owner of the website to get an idea of how accessible their site is for people of various capabilities (report is available in *Appendix 9.0 Accessibility Report*); something not often discussed by those who don't utilize such features but nevertheless an important topic to discuss.

While our designs here could use more work (no system is ever perfect), we believe that we have created a solid foundation from which future designers of the system could build upon to create a truly great user experience.

Appendice

1.0 Consent Documents

1.1 Statement of Consent for Interviews

Statement of Informed Consent

Purpose: We are conducting a study of how people book hotel rooms. The purpose of this study is to inform the design of this kind of technology. It is not intended to test your individual performance in any way. This study is being conducted as part of a course at the University of California, Irvine, entitled, “Informatics 132: Project in Human Computer Interaction.” As such, this is also a training opportunity for us as students.

Procedure: You will be asked to participate in an interview. We will ask you questions about your experiences and opinions. This interview is meant to be a conversation – there are no right or wrong answers. We expect the interview to last approximately 30 minutes. We will take notes about your responses.

Confidentiality: We will use the data you give us, along with the information we collect from other participants, to design better technologies. To ensure confidentiality, we will not associate your name with your data.

Freedom to Withdraw: Participation in this study is voluntary. You may withdraw from the activity at any time without penalty.

Contact Information: If you have any questions or comments, you may contact us at our UCI email addresses which we will provide separately, or you may contact the instructor of the course: Matthew Bietz, Ph.D., mbietz@uci.edu.

If you agree to these terms, please indicate your acceptance by signing below:

Signature: _____

Printed Name: _____

Date: _____

1.2 Statement of Consent for Surveys

Statement of Informed Consent

--Purpose--

We are conducting a study of how people book hotel rooms. The purpose of this study is to inform the design of this kind of technology. It is not intended to test your individual performance in any way. This study is being conducted as part of a course at the University of California, Irvine, entitled, “Informatics 132: Project in Human Computer Interaction.” As such, this is also a training opportunity for us as students.

--Procedure--

You will be asked to participate in a survey. We will ask you questions about your experiences and opinions. This survey is meant to be a conversation – there are no right or wrong answers. We expect the survey to last at most 5 minutes. We will take notes about your responses.

--Confidentiality--

We will use the data you give us, along with the information we collect from other participants, to design better technologies. To ensure confidentiality, we will not associate your name with your data.

--Freedom to Withdraw--

Participation in this study is voluntary. You may withdraw from the activity at any time without penalty.

--Contact Information--

If you have any questions or comments, you may contact us at our UCI email addresses which we will provide separately, or you may contact the instructor of the course: Matthew Bietz, Ph.D., mbietz@uci.edu. You will also be given a chance to send us some feedback at the end of the survey.

If you agree to these terms, please indicate your acceptance by clicking 'NEXT' to begin the survey.

1.3 Statement of Consent for Usability Tasks

Statement of Informed Consent

Purpose: We are conducting a study of how people book hotel rooms. The purpose of this study is to inform the design of this kind of technology. It is not intended to test your individual performance in any way. This study is being conducted as part of a course at the University of California, Irvine, entitled, “Informatics 132: Project in Human Computer Interaction.” As such, this is also a training opportunity for us as students.

Procedure: You will be asked to participate in an usability test. We will give you scenarios and tasks to attempt. This usability test is meant to give us an idea on how users approach different tasks. There will be a goal for each scenario, but there are no right or wrong ways to achieve it. You will not be penalized in any way for not completing the task. As you use the site, we would like you to think out loud as much as possible: to tell us what you’re looking for, what you’re trying to do, and what you’re thinking. We expect the usability test to last 30 to 45 minutes. We will take notes about your responses.

Confidentiality: We will use the data you give us, along with the information we collect from other participants, to guide our redesign. To ensure confidentiality, we will not associate your name with your data.

Freedom to Withdraw: Participation in this study is voluntary. You may withdraw from the activity at any time without penalty.

Contact Information: If you have any questions or comments, you may contact us at our UCI email addresses which we will provide separately, or you may contact the instructor of the course: Matthew Bietz, Ph.D., mbietz@uci.edu.

If you agree to these terms, please indicate your acceptance by signing below:

Signature: _____

Printed Name: _____

Date: _____

2.0 Interview Protocol

0. Provide and read the Statement of Consent (See *3.1 Statement of Consent for Interviews* under Appendix 3.0 Consent Documents).
Ask the interviewees to sign the form to indicate their consent.
1. Hi, nice to meet you. What's your name?
2. How's your day?
3. What year were you born?
4. Do you have an occupation?
 - a. Are you a student?
5. What methods of travel do you utilize?
 - a. If the answer is, or includes, cars:
 - i. Is it your own car?
6. When was the last time you stayed at a hotel?
 - a. Do you remember which hotel you stayed at?
 - b. What are the reasons that you decided to stay at that hotel?
 - c. Are you going to book that hotel again next time you're in that area?
 - i. Why (not)?
7. What is typically your main reason for booking a hotel?
 - a. If the answer is vacation or business trip:
 - i. Where do you like to travel to?
 - ii. Do you usually travel by yourself, or with others?
 1. Who did you travel with?
 - iii. What services do you look for?
 1. What are the must haves?
 2. What are the nice to haves?
 - iv. What kind of services/amenities did you expect your hotel to have?

b. Emergency

- i. What is the emergency? (Ask if they're ok discussing this)
- ii. What main services were you looking for at that time?

8. What is the general process you use to book a room somewhere?

a. If the answer is through the internet:

- i. What are some things that you liked about using **mentioned website**?
- ii. What are some of your biggest pain points in using **mentioned website**?
- iii. What types of information on a website influences your decision to book a room the most?
 1. Why?
(Things to look for: Why do bad pictures deter them so quickly, if that's the case?)
- iv. Is this website the one you use the most?
 1. How did you learn of this website?
 2. Why did you decide to give it a try?
- v. What other hotel booking services have you tried?
 1. Why do you keep returning back to the service you use the most?
 2. What deters you from using the other booking services?

b. If the answer is anything but the internet:

- i. Why is it that you prefer this method over booking a room online?
- ii. What don't you like about booking hotels this way?
- iii. Have you ever tried booking a hotel room online?

9. Do you remember your booking process for the last time you traveled?

- a. If the answer is yes, and it was not over half a year ago
(Look at the answer for question 6):
 - i. Did you use the method mentioned above? If not, why not?

b. If the answer is no, or it was over half a year ago
(Look at the answer for question 6):

i. Skip to question 10.

10. When you go on vacation, is it usually like a day trip or do you tend to stay overnight?

- a. Does the length of the stay determine the type of place you stay at?
- b. Does other factors, such as destination, determine the type of place you stay at?
- c. If you stay overnight, how do you choose where to stay?

11. We are going to show you some hotel websites and we want you to tell us what comes to mind.

(Show the following websites in any order)

- a. <http://starlightinnhuntingtonbeach.us>
- b. <https://www.hyatt.com/en-US/hotel/california/hyatt-regency-huntington-beach-resort-and-spa/hunrh>
- c. <http://www.huntingtonbeachinn.com/>
- d. <https://www.airbnb.com/>
- e. Things to look for:
 - i. What is your first thought/impression about the website?
 - ii. Does the site appeal to you?
 - iii. Would you like to find out more about the hotel based on the layout/aesthetics/etc.?

12. Is there anything else we should have asked, but didn't?

3.0 Survey Questions

Demographics

1. What is your age? *

Mark only one oval.

- Under 12 years old
- 12-17 years old
- 18-24 years old
- 25-34 years old
- 35-44 years old
- 45-54 years old
- 55-64 years old
- 65-74 years old
- 75 years or older

2. What is your gender? *

Mark only one oval.

- Female
- Male
- Prefer not to say
- Other: _____

3. What is the highest degree or level of school you have completed? If currently enrolled, highest degree received.

Mark only one oval.

- No schooling completed
- Nursery school to 8th grade
- Some high school, no diploma
- High school graduate, diploma or the equivalent
- Some college credit, no degree
- Associate degree
- Bachelor's degree
- Master's degree
- Professional degree
- Doctorate degree
- Other: _____

4. What is your marital status?

Mark only one oval.

- Single
- Married
- Widowed
- Separated
- Divorced

5. What is your employment status? *

Check all that apply.

- Employed for wages
- Self-employed
- Out of work and looking for work
- Out of work and not currently looking for work
- A homemaker
- A student
- Military
- Retired
- Unable to work

Travel Experience

6. Have you booked, or tried to book, a hotel before? *

Mark only one oval.

- Yes
 No

7. Which methods of hotel booking have you tried before? *

Check all that apply.

- Book using its official website
 AirBnB
 HostelWorld
 Book through phone calls
 Book at the hotel in person
 Hotwire
 Kayak
 Trivago
 Priceline
 Agoda
 Booking.com
 Expedia
 Other: _____

8. What is your preferred platform for booking a hotel? *

Mark only one oval.

- Online
 On the phone
 In-person
 Other: _____

9. When you want to learn more about a hotel, how do you usually get more information? *

Check all that apply.

- Go on the hotel's website
 Ask friends/family who have stayed there before
 Contact the hotel
 Look at online reviews
 Other: _____

10. If your preferred booking method is using a website, how did you learn about it?

Mark only one oval.

- Saw/heard an advertisement for it
- Found it by searching on the internet
- Recommended to me by friends/family
- Other: _____

11. If you've used a website to book a hotel before, which of its characteristics is most important to you?

Mark only one oval.

- Information availability
- Efficiency
- Ease of use
- Aesthetics
- Other: _____

12. If you've used a booking website before, what type of information on the site influences your decision the most?

Mark only one oval.

- Map and directions
- Pictures
- Textual descriptions
- Reviews
- Other: _____

13. The last time you booked a hotel online, did you use the hotel's website, or a third party service (e.g. Expedia)? *

Mark only one oval.

- Hotel site
- Third party service
- N/A

14. What is your reason for choosing the answer above? Put N/A if you have not booked a hotel online before. *

15. What is typically your main reason(s) for travel? *

Check all that apply.

- Vacations
- Emergencies
- Business trips (interviews, conferences, etc.)
- Other: _____

16. How often do you book hotels? *

Mark only one oval.

- At least once a month
- At least once every three months
- At least once every six months
- Once a year or less

17. How recently have you traveled? *

Mark only one oval.

- Within a week
- Within a month
- Within a year
- Over a year ago

18. How long was your stay the last time you booked a hotel room? *

Mark only one oval.

- One night
- A few nights
- More than a week

19. How much of an effect do special offers or promotions have on your hotel booking decision? *

Mark only one oval.



20. How much of an influence does price have on your decision of booking a hotel? *

Mark only one oval.



21. What are some hotel amenities you look for when booking a hotel? *

Check all that apply.

- Free breakfast
- Spa
- In-room minibars
- Suites
- Free Wifi
- Free parking
- Room service
- Shuttle services
- Restaurants, cafes, bars, or other dining areas
- Wake up services
- Housekeeping services
- Air conditioning
- Other: _____

22. What other things do you look for when booking a hotel? *

Check all that apply.

- Refund policy on rooms cancelled
- Accessibility
- Positive online rating and/or comments regarding physical goods provided
- Affordability
- Easy check-in process
- Positive online rating and/or comments regarding customer service
- Other: _____

23. How likely are you affected by online ratings or comments about a hotel? *

Mark only one oval.

1 2 3 4 5

Very unlikely Very likely

Wrapping Up

24. How would you rate this survey?

Mark only one oval.

1 2 3

Terrible Great

25. Is there anything we should have asked, but didn't?

26. Any other feedback regarding the survey?

Powered by
 Google Forms

4.0 Interview Log

Participant Number	1
Gender	Male
Age	52 years old
Description	He has over twenty years of experience working in a hotel in Taiwan. During those years, he first worked as the head of the IT department. He is now working as one of the higher executives.
Interview Date	Friday, February 1, 2019
Interview Time	10:20 - 11:48 pm
Interview Location	Phone interview

Participant Number	2
Gender	Female
Age	31 years old
Description	She works in the IT department of a university in central America.
Interview Date	Wednesday, February 2, 2019
Interview Time	11:46 am - 12:13 pm
Interview Location	Phone interview

Participant Number	3
Gender	Female
Age	21
Description	She is a full time student working part time as a campus operator. She doesn't travel too often now but has in the past. Most of her past trips have been in state but she has plans to travel out of state and internationally. She likes to research potential future trips so she often visits various websites to look for places to stay.
Interview Date	Thursday, January 31st, 2019
Interview Time	5:00pm-5:33pm
Interview Location	UC Irvine Campus

Participant Number	4
Gender	Male
Age	21
Description	He is a full time student working part time in the tech field.
Interview Date	Thursday, January 31st, 2019
Interview Time	5:50pm-6:13pm
Interview Location	UC Irvine Campus

Participant Number	5
Gender	Female
Age	20
Description	She is a full time student with an internship as a software engineer. In the past, she has traveled in state and internationally for business trips and interviews. However, in her free time, she likes to research places to go to for vacation. She plans to travel to other states and countries for vacation in the future.
Interview Date	Thursday, January 1, 2019
Interview Time	8:15pm-8:51pm
Interview Location	UC Irvine Campus

Participant Number	6
Gender	Male
Age	21
Description	He is a fourth year at UCI. He works part time as a tennis coach, and travels a few times annually for vacation and to go back home to China. He uses websites regularly to do so.
Interview Date	Thursday, January 31, 2019
Interview Time	5:40pm-6:13pm
Interview Location	Phone interview

Participant Number	7
Gender	Female
Age	57
Description	She is a business owner that travels regularly for work-related meetings. She also frequently travels for vacation with her family. She likes to use multiple third-party booking websites at a time to find competitive prices for hotels she wants.
Interview Date	Thursday, January 31, 2019
Interview Time	11:00pm-11:34pm
Interview Location	At interviewee's home

Participant Number	8
Gender	Female
Age	20
Description	She is a full time computer science student also working part time as a software engineer off campus. Because she is from another country, she has traveled internationally before. Her family often travels for vacation during breaks. She likes to use a third party hotel booking website to search and compare hotels.
Interview Date	Thursday, January 31, 2019
Interview Time	9:00pm-9:47pm
Interview Location	UC Irvine Campus

5.0 Task Descriptions & Evaluation Protocol

5.1 Task 1: Usability Test

Scenario

You made a last minute decision to stay two nights at Huntington Beach two weeks from now to go to a festival by yourself. You've heard about a hotel named Starlight Inn Huntington Beach, but you have never stayed there before. All third-party platforms that you trust already ran out of rooms, but you want to check the vacancy of the hotel on its official website, and see if it offers any smoke-friendly rooms before you look for another hotel.

Goal

Book a room that allows smoking for one adult two weeks from now for a total of two nights

Inputs

- Check-in date
- Check-out date
- Number of adults
- Room type
- Billing information
- Smoking option
- Complete booking

Assumptions

- The user has not booked with Starlight Inn before
- There are rooms available

Steps

1. In any order:
 - a. Select the check-in date
 - b. Select the check-out date
 - c. Select the number of adults
2. Select search for rooms
3. Select a room type
4. In any order:
 - a. Fill in billing information
 - b. Change smoking preference to allow smoking
5. Complete the transaction

Success Criteria

One of the following for the task to be counted as completed:

- Facilitator understands where users go to find the smoking information
- Participant has achieved the goal
- Participant has completed process within 10 minutes

5.2 Task 2: Usability Test

Scenario

You are going to travel with your friend, and you guys are debating whether you guys should share a room or get your own rooms. You already know that Starlight Inn has two types of rooms -- queen room with two queen beds and king room. You want to find more interior pictures of queen room with two queen beds.

Goal

Find pictures of queen room with two queen beds

Inputs

None

Assumptions

- The user has not visited the website before

Steps

1. Go through the pictures on the slideshow to find pictures of queen room of two queen beds

Alternative Steps

1. In any order:
 - a. Select the check-in date
 - b. Select the check-out date
 - c. Select the number of adults
2. Select search for rooms
3. Expand the Amenities drop down under queen room of two queen beds
4. Go through the pictures

Success Criterias

One of the following for the task to be counted as completed:

- Facilitator understands where users go to find the images
- Participant has achieved the goal

5.3 Task 3: Usability Test

Scenario

You have found a room that you are willing to stay in at Starlight Inn Huntington Beach. The inn offers all of the services and amenities that you are looking for, including acceptable pricing of rooms and services. You want to know whether you will be penalized for cancelling a reservation.

Goal

Find the cancellation policy

Inputs

- Check-in date
- Check-out date
- Number of adults
- Number of children
- Room type
- Billing information

Assumptions

- The user has not visited the website before
- There are rooms available

Steps

1. In any order:
 - a. Select the check-in date
 - b. Select the check-out date
 - c. Select the number of adults
 - d. Select the number of children (optional)
2. Select search for rooms
3. Click the dropdown menu for amenities
4. Find cancellation policy

Alternative Steps 1

1. Go to the website
2. In any order:
 - a. Select the check-in date
 - b. Select the check-out date
 - c. Select the number of adults
 - d. Select the number of children (optional)
3. Select search for rooms
4. Hover over the information icon ([i])
5. Find cancellation policy

Alternative Steps 2

1. In any order:
 - a. Select the check-in date
 - b. Select the check-out date
 - c. Select the number of adults
 - d. Select the number of children (optional)
2. Select search for rooms
3. Click book now
4. Scroll to the policy section
5. Find cancellation policy

Alternative Steps 3

1. In any order:
 - a. Select the check-in date
 - b. Select the check-out date
 - c. Select the number of adults
 - d. Select the number of children (optional)
2. Select search for rooms
3. Hover over the text “FREE CANCELLATION”
4. Find the cancellation policy

Success Criterias

One of the following for the task to be counted as completed:

- Facilitator understands where users go to find the cancellation policy
- Participant has achieved the goal

Notes

For this task, understanding where the information should go is more important than whether the participants really completed the task.

5.4 Task 4: Usability Test & Cognitive Walkthrough

Scenario

You are staying in the area for the weekend and you are considering Starlight Inn as your option but you have several inquiries about the hotel rooms and amenities. You decide to contact the hotel on the website.

Goal

Contact the hotel

Inputs

- Contact information
- Question or inquiry

Assumptions

- The user has not visited the website before

Steps

1. Locate and select Contact Us page
2. Specify contact information
3. Enter question/inquiry about Starlight Inn
4. Send request

Success Criterias

One of the following for the task to be counted as completed:

- Participant has achieved the goal

5.5 Task 5: Cognitive Walkthrough

Goal

Book a non-smoking room for one adult two weeks from now for a total of two nights

Inputs

- Check-in date
- Check-out date
- Number of adults
- Number of children
- Room type
- Billing information

Assumptions

- There are rooms available
- The user has not booked with Starlight Inn before

Steps

1. Locate the booking interface
2. Specify check-in and check-out date
 - a. Select the check-in date
 - b. Select the check-out date
3. Specify one room and one adult
 - a. Select the number of adults
 - b. Select the number of children
4. Click “Search”
5. Select “Book Now” for any available room
6. Fill in billing fields with fake information
7. Fill in confirmation and confirm smoking preference “no”
8. Click “complete booking” (not actually)

Success Criterias

One of the following for the task to be counted as completed:

- Participant has achieved the goal
- Participant has completed process within 10 minutes

5.6 Task 6: Cognitive Walkthrough

Goal

Get the price estimate for a room of two adult two weeks from now for a total of two nights in Vietnamese Dong

Inputs

- Currency type
- Check-in date
- Check-out date
- Number of rooms
- Number of adults
- Number of children

Assumptions

- The user has not visited the website before

Steps

1. Change the currency preference to Vietnamese Dong
2. Specify a check-out date, two nights after check-in date; specify the number of adults and children
3. Click search
4. Find the estimated price for the rooms

Success Criterias

One of the following for the task to be counted as completed:

- Facilitator understands where users go to change the currency preference
- Participant has achieved the goal

6.0 Usability Test Scripts

Introduction

Ice breaker.

Go over the Statement of Consent (Appendix 2.0 Consent Document) and acquire their consent.

If you come across any questions, feel free to ask them, but we may not be able to answer immediately, because we are interested in how people perform without outside help.

Before we begin with the tasks, I would like to ask you some simple questions:

1. Have you ever been in a usability test before?
2. What are the main reasons that you travel?
3. Do you have a lot of experience with booking hotel rooms?
4. How do you usually book hotel rooms?
5. Have you ever heard of Starlight Inn?

Present the list of all the tasks, so they can refer to it when they need it.

Task 1

Can you read Task 1 and tell us if you have any questions?

Perform Task 1.

Hints if they don't know what to do next:

1. Can you try completing the booking process, but stop before actually booking a room?

Question after completion of Task 1:

1. What do you think about the functionalities of the website so far?

Task 2

Can you read Task 2 and tell us if you have any questions?

Perform Task 2.

Questions after task 2 is completed:

1. Do you have any comments on the way images are organized?
2. What features do you think will help you complete the task better?

Task 3

Can you read Task 3 and tell us if you have any questions?

Perform Task 3.

Hints if they don't know what to do next:

1. Why don't you try booking a room and see if that helps?

Question after completion of Task 3:

1. What do you think about the process?
2. Are there any tools that you think might be helpful for you to complete the task?
3. Do you have other comments about this task?

Task 4

Can you read Task 4 and tell us if you have any questions?

Perform Task 4.

Closing

Question before the end of the test session:

1. If you were to rate this website out of 5 (1 being horrible and 5 being fantastic), how would you rate this website? Why did you choose that?
2. Anything else that we should now about about either the experience with the website or your experience with the usability tests?
3. Are there any questions or comments that you have for me?

Thank them for their participation.

7.0 Usability Test Log

Participant Number	1
Gender	Male
Age	45 - 50
Description	He is a UCI professor in Paul Merage School of Business and consultant. He had some experience with hotel booking through third-party services.
Test Date	Wednesday, February 20, 2019
Test Time	1:45 - 2:00 pm
Duration	15 minutes
Location	Paul Merage School of Business lobby, UC Irvine

Participant Number	2
Gender	Female
Age	20
Description	She is a full time student at UCI who is currently not working, and has had minimal experience in booking hotels through online methods.
Test Date	Thursday, February 21, 2019
Test time	2:00 - 2:26 pm
Duration	26 minutes
Location	Anteater Learning Pavilion, UC Irvine

Participant Number	3
Gender	Female
Age	39
Description	She is a associate professor at UCI within the school of Information and Computer Sciences. She has experience booking hotels. She has taken a usability test before but not within the last 6 months.
Test Date	Thursday, February 21, 2019
Test time	3:30pm - 3:50pm
Duration	20 minutes
Location	Anteater Learning Pavillion, UC Irvine

Participant Number	4
Gender	Female
Age	21
Description	She is a full time student pursuing a History and Political Science degree at UCI. She has had some experience with booking hotels online.
Test Date	Thursday, February 21st, 2019
Test time	4:00pm - 4:19pm
Duration	19 minutes
Location	Humanities Hall, UC Irvine

Participant Number	5
Gender	Female
Age	23
Description	She is a UCI graduate with a B.S. in Public Health Science and an Education minor. She has been working in IT for 1.5 years. She has a good amount of experiencing booking hotels for vacationing.
Test Date	Friday, February 22nd, 2019
Test time	4:10pm - 4:28pm
Duration	18 minutes
Location	UCI OIT Office

8.0 Individual Heuristic Evaluation Notes

8.1 Kaitlyn Nguyen

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

(Read full article on [visibility of system status](#).)

- Redesign 1
 - Highlights the current date selected on the calendar.
 - Once a date is selected, the date displayed in the text box above the calendar will be changed to reflect the date the user has chosen.
- Redesign 2
 - The x's or checks that appear next to the search fields let the user know if the information they have entered is currently valid or invalid.
 - The confirmation message that appears after the message is sent validates that the message was successfully submitted.
 - The tab that the user is currently in will be highlighted to reflect the current position of the user on the website.
- Redesign 3
 - The dots below the pictures will notify the user of where they currently are in the picture collection.

Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

(Read full article on the [match between the system and the real world](#).)

- Redesign 1
 - The change currency button was changed from USD to a more universal symbol for swapping currency types. This would help match the system to the real world better for users who do not normally operate in USD.
- Redesign 2

- The labels of the text fields, as well as the labels of the buttons are widely used real-world terms that should be immediately understood by the users.
- Redesign 4
 - Labels provided match real world phrases and accurately mirror the information that falls below it (e.g. the Hours label)
- Redesign 5
 - Each symbol accurately mirrors the real world action it would produce. For example, clicking on the back arrow would bring the user back one image, clicking the forward arrow would bring the user forward one image.

User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

- Redesign 1
 - If the user selects a currency type they did not actually want, they can easily change it by simply selecting another currency type.
 - Same rules as above applies for selecting dates or guest details when searching for a room. It is very simple to change their entries.
 - If a user searches for a room with inaccurate information filled out, they simply have to re enter and click submit again to get results that reflect their accurate search queries.
- Redesign 2
 - The users are able to exit the process any time they like, without any inconveniences.
 - If the user decides to exit the page while writing a message, the message will simply be deleted.
- Redesign 5
 - The users are able to exit the enlarged viewing mode in pictures simply by clicking on the x in the corner of the image.

Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow [platform conventions](#).

- Redesign 1
 - Each label is clear in its functionality. Labels like Search or Book Now are commonly used on other websites and should be immediately understood by users.
 - It is also a common practice to provide calendars to select dates when searching for a room.
- Redesign 2
 - The type of information provided now matches those commonly provided on all other hotel websites: phone number, address, hours of operation, etc.
 - The symbol next to the hours of operation is also a commonly known and used symbol that users will recognize as a button that will expand with more information if they press on it.
- Redesign 3
 - The amenities list displays icons that are widely known and used. There is a different icon for each type of amenity, clearly symbolic of what the amenity is.
- Redesign 4
 - The types of information that is most desired by most users would be phone number and address. In order to conform to this standard, we decided to add this to the contact page.
 - It is a common practice to have the hotel name shown across all pages, no matter where the user navigates to. Because of this we decided to have the banner with the hotel name and address be present at the top of the page for all pages of the site.
- Redesign 5
 - A common functionality across all websites, not even specific to hotel websites, is being able to enlarge an image by clicking on it. To conform to this common capability, we added this functionality to the website.

Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

(Read full article on [preventing user errors](#).)

- Redesign 1
 - Providing a calendar to click on prevents the user from entering dates that are not valid (e.g. an end date that comes before the start date)
 - Providing search results only after the user enters information and clicks Submit prevents any error of trying to book a room when no details on their trip logistics have been provided yet.
- Redesign 2
 - If the user attempts to send a form with incorrect information, the problematic fields will be highlighted, and the user will be provided with information on why the entries are wrong, and how to properly fix it so that they can successfully submit a message.
- Redesign 5
 - The user is provided with complete flexibility with the arrow symbols. They are able to navigate back and forth through the picture collection, and exit whenever they would like.

Recognition rather than recall

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

(Read full article on [recognition vs. recall in UX](#).)

- Redesign 1
 - The navigation bar is always visible at the top of the screen, so users do not have to recall what their page options are to choose from.
 - The details the user enters to search for available rooms never disappears or leaves the user's site when looking through the results. So, users do not have to remember what exactly they entered to verify that these results are mirroring their desired search criteria.
- Redesign 2
 - The question marks besides the fields that may need an explanation will allow the user to look up the meaning of that box if they ever need it.

- Each box is labeled with a title, and also contains example text so the user does not need to remember what each field requires.
- Redesign 3
 - The icons paired with their textual descriptions provide a lot of clarity on what the amenities entail, so the users do not need to recall what the symbols meant elsewhere, or the last time they saw it.
- Redesign 4
 - Although the content is not explicitly labeled, it is clear enough and self explanatory enough so that the users will recognize what they are.

Aesthetic and minimalist design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

- Redesign 1
 - There is no data noise from outside advertising or excessive windows. All information provided is intended to be useful and will be needed by most users.
 - The tabs and pages provided are separated by information type to maintain a minimalist design on each page the user navigates to.
- Redesign 2
 - The contact us page only contains information that is absolutely necessary. Although we did add onto the original design of the page, we did not add much, maintaining its very simple, clutter-free design.
- Redesign 3
 - We reorganized and relocated information on the homepage to declutter its overall appearance.
 - We emphasized the more important functions of the page by moving it to the top. But other than that, the relocation of information and consolidation of information added to its minimalist design.
- Redesign 4
 - Only information that is absolutely relevant and needed is present on the page, maintaining its simplicity and minimalist design.
- Redesign 5

- The use of symbols decreased the textual clutter, and adding to the minimalist design.

Help users recognize, diagnose, and recover from errors

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

- Redesign 1
 - If the user attempts to hit the Search button when looking available rooms without filling out the dates of their stay, the calendar will drop down from those fields, prompting the user to select the date of their stay.
- Redesign 2
 - Because the fields provide live checks and feedbacks to the users with the X's and checks besides the fields, the users will be able to quickly recognize and diagnose the issue.
 - The message window that appears when a field contains unacceptable information also will ensure that the user is able to recover from errors by providing information on what is wrong, and how to fix it.
 - If the user tries to click submit with incorrect information, the fields that are violating any checking rules will be highlighted, and the user will be given a message on what is wrong and how to fix it.

Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

- Redesign 1
 - There are not many steps in the process of searching for available rooms. And each step is self explanatory with their corresponding labels.
- Redesign 2

- The message provided to the user if they enter incorrect information serves as the help and documentation they would need in order to fix the field and successfully submit a message.

8.2 Michelle Lac

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

(Read full article on [visibility of system status](#).)

- Redesign 1:
 - The “Check Room Availability” section provides feedback on the check in and check out dates selected on the calendar with highlighted dates.
 - The drop down menu for check in dates, number of rooms, and number of guests updates values selected by the user.
 - System shows a loading screen after user hits search button
 - The screen provides users with a dialog “Available rooms for [check-in date] to [check-out date] to inform users of the available rooms.
- Redesign 2:
 - The Contact Us page, provides users with real time updates of whether their input is correct or incorrect with a check or x mark.
 - After users fill out the form and hit send, the system shows a confirmation message information the user that it has been sent.
 - Once users close the confirmation message, the form is empty to show that data has been sent.
- Redesign 3:
 - The dots on the bottom of the image slideshow inform the user which page of the slideshow they are viewing.
 - Check room availability section shows the user the selected dates, rooms, and guests.
- Redesign 4:
 - The redesign that implements more readily available forms of contact information on the contact us page has an option that allows users to view hours during other days of the week.
 - When users select the plus sign for hours available, the hours menu opens to show other dates and times
- Redesign 5:
 - When users select an image within the image gallery of the photos tab, the image is enlarged in a pop up window for a better viewing experience.

- If there are no preceding or following image, arrows will not show up next to the image, to inform the user that they are at the end of the gallery.

Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

(Read full article on the [match between the system and the real world](#).)

- Redesign 1:
 - The system uses natural phrases such as "check room availability" for checking available rooms for booking.
 - The system displays a calendar users are familiar with for selecting check-in and check-out dates.
 - The system has clear bold headings for different sections.
- Redesign 2:
 - Contact Us form has same format as form in real world.
 - Each text field is labeled with familiar names.
 - Description for message is "write a message" instead of the previous "write what do you want" description.
- Redesign 3:
 - Amenities section uses icons that match with the real world.
 - System uses simple terms for labels.
 - Amenities are on the homepage in two columns for easy viewing.
- Redesign 5:
 - The photos section of the website is named gallery, like in the real world photo exhibits are called galleries.

User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

- Redesign 1:

- Users have control to change their selections for check-in and check-out dates, number of rooms, and guests to search for rooms again if they made a mistake; this supports redo.
 - There is no clear “emergency exit” to leave the state. Users have to either refresh the page or reselect inputs to search for rooms again.
- Redesign 2:
 - Users can redo their action by hitting the send button for the Contact Us form.
 - After sending a message, users can exit the confirmation dialog and resend a message if needed.
- Redesign 3:
 - The homepage has a home button users can click to refresh the page.
 - User is in control of the photos in the image slideshow of the homepage; they can click to view other photos.
 - Users can easily access room availability because its located on the top of the page.
- Redesign 4:
 - This redesign offers more contact options for the user
 - It implements phone number, hours of operation, and address in the Contact Us page), giving them more control of the ways they can contact the hotel.
- Redesign 5:
 - Users can control how they view images in the Gallery.
 - They can view images in a grid or click on images to enlarge them.
 - Users have two actions to exit from pop up window of enlarge images: they can select the X mark on the upper right corner or select anywhere on the shaded area

Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow [platform conventions](#).

- Redesign 1:
 - Check room availability feature uses a calendar, which is a conventional standard for hotel booking sites.
 - The currency feature on the menu bar uses a conventionally used icon that represents changing currency.

- The system uses the same terminology as other hotel websites such as “check-in”, “check-out”, “rooms”, and “book now”.
 - The system uses face icons to represent the number of people per room type available.
- Redesign 2:
 - The Contact Us form has labels on the top of text boxes to make it clear what text box is for what information.
 - This redesign implements question mark buttons beside text fields, which is a conventional standard for forms.
- Redesign 3:
 - Menu bar is on the top of the page, following conventional standards, which makes it easy for users to go to other sections of the website.
 - Information is consistently spaced apart by consistent white space.
- Redesign 4:
 - Each text box of contact us is labeled so users won’t be confused with what information is needed.
- Redesign 5:
 - Photos in the Gallery page of Starlight Inn are in a grid in the center of the page.
 - Photos are placed in consistent columns and rows.
 - Each enlarged image has the same consistent actions to move forward, backward, or exit the image gallery.

Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

(Read full article on [preventing user errors](#).)

- Redesign 1:
 - The system does not show available rooms for users to book until they hit the search button; this helps prevent errors with booking the wrong room.
- Redesign 2:
 - Labels on top of text boxes inform the user input is required for each text box, this prevents users from entering wrong information.

- Question mark buttons besides text fields explain what kind of input is considered valid, this helps prevent users from entering wrong information.
 - Live feedback is shown to the user beside text fields they have filled out with (x's or checks) to inform users if their input is valid before they send their form.
- Redesign 3:
 - The Check Room availability section does not show available rooms until users search for a room to prevent booking a room that doesn't fit the right criteria (eg. number of guests)
- Redesign 4:
 - This redesign just adds more relevant contact info such as phone number and hours of operation so error prevention is not applicable.
- Redesign 5:
 - If a user is viewing images in fullscreen, the arrow button to go forward or backward would not show up if the image is at the beginning or end of the image queue to prevent users from trying to view images that do not exist.

Recognition rather than recall

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

(Read full article on [recognition vs. recall in UX](#).)

- Redesign 1:
 - The site uses visible drop down menus for selecting options, making it easy for users to look at their selection without having to remember what they selected.
 - Each section is labeled to make it recognizable to the user
- Redesign 2:
 - Each text field has a label so users don't have to remember what information they need to enter in (the website's original design does not label text boxes on the top so when users enter information, they won't see labels on top of each text box that tells them what is needed)

- Question mark icons that users can hover over explain the correct information needed for each text field so users don't have to remember how to enter information properly.
- Redesign 3:
 - In the Check room available section, the drop down menu's selected items are visible so the user does not have to remember information they inputted when searching for rooms.
 - Amenities section has icons making it easy for users to recognize what amenities are offered instantly.
- Redesign 4:
 - Phone number and hours of operation are available in the contact us page so users can easily find contact information without having to remember the phone number.
 - The address is also at the top menu so users have easy access without having to remember where the hotel is located.
- Redesign 5:
 - The Gallery page has a grid of all hotel images, allowing users to view images for rooms whenever they want so they don't have to remember how it looked like when they were booking the hotel.

Flexibility and efficiency of use

Accelerators — unseen by the novice user — may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

- Redesign 1:
 - In the check room availability section's calendar, the user's cursor jumps to the next date for the calendar after users select their check in date.
- Redesign 2:
 - The contact us form is simple so it does not have any accelerators.
- Redesign 3:
 - The check room availability section allows users to select check in and check out dates on the same calendar feature making it easy for users to view all selected dates.
- Redesign 4:
 - The contact us page is simple so it does not have any accelerators.
- Redesign 5:

- When users select on an image in the Gallery, they can exit from the pop up by selecting anywhere on the shaded area around the enlarged image.
 - This allows advanced users to exit enlarged images quicker.
- Users can scroll down the grid of images in the Gallery to find the image they want instead of clicking right and left arrows in the enlarged images.
- Enlarged images have arrows that allow users to go forward and backward in the image queue easily.

Aesthetic and minimalist design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

- Redesign 1:
 - The redesign removes irrelevant information such as the “show price” button which adds no functionality since users cannot view the price until they have selected proper check in and check out dates and also searched for a room to book.
 - The homepage is simple, not cluttered, with a minimalist design.
 - The “check room availability” section keeps guest selection minimal and straightforward by having a dropdown menu called “Guests” instead of separate drop down menus for kids and adults since the cost for both is the same.
- Redesign 2:
 - The Contact Us form is simple and has a minimalist design.
 - The page does not have irrelevant information; it simply shows different contact information including the contact form.
- Redesign 3:
 - All information about policies are located in a Policies tab.
 - All amenities are consolidated in one area of the homepage and booking process.
 - A gallery tab is added while the homepage only has a few images on the slideshow advertising the property; this keeps the design aesthetic and minimally designed.
- Redesign 4:
 - Contact Us form is simple with a minimalist design.

- The page does not have irrelevant information; simply shows address, hours of operation, a photo, phone number, and contact form.
- Redesign 5:
 - Photos in the Gallery are placed in a grid for easy viewing of several photos at a time.
 - Enlarge photos have a minimalist design with the photo, an exit icon, and arrows for moving back and forth.

Help users recognize, diagnose, and recover from errors

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

- Redesign 1:
 - This heuristic is not applicable to redesign 1, which is to provide clearer labels.
- Redesign 2:
 - Each text field has a check or x mark informing the user if their input is valid or not; this helps them recognize that they made an error.
 - Each text field has a question mark icon that users can hover over for an explanation of the correct way to enter information; this helps users diagnose errors with their input.
- Redesign 3:
 - The home page does not have any actions that lead to error.
- Redesign 4:
 - The Contact Us form has feedback telling user if their input is incorrect (check mark, x mark) and an icon informing users with an explanation of required input.
- Redesign 5:
 - Error messages are not applicable in the Gallery section because this is a very simple page of the site.
 - Users can't make any mistakes because they are simply viewing images.
 - Users can easily exit enlarged images by clicking on the X button.

Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

- Redesign 1:
 - This heuristic is not applicable to this redesign because the system is simple enough to use without documentation.
- Redesign 2:
 - Question mark icons next to text fields provide help to users that need help with the kind of information required. When users hover over the icon, they are provided with an explanation.
- Redesign 3:
 - Each section is properly labeled in the home page so it does not require help and documentation on how to navigate the page.
- Redesign 4:
 - The contact us form has question mark icons that help the user in the case they input wrong information or need help on the specific input required.
- Redesign 5:
 - The redesign Gallery does not offer help and documentation because its pretty intuitive that users can view images and select them to see them fullscreen.
 - Images are easy to view due to the grid format.

8.3 Mandy Tsai

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

(Read full article on [visibility of system status](#).)

- Redesign 1
 - When the user click on a date on the calendar drop down from either check-in or check-out field, the date is highlighted. When both check-in and check-out dates are selected, the entire duration of stay (from check-in date to check-out date) will be highlighted.
 - After making the selection on the calendar drop down, the date will be shown in number format MM/DD/YYYY in the field.
 - After making the selection of Rooms or Guests from corresponding drop down, the number will appear in the field.
 - The user can click the “Search” button after selecting a check-in and a check-out date. There will be a spinning wheel, if the system is taking some time to search for an available room. Otherwise, the search result will expand and the user will be able to see the rooms available.
 - The “Book Now” button will bring the user to the billing page. The whole page will be reloaded, so that the user knows that he or she is on a different page now.
 - Clicking any of the tabs from the menu bar will redirect the user to another page. The whole page will be reloaded, so that the user knows that he or she is away from the homepage now.
- Redesign 2
 - The live-check feature for name, email address, and phone number keeps users informed on whether the entered value is acceptable.
 - After the message is sent, there will be a pop-up informing user that the message is sent.
 - If there is an unacceptable field, but the user click “Send” anyway, then the field will be highlighted and auto-focused, and a text bubble that explains what the field is asking for and what information is accepted will show on top of the field.
 - After the message has been sent and the user had closed the confirmation message, the fields on the contact form will all be cleared. This indicates that the form presented is a new form now.

- Redesign 3
 - The dots below the image slideshow shows the progress. For example, when the slideshow is showing the first two pictures, the first two dots are highlighted. If the user clicked the last dot, then the two images on the slideshow will be the fourth and the fifth images.
- Redesign 4
 - The plus symbol disappears after the list of hours of operations is expanded. This lets users know that there is no more information to expand.
- Redesign 5
 - Clicking an image will result in an image pop up. When the users are in the pop up view, the rest of the page will be masked in black. That background setup is to let users know that things in the background are temporarily disabled. They must exit the pop up view before they are able to click anything else in the background.
 - Clicking the left or right arrow on the corresponding sides of the image will bring up the preceding or following image. The pop up section will be reloaded so that the users know it's a new image.
 - Exiting the pop up view will unmask the background. This hints the users that they can now navigate the website like they did before opening the pop up view.
 - When there are no preceding image, the left arrow will disappear. This is appropriate to let the user know that he or she is at the first image.
 - When there are no following image, the right arrow will disappear. This is appropriate to let the user know that he or she is at the last image.

Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.
 (Read full article on the [match between the system and the real world](#).)

- Redesign 1
 - The labels of the buttons are all familiar terms to users who have booked or tried to book hotel rooms before.

- The order of the tabs on the navigation bar is highly similar to what the website originally have. We want to make sure returning users find themselves comfortable with the change in the site.
 - We can also argue that the tabs on the navigation bar is sorted in the order of the degree of interest we predict the user to have. For example, we believe that the user will want to know more about the inn and the surrounding area, so we placed the “About” tab first.
 - The simple layout of the redesign mirrors the personality that the inn presents. It is not trying to offer something fancy, but something that works and cuts straight to the point.
- Redesign 2
 - The information listed should all be familiar to the user. Although not labeled, the address, phone number, and hours of availability should be self explanatory and immediately understandable.
 - The text fields are all labeled with real world terms. The examples given in each field also helps user understand what is being asked if they don't understand the labels. The “Questions or Comments” field nicely prompts the user to “Write a message,” which is common to prompts on social media sites.
 - The confirmation message reads like something that would be said over the phone.
- Redesign 4
 - The hours of operation is simply labeled “Hours,” but we think it is clear what the hours are referring to since it is placed right next to the phone number.
- Redesign 5
 - Clicking the left arrow in a pop up view will bring the user to the immediately preceding image as shown on the grid. The arrow direction matches the order that images are ordered on the page. Similarly, clicking the right arrow in a pop up view will bring the user to the immediately following (next) image as shown on the grid.

User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

- Redesign 1
 - The booking section is always available and present at the top of the page. Users can always go back to change any field and click “Search” for new search results.
 - The user can stop filling out the search criterias whenever they please. They can fill in the check-in date and decide to go to another page without getting interrupted.
 - The back button is never disabled, so the user is allowed to come back to the homepage after being redirected to the billing page with no penalty.
 - If a user left the page and returned to the page, the search result will be cleared. In this case, the user will have to re-enter the search criterias to see the search results again.
- Redesign 2
 - Users can exit the page whenever they want at any time without penalty. If the user left the page with some information filled in, but no messages sent, then the information will be erased. No information will be recorded by the system.
 - If the user left the page and returned to the page, he or she will have to re-enter previously entered information.
 - They will not be able to unsend a message.
 - The users can click “Send” at all times, but if there were any unacceptable value in any of the fields, then the message will not send, and the fields with unacceptable values will be highlighted.
 - The user can click the little plus symbol at the end of the hours of operation if he or she wanted to know the times that the inn is reachable for other days of the week.
- Redesign 4
 - The user can choose to expand the full list of hours of operation, but they will not be able to collapse it once it is expanded.
- Redesign 5
 - The users can exit the pop up view whenever they want by clicking the X mark on the upper right of the image or by clicking anywhere in the background.
 - The users can freely move between closely groups images in pop up view, one image at a time.

Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow [platform conventions](#).

- Redesign 1
 - Buttons of the same purpose will have the same label on this page. For example, buttons that redirect the user to the billing page are both labeled “Book Now.”
 - The terms and labels that we used are also standard in the industry. A “Search” that search for rooms matching the user’s search criterias. A “Book Now” button that redirects the user to the billing page to complete the booking process.
 - The tabs on the navigation bar are also the same no matter the page the user is on.
 - We took out the “Reservation” label that was originally used to label the column where “Book Now” buttons are in, because that doesn’t really describe what those buttons do.
- Redesign 2
 - The page now shows all of the communication channels that the inn can be reached: postal address and phone number.
 - The contact form now have little question mark icons that, when hovered, will show description of the field and lists of unacceptable characters.
 - In addition to the sample inputs in the fields, the fields now have simple labels on top.
 - The page now has a title “Contact Us” that keeps the pages on the website consistent and reminds the users what page they’re on.
 - The little plus icon next to the hours of operation is a common symbol used to indicate that it is an expandable list.
- Redesign 3
 - Unlike other pages, the homepage doesn’t have a title that tell the users which page they are on. We expect the content of the page to be the most direct hint.
 - Each amenity has its own unique icon that represents the amenity. For example, free WiFi is represented by the commonly used signal symbol.
- Redesign 4
 - Postal address and phone number seem to be two must have information on hotel websites. To conform to that standard, we decide to add those information onto the Contact Us page.

- The hours of operation is simply labeled “Hours.” We believe that this is enough for users to recognize what it means, for this is actually commonly used.
- Although the address is already shown on the banner under the title “STARLIGHT INN HUNTINGTON BEACH,” we think it is necessary to put it *in* the Contact Us page as well. Because the banner is present on all pages, the user might not be looking at the banner when searching for the postal address on the Contact Us page.
- Redesign 5
 - The pop-up view is used in many websites to show enlarged pictures.
 - Putting an X mark on the upper right corner is a common way to indicate that it is a “Close” button.
 - The arrows are common indicators of direction of movement. Left arrow brings the user one image to the left; right arrow brings the user one image to the right.

Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

(Read full article on [preventing user errors](#).)

- Redesign 1
 - If the user tried to click “Search” without selecting check-in and check-out dates, then the fields will be highlighted to auto-focused on the first unfilled field.
 - Number of rooms and number of guests are both preset to one, so the user can click “Search” right after check-in and check-out dates are selected.
 - The search results section will only show rooms that are available, so there will not be a case where the user click “Book Now” and is informed that the room is unavailable.
- Redesign 2
 - The message will not send until all of the entered values are acceptable.

- If the user tried to send a message with inappropriate values, then the system will highlight and auto-focused on the fields that need to be corrected, so the user knows what to change immediately.
 - There will be no confirm message after the user clicks “Send” and before the message is actually sent.
- Redesign 5
 - The user can always undo and redo. If they accidentally clicked the left arrow, they can click the right arrow to go back to the image he or she was previously viewing. The user can also re-enter the pop-up view of an image after accidentally closing it off. To do that, the user simply have to find that image, and left click once on the image.

Recognition rather than recall

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

(Read full article on [recognition vs. recall in UX](#).)

- Redesign 1
 - The tabs on the navigation bar is always present, no matter the page, so there is no need for the user to remember the options that they have.
- Redesign 2
 - The labels on top of each fields allow users to know what the fields are for after they entered information, which is when the same texts are erased.
 - The explanations will always be present if the user hover over the question mark icon at the end of a label. It will be there even if the user had entered a value and the value is *approved* with a check mark at the end of the text box.
- Redesign 3
 - Each amenity icon has simple textual description right next to it. This prevents users from having to remember what the icon last meant when he or she saw it somewhere else.
- Redesign 4

- The information are not labeled, but we believe that the content itself is enough for users to recognize what they are.

Flexibility and efficiency of use

~~Accelerators — unseen by the novice user — may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.~~

Aesthetic and minimalist design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

- The redesigns kept the color scheme that the website originally has: black, white, green. This is to prevent shocking the returning users from all of the changes that we made. Although the homepage looks very different now in terms of content, the familiar elements provide enough hints that it's the same inn after all.
- Redesign 1
 - The labels are short and straight to the point. We use the minimum number of words to explain their functions. For example, “Gallery” is where all of the pictures of the inn can be found; “Policies” is where all of the hotel policies are at.
 - We only show the search results section after the user click “Search” to reduce the amount of irrelevant information on the homepage.
- Redesign 2
 - The Contact Us page actually looks highly similar to what the website originally has. We kept the page simple so any user can find their ways around it easily. We also kept it familiar to returning users.
- Redesign 3
 - We have taken out a lot of information from the homepage, because they made the homepage looks cluttered.
 - We leave the core function of the website -- booking section -- at the top of the homepage. We also have picture slideshow and amenities list, because we feel that they may attract users to want to learn more about the inn.

- We incorporate very limited colors and transitions on the homepage to create the minimalist impression.
- Redesign 4
 - The contact information are simply listed on the top of the Contact Us page under the page title. Only the relevant information is presented.
- Redesign 5
 - We used symbols to replace terms such as “previous image,” “next image,” and “close.”

Help users recognize, diagnose, and recover from errors

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

- Redesign 1
 - If the user forgot to fill in the check-in or check-out dates before clicking “Search,” then the first empty field will be automatically focused, and the calendar drop down will expand. The calendar drop down will be enough hint that let the user know he or she needs to select a date.
- Redesign 2
 - Entered values are checked live, if the values contained unacceptable characters, then the field will be marked with an X at the right end of the text box.
 - If there were any unacceptable values in the fields, but the user clicked “Send,” then the fields with unacceptable values will be highlighted. The user will be auto-focused on the first field with mistake(s). The explanation message bubble will appear as if the user is hovering over the question mark icon.
- Redesign 4
 - Accidentally expanding the hours of operation list will not result in penalties.

Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

- Redesign 2
 - The explanation message bubble serves as help and documentation for corresponding fields.

8.4 Jose Yanez-Lopez

Visibility of system status

- Redesign 1
 - Rooms are displayed once the user enters dates and clicks search, informing them that their steps taken were correct
- Redesign 2
 - Checkmarks or Xs let the user know if their input is valid
 - Clicking the send button notifies the user that the message is sent
- Redesign 3
 - The booking area in the redesign is dormant until the user acts upon it by either entering dates, which shows the calendar, or clicking search, which shows the available rooms

Match between system and the real world

- Redesign 1
 - Check-In and Check-Out calendar reflects what people reference when booking
 - Rooms and number of guests are appropriately labeled as such
 - Book now button label matches intent
- Redesign 2
 - The labels are based on the contact page are typical of what's asked in the real world
 - The send button reflects the real world action of sending a message
- Redesign 3
 - The order of the items are based on user research detailing what they reference/use the most
 - The sections are based on real world information
- Redesign 5
 - The style of the gallery reflects how you would look at pictures in real life; scroll through multiple photos and take a closer look at one specifically

User control and freedom

- Redesign 1
 - User can click anywhere on the page to reset dialog prompts such as calendar or rooms/guests
 - User can enter new criteria and click search to run the process again

- Redesign 2
 - If a mistake it made, the user is informed and is able to correct it before the message is sent
 - All the fields can be edited in any order
- Redesign 3
 - These pages mainly present information with the exception of the booking area
 - The booking section is very flexible with input, you can update it and redo a search.
- Redesign 5
 - The existence of an X to close out of an image allows them to close an image if they accidentally open it for example
 - They are given control in which image they see through selecting it

Consistency and standards

- Redesign 1
 - The terms on the page accurately reflect their actions
- Redesign 2
 - Labels and buttons are consistent across the design
- Redesign 3
 - Headings and buttons are consistent

Error prevention

- Redesign 1
 - When criteria entered for a room produces no results, a message appears that says why it failed
 - When criteria entered for a room produces results, it reiterates when the room(s) are available
- Redesign 2
 - Checkmarks and X's are put next to each field to signal whether the information is valid
 - Question marks elaborating what the field requires helps the user understand what it wants

Recognition rather than recall

- Redesign 1
 - The flow for booking is sequential so the user is presented information as it becomes relevant

- No information is required to be remembered to proceed as the system is labeled appropriately with what each section requires
- Redesign 2
 - All the information is displayed on the page so the user doesn't have to remember anything
 - All the fields can be filled in independent of the other ones
- Redesign 3
 - Each section contains necessary information for its purpose. You can look at each section without needing to reference the others.
- Redesign 4
 - The plus sign is universal for "more" indicating that more information is available

Flexibility and efficiency of use

- Not applicable to our system; no such functionalities exist.

Aesthetic and minimalist design

- Redesign 1
 - All the information presented is relevant to the tasks the user would complete on this page
- Redesign 2
 - The page presents the minimal amount of information required to detail what you need to do
 - If more information is needed on Email Address and Phone Number, we have provided a question mark that elaborates on what to enter
- Redesign 3
 - Relevant information has been kept on the main page
 - Policies, for example, has been moved to its own page to reduce clutter
 - Amenities have icons to aid in identifying what is offered
- Redesign 4
 - contact information and hours of operation are necessary information
- Redesign 5
 - The gallery only includes a heading and the images themselves, reducing it down to just the content with no extraneous information

Help users recognize, diagnose, and recover from errors

- Redesign 1
 - When the user clicks search before entering check-in/out dates it displays the calendar so they can enter dates
- Redesign 2
 - The symbols we use are universal signifiers for “yes” and “no”
 - We add example information within each text field to help the user understand what information is asked for

Help and documentation

- Redesign 2
 - The question mark elaborates on what we ask for in the respective fields
 - There is example information in each field for the user to reference

9.0 Accessibility Report

We evaluated Starlight Inn's website against Level A items using the WCAG2 Checklist provided by WebAIM (<https://webaim.org/standards/wcag/checklist>). Level A items focused on whether web contents and functions are available to senses including sight, hearing, and touch as well as how operable, understandable, and robust the system is.

In terms of success criteria, the website is predictable. When users hover over an item such as an image, there are no unexpected changes; the same applies to when users input information when contacting the hotel or filling out the booking form. The site is also navigable, with a home tab and policy tab that navigates users to the section of the homepage with policies.

However, some categories of accessibility that need special attention are text alternatives, use of color and input assistance. The site does not provide any alternative description for photos or text in the form of photos. Text alternatives are important because they are read in place of images for screen readers, provide semantic meaning to images. For instance, within the HTML of the website, each photo provided in the hotel slideshow of rooms does not have alternative text explaining what part of the hotel is being displayed. The site also has photos of text such as "Remember Price Guarantee - when you book with us!" in the homepage. This is just text in a form of an image with no alternative text, as a result, users that cannot view the image would not know about this policy.

Moreover, the site also fails to successfully address the use of color. When users enter wrong information in their contact form and hit submit, the system does not provide dialog explaining the error. It outlines the text field box that is invalid in red. This is problematic because it does not accommodate for users with color blindness.

Furthermore, the site lacks input assistance meant to help users avoid and correct mistakes. When users enter invalid input for any text field in their contact form or booking form, the site does clearly identify the error or how to fix it. There are no descriptions explaining to the user why their input was incorrect. Additionally, the site also does not provide sufficient labels. Text fields are not labeled on top and each text field does not have a question icon explaining the types of information needed. Overall, although the accessibility of the website is clearly insufficient.

Some of our recommendations to the client include:

- Non-text content should be given alternative text to provide users a description of the content.

- They should continue to associate form inputs with text labels in their future updates;
- They should provide more hints that help users notice they entered an unacceptable value in a text field, because lightly highlighting the field in red may not be noticeable due to color-blindness; and
- They should provide descriptive and informative page title for all of the pages.