

Chasellas 62

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Figure 1: Landing page

ABSTRACT

Chasellas 62 is a tailored rental website designed to address the unique challenges faced by vacation homeowners, particularly in the Lower Engadin region of Switzerland. Unlike mainstream platforms such as Airbnb, it prioritizes personalized interactions between homeowners and guests, streamlines the booking process, and provides tools to establish a distinctive brand identity. Developed with a robust tech stack featuring React for the frontend and Flask for the backend, the platform ensures a seamless user experience while adhering to modern web standards, including accessibility and mobile-first design. By catering to the specific needs of homeowners and enhancing guest satisfaction, *Chasellas 62* represents a step forward in creating sustainable and efficient rental solutions.

1 INTRODUCTION

1.1 Background

The vacation home rental market has experienced significant growth in recent years, particularly in the post-COVID era. As travel has rebounded, more people are opting to stay in local vacation homes and apartments rather than standardized hotels. This

trend reflects the desire for unique and personalized experiences that allow travelers to connect more deeply with their destinations. Market leaders such as Airbnb and Booking.com dominate the global vacation rental market, offering extensive reach and convenience. However, these platforms often fail to meet the specific needs of homeowners who prioritize personal interactions, guest suitability, branding, and environmental sustainability. Homeowners are frequently left with limited control over the booking process and are unable to showcase their properties' unique characteristics and values.

1.2 Problem Statement

While existing rental vacation platforms such as Airbnb and Booking.com provide convenient solutions for homeowners and guests, they fail to address critical challenges faced by both parties. After collecting user feedback we were able to identify three key problems:

1. Impersonal Interactions Between Homeowners and Guests

Before booking, homeowners often lack meaningful information about potential guests, which leads to uncertainty and concerns. Similarly, guests have little insight into the homeowners and the unique qualities of the properties they plan to stay in. This absence of personal connection can undermine trust and reduce the overall experience for both parties.

2. Difficulty in Selecting Suitable Guests

Homeowners are typically provided with limited information about potential guests, which makes it difficult to evaluate their suitability. Factors such as intent, age, travel dis-

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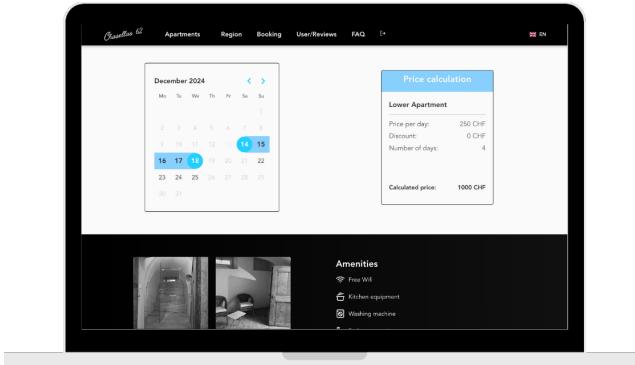


Figure 2: Integrated calendar

tance, and travel method are often overlooked, which can lead to mismatches, negative guest experiences, and reputational harm. Ensuring the right fit between guests and properties is essential to improve word-of-mouth marketing and repeated bookings.

3. Challenges in Establishing a Unique Brand Identity

Rental platforms enforce standardized and restrictive guidelines on how property listings are presented. This limits the ability of homeowners to showcase the unique aesthetics, character, and vision of their properties. Without the freedom to differentiate their properties, homeowners struggle to attract target audiences and build a distinctive brand presence.

Addressing these challenges is essential to improve trust, enhance guest satisfaction, and empower homeowners to effectively market their vacation homes.

1.3 Objective

The objective of *Chasellas 62* is to bridge the gap between homeowners and guests by developing a personalized, efficient, and sustainable platform. Designed for a charming vacation home in the beautiful Lower Engadin region of Switzerland, the platform aims to simplify the booking process while fostering trust and enhancing the overall rental experience.

The target users are:

- Customers:** Individuals or families looking for a vacation home with transparent and direct communication.
- Homeowners:** Property owners seeking reliable guests, streamlined processes, and the ability to showcase their home distinctively.

2 OUR SOLUTION

2.1 Overview

Chasellas 62 addresses these challenges by offering a unique and exclusive website for a rental vacation home in the beautiful Engadin.

The customers can check the availability through an integrated calendar Fig. 2 or contact the homeowner directly. During their stay, they can enjoy various recommendations Fig. 6 for local activities not only provided by the homeowner, but also from other previous guests. Post-stay they have the possibility to rate, give feedback and share their experience Fig. 3.

The homeowner is able to have a more personal, yet efficient interactions with guests through having a questionnaire or a video-note of their potential customers answering a few questions. The booking process is streamline with a guest suitability check, ensuring that the right guests are selected. This approach not only enhances



Figure 3: Reviews in the mobile view

the homeowner's ability to build a stronger brand identity but also supports the development of an effective word-of-mouth marketing funnel, driven by positive guest experiences.

2.2 Booking Flow

1. Customers explore the website and view detailed descriptions, floor plans, and photos Fig. 4 and check the availability in the integrated calendar.
2. They submit booking requests including either a questionnaire or a short video where they introduce themselves and answer a few questions.
3. Based on criteria such as intention, traveling distance and method, seriousness, and age, the homeowner can decide whether it meets their expectations and confirm or reject it.
4. The guest is then informed of the booking or cancellation via email.

2.3 Review Flow

1. The customer has finished his adventurous stay at *Chasellas 62*
2. Two days after his stay, the customer is prompted via an email to review the rental home on the website.
3. If the guest gave 4 or 5 stars, he/she is asked to share the website via the common media platforms.
4. However if he/she gave less than 4 stars, he/she is asked to enter a feedback for improvement

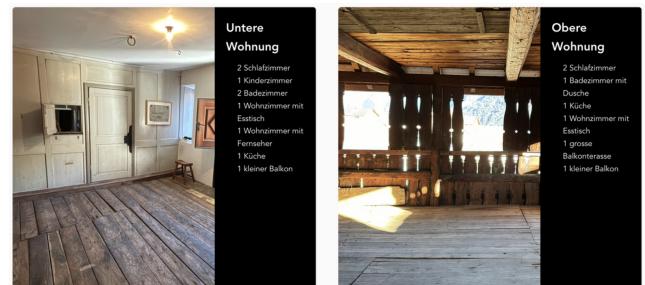


Figure 4: Property photos for *Chasellas 62*.

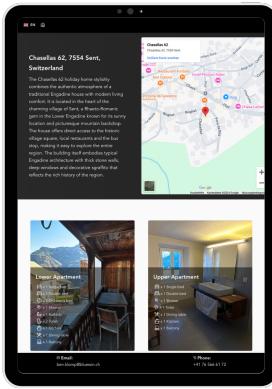


Figure 5: Dynamic Map in the tablet view

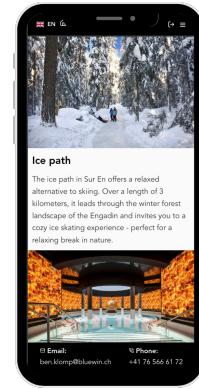


Figure 6: Recommendations in the mobile view

3 DESIGN AND IMPLEMENTATION

Chasellas 62 features a clean, inviting, and functional design. The visual aesthetic combines woodgrain details, cozy interiors, and rustic elegance to create a warm and professional first impression. This design approach highlights the unique atmosphere of the property while maintaining simplicity and usability.

Key interactive elements include high-quality image slideshows that showcase the property, dynamic maps [Fig. 5](#) for exploring the surrounding area, and a streamlined booking calendar [Fig. 2](#).

The design focuses on building a strong, unique brand identity for the homeowner, ensuring the property stands out from generic listings. By blending aesthetics and functionality, *Chasellas 62* creates a memorable and user-friendly experience for both guests and property owners.

3.1 Tech Stack

The frontend of *Chasellas 62* was developed using React [1] with TypeScript [2], ensuring both flexibility and type safety for robust and maintainable code.

The backend was built using Flask [3], chosen for its simplicity and flexibility in managing dynamic backend logic. It follows REST API design standards, exposing endpoints for handling GET and POST requests.

3.2 Data Management and Storage

The backend uses SQLAlchemy [4] as the Object Relational Mapper (ORM) to interact with the SQLite [5] database. We have three models:

- Booking:** Stores details of each booking with the fields `id`, `name`, `email`, `start_date`, `end_date`, and `selected_apartment`. Bookings are linked only to an email address, allowing customers to book without requiring an account.
- User:** Manages user accounts with fields like `id`, `name`, `email` (unique), and the hashed `password`. Registration ensures unique email addresses, enabling secure and personalized interactions.
- Rating:** Captures customer reviews with fields including `id`, `email`, `rating`, `review`, and `apartment`. Ratings can only be submitted after registration, allowing seamless integration of new reviews into a user's profile.

3.3 Implementation Details

Chasellas 62 is built with a mobile-first approach [Fig. 6](#) to ensure seamless usability across devices. The platform is optimized for

search engines using structured content and keywords to improve visibility on Google. Accessibility features, such as alt text for images, high-contrast design, and WCAG 2.1 [6] compliance, make the website inclusive for all users.

4 SYSTEM SHOWCASE

A Hypothetical Use Case Scenario: A family plans a holiday in the Engadin region.

- They visit the *Chasellas 62* website and view detailed photos, interactive maps, and activity suggestions.
- Impressed by the property, they submit a booking request with a short video introduction.
- The homeowner receives the request, approves it, and confirms the booking via email.
- After their stay, the family receives a prompt to leave a review and share their experience on social media, boosting the property's visibility.

5 COMPLIANCE WITH WCAG PRINCIPLES

Chasellas 62 adheres to the WCAG 2.1 [6] accessibility guidelines to ensure usability for all individuals, including those with disabilities:

5.1 Perceivable

Text Alternatives: All non-text content, such as images and interactive media, includes descriptive alt text to ensure compatibility with assistive technologies.

Adaptable Content: The website layout supports multiple screen orientations and reflows seamlessly across devices.

Distinguishable Content: High color contrast ratios (meeting a minimum of 4.5:1) enhance text readability. Text can be resized up to 200% without loss of functionality.

Avoidance of flashing content ensures no seizure risks.

5.2 Operable

Keyboard Navigation: All website functions can be accessed using a keyboard, ensuring usability for users unable to operate a mouse.

Navigation Consistency: Logical and consistent page structure makes it easy to navigate.

Timing Adjustable: Users are not restricted by time limits for completing forms or tasks.

5.3 Understandable

Readable Text: Content is presented in clear and simple language, and the text hierarchy (headings, paragraphs) improves comprehension.

Input Assistance: Forms include labels, error messages, and instructions to help users input data accurately.

Predictable Functionality: Navigation patterns remain consistent throughout the website.

5.4 Robust

Parsing: All elements have complete start and end tags and are nested according to their specifications. There are no elements that contain duplicate attributes, and any IDs are unique, except where the specifications allow these features.

6 DISCUSSION

6.1 Lessons Learned

We learned a lot about the whole development process. It was very challenging to transition from the ideation to the prototyping phase. The main lessons learned were the following:

- **Human-Centred Approach:** The design process highlighted the importance of understanding the end-users (homeowners and guests). It was a constant balancing act of giving the homeowner full control over their branding and fully incorporating their vision while still keeping in mind the needs of the users.
- **The Role of Accessibility:** The implementation of WCAG 2.1 compliance was not just a technical challenge but also a demonstration of how small adjustments can improve the application's accessibility for diverse user groups. Another important aspect of accessibility was enhancing search engine optimization (SEO), which increased the reach of our platform.
- **Coding Aspect:** From a coding perspective, we learned the importance of writing scalable and readable code and leveraging optimal tools to enhance code quality and maintainability. Managing the user state, such as booking status or guest reviews, required careful state management to avoid errors and improve performance. We had to provide a reliable and secure management of user data and booking information.
- **Project Management:** For the integration of the design, frontend, and backend components, a clear coding structure was necessary. We had to establish fixed milestones and a clear line of communication. With efficient project management, we reduced administrative work and focused on the development of our platform.

6.2 Limitations

These were the primary limitations we identified:

- **Manual Guest Selection Process:** Currently, the review process for selecting suitable guests is being handled manually. After the guest submits their information, the owner has to review and either accept or reject the booking request. This is very time-intensive for the homeowner when faced with a large number of requests.
- **No Direct Payment Integration:** As of now, the homeowner manually sends a bill to the guest after confirming a booking request. This prolongs the payment process, making it more time-consuming and requiring additional effort from both the homeowner and the guest.

6.3 Future Improvements

If we were to further improve our platform, these would be major improvements we would implement:

- **Automated Guest Selection:** To address the limitation regarding the manual guest selection process, we aim to improve this process by automating it using AI algorithms. By streamlining the selection process, we can save time and reduce the amount of effort required from the homeowner.
- **Integration of Payment Systems:** Instead of relying on manual billing methods, we plan to integrate online payment options to further enhance the user experience. This would include compliance with e-banking systems and enable credit card payments. By incorporating these features, we aim to improve convenience for users while reducing the administrative workload for the homeowners.
- **Addition of VR Room Tour:** Integrating a VR room tour would allow guests to explore the space interactively, providing a more realistic sense of the properties. This addition would make the platform more interactive and enhance the user experience.

7 CONCLUSION

The aim of our project was to create a holiday rental platform that allows unique branding for homeowners of vacation homes, exemplified by the property *Chasellas 62* in the Lower Engadin.

Our approach focused on enabling uniqueness by addressing the key challenges faced with modern platforms, which primarily include the lack of personalized interactions, the selection of suitable guests, and the limited brand expression.

The outcome was a simple yet elegant platform that addressed all the needs of the users while still aligning with the vision of the homeowner. Instead of increasing the quantity of listed homes by adding more properties from different owners, the future goals should focus on improving the convenience and visibility of the application by keeping up with modern requirements and maintaining an innovative edge.

FIGURE CREDITS

All images are taken by Ben Klom, 2024.

REFERENCES

- [1] Meta Platforms, Inc. *React Documentation*. [3](#)
- [2] Microsoft. *TypeScript Documentation*. [3](#)
- [3] Pallets Projects. *Flask Documentation*. [3](#)
- [4] SQLAlchemy Project. *SQLAlchemy Documentation*. [3](#)
- [5] SQLite Consortium. *SQLite Documentation*. [3](#)
- [6] W3C Recommendation. *Web Content Accessibility Guidelines (WCAG) 2.1*, June 2018. [3](#)