**Documentation – Haukainga Home Winds**

Business Application Programming – Part 2: Formal Documentation

First draft – added Lukas parts (excluding Testing)

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# Introduction

This documentation provides detailed descriptions of methods, design documents, analysis and requirements which are needed in the development of Haukainga Home Winds. The project was requested by Hauia Te Kanua. The development team decided to implement the necessary features previously specified in the proposal using the WordPress framework and multiple Plugins. This documentation will provide a more detailed description as well as changes to the requirements stated in the proposal.

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| --- | --- |
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# Executive Summary

The Client is unsatisfied with the currently available property booking services. The development of this web application aims to fulfill the requirements and offer an authentic platform for property rentals that represents Aotearoa and the Māori culture.

This property booking system will include features to publish, view, and book properties. In addition, plugins will be used to conduct payment and refunds, as well as photo identification to ensure liability and authenticity. A detailed analysis and reflection of key areas and specifications will be included in this document.

# Background

Before the Client decided to commission the development of this web application, Book-a-Bach was used to rent the properties. The Client was dissatisfied that the service was mainly directed towards foreign travelers. This posed not only liability issues but also made it difficult to provide the properties to Kiwi travelers. Recent business decisions have also led to a reduction in the revenue of property owners. Additionally, the design of the platform was generic and didn’t capture the idiosyncrasies of the Māori culture and Aotearoa in general.

This led to the decision to reach out to us and commission an application that provides a fair, easy and authentic property rental service that captures the hospitality of New Zealand. Owned by locals, available to everyone.

# Analysis of Business Issues

Booking Management

The main purpose of this application is to provide a booking system for properties. We decided to use “Hotel Booking”, a WordPress plugin that includes various features that are needed to fulfill the requirements of the client.

WordPress, as well as the plugin, enables a fast implementation of most of the requirements. Additional features are going to be added by modifying the plugin. The choice is further supported by security and maintenance concerns we will discuss later.

Booking management includes scheduling, placing and cancelling bookings. Various features like photo identification, payment aspects, and user experience also play a crucial role but will be discussed in the following.

## Property Management

Properties need to be created, modified, managed, and in some cases deleted. These features are already realized in the “Hotel Booking” plugin and only need minor adjustments for specific requirements.

Providing a map with the location of the properties is required and will be added using the Google Maps API. This ensures availability and maintainability. In addition, it is the most common provider of map services, which is beneficial for the user experience.

## Account Management

To use the booking system, it will be necessary to implement multiple user groups with different permissions. This includes user groups for system administrators, property owners, and customers.

In this case, the plugin also provides various features already implemented. The configuration of the permissions will be guided by the requirements specification. Managing the user profiles will be available to all user groups and ensure that information about the user can be updated anytime.

## User Experience

As previously stated, the client wants to provide an authentic New Zealand and Māori themed user experience. We are using existing WordPress themes and adjusting them to fit the wanted design. Making use of child themes will ensure the maintainability and configuration of specific website features.

Feedback and rating features will be added to make the user experience more interactive and give a sense of participation to the customers. Additionally, the website will be available in multiple languages to increase accessibility. Combined with the features and aspects we discussed before, this makes the booking experience intuitive and convenient.

## Photo Identification

Before a booking can be placed there is a need to authenticate the customer. We offered multiple possible solutions in our proposal. Various benefits and drawbacks of each were mentioned. We recommended using a third-party authentication plugin for WordPress. This plugin would provide real-time authentication supporting various IDs, driver licenses, or Passports.

Out of financial and time management reasons we decided to implement an alternative solution but recommend updating to the third-party tool when needed.

We will provide an upload feature where an ID, driver license or passport can be uploaded. After manually checking the validity of the uploaded document the user gets marked as being authenticated and is able to use the booking system with all features.

## Payments and Refunds

The last missing step to successfully place a booking is the implementation of payment functionalities. We decided to use a third-party plugin to achieve this because of security, privacy, maintainability, and reliability concerns. Depending on the final plugin used, we can provide the payment with various payment methods.

Depending on the refund policy the client wants to implement we decided to notify the property owner or system administrator to handle refunds manually. The limited time frame of this project and financial concerns led to this decision, but certain payment plugins can handle refunds automatically and can be implemented in the future.

## Privacy and Business Laws

The choice of using the WordPress framework and plugins is beneficial when discussing privacy and security issues. The widespread use of these services and big community provides a high amount of privacy and security features. Regular updates and fixes of known security problems ensure that the web application provides privacy and security of data. Additionally, we don’t store payment related data in the databases. The uploaded documents for identification will be deleted after validation. Industry standard encryption methods will be used for any sensitive data stored in the databases as well as password protection for accessing data and user accounts. Combined with access permissions, this ensures privacy and security.

Because the development team is consisting of only Internation students, we rely on the project manager and client to ensure that we follow all business laws related to our application. Contact details will be added to the website to make sure customers can notify the system administrator.

# Key areas of Application Issues

## Maintainability

The extensive use of third-party plugins and the WordPress framework ensures that maintaining the application is easy and should work without the need for adjustments. Child themes prevent any changes in the display of the website when updating parent themes. In cases of problems, the community of the plugins and WordPress can provide support and possible solutions. We suggest checking for updates for plugins and WordPress on a regular basis to ensure security and usability.

Depending on the final hosting solution, we also encourage the client to regularly check for updates for the database and server.

Maintenance after rollout is not part of the scope for this project.

## Scalability and Performance

The restricted use of the web application to properties located in New Zealand will probably not pose any problems concerning scalability and performance. Comparing different hosting providers can minimize possible problems.

Choosing the hosting provider is not part of the scope for this project.

## Security

Already stated when discussing privacy and business issues, we ensure security by using commonly used plugins for the WordPress framework. Regular updates combined with encrypted databases with access restrictions and permissions provide the security needed to fulfill legal requirements.

Additional security measures can be provided by the hosting service and should be considered.

#### MICHAEL ####

# Analysis of Program Specifications

#### TALGAT ####

# Entity Relationship Diagram

# Design Documents

## Wireframes

## Sitemap

## Activity Diagrams

## System Architecture Diagram

## Data Flow Diagram

#### LUKAS ####

# Testing

Discussing in next meeting

#### TALGAT ####

# Conclusion