Tour Booking Management System

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Introduction

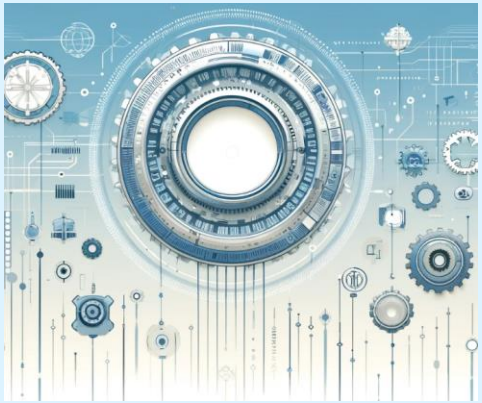
The rapid growth of tourism has increased demand for efficient booking systems. This Tour Booking Management System will allow users to easily search, book, and manage tours, while helping operators oversee their offerings.

Technology & Development

- Frontend: HTML, CSS, JavaScript
- Backend: Node.js, Python
- Agile development with weekly sprints for flexibility

Project Goals

- Provide a user-friendly platform for booking and managing tours
- Enable operators to manage tours, users, and reviews effectively



Focus

The project focuses on **New Zealand tours**, with three phased releases, starting with an MVP.

Project Overview

Key Features:

**** Release 1 ****:**

- **Tour Browsing**: View detailed information (description, price, schedule, ratings)
- **Manage Online Booking**: Secure booking, email confirmations, real-time status updates
- **Multi-language switching** : such as Maori, Chinese. More languages will be available
- **Admin Interface**: Manage user accounts, generate reports, and monitor system performance

Release 2 & 3:

- Customer Support: Email support for inquiries
- Tour Review: Users can leave reviews and rate their experiences, helping future customers make informed decisions
- System Monitoring & Reporting: Centralized performance and error log tracking
- User Registration and Profiles: Users can create accounts to manage bookings, save favorite tours, and receive personalized recommendations
- System Integration: API for third-party integrations

Benefits:

Easy to Use

Smooth Process

Culturally Aware

Increased Visibility

Project Plan

Development Environment:

- Frontend: HTML, CSS, JavaScript (React/Vue)
- Backend: Node.js + Python
- Database: SQLite
- Hosting: Local server or cloud-based
- Tools: Git for version control, Jira for project management
- GitHub repository: https://github.com/aamtayag/mse800-assessment2.git

Development Approach:

- Agile methodology (Scrum + XP)
- 1-week sprint
- Relative estimation (using Fibonacci) : 1, 2, 3, 5, 8, 13

Stakeholders:

- Product Owner / Business Users (Tourists/Customers/Tour Operators/Tour Owners) / Sponsor – provides requirements and feedback on the product's functionality
- Agile Facilitator/Project Manager – oversees project progress, facilitates meetings, and ensures agile practices are followed
- Project Team – responsible for designing, developing, and testing the system

Team Structure

Architect

Team Member: Arnold Aristotle Tayag

Responsibility:

- Responsible for the overall design of the system architecture
- Develop and maintain the technical architecture and core design of the system
- Guide technology selection and choose the right technology stack and tools for the project
- Ensure the system has good scalability and efficient data processing capabilities
- Collaborate with front and back-end teams to ensure proper implementation of architectural design

Frontend Developer

Team Member: Wen Liang

Responsibility:

- Responsible for the design and implementation of the user interface
- Implement user interface design and interaction features to ensure compatibility on various devices
- Collaborate with the back-end team to integrate APIs and ensure seamless interaction of data with the interface
- Optimize front-end performance to improve system loading speed and response time
- Focus on user experience details to optimise interface elements and interaction logic

Team Structure

Backend Developer

Team Member: Hengpan He

Responsibility:

- Responsible for the implementation of the system's data processing and business logic
- Implement core business logic and handle complex data operations and processes
- Design and implement system database and API interfaces to ensure smooth data interaction between front and back end
- Configure system security to protect user data and prevent security breaches
- Ensure the stability of the back-end system through unit testing and integration testing.

Project Manager

Team Member: Arnold Aristotle Tayag

Responsibility:

- Key coordinator and bridge of communication for project time planning, resource management and schedule control
- Manage project schedules to ensure phases are completed on time
- Maintain open communication to ensure unobstructed flow of information between the client, development team and test team
- Identify and manage project risks and develop prevention strategies
- Organize regular project status meetings to support the team and resolve issues

Project Kick-off Meeting

Meeting Objectives

- Define the main functions of the system and the operating privileges of key user roles
- Establish communication process and feedback mechanism to ensure timely problem solving during the development process
- Identify project risks, analyze potential challenges and discuss initial response strategies.

Key Participants:

- Client representative: Arnold Aristotle Tayag
- Development team Representative: Wen Liang
- Project Manager: Hengpan He

Meeting Outcomes:

- Confirm the process of publishing basic information (e.g., name, description, price, etc.) about a tour product and the authority to modify it
- Discuss the key steps in the booking process, including the process design for booking confirmation and cancellation
- Clarify the notification mechanism for users and administrators to ensure transparency and real-time system operation
- Discuss the key steps in the booking process, including the process design for booking confirmation and cancellation

Project Kick-off Meeting

Meeting Outcomes:

- Confirm the process of publishing basic information (e.g., name, description, price, etc.) about a tour product and the authority to modify it
- Clarify the notification mechanism for users and administrators to ensure transparency and real-time system operation
- Discuss how to achieve efficient communication and ensure two-way feedback between the client team and the development team. Specifically includes:
  - Weekly project update meetings to report on the week's progress and the work plan for the following week
  - An assessment of the time point to the next milestone
  - Task tracking and issue management using the project management tool Jira

Project risks identification:

- Identify technical or business challenges that may be encountered in the project, conduct risk analyses and initially discuss response strategies. Key considerations include:
  - User booking cancellation timeliness issues and system responsiveness during peak periods
  - System stability, including Service Level Agreement (SLA) related elements
  - Horizontal expansion capability of the system and disaster recovery requirements
  - Objectives and requirements of the system's core data storage and backup strategy

Scope of Work

The system focuses on providing tour booking services exclusively for tours within New Zealand. It will cover the following key features:

Tour Browsing: Displays detailed information such as tour descriptions, prices, itineraries, and ratings.
Online Booking: Supports email confirmation, payment processing, and tracking of booking statuses.
Tour Review: Allows users to provide feedback and ratings after the tour.
User Management: Enables administrators to manage user accounts and permissions.
System Integration: Offers APIs for integrating with third-party payment services and tour information providers

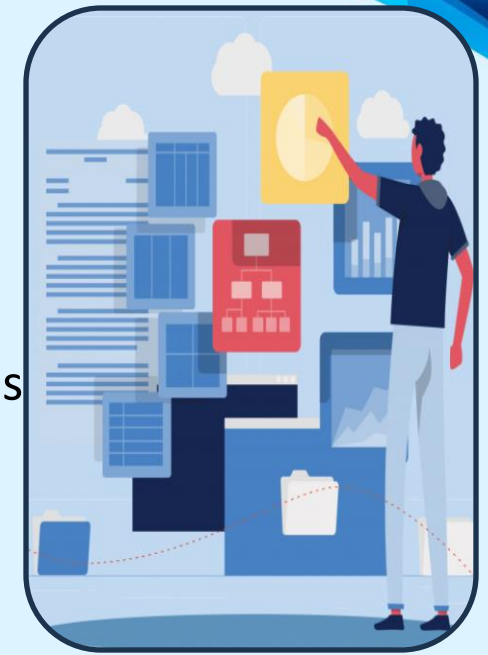
The following items are beyond the scope of this project:

- （X） Offline travel arrangements or services outside of New Zealand
- （X） Travel insurance management: The system will not handle or process insurance requests or claims
- （X） Multi-currency support: The platform will only process payments in New Zealand dollars (NZD) without exchange rate calculations

System Design

System Architecture:

- **Frontend**: HTML, CSS, JavaScript (responsive UI)
- **Backend**: Python + Node.js (business logic, API)
- **Database**: SQLite (tour details, user data)

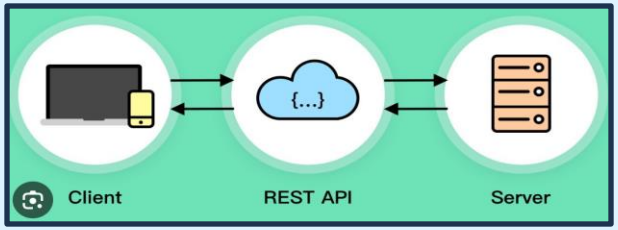


Module Breakdown:

- **Tour Browsing**: Load and display tours
- **Online Booking**: Manage bookings, payments, confirmations
- **Admin Interface**: User, booking management, reports
- **Review Module**: User feedback collection
- **System Integration**: Third-party API integration

System Design

- **System Interfaces**
- **Tour Listing**: Filter tours by preferences
- **User/Admin Login**: Separate login for tourists and admins
- **Booking**: Collect traveler info, confirm availability, process payments



- **Data Flow and Communication**:
- **Frontend-Backend Communication**: REST APIs
- **Database Operations**: SQLite (future migration ready)
- **Scalability**: Initial phase with SQLite, scalable to MySQL/PostgreSQL if needed

Project Backlog Planning

Summary:

- 19 user stories, 113 story points
- Release 1: 10 user stories, 50 story points, 4 sprints
- Release 2: 7 user stories, 42 story points, 4 sprints
- Release 3: 2 user stories, 21 story points, 2 sprints

Release Planning

Release 1:

- Tour browsing
- Online booking
- Admin Interface
- Customer Support

Release 2:

- Tour browsing: show computed average rating, tour management
- Tour review: 1 rating from 1 to 5, customer comments/recommendations
- Admin Interface: report generation
- System Monitoring & Reporting: system performance, monitor error logs, booking report and analytics

Release 3:

- System integration
- API for third-party integrations

Sprint Planning

Sprint Plan for Release 1

Sprint Number	User Story #	Estimation (Fibonacci)
1	1	2
	2	2
	3	5
2	4	5
	5	5
	7	5
3	12	4
	13	5
4	17	13
	18	4

Sprint Plan for Release 2

Sprint Number	User Story #	Estimation (Fibonacci)
1	6	3
	8	5
2	9	8
	10	5
3	11	5
	14	8
4	16	8

Sprint Plan for Release 3

Sprint Number	User Story #	Estimation (Fibonacci)
1	15	8
2	19	13

Costing / Budget

Assumptions:

1. Sample budget outline (baseline only) for a Tour Booking Management System, broken down into Development, Infrastructure, and Operational expenses
2. Budget allocated is based on a mid–sized tour agency
3. Actual cost will vary based on system complexity, user volume, and additional features, such as analytics or advanced reporting features

Development Costs: $31,500 - $65,000

1. Planning & Design
2. Software Development
3. Testing & Quality Assurance

Infrastructure & Licensing Costs: $3,000 - $12,500

1. Hosting & Server Costs
2. Software Licensing & Subscriptions

Operational Costs: $26,000 - $66,000

1. Content Creation & Marketing
2. Ongoing Maintenance & Updates
3. Staff Training & Support

Total Estimated Cost:

Initial Development & Setup Costs: $35,000 - $78,000

Ongoing Monthly Costs: $2,000 - $5,000

Total Yearly Operational Cost: $26,000 - $66,000

Cultural Considerations

Our project incorporates the core principles to ensure cultural sensitivity and respect for Māori perspectives. Specifically, we consider the Treaty of Waitangi (Te Tiriti o Waitangi), New Zealand's founding document, establishing a partnership between Māori and the Crown.

Key principles:

- Kawanatanga (Governance) - collaboration with Māori groups and local authorities to be able to encapsulate New Zealand’s tourism standards and Māori values
- Tino Rangatiratanga (Self-Determination) – feature Māori-related tours and historical/cultural activities. This enables Māori people to have control over the way their cultural heritage is showcased
- Oritetanga (Equity) - provide equal opportunity for Māori indigenous people to publish, manage, and benefit from tourism opportunities.

Project Sign-Off

Project Title : Tour Booking Management System
Project ID **: Alpha-1xB.1257**
Date : 31 October 2024
Project Manager **:** Wen Liang
Client/Stakeholder **:** Arnold Aristotle Tayag

Deliverables Checklist

The following project deliverables have been completed, reviewed, and approved:

- Requirement Specification, System Design Document, Database Design, Application Development
- System Testing, User Acceptance Testing (UAT), Training & Documentation, Go–Live/Deployment

Acceptance Criteria

All project requirements, deliverables, and acceptance criteria have been reviewed and meet the standards agreed upon in the original project plan, including:

- Functional and non-functional requirements
- Performance and scalability requirements
- Security and compliance requirements
- Usability and user interface requirements

Project Sign-Off

Sign-Off

By affixing your signature below, both parties agree that the project meets all user specifications and requirements and is considered officially complete. Any addendum, modifications, enhancements, or new functionalities added will be treated as new requirements and will be the subject of a new project proposal

Project Manager: Wen Liang _____

Client/Stakeholder: Arnold Aristotle Tayag _____

Technical Lead: Hengpan Han _____

Date: 31 October 2024

Reflection

Key Takeaways:

This system development project has allowed the team to put in practice key elements that are essential for project success:

- Clear and thorough requirements gathering
- Importance of stakeholder engagement & customer-centric focus
- Realistic planning and scheduling
- Early and frequent delivery of value
- Quality assurance and testing
- Risk management and early issue resolution
- Efficient communication and collaborativer approach
- Adaptability to change
- Project retrospective and continuous improvement

Thank You...