**A PROPOSED OFFERING OF A WEB-BASED TRAVEL BOOKING SYSTEM FOR RARE EXPLORER TRAVEL&TOURS AT DATAMEX COLLEGE OF SAINT ADELINE VALENZUELA BRANCH**

A Project Proposal Presented to the

Faculty of Datamex College of Saint Adeline, Inc.

In Partial Fulfillment of the Requirements for the

Degree of Bachelor of Science in Information Technology

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**PROJECT PROPOSAL**

**INTRODUCTION**

An online travel booking platform, like RareExplorer Travel Booking System, is built to make planning travel easier, faster, and more relaxed. Unlike the traditional way of arranging travel, RareExplorer makes planning travel a seamless process by allowing travelers to book flights, accommodation, and services in as few steps as possible. RareExplorer was built to offer low-cost travel deals, reliable travel bookings, and easy to use features that anyone can use. Unlike traditional travel booking systems, the focus is on creating a great and trustworthy travel booking platform designed to meet the needs of today's travelers saving them time and allowing them to experience their travel in a stress-free manner.

RareExplorer also focuses on customer engagement and customer satisfaction. The system is designed to be user-friendly and is supported by responsive customer service so customers can easily navigate the system. By using good technology and data, RareExplorer can provide valuable travel suggestions and guidance to customers, matching their travel interests to their current travel preferences. This proposal sets out an action plan for the development of the RareExplorer Travel Booking System, with the further aim of making it the most popular travel booking system that can offer travel to a diversity of travel options from popular travel to hidden treasures, short of moving to a different continent, while maximizing convenience and comfort.

Customer satisfaction is at the heart of RareExplorer’s mission. The platform features 24/7 support through live chat and help desk services, ensuring that users receive timely assistance before, during, and after their trips. A built-in review and feedback system encourages transparency and helps future travelers make informed decisions. RareExplorer also supports multiple languages and payment methods, making it accessible to a global audience. With secure transactions and real-time inventory updates, users can book with confidence, knowing they’re getting the most accurate and up-to-date options available.

This proposal outlines a clear plan to build and improve RareExplorer, with the goal of making it the most popular travel booking system available. It aims to offer a wide range of travel options from well-known places to adventures without needing to move across the world. The system is designed to make travel more convenient and comfortable for everyone

**CLIENT INFORMATION**

This section outlines essential information about the client organization, RareExplorer Travel and Tours. It includes the business name, ownership, contact details, and a brief background of their operations. This helps clarify who the system is being developed for and ensures that the specific needs, goals, and expectations of RareExplorer are well understood throughout the duration of the project. By identifying the client clearly, the development team can align the system’s features and functionality with the organization’s travel services, customer engagement strategies, and operational work flows.

**Client Organization:** RareExplorer Travel and Tours  
**Representative Name:** Rj R.Cameña  
**Email:** rareexplorer.traveltours@gmail.com  
**Address:** Quezon City, Metro Manila, Philippines



*Image 1. Picture of Client*

**PROJECT SCOPE**

This section outlines the goals, coverage, and limitations of the RareExplorer Travel Booking System. It defines what the system will include, the features it will offer, and the outcomes it aims to achieve. This helps ensure that all stakeholders—from developers to business owners—have a shared understanding of the project’s direction and purpose.

**Deliveries**

The primary output of this project is a web-based Travel Booking System for RareExplorer Travel and Tours, developed using modern web technologies and powered by Firebase. The system is designed to help travelers easily book flights, accommodations, and travel packages through a single, user-friendly platform. Currently, many travelers rely on multiple websites or manual coordination to plan their trips, which can be time-consuming and confusing. By introducing this centralized digital system, RareExplorer aims to simplify the travel planning process, reduce errors, and offer a more personalized experience. The system will include modules for booking management, user registration, travel recommendations, payment processing, and customer support. It will also feature secure login and role-based access to ensure data protection and proper user permissions.

**Inclusion**

The system will include all essential features needed to run a modern travel booking platform. These features are built around CRUD operations, allowing users to create, view, update, and delete bookings and travel preferences. A search and filter function will help users find specific destinations, hotels, or flights quickly. The system will support real-time updates using Firebase Firestore, and secure user authentication through Firebase Authentication. Payment integration will be handled via third-party gateways such as Gcash. Travel suggestions will be generated based on user history and preferences, enhancing the personalization of the experience. The system will be accessible via desktop and mobile browsers, and hosted on Firebase Hosting for fast and reliable performance

**Expectation**

We expect that this system will significantly improve how RareExplorer manages travel bookings and interacts with customers. It should make the booking process faster, more accurate, and more engaging. Travelers will be able to plan their trips with fewer steps, receive personalized recommendations, and complete secure payments—all in one place. The system is also expected to increase customer satisfaction and loyalty by offering a smooth and responsive interface, along with helpful travel suggestions. For RareExplorer staff, the system will provide better tools for managing bookings, tracking user activity, and responding to customer inquiries. Overall, the platform should help RareExplorer grow its customer base and become a trusted name in travel services.

**Assumptions**

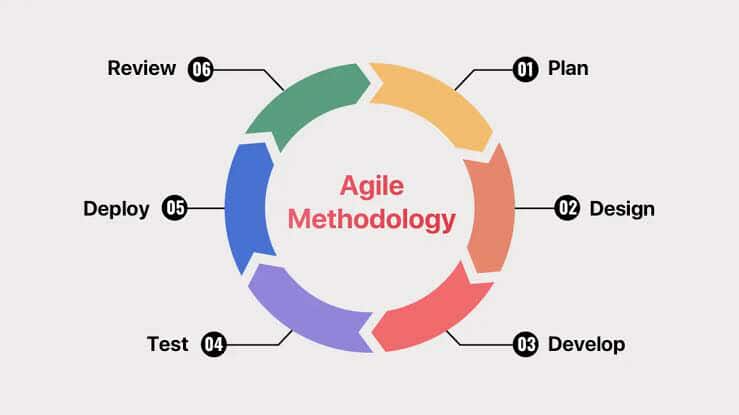
In developing this system, we assume that RareExplorer has access to reliable internet connectivity and devices capable of running modern web applications. We also assume that staff members have basic digital literacy and are willing to learn how to use the system effectively. It is expected that users will access the system primarily through web browsers on desktop or mobile devices. We assume that Firebase services—such as Firestore, Authentication, and Hosting—will be available and properly configured. Additionally, we assume that RareExplorer will maintain regular backups and monitor system performance to ensure data integrity and uptime.

**Constraints**

There are certain limitations to what this system can do. First, it is designed as a web-based platform and does not include a native mobile app at launch, although mobile browser access is supported. Second, the system does not include offline functionality, so users will need an internet connection to access features. Third, while the system supports secure payments, it does not include advanced financial tools like invoicing or tax calculation. It also does not integrate with external analytics platforms or third-party travel APIs beyond basic booking data. These constraints were intentionally set to keep the system focused, cost-effective, and aligned with RareExplorer’s current operational needs. Future updates may include mobile app development, cloud-based analytics, and expanded travel services.

**PROJECT APPROACH**

The team will develop an Online Travel Booking System where people can easily book flights, hotels, and vacation packages. The system will be accessible on both computers and mobile phones, allowing users to plan and manage their trips anytime, anywhere.



*Figure 2. Agile Method for Travel Booking System For RareExplorer Travel and Tours*

**Plan**

In the planning phase, we identified key challenges faced by travelers and travel agents, particularly the time-consuming and fragmented process of booking flights, accommodations, and travel services across multiple platforms. Through user interviews, competitor analysis, and market research, we gathered initial requirements and created a product backlog that included core features such as flight and hotel booking, travel packages, user profiles, payment processing, and customer support integration. The goal was to build a system that simplifies travel planning, offers affordable and reliable options, and enhances the overall travel experience through a user-friendly and efficient platform.

**Design**

During the design phase, we developed wire frames and user flow diagrams to visualize how travelers would interact with the system. The focus was on creating a clean, intuitive interface that could be easily used by people of all ages and technical backgrounds. The system architecture was designed to support web-based operations using Firebase, with secure data handling and modular scalability. Each module—such as Booking Management, Travel Suggestions, and Payment Gateway—was carefully mapped to ensure smooth integration. We also defined user roles (e.g., traveler, admin, agent) to manage access levels and protect sensitive information.

**Develop**

Development followed Agile methodology, with each sprint focused on building and testing one module at a time. We used HTML, CSS, and JavaScript for the frontend, and integrated Firebase to connect with backend services. The first sprint focused on user registration and login using Firebase Authentication. Later sprints added booking forms, real-time availability checks using Firestore, and dynamic travel suggestions based on user preferences. Firebase Hosting was used to deploy the web app, and Cloud Functions handled tasks like sending confirmation emails and updating inventory. Each feature was tested and integrated into the main system as development progressed.

**Test**

Testing was done continuously throughout development. After each sprint, we performed unit tests to check individual features and integration tests to ensure modules worked together. Firebase’s real-time capabilities allowed us to simulate live booking scenarios and test how the system handled multiple users. We also conducted usability testing with sample users to gather feedback on navigation and performance. Security testing focused on authentication, data access rules, and protection against unauthorized actions. All bugs and issues were documented and resolved before moving forward.

**Review**

Once all modules were tested and approved, we deployed the system using Firebase Hosting. A training session was conducted for RareExplorer staff and travel agents to familiarize them with the system. Documentation was provided to guide users through each feature, including booking, managing profiles, and accessing support. The system successfully replaced manual booking processes and offered a fast, secure, and user-friendly platform for travel planning. Future updates may include mobile app integration using Flutter with Firebase, advanced AI-powered recommendations, and support for muti-language and muti-currency options to expand globally.

**PROJECT TEAM**

|  |  |
| --- | --- |
| Wong,Chrisdelyn S. | Project Leader  Led the project, assigned tasks, ensured deadlines were met, and handled documentation. |
| Alelojo,Red Hernie | Developer  Developed the code, built the system, and managed the database for bookings, schedules, and payments. |

*Table 1. Project Team*

**PROJECT TIMELINE**

|  |  |  |
| --- | --- | --- |
| **Phase** | **Duration** | **Description** |
| Planning and Brain storming | Week 1-2 | The project begins with strategic planning . |
| Website Design | Week 3-4 | Design work starts with creating wireframes and mockups for the platform’s interface. |
| System Deployment Preparation | Week 5-6 | The development team prepares the system architecture and configures Firebase services including Firestore, Authentication, and Hosting. |
| Adding More Functions | Week 7-8 | These may include enhancements to the booking process, personalized travel suggestions, admin tools, and loyalty program elements. |
| Testing and Debugging | Week 9-10 | Security and data handling are also reviewed to ensure safe and reliable operation. |

*Table 2. Project Timeline*

**PROJECT RESOURCES**

**Hardware**

|  |  |  |
| --- | --- | --- |
| Laptop | Intel Xeon RAM 8-16 gb | High-performance workstation laptop powered by Intel Xeon, ideal for multitasking, data processing,and running demanding applications. The 8–16 GB RAM range ensures smooth performance. |
| Internet Connection | Any type of internet connection&Mobile Data | Connectivity using Wi-Fi, wired LAN, or mobile data. Ensures reliable access to online services, cloud storage, and real-time updates |
| Cellphone | Atleast 64 to 128 storage | Smartphone with at least 64 to 128 GB of internal storage, suitable for storing apps, media |
| QR Code | Payment Transaction | A scannable digital code used for secure and fast payment transactions. |

*Table 3. List of Hardware Components*

|  |  |  |
| --- | --- | --- |
| Database | Cloud Firestore | Scalable NoSQL database for storing structured data in real time |
| Authentication | Email and Password | Secure login using registered email and password |
| Backend | Cloud Function | Serverless code that runs on demand for backend logic |
| Frontend | HTML,CSS,Javascript | Core web technologies for building user interfaces |
| Payment Gateway | Gcash | Trusted platform for processing online payments securely |

**Software**

*Table 4. List of Software*

**HUMAN RESOURCES**

The team was composed of a project leader, programmer, designer, system analyst, tester and data gatherer. Each of the members had an important role in the development process. The project leader was responsible for leading the team to accomplish the task and monitor the individual timeline of the other members. The programmer engaged in writing the coding and developing the system features. The designer developed the layout, form, aesthetics and user-friendliness of the system. The system analyst evaluated and determined the requirements of the system based on the need of the users. The tester was responsible for identifying errors in the system and assessing proper functionality. Finally, the data gatherer identified and collected the data needed for the project. There was an active working relationship among the team members, and when all team members perform their respective roles, the project would be developed in an accurate and timely manner

To complete our project, we produced a simple plan that identified the best development needs of the project. Development needs that were taken into account, were only the fundamental necessities of the project idea, the costs of development, testing, hosting, and QR code for payments. We thought it best to create a basic plan that will allow all tools to be affordable, functional and achievable as part of the proposal. Only when we identified all the necessary tools, we ensured affordability (and consulted with the team), and then had several options for the project, while meeting the needs as expressed by the individuals involved, and ultimately to the client. The team was small, as were the tools, however, we were still able to mitigate expenses, while still developing a proper system and meeting the project criteria.

|  |  |  |
| --- | --- | --- |
| Item | Estimates Cost (PHP) | Justification |
| Software Tools | 0 | Open source tools (HTML,CSS,JS) are free to use |
| Developer Compensation | ₱50,000 | Lowered cost by using a smaller multitasking team |
| Testing | ₱20,000 | For basic device testing and fixing errors |
| Web Hosting (1year) | ₱15,000 | Basic shared hosting package for the website |
| Bookings and Payment Feature | ₱10,000 | To add and secure the booking form and allow online payments |
| Other Expenses | ₱5,000 | Covers small extras like icons,fonts or templates |
| Total | ₱100,000 |  |

*Table 5. List of Human Resources*

**RISK MANAGEMENT**

To ensure that the Travel Booking System for RareExplorer Travel and Tours operated efficiently and remained dependable, we anticipated the possible challenges associated with these technologies and identified several potential risks early in the project and we put a plan in place to mitigate these risks. The main issue was the potential risk of losing or corrupting data such as booking data or payment information due to server crashes, physical outages or human error. We minimize this potential risk by performing automatic daily backups, located in the cloud and also physical drives which would allow us to restore our data, should something go wrong. We implemented additional security protocols to safeguard the system from unauthorized access.

Another risk is bugs or issues in important aspects of the system, such as booking trips, paying online, and searching for travel packages. We used two types of testing, where we did unit testing of each part of the system and then system testing of the whole system to ensure there were no operational issues when implemented in real scenarios. Effective time management was truly a major challenge for the team in the development of the system. The team members were trying to balance other academic, or personal commitments and figure out the availability of the other team members and consistent progress was a matter of planning and quickly adapting at times. There was a possibility for delays to occur, or for communication to happen, since our development team was relatively small. In particular, we made it clear what everybody's tasks were, and used tools so we tracked progress. We also had regular meetings (once a week) to facilitate working together and not fall behind. We also thought about users who might not be accustomed to booking trips online, primarily older clients or travel agents who may have been used to manually booking trips. To assist with this, we made the online system easy to use with a clean and clear layout, simple buttons and sequential guides throughout the process. Our plan was to provide basic training during the roll-out.

There were also challenges with payment security as customers were entering Sensitive information and we include street encrypted systems, secured payment systems and checks to ensure data security and build confidence in what we were providing. Lastly, we were depending on third-party services to provide flights, accommodations and transportation. So, we had contingency suppliers in place, knowing that if any of these services let us down or changed, we would have to follow our plan. The system could handle short-term outages and not collapse! We had identified these threats early, and managed them correctly, therefore we were able to deliver an easy to use booking system that was affordable to meet the objectives of RareExplorer Travel and Tours and assist their sustainable success.

**COMMUNICATION PLAN**

Good communication was super important for the Travel Tech Team to make sure RareExplorer Travel & Tours was built and successfully released. The team had a clear plan to keep everyone updated and on the same page. They made sure to respond quickly to any issues. Depending on how urgent or important a message was, they used different tools and apps to communicate.

**Frequency and Format of Project Meetings**

* Daily Stand-ups (Team Only):

Short updates were shared through group chats on Messenger or report daily progress, raise quick questions, and coordinate minor changes.

* Weekly Development Meetings:

Every Monday in Morning via Google Meet to review ongoing tasks, resolve blockers, and plan upcoming milestones. These meetings helped the team stay aligned and on schedule.

* Bi-weekly Client Meetings (RareExplorer):

Meetings with RareExplorer’s representatives were held every two weeks through Google meet or Email. These meetings were used to present progress updates, gather feedback, and adjust priorities when necessary.

* File and Report Sharing:

Project documents such as timeline, system designs, feature updates, and test reports were shared using Google Drive and updated regularly. Collaborative tools like Google Meet and Messenger were used to track real-time progress and revisions.

This structured communication approach helped build transparency, keep all stakeholders informed, and ensure that the goals of RareExplorer Travel & Tours were consistently met. Regular check-ins and proper use of digital tools helped streamline development, reduce misunderstandings, and ensure timely delivery of the system.

**Stockholder**

|  |  |
| --- | --- |
| RareExplorer Travel Owner | Oversees the overall business operations and ensures the success of the travel agency |
| Travelers / Customers | Book and avail travel services such as tours, flights, and accommodations |
| Travel Agency Staff | Assist customers with reservations, inquiries, and travel arrangements |
| System Administrator | maintains the technical infrastructure and security of the booking system |
| Tour Operators | Provide and organize tour packages and travel experiences for customers. |
| Payment Gateway | Handles secure online payment transactions for bookings. |
| Project Owner/Management | Project goals, monitors progress, and ensures timely delivery |
| Developers | Design, build, and maintain the travel booking system’s features and functionality |

*Table 6. List of Stock Holder*

**Roles**

|  |  |
| --- | --- |
| Project Leader/System Analyst | Oversees the project, coordinates the team, and ensures tasks are completed on time |
| Developer | Writes, tests, and maintains the code for the system |
| Data Gatherer | Collects, organizes, and verifies data needed for system development and decision-making |

*Table 7. List of Roles*

**Referred Communication**

* Online for meeting and Email for updates
* Email notifications, SMS alerts, in-app messages, live chat support
* Internal messaging platforms, emails, phone calls
* Admin dashboard alerts, technical emails, reports
* Email correspondence, partner dashboards, scheduled virtual meetings
* API documentation, service reports, technical support email and ticket
* Scheduled meetings (online/in-person), progress reports, email or Messenger
* Online like emails, and shared documents

**PROJECT GOVERNANCE**

The Travel Booking System will be developed by the team, with everyone clear about their roles from the beginning. The team will follow a solid plan where tasks are properly assigned, responsibilities are understood, and progress is tracked regularly to avoid delays. This organized approach helps keep everything on schedule and running smoothly.

The Project Leader, Chrisdelyn Wong, is in charge of managing the entire project. She assigns tasks, sets deadlines, and makes sure everything is finished on time. She also handles the documentation and serves as the main contact between the development team and the client. Any big decisions—like changes to system features or the timeline—are first discussed within the team, then confirmed with the main stakeholder, RareExplorer Travel. This way, all system changes are agreed on and carefully thought through.

Each member of the team has their own role. Red Hernie Alelojo, the programmer, is responsible for building the system and setting up the database. Lastly, the RareExplorer Travel Owner provides the requirements, checks on progress, and gives final approval once everything is complete.

By clearly defining everyone’s roles and making smart decisions as a team, everything stays organized and runs efficiently. Good communication and teamwork help ensure the project is successful and that the final system meets everyone’s expectations.

**APPENDIX**

Buhalis, D., & Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the Internet

https://www.sciencedirect.com/science/article/abs/pii/S0261517708000162?via%3Dihub

Encarnacion,R. Booking and Reservation System

<https://www.researchgate.net/publication/381506499_Booking_and_Reservation_System_A_Unified_Application_Using_Location>

*Gosela, R. R. U., & Encarnacion, R. E. (2024). Booking and reservation system: A unified application using location-based services for sustainable tourism networks. Surigao Del Norte State University.*

<https://www.researchgate.net/profile/Riah-Encarnacion>