**Hotel Cowboy Hotel Conference Room Booking System**

**Project Mid-Semester Deliverable**

Team Maverick Reservations

Leo Tran, Moises Casillas, Pedro Garcia, Edward Garcia, John Park, Ryan Dorta, Blake Demarest, Luke Shellenbarge

College of Business and Economics, California State University, Fullerton

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Dr. Bruce Hunt

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**Executive Summary:**

The Cowboy Hotel Conference Room Booking System project addresses inefficiencies in its outdated manual reservation process by developing an automated, secure, and user-friendly platform to manage its newly expanded conference facilities. Spearheaded by Hotel Manager Jamie Bradson and executed by Team Maverick Reservations from California State University, Fullerton, this initiative aims to eliminate double bookings, reduce operational errors, and enhance customer satisfaction through streamlined booking workflows, integrated payment tracking, and robust reporting capabilities. The system allows booking specialists to search for and reserve rooms by date, capacity, and amenities, track reservation statuses (confirmed, unconfirmed, canceled), generate analytical reports on room utilization, customer history, and revenue trends, and restrict catering-related modifications to managerial oversight for compliance. Key security measures include encryption, audit logs, and role-based access controls to protect sensitive customer data. Projected financial benefits include $137,500 in additional conference room revenue in the first year, with growth reaching 30% by 2028, and $38,276 in cost savings from reduced errors and refunds. The system’s technical feasibility is ensured through compatibility with existing infrastructure (Windows 11, Office 2019), while its economic feasibility is confirmed by a 127.05% ROI and a breakeven point within 1.5 years, culminating in a cumulative net cash flow of $369,074 by 2028. Organizational feasibility is supported by strong management alignment and phased staff training to ensure smooth adoption. Developed within a $56,000 budget and a 6-month timeline, the solution prioritizes scalability, real-time performance (2-second query responses, 4 concurrent users), and integration with external payment systems. By aligning with the hotel’s expansion strategy, this system positions the Cowboy Hotel to maximize revenue potential, improve operational efficiency, and leverage data-driven insights for strategic decision-making, ultimately reinforcing its competitive edge in the hospitality industry through innovation and enhanced customer experiences.

| System Request\_Conference Room Booking System |
| --- |
| Project Sponsor: Jamie Bradson, Hotel Manager |
| Business Need: The Cowboy Hotel has expanded its facilities with new conference rooms, requiring a new streamlined booking system to replace outdated manual processes. These inefficiencies have caused double bookings, missed revenue opportunities, and booking errors that undermine customer satisfaction and operational efficiency. |
| Business Requirements: The new system must enable booking specialists to:   * Search for rooms by date, time, type, capacity, availability, dimensions, setup preferences, and rental fees. * Track reservation status (unconfirmed, confirmed, canceled) and support modifications without deleting canceled reservations (for reporting purposes). * Manage payments by tracking total charges, payments made, and remaining balances. External hotel systems will handle payment processing. * Allow only managers to handle catering-related changes or acknowledge cancellations/modifications involving catering (with caterers notified). * Generate reports on frequent customers, their booking history, room popularity, and revenue analysis (weekly, monthly, quarterly). |
| Business Value: By implementing this conference room booking system, the Cowboy Hotel will benefit significantly.   * In the first year alone, we expect to generate an additional $137,500 in conference room booking revenue, growing to 30% by 2028. * The hotel will also generate 8% of hotel room sales from conference customers, which is projected to be $51,322 by 2028. * The new system should reduce costly errors and refunds. We expect the hotel will save $38,276 by 2028 through fewer mistakes and greater customer satisfaction. |
| Special Issues or Constraints:   * Project budget is limited to $56,000. * New system must be delivered within 6 months to align with hotel expansion. * Booking system able to work on Windows 11 and Office 2019 integration. * Protect customer data (names, emails, phone numbers, organizations) and implement an audit log for tracking system actions. * Support 2–4 concurrent users with instant response times. |
|  |

**Project Work Plan:** A close-up of a document

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**Feasibility Analysis:**

| **Benefits-Costs Analysis** | **2025** | **2026** | **2027** | **2028** | **Total** |
| --- | --- | --- | --- | --- | --- |
| **Benefits** |  |  |  |  |  |
| Conference Room Revenue |  | $ 137,500 | $148,500 | $192,456 | $ 478,456 |
| Increase Hotel Room Revenue |  | $ 44,000 | $ 47,520 | $ 51,322 | $ 142,842 |
| Reduced errors & refunds |  | $ 11,000 | $ 11,880 | $ 15,396 | $ 38,276 |
| **Total benefits** |  | **$ 192,500** | **$207,900** | **$259,174** | **$ 659,574** |
| **Development Costs** |  |  |  |  |  |
| Software Development | $ 10,000 | $ - | $ - | $ - | $ 10,000 |
| Hardware | $ 2,000 | $ - | $ - | $ - | $ 2,000 |
| Training | $ 1,500 | $ - | $ - | $ - | $ 1,500 |
| Setup | $ 2,000 | $ - | $ - | $ - | $ 2,000 |
| **Total Development Costs** | **$ 15,500** | **$ -** | **$ -** | **$ -** | **$ 15,500** |
| **Operation Costs** |  |  |  |  |  |
| System maintenance & support |  | $ 500 | $ 500 | $ 500 | $ 1,500 |
| Software updates |  | $ 4,000 | $ 4,000 | $ 4,000 | $ 12,000 |
| Booking Specialist |  | $ 65,000 | $ 65,000 | $ 65,000 | $ 195,000 |
| Annual Security & Compliance Fee |  | $ 3,000 | $ 3,000 | $ 3,000 | $ 9,000 |
| Assistant |  | $ 55,000 | $ 55,000 | $ 55,000 | $ 165,000 |
| Miscellaneous |  | $ 8,500 | $ 8,500 | $ 8,500 | $ 25,500 |
| **Total Operation Costs** |  | **$ 136,000** | **$ 69,500** | **$ 69,500** | **$ 275,000** |
| **Total Costs** | **$ 15,500** | **$ 136,000** | **$ 69,500** | **$ 69,500** | **$ 290,500** |
| **Total Benefits - Total Costs** | **$ (15,500)** | **$ 56,500** | **$138,400** | **$189,674** | **$ 369,074** |
| **Cumulative Net Cash Flow** | **$ (15,500)** | **$ 41,000** | **$179,400** | **$369,074** |  |
| **ROI (Net Benefits/Total Costs)** |  |  |  |  | **127.05%** |

***Technical Feasibility:***

The Conference Room Booking System is technically feasible, as it will utilize the hotel's existing infrastructure, including compatibility with Windows 11 and Office 2019. The system will be built as a database-driven internal application, a well-established and reliable technology, further supported by new assistant personnel for maintenance. With the project scope limited to internal booking management, complexity, and implementation risks are minimized. However, since the hotel’s current booking system is outdated, transitioning to automation will require user training. The risk level is considered low to moderate, with the primary challenge being staff adaptation to the new system.

***Economic Feasibility:***

The cost-benefit analysis demonstrates that the Conference Room Booking System is financially viable, with projected revenue growth outweighing implementation expenses. The initial development cost is estimated at $56,000, covering software development, hardware upgrades, and training. Industry projections suggest that conference room bookings will account for 25% of hotel room revenue in the first year, growing to 30% by year three, alongside an 8% increase in hotel room bookings due to conference events. The system's break-even point is estimated within 1.5 years, driven by increased bookings and improved operational efficiency. Additionally, intangible benefits include reducing manual booking errors, enhancing customer satisfaction, expediting the booking process, improving staff efficiency, and enabling better data tracking for strategic pricing and promotions

***Organizational Feasibility:***

The system strongly supports the hotel’s expansion strategy by ensuring the new conference rooms achieve maximum revenue potential. Top management support is evident, as the hotel manager is fully committed to the project, viewing it as an avenue to boost revenue and operational efficiency. While staff adaptation is expected to be smooth due to the system’s user-friendly design, potential resistance might arise from staff adapted to manual processes. However, comprehensive training and friendly use will ease this challenge. Regarding the impact on operations, Booking Specialists will benefit from automated scheduling and payment tracking, significantly improving efficiency. Additionally, managers will gain access to detailed reports, enabling informed, data-driven decision-making to support the hotel's strategic goals.

**Requirements Definition:**

***Functional Requirements***

1. Manage Conference Room Bookings

1.1 The system allows booking specialists to create, modify, and cancel conference room reservations. 1.2 The system prevents double-booking by checking room availability before confirming a reservation.

1.3 The system allows booking specialists to assign customers to specific conference rooms.

1.4 The system tracks booking statuses, including unconfirmed, confirmed, and canceled reservations.

2. Payments Process

2.1 The system tracks payment details for monitoring purposes, including payment amount, payment date, and payment method (e.g., credit card, check, cash).

2.2 The system enables booking specialists to apply predefined discounts when applicable and logs the adjusted payment amounts for reference.

2.3 The system tracks the total charge for a reservation and provides payment details, such as amounts paid and remaining balance, for monitoring purposes only (not for calculation or automation).

2.4 The system integrates with the hotel’s external payment system, which manages payment processing.

2.5 A reservation remains "unconfirmed" until a deposit or first payment is received. Booking specialists must manually update the reservation status to "confirmed" upon verifying the deposit or payment.

3. Room Availability and Scheduling

3.1 The system allows staff to search for conference rooms based on date, capacity, and features.

3.2 The system updates the Room Availability Database when a reservation is confirmed.

3.3 The system suggests alternative room options when a preferred room is unavailable.

4. Generate Reports & Manage Booking Data

4.1 The system generates weekly and monthly booking reports for management.

4.2 The system allows booking specialists to view customer booking history.

4.3 The system tracks frequently booked rooms and usage trends.

5. View Available Conference Rooms

5.1. The system allows booking specialists to retrieve and provide customers with details on available rooms, amenities, pricing, and payment requirements (e.g., deposit, partial payment for confirmation).

5.2. The system enables booking specialists to check additional services (e.g., catering, AV) and inform customers upon request, including estimated costs.

6. Manage Existing Bookings

6.1. The system enables booking specialists to modify or cancel reservations upon customer request while updating the payment and booking status as needed (e.g., reflecting refunded amounts for cancellations).

6.2. The system maintains a history of past bookings, allowing specialists to provide customers with details on previous reservations, including payment details (e.g., deposits paid and balances outstanding).

6.3. The system allows booking specialists to add services to an existing booking as customers request while ensuring updated payment tracking for new services.

***Nonfunctional Requirements***

1. Operational

1.1 The system shall run on Windows 11 and be compatible with Office Professional 2019.

1.2 The system shall be accessible only on hotel-assigned computers to prevent unauthorized access.

2. Performance

2.1 The system shall process room availability queries within 2 seconds.

2.2 The system shall support up to 4 concurrent users during peak hours.

3. Security

3.1 The system shall require unique login credentials for all booking specialists.

3.2 The system shall store customer data securely using encryption.

3.3 The system shall maintain an audit log for all booking modifications and payments.

4. Cultural & Political

4.1 The system shall support multiple time zones for customers booking from different regions.

4.2 The system shall allow room descriptions and pricing customization to align with hotel policies.

**Set of use cases:**

**Process model:**

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**A diagram of a hotel level

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A diagram of a hotel

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**A diagram of a hotel

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**A diagram of a flowchart

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**Data model:**

**A diagram of a service

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**Appendix:**

1. ***Interview Summaries:***

**Interview Report**

**Person Interviewed:** Bruce Hunt

**Title:** Hotel General Manager

**Interviewer:** Blake Demarest

**Date of Interview:** February 24, 2025

**Purpose of Interview:**

* Gather functional and non-functional system requirements for the Cowboy Hotel Conference Room Booking System.
* Identify existing booking challenges and how the system should address them.
* Determine the new system's key security, reporting, and user access needs.

**Summary of Interview:**

**Current System Issues to be addressed:**

1. **Manual Booking Process:**
   * The current conference room booking system is manual; errors like double booking and reservation inefficiencies are commonplace.
   * The hotel's existing hotel booking process is unsuitable for conference room reservations.
2. **Limited Staff Access & Approval Controls:**
   * All staff should have general system access, but only managers should be able to acknowledge catering-related changes.
   * Managers will also oversee final approvals on modifications and cancellations related to catering services.
3. **Reservation Modifications & Cancellations:**
   * Customers must contact a booking specialist to modify or cancel a reservation.
   * Canceled reservations will not be deleted; they will be marked as canceled for reporting and audit tracking.
4. **Pricing & Payment Tracking:**
   * Room rental rates range from $75 to $100 per hour.
   * Discounts will be made available for multiple room bookings or special events.
   * The system will not process payments but track payments, outstanding balances, and deposits.
5. **Security & Authentication:**
   * The system will store sensitive customer information, including names, phone numbers, email addresses, and organizational affiliations.
   * Strong security measures will be implemented, including password and potential multi-factor authentication.
   * The system must maintain an audit log of all booking modifications and staff actions.
6. **Concurrent Users & System Performance:**
   * The system should support 2-4 concurrent users.
   * Response time for booking queries and data retrieval should be within seconds to ensure quick service.
7. **Reporting & Data Insights:**
   * The system should generate customer booking history reports, room utilization statistics, and financial summaries (weekly, monthly, and quarterly).
   * Identify which rooms are frequently booked and which are underutilized.
8. **IT Support & Maintenance:**
   * Remote IT support is preferred, with on-site escalation only if necessary.
   * Automated error reporting should be considered for system failures or critical issues.

**Open Items:**

1. Confirm the final list of security measures to be implemented.
2. Determine the level of training required for employees to use the system efficiently.
3. Decide whether to integrate the new system with the hotel's existing room booking software.
4. Specify how catering services will be logged and managed in the system.
5. Finalize the rules for unconfirmed reservations, including deposit handling.

**Next Steps:**

* Develop a high-level system design that includes user roles, security measures, and reporting functionalities.
* Refine pricing and discount logic for event-based reservations.
* Define the criteria for reservation statuses (e.g., confirmed, unconfirmed, canceled).

**Detailed Notes:** See attached transcript.

Follow-up question:

1. Are there any restrictions on how far in advance a customer can book or cancel?
2. How long should the booking history be stored for auditing purposes?