Cowboy Hotel
Final Deliverable

Group 5:
Immaculate Systems
Peter Chang
Ethan Johnson
Karman Tuli
Bryan Vu
Ryan Thant
Joseph Phung

ISDS 406-01
Professor Hunt

Table of Contents

Executive Summary **3**

System Request **6**

Project Work Plan **7**

Feasibility Analysis **8**

Technical Feasibility 9

Economic Feasibility 9

Organizational Feasibility 9

Requirements Definition Document **10**

Use Cases **12**

Physical Process Model (DFDs) **16**

Context Level: 16

Level 0: 17

Level 1: Customer Account 18

Level 1: Reservations 19

Level 1: Caterer Account 20

Physical Data Model (E-R) **21**

Hardware/Software Specifications **22**

User Interface **24**

Interface Structure Diagram 24

Example Calendar Screen 25

Example Reservation Screen 26

Appendix **27**

Interview Report 27

Interview Transcript 28

Executive Summary

The purpose of this document is to propose a new software system for planning/booking events of conference rooms for the Cowboy Hotel.

By describing the current state of operations and conducting interviews with the client, the System Request is created to highlight the business needs and requirements of a new booking system beyond current hotel operations. Currently, the old system is inhibiting workflow as employees are required to complete processes manually, resulting in disorganization, continuous mistakes, and increased expenses. By implementing user-friendly booking software that can automate reservation requests, improve operations and streamline processes, Cowboy Hotel will be able to handle simultaneous reservations more efficiently while increasing overall revenue.

With the implementation of the new software system, the client is requesting two additional hardware machines to assist employees with booking and modifying reservations for the conference rooms. Both devices must have Microsoft Windows 10 and Microsoft Professional 2016 to improve accuracy while processing data storage for customer requests. Most importantly, the system's prevalence must be centered around the customer, ensuring their needs are met.

The hotel anticipates the conference room to generate $80,000 in revenue after Year 1 while forecasting $100,000 by the end of 2025. In addition, there will be a positive regression with increased hotel bedroom/suite reservations, leading to an additional $20,000 in generated sales each year.

To complete the project as quickly and cost-efficient as possible, a Project Work plan will be developed to maintain organization. The plan will outline critical dates, providing a high-level overview of the Systems Development Life Cycle of the project. The system's design will be completed by Nov 30, 2022, and the team anticipates full implementation and completion of the project by mid-March 2023.

With compliance from the project sponsor, the Feasibility Analysis is created to break down the technical, economic, and organizational feasibility of the system. By adhering to the $40,000 budget constraint, the system will be technically feasible with a positive Return On Investment of 43% and a net cash flow of $98,488 after three years.

The system will be organizationally feasible as booking reservations become more streamlined with new hardware machines, designated booking staff, and increased employee transparency. With the project manager's role representing the change agent and primary leader of the project, they will aid in training employees resulting in higher turnover in reservations and increased revenue for the hotel.

The project will be technically feasible as Cowboy Hotel employees will find minimal disparity with implementing a new booking system as there is familiarity with the current bedroom/suite booking system. Through the addition of new hardware/software, the processes will remain independent but complement one another for conference rooms and traditional hotel bedroom reservations throughout Cowboy Hotel. In addition to extensive training and support from the Systems Analyst, the system's

security will be of the utmost importance, securing customer data and handling access to the software based on unique usernames and passwords.

To further clarify the functional and non-functional requirements of the system, the Requirements Definition document describes the necessities of the system's actions and the different characteristics it must adhere to. The new system must be able to:

- Input customer booking requests
- Check available reservations
- Handle customer information
- Change reservation details
- Complete reservations

In addition, its features must be installed on three machines: two in the conference scheduling office and one in the hotel manager's office. The new system's technical environment will be in English and utilize the Microsoft Windows 10 operating system. Performance-wise, the system should instantaneously send automated responses to customers, handle numerous tasks synchronously, and streamline updates across all hardware machines.

A set of Use Cases were created to connect the project vision with the current processes and boundaries necessary for project requirements. Each use case demonstrates the following: its designated priority to the system, what triggers the activity (temporal or external), the actor(s) that interact with the design, preconditions/postcondition for the use case, the normal course that states the actions of the actor and system, and any relevant exceptions. The use cases in the new system will demonstrate the various triggers of creating a customer ID and creating/modifying/canceling reservations,

To understand how various processes interacted with one another and illustrate the flow of information, a Data Flow Diagram and Physical Entity Relationship Model were created. The Context Level Data Flow Diagram depicts an overall view of the conference room booking system, while Levels 0 and 1 goes into greater detail to show the different information flowing through each process (customer accounts, reservations, caterer account, and report). In addition, the Physical Data Model focuses on how the data will be stored within databases and files. Most physical process models are based on binary relationships typically labeled as one-to-one, one-to-many, and many-to-many.

We recommend a combination of purchasing pre-packaged software and outsourcing due to various reservation/booking systems already existing. Integrating this standard software with our systems will be straightforward while satisfying our cost-effective budget and time constraints. Purchasing pre-packaged software is rarely a perfect fit, so it'll also require outsourcing to adhere to the system requirements. This will improve flexibility and scalability and adjust to increased capacity if needed. Additionally, we will be exempt from the responsibility of quality risks, as our outsourcing team will dedicate time to verify if the system changes fulfill our needs. Outsourcing will allow for editing the baseline software/hardware, fulfilling specific conditions such as performance and design, and staying within the allocated budget.

Our software usage of Microsoft Windows 11 Pro and additional special software, as listed under the Hardware/Software Specifications, will help incorporate system security and adhere to our needs for optimized performance. The purchase of an HP-Desktop with AMD hardware will also include a 24" HP Monitor, assisted by a dual-band wireless network from Intel to support automated responses and changes to reservations simultaneously. Overall, the implementation of new software and hardware capabilities will increase operational efficiency among employees and facilitate customer needs, decreasing discrepancies.

Through showing how all the screens, forms, and reports are related, an Interface Structure Diagram will depict how users can move/interact from one screen to another. In addition, two example user interfaces are featured to highlight the simplicity and efficiency of the software. With an emphasis on aesthetics, content awareness, layout, and usage level, the calendar and reservation screen will allow users to view/modify reservations with ease.

By successfully completing the Planning, Analysis, and Design phase of the Systems Development Life Cycle, the team is ready to transition into the Implementation stage and assist in implementing the new booking/reservation system for the Cowboy Hotel.

System Request

System Request – Cowboy Hotel Software Project
Project Sponsor: Jaime Bradson, Hotel Manager
Business Need: This project has been initiated to automate, streamline, and improve the processes of event planning & book handling while creating an intuitive user interface for the Cowboy Hotel conference rooms. Currently, the conference rooms are not being used to its full potential for the following reasons: ▪ Limited ability and capacity to handle reservations as the booking & planning process is completed manually ▪ Existing booking software is only able to properly handle bedroom & suite reservations ▪ Current process is prone to errors, tedious, and costly resulting in loss of profits ▪ Limited hardware available
Business Requirements: Through utilizing the SDLC method and creating a new software solution, the company will be able to significantly increase profits, improve employee morale, and provide greater opportunities for future growth. With the addition of two hardware machines, the specific capabilities of the new system will include the following: ▪ Fulfill the essentials processes necessary for event planning & book planning ▪ User-friendly interface and quality-enhanced reporting capabilities ▪ Improved process for data storage ▪ Reduce “human-error” judgment resulting in increased time efficiency and decreased costs ▪ Automate work processes across the conference scheduling office ▪ Qualitative output and improved confidence within staff
Business Value: The Cowboy Hotel currently generates roughly $400,000 in revenue annually with only bedroom & suites. Through the addition of improved processes with the conference rooms, the business expects sales from the conference room bookings to equate to ~20% of the revenue earned from bedrooms & suites. By year 4, Cowboy Hotel can expect the projected percentage to increase to ~25%, along with a 5% increase in bedroom & suite revenues as well. By initiating a new software solution, the hotel will be able to handle the ongoing maintenance of the system while providing greater employment opportunities. Conservative Year 1 estimates of tangible value to the company include the following: ▪ $20,000 in increased sales from Bedroom & suites only ▪ $80,000 in sales from fully operational conference rooms
Special Issues or Constraints: With the construction of the conference rooms completed, the project must be implemented as soon as possible to prevent further loss of revenue. In addition, adequate training must be completed with upper management, so they can train future staff. Lastly, development costs must be within $40,000 to properly fund the project.

Project Work Plan

			Estimated			Actual				
Task ID	Task Name	Assigned To	Durations (Days)	Start Date	Finish Date	Start Date	Finish Date	Duration Variance	Dependency	Status
1	**Planning Phase**	**Group 5**	**21**	**Wed 8/24/22**	**Wed 9/14/22**			**0 Days**		**Closed**
1.1	Identify opportunity	Peter	7	Wed 8/24/22	Wed 8/31/22	Wed 8/24/22	Wed 8/27/22	0		Closed
1.2	Analyze feasibility	Peter	7	Wed 8/24/22	Wed 8/31/22	Wed 8/24/22	Tue 8/30/22	0		Closed
1.3	Develop work plan	Peter	14	Wed 8/31/22	Wed 9/14/22	Sun 9/4/22	Wed 9/7/22	0	1.1, 1.2	Closed
1.4	Control and direct project	Peter	7	Wed 9/7/22	Wed 9/14/22	Thur 9/8/22	Tue 9/13/22	0	1.3	Closed
2	**Analysis Phase**	**Group 5**	**42**	**Wed 9/14/22**	**Wed 10/26/22**			**0 Days**		**Closed**
2.1	Develop analysis strategy	Peter	7	Wed 9/14/22	Wed 9/21/22	Wed 9/14/22	Sat 9/17/22	0		Closed
2.2	Determine business requirements	Team	7	Wed 9/14/22	Wed 9/21/22	Thur 9/15/22	Tue 9/20/22	0		Closed
2.3	Use case analysis	Team	7	Wed 9/21/22	Wed 9/28/22	Wed 9/21/22	Tue 9/27/22	0	2.1, 2.2	Closed
2.4	Process modeling	Peter	7	Wed 9/28/22	Wed 10/05/22	Thur 9/29/22	Fri 9/30/22	0	2.3	Closed
2.5	Data modeling	Team	21	Wed 10/5/22	Wed 10/26/22	Fri 10/7/22	Mon 10/24/22	0	2.4	Closed
3	**Design Phase**	**Group 5**	**35**	**Wed 10/26/22**	**Wed 11/30/22**			**0 Days**		**Closed**
3.1	Design architecture	Team	7	Wed 10/26/22	Wed 11/2/22	Fri 10/28/22	Mon 10/31/22	0		Closed
3.2	Design interface	Team	7	Wed 11/2/22	Wed 11/9/22	Sat 11/5/22	Sun 11/6/22	0		Closed
3.3	Design programs	Team	7	Wed 11/9/22	Wed 11/20/22	Wed 11/9/22	Sun 11/12/22	0	3.1, 3.2	Closed
3.4	Design databases and files	Team	7	Wed 11/9/22	Wed 11/20/22	Wed 11/9/22	Tue 11/15/22	0	3.3	Closed
4	**Implementation**	**Group 5**	**112**	**Wed 11/30/22**	**Wed 3/22/23**			0		**Open**
4.1	Purchase License	Team	14	Wed 11/30/22	Wed 12/14/22	Wed 11/30/22	Wed 12/7/22	0		Closed
4.2	Install new system	Team	14	Wed 11/30/22	Wed 12/14/22	Wed 12/1/22	Wed 12/8/22	0	4.1	Closed
4.3	Maintain system		98	Wed 12/14/22	Wed 3/22/23				4.1, 4.2	Open
4.4	Post-Implementation		98	Wed 12/14/22	Wed 3/22/23				4.3	Open

Feasibility Analysis

	2022	2023	2024	2025	Total
Benefits					
Sales in fully operational conference rooms		80,000	90,000	100,000	**270,000**
Increased sales in bedroom & suites		20,000	20,000	20,000	**60,000**
Total Benefits		**100,000**	**110,000**	**120,000**	**330,000**
Development Costs					
Equipment Cost:					
HP - Desktop + 24" Monitor:	850	0	0	0	850
Two Full-Size Wireless Optical Keyboard and Mouse Bundle	78	0	0	0	78
ThinkSystem ST550 Tower Server	2,434	0	0	0	2,434
LG - 22" LED FHD FreeSync Monitor	80	0	0	0	80
Intel X550-T2-DELL 10 GB Ethernet Converged Network Adapter	492	0	0	0	492
Software Cost:					
McAfee Antivirus	120	0	0	0	120
Microsoft Office Professional	440	0	0	0	440
Adobe Acrobat Pro	240	0	0	0	240
Microsoft Business Premium	264	0	0	0	264
Windows Server 2016	289	0	0	0	289
Microsoft Windows 2011 Pro	199	0	0	0	199
AOMEI Partition Assistant Professional	70	0	0	0	70
SQL Server 2017	700	0	0	0	700
Development Fees:					
Development Labor	29,244	0	0	0	29,244
Data conversion costs	2,000	0	0	0	2,000
Consultant Fees	2,500	0	0	0	2,500
Total Development Costs	**40,000**	-	-	-	**40,000**
Operational Costs					
Miscellaneous Expenses		5,000	5,000	5,000	15,000
Employee Cost:					
Booking Specialist Salary		20,000	40,000	40,000	100,000
Booking Assistant Salary		15,000	30,000	30,000	75,000
Licensing Cost:					
Adobe Acrobat Pro License	-	240	240	240	720
Microsoft Business Premium License	-	264	264	264	792
Total Operational Costs		**40,504**	**75,504**	**75,504**	**191,512**
Total Costs	**40,000**	**40,504**	**75,504**	**75,504**	**231,512**
Net Cash Flow	(40,000)	59,496	34,496	44,496	98,488
Return on Investment (ROI)					**43%**

Technical Feasibility

The original booking system relied on manual paperwork processing, which will now be automated through the Microsoft Windows 10 operating system. Additional staff, including the customer service agent, may not be familiar with Microsoft Office Professional 2016, so training will be required to handle bookings efficiently. The software will be feasible enough to handle any security threats, with a password and UserID required by every staff member entering the system. Having familiarity with the current room/booking system, the project team will help implement the system on three machines, with two in the conference scheduling office and another on the hotel manager's computer. The reliability of the Microsoft Windows 10 operating system will ensure no loss of data, as well as safe data inputting. Compliance will be required by staff members to responsibly handle and manage bookings on Microsoft Office Professional 2016. The work process must be automated and focused on accuracy and efficiency for the straightforward handling of bookings. The risks presented by the project are low as the size of the project is not large enough to present additional complications. Both the analysts and the users are familiar with the technology that is being used for the system, so the risks are minimal in that aspect as well. The technical aspect of this project is feasible enough to successfully manage bookings for the hotel.

Economic Feasibility

The completion of this project will adhere to a $40,000 budget. Through including a myriad of initial expenses to fulfill the hardware, software, and labor expectations, the development costs will utilize $39,500 of the entire budget. The remaining $500 will be reserved for any unexpected/last-minute expenses. With various tangible benefits of steadily increasing revenue, we expect to earn $120,000 by the end of 2025 with an overall Return On Investment (ROI) of 32%. Through hiring new employees, conducting training, and distributing salaries, operational labor will be the most significant expense at $120,000. Overall, with a positive Return On Investment, this project is feasible and should be implemented as the benefits, and potential growth opportunities outweigh the costs.

Organizational Feasibility

The system, once implemented, will allow booking specialists to handle conference room reservations easier than before by allowing more accurate recording of reservation information and faster retrieval of reservation records. In addition, response time to customers will be significantly decreased. This improvement in business flow will be highly beneficial to the hotel's goals of improving its conference room booking rate and customer satisfaction. As the system is reserved for internal use only, the system users are limited to the hotel's conference room reservation specialists. With the manager acting as a champion for the system and affirming the benefits of the new system to the system users, the project is organizationally feasible.

Requirements Definition Document

Functional Requirements
1. Reservation System Request 1.1 The system will enable the booking specialist to input a customer request 1.2 The system will check to see if the requested date/time is available 1.3 The system will accept the customer's personal information 1.4 The system will verify and process the customer's payment option 1.5 The system will complete the reservation request and generate report
2. Changing Reservation Request 2.1 The system will allow the booking specialist to change reservation date 2.2 The system will notify if the change is available 2.3 The system will record the changes made to the reservation 2.4 The system will update room availabilityU 2.5 The system will notify the booking specialist when the change is successful
Nonfunctional Requirements
1. Operational 1.1 The system should operate on Microsoft Windows 10 operating system, and Microsoft Office Professional 2016 1.2 The system should be installed into several hardware machines 1.3 Payment information database will automatically be read by the system 1.4 The system must accommodate software maintenance and future computer hardware 1.5 The system is only operational on desktop PCs
2. Performance 2.1 The system will update data stores within a few seconds 2.2 The system should support 2-3 users simultaneously 2.3 The system should be able to update across all hardware machines simultaneously 2.4 The system should be able to send automated responses to the customer within set allocated time frames 2.5 Backup plan in the event of software failure needs to be determined by the analyst
3. Security 3.1 Loss of all system data would cost $330,000 based off the total benefits in the Feasibility Analysis 3.2 Cancellation must be acknowledged by manager before confirmation 3.3 Customer accounts/data should be maintained securely 3.4 Access to hardware/software should be secured through unique password and username for each employee 3.5 All systems will have anti-virus software to check uploaded files
4. Cultural and Political 4.1 The system will operate in English

4.2	The system will not allow local users to modify settings until approved by the manager
4.3	All transactions will be stated in U.S. dollars
4.4	Company will purchase all OS through Microsoft
4.5	Personal/customer data must be protected

Use Cases

UC-1: Create Customer ID

Use Case ID:	UC - 1	**Priority:**	High
Use Case Name:	Create Customer ID		
Trigger:	A customer wants to create an account with the Cowboy Hotel	**Type:**	External
Actor:	Booking Specialist		
Preconditions:	1. Booking Specialist is logged into the system 2. Customer gives booking specialist customer information and details		
Normal Course:	1.0. Create Customer ID 1.1. The Booking Specialist opens the booking system 1.2. Booking Specialist opens new customer information form 1.3. System will display the Customer Information form, and wait for the Booking Specialist to complete the form 1. Customer name entered into the system 2. Customer contact information entered into the system 1.4. System will assign an ID to the customer 1.5. System stores new customer account information and Customer ID into the customer data store		
Postconditions:	1. Customer accounts and Customer ID are stored in the customer data store		
Relevant Exceptions:	E1: Customer gives Booking Specialist invalid, or missing information (occurs at Step 3) 1. The system will output an invalid/missing information error message 2. The system will prompt the Booking Specialist to re-enter customer information or to cancel the application 3. Booking Specialist selects re-enter customer information E2: Customer already has an existing Customer Account (occurs at Step 4) 1. System output a "Customer already has an existing ID" message 2. System displays customer information		

UC-2: Create Conference Room Reservation

Use Case ID:	UC - 2	**Priority:**	High
Use Case Name:	Create Conference Room Reservation		
Trigger:	Booking specialist is contacted by customer for conference room booking	**Type:**	External
Actor:	1. Booking Specialist		
Preconditions:	1. .Conference rooms are open for booking 2. Customer ID is in the system.		
Normal Course:	1.0 Create Conference Room Reservation 1.1 Booking specialist opens the booking application 1.2 Booking specialist enter requested reservation slot 1.3 Systems verifies the availability 1.4 Booking specialist opens a conference room booking request 1.5 Customer ID information is acquired and verified 1.6. System stores the conference room booking information		
Postconditions:	1. Conference room booking is confirmed and customer information is stored by the system 2. Room availability list is updated to reflect the new availability		
Relevant Exceptions:	E1: There are no available Conference Rooms for the requested reservation slot 1. An error message will display stating "There are no available conference rooms for this time slot." 2. System will prompt Booking Specialist to request a different time slot or cancel reservation		

UC-3: Canceling Conference Room Reservation

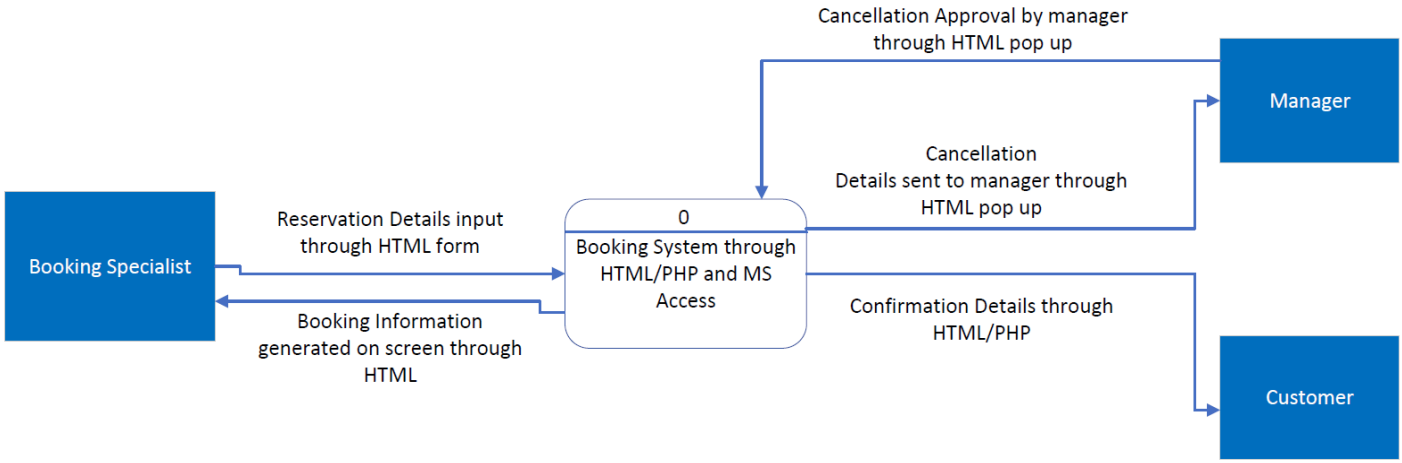
Use Case ID:	UC - 3	**Priority:**	High
Use Case Name:	Cancel conference room reservation		
Trigger:	Customer contact booking specialist to cancel reservation	**Type:**	External
Actor:	1. Booking Specialist		
Preconditions:	1.0 Customer has already booked a conference room 2.0 Customer reservation has been entered into the system		
Normal Course:	1.0 Cancel conference room reservation 1.1 Booking specialist opens the booking application 1.2 Booking specialist search up customer's reservation 1. Customer name and phone number is entered 1.3 Booking specialist opens reservation cancellation request 1.4 Booking specialist verify cancellation is complete 1.5 System updates conference room availability 1.6 System records customer cancellation request 1.7 Manager acknowledges reservation cancellation		
Postconditions:	1. Conference room booking system record the customer's reservation as canceled 2. Room availability list is updated to reflect the new availability 3. Manager acknowledges reservation cancellation		
Relevant Exceptions:	E1: Booking Specialist inputs an invalid Customer ID 1. System will display "Invalid Customer ID" 2. System will prompt the Booking specialist to input a valid customer ID or cancel conference room cancellation. 3. Return to step 1.2, Normal Course, if Booking specialist wants to input a new customer ID		

UC-4: Reservation Modifications

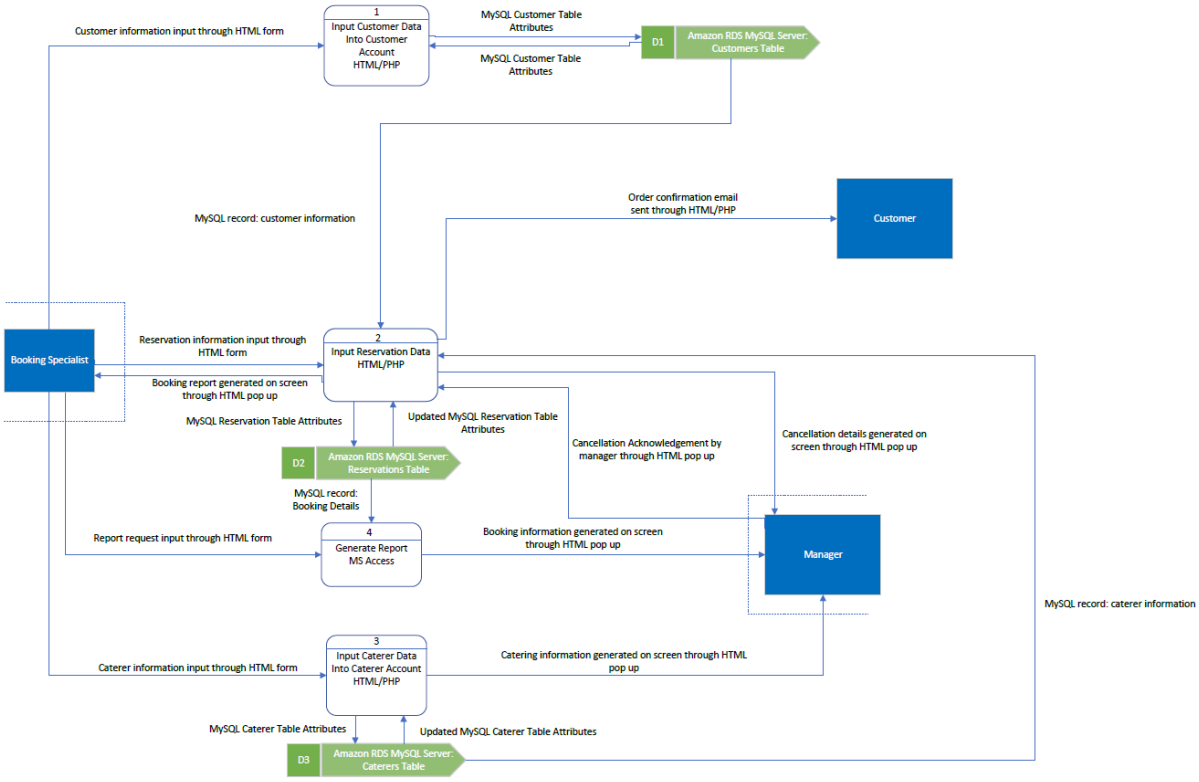
Use Case ID:	UC - 4	**Priority:**	High
Use Case Name:	Reservation Modifications		
Trigger:	Booking specialist receives notice from the customer regarding a request to change their reservation	**Type:**	External
Actor:	Booking Specialist		
Preconditions:	1. Reservation exists in the system 2. Customer ID exists in the system		
Normal Course:	1.0 Modification of reservation 1.1 Booking specialist opens the booking application 1.2 Customer ID entered into the system 1.3 Customer reservation is found 1.4 New reservation information is entered into the system 1.5 Booking specialist confirms modification is complete 1.6 System notes the change 1.7 System updates the conference room reservation changes 1.8 Manager acknowledges reservation modification		
Postconditions:	1. Reservation information is updated in the system 2. Reservation change is recorded 3. Manager acknowledges reservation modification		
Relevant Exceptions:	E1. Customer reservation is not found (occurs at Step 1.3) 1. System will state "Invalid Customer ID" 2. System will prompt Booking Specialist to reinput Customer ID or cancel Reservation Modifications 3. Return to step 1.2, Normal Course, if Booking specialist wants to input a new customer ID		

Physical Process Model (DFDs)

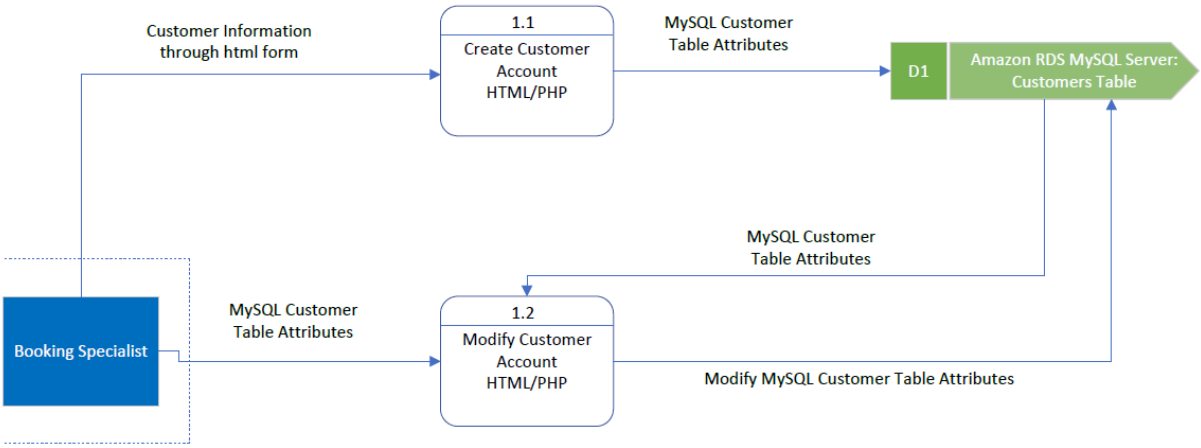
Context Level:



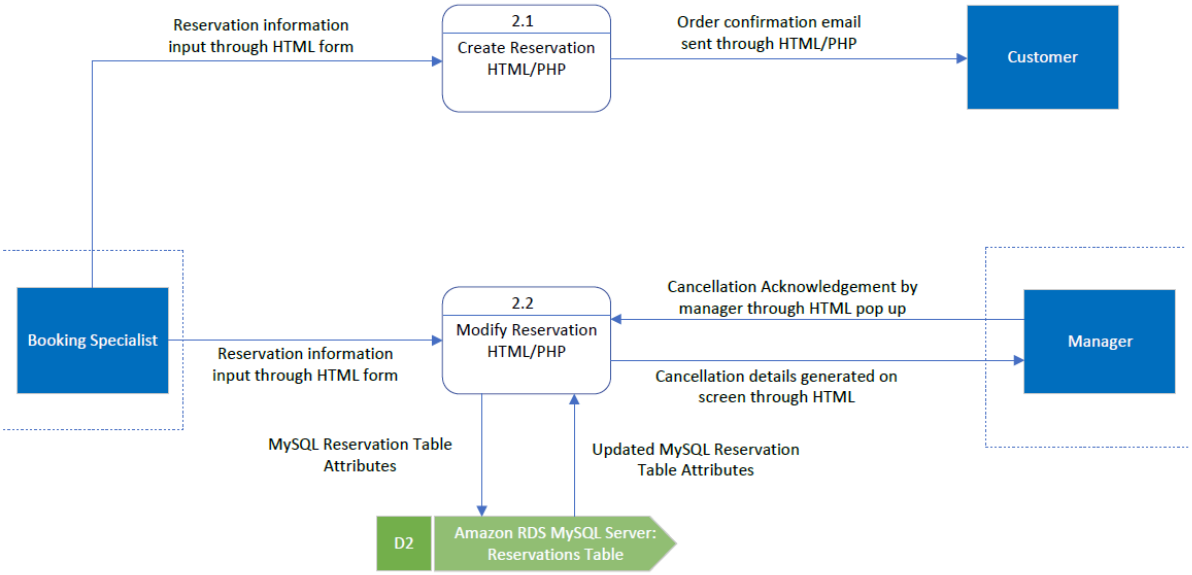
Level 0:


1
Input Customer Data Into Customer Account HTML/PHP
Customer information input through HTML form
MySQL Customer Table Attributes
MySQL Customer Table Attributes
D1
Amazon RDS MySQL Server: Customers Table
MySQL record: customer information
Order confirmation email sent through HTML/PHP
Customer
Booking Specialist
Reservation information input through HTML form
Booking report generated on screen through HTML pop up
2
Input Reservation Data HTML/PHP
MySQL Reservation Table Attributes
Updated MySQL Reservation Table Attributes
D2
Amazon RDS MySQL Server: Reservations Table
Cancellation Acknowledgement by manager through HTML pop up
Cancellation details generated on screen through HTML pop up
MySQL record: Booking Details
Report request input through HTML form
4
Generate Report MS Access
Booking information generated on screen through HTML pop up
Manager
MySQL record: caterer information
3
Input Caterer Data Into Caterer Account HTML/PHP
Caterer information input through HTML form
Catering information generated on screen through HTML pop up
MySQL Caterer Table Attributes
Updated MySQL Caterer Table Attributes
D3
Amazon RDS MySQL Server: Caterers Table

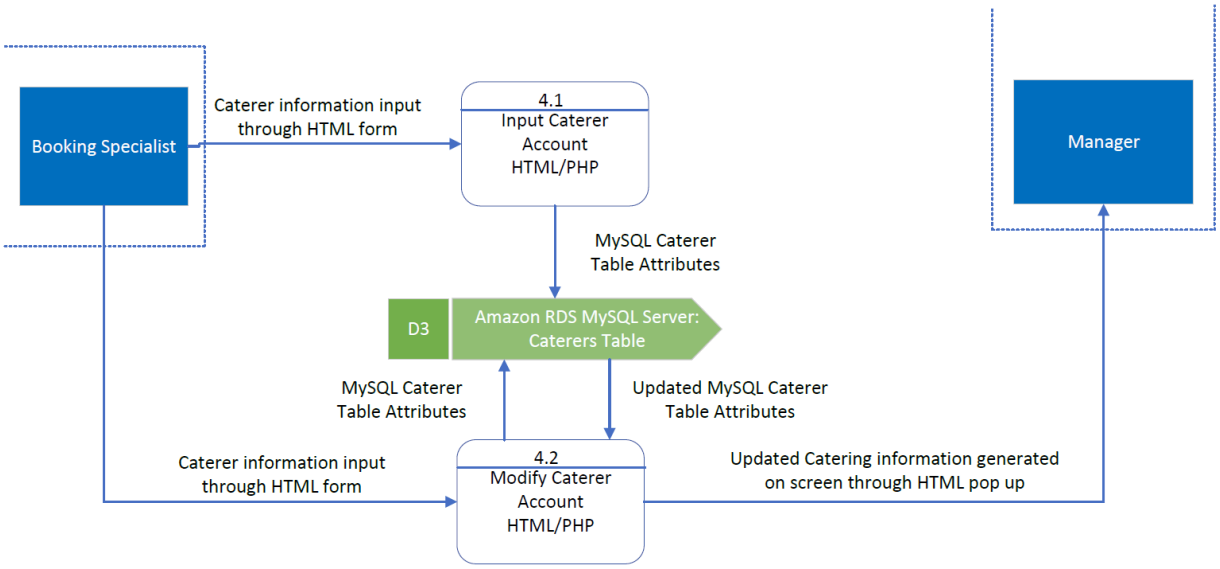
Level 1: Customer Account



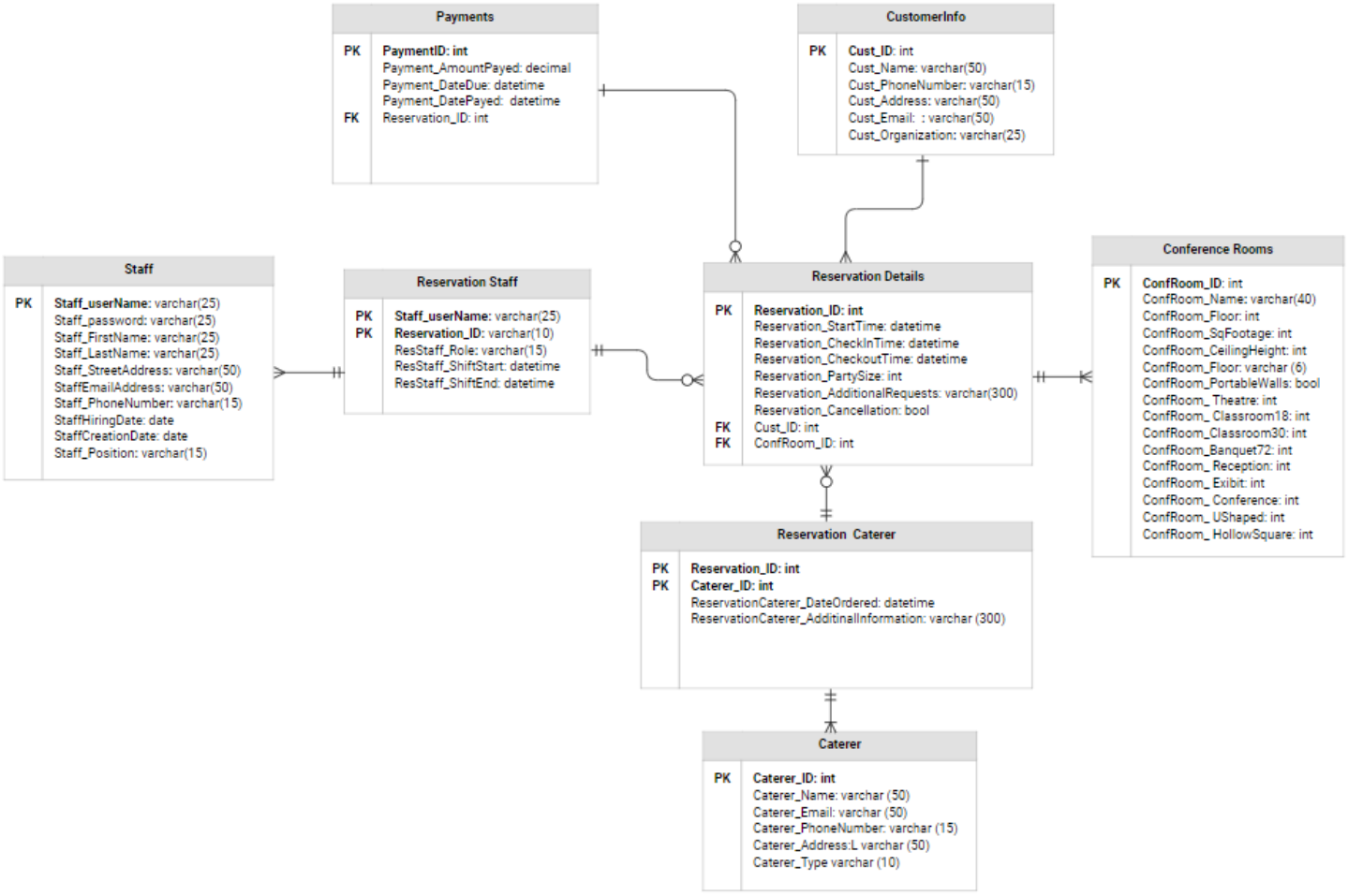
Level 1: Reservations



Level 1: Caterer Account



Physical Data Model (E-R)



Hardware/Software Specifications

	Standard Client	Standard Server
Operating System	Microsoft Windows 11 Pro https://www.bestbuy.com/site/windows-11-pro-usb-flash-drive-english/6499303.p?skuId=6499303	Windows Server 2016 https://www.walmart.com/ip/Windows-Server-2016-Standard-16-Core-OEM-English-Version-New/537252485?wmlspartner=wlpa&selectedSellerId=101022218
Special Software	Google Chrome https://www.google.com/chrome/index.html Microsoft 365 Business Premium https://www.microsoft.com/en-us/microsoft-365/business/compare-all-microsoft-365-business-products?&activetab=tab:primaryr2 Adobe Acrobat Pro https://www.adobe.com/acrobat/acrobat-pro.html Microsoft Office Professional 2021 https://www.microsoft.com/en-US/microsoft-365/p/office-professional-2021/CFQ7TTC0HHJ9?activetab=pivot:overviewtab McAfee Advanced Anti-Virus https://www.mcafee.com/en-us/antivirus.html	Active Directory https://www.walmart.com/ip/Windows-Server-2016-Standard-16-Core-OEM-English-Version-New/537252485?wmlspartner=wlpa&selectedSellerId=101022218 AOMEI Partition Assistant Professional https://www.diskpart.com/free-partition-manager.html SQL Server 2017 https://www.trustedtechteam.com/products/microsoft-sql-server-2017-standard-license?dfw_tracker=22777-441212469258&utm_source=google&utm_medium=cpc&utm_campaign=Gshop_SQLMed%7D&utm_term=&cq_plac=&cq_net=g&cq_pos=&cq_med=pla&cq_plt=gp&gclid=CjwKCAjwh4ObBhAzEiwAHzZYU2LSoWRiuCaHNa-3SHGT2TBD2fyryNHpzdhH0KN-CsuOK2N2uYEJlBoCTT4QAvD_BwE
Hardware	HP – Desktop - AMD Ryzen 5 - 512 GB SSD - AMD Radeon Graphics HP – 24” IPS LED FHD FreeSync Monitor https://www.bestbuy.com/site/combo/all-desktops/175df4cf-812f-411f-9283-ab81c4607a69 Microsoft – Full-Size Wireless Optical Keyboard and Mouse Bundle	ThinkSystem ST550 Tower Server https://www.lenovo.com/us/en/p/servers-storage/servers/towers/thinksystem-st550/77xx7trst50?orgRef=https%253A%252F%252Fwww.google.com%252F Microsoft – Full-Size Wireless Optical

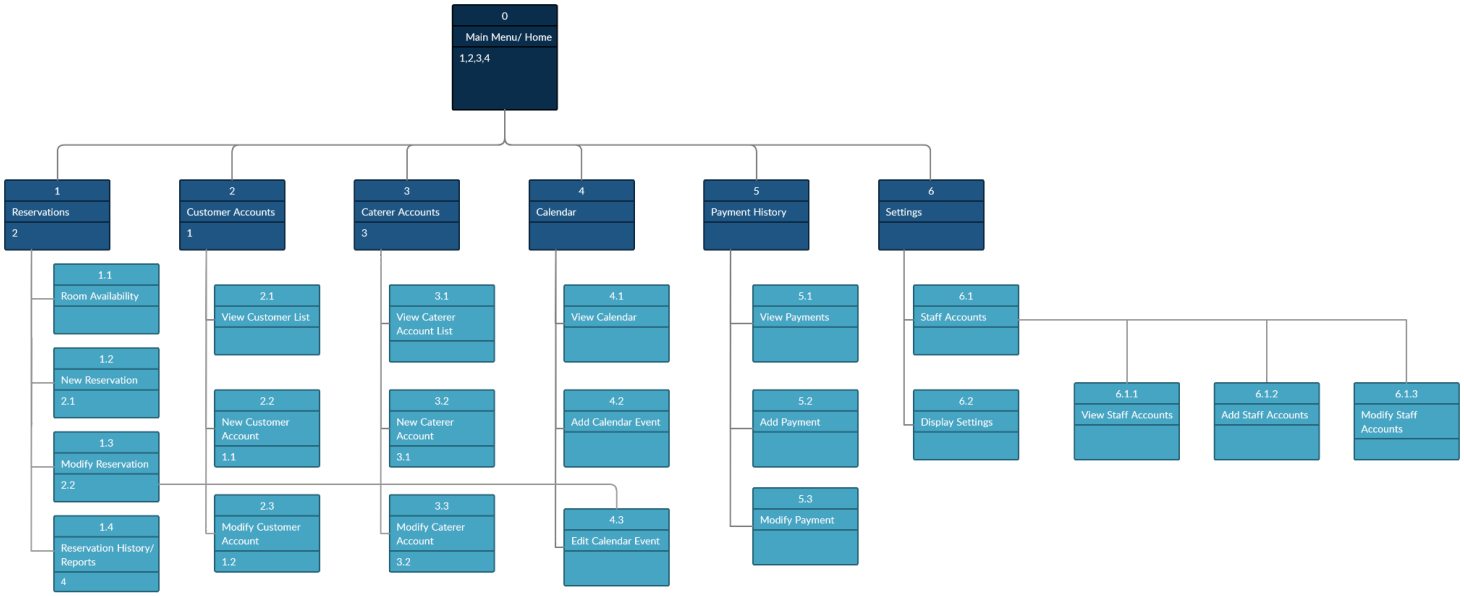
	https://www.bestbuy.com/site/microsoft-desktop-850-full-size-wireless-optical-keyboard-and-mouse-bundle-black/4533300.p?skuId=4533300	Keyboard and Mouse Bundle https://www.bestbuy.com/site/microsoft-desktop-850-full-size-wireless-optical-keyboard-and-mouse-bundle-black/4533300.p?skuId=4533300 LG - 22" LED FHD FreeSync Monitor https://www.bestbuy.com/site/lg-22-led-fhd-freesync-monitor-hdmi-black/6509812.p?skuId=6509812&ref=NS&loc=101&ref=212&loc=1&gclid=CjwKCAjwh4ObBhAzEiwAHzZYU7P4n3N0qeQBv7B37Z8mUoN1LDaA6MK3pgnIfJHxvtU9YgGmz3Ro-xoCVNUQAvD_BwE&gclsrc=aw.ds
Network	Intel – Dual Band Wireless-AC 9260 Embedded To Kit - 802.11ac - 1.73 Gbps - 2x2 - (Included in Desktop) https://www.bestbuy.com/site/combo/all-desktops/175df4cf-812f-411f-9283-ab81c4607a69	Intel X550-T2-DELL10GB Ethernet Converged Network Adapter https://www.dell.com/en-us/shop/intel-x550-t2-10gbe-nic-dual-port-copper-kit/apd/540-bceh/networking

Hardware/Software Costs:

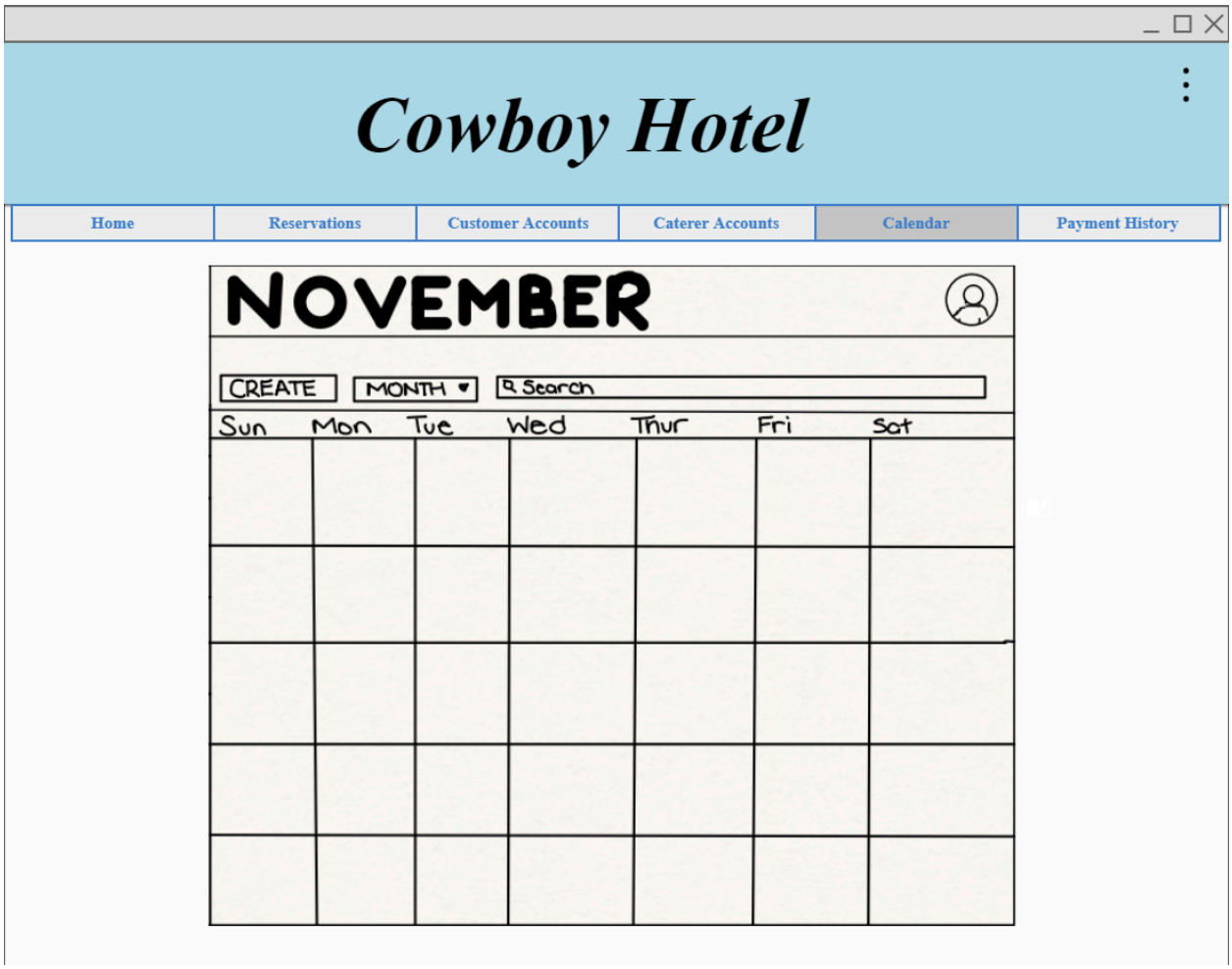
Estimated Cost of Each Piece of Hardware	Cost
HP - Desktop + 24" Monitor	$849.98
Two Full-Size Wireless Optical Keyboard and Mouse Bundle	$78.00
ThinkSystem ST550 Tower Server	$2,434.07
LG - 22" LED FHD FreeSync Monitor	$79.99
Intel X550-T2-DELL 10 GB Ethernet Converged Network Adapter	$492.46
Estimated Total Cost of Hardware	**$3,934.50**
Estimated Cost of Each Piece of Software	$120.00
McAfee Antivirus	$440.00
Microsoft Office Professional	$240.00
Adobe Acrobat Pro	$264.00
Microsoft Business Premium	$289.00
Windows Server 2016	$199.00
Microsoft Windows 2011 Pro	$69.95
AOMEI Partition Assistant Professional	$699.00
SQL Server 2017	
Estimated Total Cost of Software	**$2,320.95**

User Interface

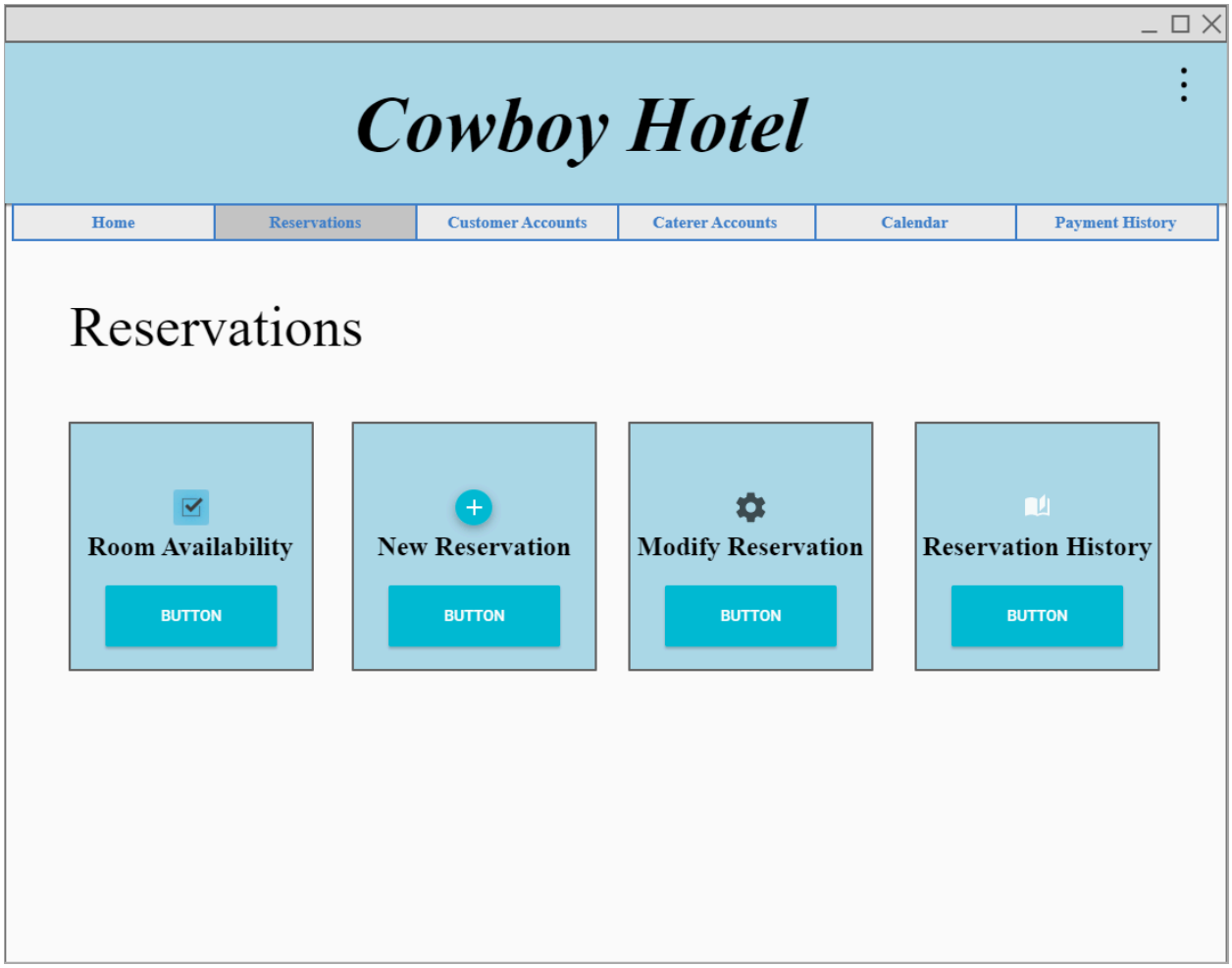
Interface Structure Diagram



Example Calendar Screen



Example Reservation Screen



Appendix

Interview Report

Interview Notes
Person Interviewed: Jaime Bradson, **Hotel Manager** **Interviewer(s): Peter Chang, Karman Tuli, Ethan Johnson, Bryan Vu, Michael Pearson, Joseph Phung,** **Ryan Thant** **Purpose of Interview:** ● Determine the functional requirements for the new system ● To understand the environment the new system will be operating in **Summary of the Interview** ● The new system will require the ability to track customer data (in perpetuity) and which conference room generates the most revenue. ○ In terms of payment, the client must be able to track different stages of the reservation process (outstanding, confirmed, canceled) ○ Customers will receive a contract as proof of booking/liability for any damages ● The new system must be able to add/remove customers, book reservations, track payments, report/record data, track date/time/party size ● The manager will need to be notified about any changes regarding conference room reservation ● Each employee will have access to the system; however, managers will act as liaisons between the hotel and caterers and must approve any cancellations ● Individual employees will be able to access the booking system with their individual user ID and password ○ Users will be managed through Active Directory ● The biggest priority for the manager is to have a system that is efficient and easy to use for employees in order to translate towards a good customer service experience ○ I.e. customers are the utmost priority ○ Transactions need to be quick to ensure customer satisfaction ● The new system must be complementary to the hotel booking system, as hotel bookings and conference bookings will be kept separate. ● Miscellaneous costs budget: $5,000 ● They plan to hire two new employees after six months of new system implementation ○ Booking Specialist: $40,000/year ○ Hire Assistant: $30,000/year ● In 2023, the client will need to prorate salaries in the operational costs **Open Items:**

- Begin process modeling:
    - Create a DFD (Data Flow Diagram) Get DFDs validated by the client

Follow-Up Question:

- Is there a specific company you want to purchase the hardware from, or would you like us to just get the most feasible option available?

Interview Transcript

How would you like to accept payment?
Out of scope. I already have a point of sale system within my hotel system, so it is out of scope. With that said, I still need to track the fact that somebody made a payment, I am just not processing it.

Should software include booking?
Absolutely, when the system goes live there will already be some reservations made and we want to put those into the system.

Will the software allow the customer to choose from different types of conference rooms?
Yes and no, customers do not have access to the system; it is an internal system. Booking specialist understands that there will be an event planner.

What is the project deadline?
As soon as possible.

What type of information do we need to capture from the customer?
Date, Time, Number of Customers, etc. What is available? What rooms can satisfy the customer? What can I put together?

Would you like to have built in follow up customer surveys at the end or promotions?
Sure, why not.

Will the system be able to see the revenue/profits per conference room?
Yes, I want to be able to, from a finance and marketing standpoint, look at different things. Number 1, what is our revenue per room based on a monthly or weekly basis. What clients are coming back over and over again? Which rooms have the most revenue, which are not doing well etc.

When booking a conference room, what information do we want from the customer?
Name, address, phone number, email, organization they represent. Those are the basic things I need, but not credit card information. Keep it as simple as possible.

What is included in the booking paperwork from before?
I want to stay away from that since a lot has been done by hand. With that said, there's contracts but that's not part of the system. From there it's really about understanding: What does the reservation look like? How much is the reservation going to cost? Be able to track the payment made, Be able to by report or query the system how much the customer owes or their outstanding balance, What caterer do they have? I want a contact link.

I want to know what the status is of the reservation.
Outstanding Reservation: Payment outstanding
Confirmed Reservation: Payment Received
Canceled Reservation: Status of canceled, but don't tie reservation room

How should we keep the system protected?
You should tell me how, but we should keep the system protected.

What are some key features?
I want to be able to search availability, I need to be able to add customers, I need to be able to book a reservation, I need to be able to change or cancel a reservation, I need to track payments, I need to be able to do reporting.

How far in advance should conference rooms be able to be booked?
Don't care.

Could you add changing/canceling as one use case in modifying?
You could, it's another form of a change.

How many users should the software be able to support simultaneously?
A handful of users, only two to three users should be working on the system at the same time.

Does each employee need a separate login?
Everyone who uses the system must have a username and password. Once they are in the system, they will have full access. One exception, when a reservation is canceled or changed, a manager has to acknowledge a change, not approve it. Managers are responsible as the liaison between the hotel and caterers. A change must require a manager to contact the caterers to inform them of a change or cancellation.

With the current system request, what are the highest priorities and lowest priorities?
Make it quick and easy for customers to find availability for conference rooms, Provide a list of options. Make experience for the internal team good in regards to using the system. Reservation should be as painless as possible. Customer service is key. Internal reporting is great to have but a lower priority item, it's still a need.

What are the biggest financial risks by not being able to complete the project?

No benefits from cost benefit analysis, having rooms sitting around with nothing in them.

How many years worth of data should we be able to store?
Keep it right now in perpetuity, I want to be able to do some analytics right now and until it gets too big to manage we're ok keeping it around.

How do you want our customers to receive proof of booking?
We want to send them some sort of acknowledgement. Here is your reservation number, you have these rooms from this date to this date and time etc. As a side note they're going to get a contract. It's going to stipulate all that information too. There will be a cover page to it. When they have to make payments etc.

Should any other languages be integrated?
No, it's all going to be used internal so U.S. currency, English.

Do customers need to check in on the software?
As part of their event, they will be assigned a staff member who will have everything set up for them.
Did you have plans to integrate the conference room booking system into the hotel room booking system to make it streamlined?
No, it's so different there's really no way to do it at this point in time.

Assuming we have a 40,000 budget. In regards to maintaining the system, How would you anticipate managing expenses?
Put it in the operational budget in the cost-benefits analysis. Let us know what it's going to take.

Are we going to have a third party system like Expedia or Booking.com?
It's too specialized. Our booking specialist knows how to do event planning, too many variables.

Would there be a separate section for customer damage?
That will be part of the contract.

Will there be discounts for recurring reservations?
The cost of a reservation will actually be at the discretion of the booking specialist. From a room standpoint it will depend on the time of day, time of year etc.

Do you have any idea how training will be implemented for new staff?
You tell us. I'd like to make it simple.

Will there be a certain number of conference rooms available?
All the information is on canvas, It's got a floor by floor view of every room as well as the name of the room. What the square footage is, the dimensions, capacity. There is all kinds of information. I want that tracked. How am I going to know if there are 100 people coming in for a sit down dinner, how do I know which rooms are going to fit if I don't know what the rooms look like. Be able to track the venues including the rate.

Are there any restrictions for customers? For example, can they purchase two rooms at the same time?
Sure, whatever they're willing to pay for. They have a contract and will have a confirmed reservation.

Will the booking specialist be involved at all for conference guests in terms of the hotel room booking?
We are going to see revenue increase from people attending conference rooms booking hotel rooms. When someone books a conference room we will provide them with a code that they can provide their participants that they will be able to get hotel rooms.

Should the system keep track of customer preferences like food preferences?
No

Is the customer going to get an email if they have only made a down payment?
We will give them confirmation. It will be up to the booking specialist how they want to make contact with them. It will not be automatic.
If software malfunctions will there be a backup plan?
You tell us. What's the best way to do this?

What is your biggest stress about this project?
Customer service, if we don't provide them a good environment to begin with then we lose customers. If it takes too long to book something or the process is too cumbersome then what else is going to come. Be able to check availability quickly.

Regarding login and password, What type of authentication will be required to login?
Id and password. We use active directory if that's something you want to utilize.

Are there any restrictions to events that are able to take place in the conference room?
Nothing that the system has to deal with, a booking specialist will deal with that. We will never allow monster truck racing in the hotel, beyond that…

Is there a protocol in case something happens for example Covid-19?
Yes the hotel already has a protocol that will be implemented for this as well.

If the customer isn't satisfied what are the options?
On a case by case basis, it depends on the booking specialist.

Here is your first change. We have seen the benefits and we believe we will achieve those benefits. We are going to hire two new people. We are going to hire a booking specialist at 40,000 per year and hire an assistant at 30,000 per year. In addition to this we want you to include a 5000 dollar miscellaneous expense line item. Each of these are individually listed in the budget. One caveat, we want to see what's happening with the revenue, so we are not going to hire these people until 6 months after the system is implemented. In 2023 they need to prorate their salaries in the operational costs. But the miscellaneous expenses will be available full on in 2023.