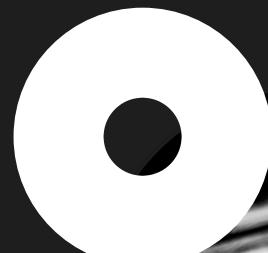


Project Final Report



NUMBER ONE B A R B I E R

BTM 481 - Information Systems Analysis

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TABLE OF CONTENTS

TABLE OF CONTENTS-----	2
Executive Summary:-----	4
Client Background:-----	5
Team Management:-----	5
System Description:-----	6
Fact Finding Techniques:-----	10
Models of the Current System:-----	14
PIECES Framework:-----	21
User Requirements:-----	27
Specification & Models of the Proposed System-----	36
Conclusion and Limitations:-----	44
Appendices:-----	46
Appendix A:-----	46
Appendix B-----	50
Appendix C-----	70
Appendix D-----	72
Appendix E-----	74
Appendix F-----	93
Appendix G-----	99
Appendix H-----	112

Executive Summary:

The Number One Barbershop was founded in 2023 by co-owners, Mohammed and Massoud. Located in Downtown Montreal, the founders embarked on this venture with a vision to create a modern and efficient space that aligns with the needs and expectations of their clientele.

The primary objective of this project was to improve the company's process systems such as booking, payment and commission and inventory management. By introducing advanced technological solutions and optimized workflows, the project aims to enhance overall service delivery, improve financial accuracy, and ensure a seamless customer experience.

Our recommendations are designed to address key areas of improvement that will benefit the barbershop by enhancing efficiency, accuracy, and customer satisfaction, which include:

To improve the operational efficiency of the barbershop, the proposed system focuses on securing revenue and reducing missed appointments through enhanced booking strategies. Policies will be refined to discourage last-minute changes and optimize appointment slots, thereby protecting revenue. The booking process will be streamlined to improve schedule management, reducing information loss and preventing conflicts. Payment processing will be diversified to meet customer preferences and increase satisfaction. Financial management will be strengthened through improved software functionalities, leading to more accurate reporting and reduced errors. Inventory management will be more efficient, minimizing stock-related issues. Finally, adopting advanced data management and digital record-keeping will enhance data accessibility and simplify accounting processes, contributing to overall business efficiency.

The enhancements will be rolled out in a phased manner to ensure minimal disruption and allow for staff training. The first phase will integrate the POS system with existing scheduling software. The second phase will restructure policies and implement new booking and payment protocols. Then, they will upgrade the scheduling subsystem to include an approval/rejection process. Lastly, launch an automated sales report and data storage solutions.

These recommendations will provide a more reliable, customer-friendly service environment that aligns with the shops' modern and innovative brand image. This report was created by a group of business analysts.

This project not only reflects our analytical and strategic planning skills but also our commitment to practical, impactful business solutions, making our team an asset to potential employers looking for dynamic problem solvers in the tech-driven landscape.

Client Background:

Located in Downtown Montreal, Number One Barbershop emerged as a successful venture by Moe and Masoud in January 2023. Both experienced barbers decided to transition from working together as colleagues to becoming business partners. This move was driven by their goal to establish a barbershop that not only provides top-notch grooming services but also serves as a reflection of their personal values and ambitions.

The foundation of Number One Barbershop was influenced by Moe and Masoud's prior experience in the industry, where they developed their skills and built a solid customer base. Their decision to open their own barbershop was motivated by the desire to create a unique space in Montreal that goes beyond haircuts and shaves. They envisioned a place that stands as a community hub, embodying their dreams and facilitating connections among people.

Moe, one of the co-owners of Number One Barbershop, served as our primary point of contact during the project. His insights and cooperation were instrumental in understanding the operational aspects of the business and shaping our project objectives. As the main liaison, Moe facilitated access to relevant information and provided valuable feedback on our proposals, ensuring that our project aligned with the goals and vision of the barbershop.

Team Management:

The group was formed during the initial class, in the first meeting the team established a contract that served both as a realistic framework and a guiding document to our project (see appendix B). This agreement effectively outlined our expectations and responsibilities. Throughout the project's duration, we never encountered an issue that necessitated referring back to the contract.

Team leader and scribe were rotated on a bi-weekly basis. This rotation ensured that each member assumed these roles at various stages, contributing to a well-rounded team dynamic. Prior to each meeting, the designated scribe prepared and distributed an agenda. This practice kept all members informed about the discussion topics and task priorities for the meetings, facilitating an efficient and focused workflow.

Our team displayed adaptability and competence in managing roles and responsibilities. When necessary, the team effectively segmented into sub-teams to tackle specific components of the project. Sub-teams worked independently and then reconvened to integrate and discuss their findings and progress. Open and constructive criticism was encouraged, and team members were receptive to feedback, which fostered an environment of continuous improvement and mutual respect.

In conclusion, the project was marked by effective team management, characterized by effective communication, mutual respect, and adaptive leadership. Each member's contribution was invaluable, not only in meeting our objectives but also enhancing the collective capability and cohesion of the group.

System Description:

The system description below outlines the key components of a system data flow diagram (DFD) as applied to systems analysis. It provides a structured overview of the various elements essential for understanding and analyzing the business processes of the Number One Barbershop. These components include the system itself, sub-systems like booking and scheduling, payment and commission, and inventory management, along with boundaries, entities, inputs, outputs, interfaces, buffers, feedback, controls, and constraints. Other subsystems such as the service, marketing and social media, post customer service or hiring were excluded from our analysis based on project scope and limitation. Each element is briefly described, offering insight into their roles and interactions within the system's overall framework.

This table serves as a foundational guide for dissecting and evaluating the barbershop's operational workflows and information systems.

SYSTEMS	DATA FLOW DIAGRAM	DESCRIPTION OF SYSTEM COMPONENTS AS THEY APPLY TO SYSTEMS ANALYSIS	EXAMPLE
SYSTEM	Summarized as a single process in Context Level DFD.	The business processes that are analyzed for the purposes of the current project and the data.	Number One Barbershop
SUB-SYSTEM	Each sub-system is summarized as one	Groups of related processes in the system that work together to	Booking & Scheduling,

	process in Level-0 DFD. Each sub-system is then exploded into its details in Level-1, Level-2, (etc.) DFDs.	achieve the common goal of the system.	Payment & Commission, Inventory Management.
BOUNDARY	The outline of the process representing the system in the Context Level DFD.	Separates systems from the environment. Defines the scope of the system. In academic terms, such as a business, the boundary is defined indirectly by inclusion/exclusion of entities.	The entire business with exclusion of the external entities and external data stores.
ENTITY	Each process in the highest-level DFD for each sub-system represents the final level of explosion. An entity cannot be exploded any further.	The smallest process of the system (a process that cannot be divided into its details any further).	P1.5 “Send Appointment Reminder”
INPUT	Data flows from an external entity to a process in the system.	Flow of data from the environment to the system.	Customer Details, Barber's Update Shifts Details, etc.
OUTPUT	Data flow from a	Flow of data from the system to	Total Invoice

	process in the system to an external entity.	the environment.	Details, Booking Reminder Notification, etc.
INTERFACE	Data flow within the system (back and forth between one process and another or between one process and a data store).	Interaction between subsystems. An interface indicates that completion of the sending process automatically starts the receiving process.	Customer & Appointment Details, Sorted Sales Details, etc.
BUFFER	Data store. When an output (data flow) from a process is not immediately acted upon by the next process, it is stored in a data store until it is time for the next process to act upon it.	Extra resources stored where there is an interface. Buffers reduce the dependence between subsystems.	Barber's Updated Shifts Details, Booking Details.
FEEDBACK	Data flows from an external entity to a process in the system.	Reaction of the environment to the system's performance. Feedback is voluntary, rather than scheduled and required like input.	N/A

CONTROL	A process in the system (usually results in an output) to that external entity that sent the feedback).	Internal mechanism the system uses to respond to the feedback so that it can maintain itself.	N/A
CONSTRAINTS		Limited resources (funds, time, etc.)	Access Control limited to the owner only.

Fact Finding Techniques:

We conducted a series of fact-finding activities at Number One Barbershop to understand the operational workflows and customer experience. This involved formal and informal interviews with the owner, employees, and customers, direct observation of the shop's daily operations, a walkthrough of the customer service process, and market research including inquiries into the utilized operational software, Setmore and other barbershop businesses in the area.

For the following please refer to Appendix E

Interviews:

Objective:

To gather detailed information about the barbershop's operations, entire systems, and subsystems.

Participants:

Owner Moe Zogheib, interviewers from the consulting team.

Methodology:

A total of six interviews, four formal and two informal, were conducted, utilizing exploratory questions focusing on three key subsystems: Booking & Scheduling, Payment & Commission, and Inventory Management.

Key Findings:

During the interviews, it was found that the barbershop uses Setmore as a primary tool for customer bookings, highlighting a dependence on this digital tool for managing appointments. In contrast, financial records, including the handling of tips and commissions, are kept

manually. This suggests that while the barbershop embraces technology for scheduling, it still relies on traditional methods for some of its financial processes.

The barbershop's approach to inventory management combines online orders and direct purchases from suppliers. This method is less formal and is based on visual checks rather than a systematic inventory tracking system. Challenges in managing inventory levels and preventing theft were noted but are not currently seen as major concerns by the shop's management.

Observation:

Objective:

We conducted the observation process to witness how the barbershop works and validate the process and information that we collected in the previous step. We observed the barbershop in real-time operations while taking notes and validating what we were observing differently from what was informed to us during the interview sessions.

Methodology:

Triangulation is a vital factor we focused on in our observation. It involves using multiple sources, methods, or approaches to study the same phenomenon. The aim is to cross-validate the results from different perspectives to ensure that conclusions are robust and accurate.

Key Findings:

Everything was up to par according to what we were informed.

Walkthrough:

Objective:

To truly understand and evaluate the customer experience at Number One Barbershop, it is essential to immerse oneself in the actual process that a customer undergoes from the moment

they decide to get a service to the completion of that service. This hands-on approach allows for an authentic assessment of the journey, encompassing the ease of booking an appointment, the welcome received upon arrival, the waiting period, the service itself, and the final steps of payment and departure while taking into consideration feelings and emotions experienced or expressed through the entire journey of the interaction with the system. By directly engaging with the barbershop's services, one can gain valuable insights into the customer's perspective, identifying strengths to be leveraged and potential areas for improvement that may not be as evident from an external viewpoint. This process is fundamental for creating a customer journey map that accurately reflects the real experiences of the barbershop's clientele.

Methodology:

A team member received a haircut to observe and feel the customer service process firsthand, providing insights into the client experience, including booking, and payment processes. Findings during this process were used as a support material to the narrative.

Market Research:

Objective:

To contextualize the barbershop's practices within the industry against a general benchmark.

Methodology:

Engaging with other barbershops and reaching out to Setmore representatives to understand industry standards and software capabilities and new features and software updates.

Key Findings:

Engaging in comprehensive market research offered a wide-angle view of the barber industry. This exploration into the practices of other barbershops illuminated industry norms and expectations, allowing for a better understanding of where Number One Barbershop stands in

comparison to its competitors. Furthermore, by delving into the intricacies of Setmore, the software at the heart of the shop's booking system, the research shed light on the software's functionalities and limitations. This knowledge not only provided insights into how the barbershop could enhance its booking system but also highlighted the critical role that such digital tools play in streamlining customer interactions, managing staff schedules, and maintaining service quality in a busy, customer-focused environment.

Models of the Current System:

Introduction:

This section delves into the heart of the *Number 1 Barbershop*'s operational processes by examining its current data systems. Data systems are crucial in streamlining workflows and enhancing decision-making. Through the use of Data Flow Diagrams (refer to Appendix F), this analysis provides a visual and narrative exploration of how information is processed and circulated within our client's business operations. Each DFD is complemented by a narrative, offering a detailed description of the depicted processes. Our analysis covers the Context Level, Level 0, and Level 1 including Booking & Scheduling, Payment & Commission, and Inventory Management subsystems. The analysis is based on a combination of fact-finding techniques stated in Section E.

Subsystem Backgrounds:

1. **Booking & Scheduling:**

This subsystem encompasses the maintenance and update of the barber schedules and how customers can book appointments for the services provided. It allows online customers to view available slots and services. It captures customer service preferences, with outputs including available times and confirmation of bookings. No financial transaction occurs at this stage. Barber also uses the process to schedule walk-in customers over the phone and social media inbound requests.

2. **Payment & Commission:**

Following the completion of the selected service, this subsystem involves the calculation of the service cost and the handling of payment, which is done exclusively in cash. The owner collects the cash payment and updates the system to reflect that the service has been paid for and completed.

3. Inventory Management:

This subsystem covers the steps the owner takes to ensure that the levels of required products, supplies, and materials are sufficient to perform the offered services. The owner procures their product from two vendors. Supplies include tapes, guards, wax etc.

External Entities:

1. **Owner(s):** Number One Barbershop has two co-owners, Moe and Massoud. Both owners are also barbers at the shop. Massoud is a silent partner while Moe is in charge of the general operation of the business and manages the other barbers.
2. **Barber/Employee:** Aside from the owners there are three other barbers (1 senior and 2 junior). Barbers cater the services provided by the shop to their diverse clientele.
3. **Customer:** The barbershop accepts male customers who are regulars, walk-ins, and out of the city visitors. Customers book appointments primarily on the website via Setmore, scheduling software used by our client, reach out by phone or via social media (Instagram), walk in without any prior booking.
4. **Montreal Supplier:** This is the owner's preferred supplier. They have a physical store on Acadie St in Montreal. Moe, the owner, drives to the store whenever the in-store supplies are determined to be low.
5. **Vancouver Supplier:** A secondary vendor used by our client in the case when the Montreal supplier can not fulfill the order in time or does not have the inventory available. The owner places an order from this supplier via their website, waiting for the order to be shipped to the store.

Use Case Narrative: (refer to Appendix F)

The use case diagram for Number One Barber Shop outlines the interactions between the Customers, Barbers, and the Owner with the system's functionalities. Customers can "Book Appointment" through the system, reflecting their ability to schedule services at their convenience. They also have the capability to "Cancel/Update Appointment," giving them flexibility to manage their bookings.

Barbers engage with the system primarily for appointment-related functionalities. They "View Bookings" to stay updated on their schedule and "Record Service Payment" to document transactions post-service. Additionally, Barbers interact with the system to "Update Working Schedule," ensuring their availability is accurately reflected.

The Owner plays a multifaceted role, managing both service and inventory aspects of the shop. The Owner updates the system when "Ordering Inventory" for the shop's supplies, and when "Requesting Inventory" to replenish the Barbers' stations. The financial oversight is depicted in the Owner's ability to "Calculate Tips & Commission," ensuring accurate disbursement of earnings to the Barbers.

Subsystem Narratives:

1- Narrative for sub-process : Booking & Scheduling Subprocess

The barbershop uses an online scheduling software named Setmore. This software has all the barbers schedule and open slots to be booked. To update working hours or block off time for personal reasons barbers have to go through the owner to update their schedule (P1.1). They communicate their shift update details either in person or by phone. The owner manually updates their requests. This information and any updates are stored in the data store D1: "Barber Schedule" that will be used to book appointments accordingly.

Customers can book appointments with the barbers in 4 different ways: Using the software booking tool embedded on the website, phoning in to the shop, walkin-in without any appointments, or reaching it out to the barber via their instagram account. The process for all scenarios to book an appointment is represented in the same way in the DFD, any slight differences that are beyond the boundary of the process are covered below.

For online booking a customer starts the booking process P1.2 by selecting the type of service they require and selecting the specific barber. Barber's availability is retrieved from the D1: "Barber Schedule". Customers select the appropriate time that is suitable for them. If this is a returning customer who has an account, they are prompted to enter their login details, their data is retrieved to the process from D2: "Customer Details". Brand new customers input their details (first name, last name, etc) they are also required by the system to provide their contact details, email or phone number or both. Their data is then stored in D2: "Customer Details" for future appointment requests.

Customers who reach out through the phone follow the same process but the only difference is that the barber on the line is guiding them through the process. Customers who reach out via Instagram are provided the Setmore booking link to set up their appointment or can be booked by the barber or owner corresponding with them. This situation is more common for the existing customers who have a close relationship with the barber.

Walk-in customers are greeted by the owner or the attending barber, they negotiate the booking by verifying if there is a current opening. If there is no available time slot the barber will suggest an alternative to the customer. If there is an immediate opening, new customers can choose to provide their contact information to make an account at their discretion, otherwise a stand-in dummy customer contact is used to validate the booking. When the barber is booking the appointment from the admin portal the requirement to provide contact information is bypassed. Walk-in customers who don't share their contact information are ones who are visiting the city and will not return to the barber for the foreseeable future. For these situations the barber making the booking will type "Walk-In" in the customer detail section prompting to create multiple records of customers under that pseudonym.

Once all the required data for the booking are provided and collected, process P1.3 "Confirm Booking " is initiated. This process consolidate all the information provided in the previous

process P1.2 and store the booking record in the D3: “Booking Details”, update the availability of the barber in the D1: “Barber Schedule” to avoid double booking, and send a confirmation notification to both the customer and the selected barber.

Customers who are booked in the future and have received a confirmation notification can cancel or update the time or date of their booking. Process P1.4 “Cancel/Update Booking” is initiated by the client request to change, it retrieves their booking details from the D3: “Booking Details”. The process will then update both data stores D1: “Barber Schedules” and D3: “Booking Details ”. Finally the process will update both the customer and the booked barber of the changes made.

The system is designed to send appointment reminders to both the customer and the barbers for their upcoming booking. This time trigger initiates the process P1.5 “Send Appointment Reminder” where it fetches the booking details from D3: “Booking Details” and proceeds to send the notification to the customer and the barber. Customers receive a reminder 24 hours before their scheduled appointment and the barber receives the remainder 15 minutes before the appointment.

Narrative for sub-process : Payment & Commission Subprocess

The process begins with the barber checking his schedule in P2.1 “Check Schedule” to know the details and the type of service he will provide so they can prepare their station for any additional product that they might require. The details of their appointments, including the services to be rendered, are retrieved from Setmore in D3: “Booking Details”. If the client is running late or is a no-show, the barber updates D3 by process P2.2 “Update Booking Status”. This step is important because D3 is used later to verify the daily and Bi-Weekly bookings and service completed as it shows their daily completed/booked appointments that calculate the projected revenue.

Some customers might ask for additional service while on the chair, the barber has to update the records in process P2.3 “Record Additional Request ” that will update D3 as well to reflect the

new price and additional services. If no additional service is requested the barber and customer move to the next phase. Each barber quotes their customer in P2.4 “Provide Quote” and the customer pays their barber directly in P2.5 “Collect Payment”. This process is not formal, as a customer can pay in the chair or at the cash register. The business only accepts cash payments at the moment. If the customer doesn’t have cash they are pointed to an ATM located inside the store to withdraw. The ATM charges customers a \$3 service fee. To retain customer satisfaction the owner most times absorbs the service fee charged by the ATM by reducing the service amount to be charged to the customer. If a customer requests a receipt at P2.5, the barber writes a hand-written receipt to provide to the customer. Copies of the receipts are not stored in any manner.

The process of each barber collecting the payment from their client is done this way for two specific reasons. Customers are more prone to provide tips when dealing with their respective barber than dealing with a different employee in the shop. Barbers are paid 100% of their tip and have a 60/40 commission split on the service amount. After receiving the payment with tips, each barber record in their individual paper book called “Barber #1 Service Book” D4, D5, D6 etc. The information recorded that is coming from P2.5 is the date and the type of service provided, the amount for the service and the amount for the tip. At the end of the day, or as needed, barbers or the owner delete the no-show appointments in P2.6 from D3: “Booking Details”.

On a daily basis after closing the owner starts process P2.7 “Reconcile Appointment & Service Books” where they calculate the amount of tips to be paid to each barber. Data is reconciled from two data stores collections, the barber service book (D4, D5 and D6) and D3 “Booking Details”. This process verifies that the information recorded in (D4, D5 and D6) matches with the information in D3. It then provides the information to process P2.8 “Tip Payments & Breakdown ” to make the payment to the barber at the end.

Commission is also done in the same manner as the tip in process P2.7 “Reconcile Appointment & Service Books” on a bi-weekly basis and paid in process P2.9 “Commission Payment & Breakdown” to the barber and the owner.

Narrative for sub-process: Inventory Management Subprocess:

Barbers have the required product to provide their daily services on their personal station. That serves as a data store D7: “Barber’s Product Station” when a certain product runs low it initiates process P3.1 “Check Station Product” for the barber to be alerted of the low stock. The barber then starts process P3.2 “Request Product from Owner” where they ask the owner for the product they are missing. At this level the owner from his memory can confirm if there is enough stock in D8 “Inventory Database (Drawer)” or he checks manually. If the item is in stock then the station is replenished at process P3.3 “Distribute Product”, otherwise the owner takes into D9: mental note to reorder the product when he has time.

Another way for the owner to initiate an inventory check is if he remembers from his mind that it is time to verify their product levels. To assess this process P3.4 “Check Inventory Levels” pulls current levels from D8: the physical drawers where inventory is stored. There isn’t any record keeping of inventory in stock and in current use. If stock levels are above the threshold, no action is taken. However, if levels are below the threshold, indicating items are out of stock or are low on stock, the owner identifies the required inventory to be replenished.

Next phase of this system is the ordering of the product. P3.5 “Request Product” is either initiated from the owner’s memory or from the previous process P3.4 “Check Inventory Level” when the stock level is low. The barber starts this process with the Montreal vendor first. The owner drives to the vendor’s physical location on Acadie St and asks for the product requested from his barbers. The vendor confirms if the requested products are in stock. If the stock is available the barber proceeds to P3.6 “Place Order” by validating the product details and the quantity needed. Vendor confirms the price for the order and the barber provides the payment information at the stage of process P3.7 “Vendor Payment”. The owner also does not keep any written notes or record of the order placed at this vendor and any receipts provided from the vendor are unkept or discarded.

In case of no stock, the owner travels back to his store and proceeds to his second vendor based in Vancouver. The transaction takes place on the website of the vendor where the owner browses the product and adds to the cart the required quantity. Once satisfied he places the order at P3.6 and confirms cheek out. The owner is then prompted to confirm the payment by clicking pay for order P3.7 and then waits to receive a shipment to his physical location. The owner receives an order and shipment confirmation to his email but he does not store them separately on his own.

PIECES Framework:

This section will provide insights and explanation about the Pieces analysis framework and how it has been used to analyze the chosen processes of Number One Barbershop. (refer to Appendix G)

The “PIECES” framework is a systematic tool used for evaluating existing systems to pinpoint problems and identify areas for improvement. The project phases represent a structured approach to system analysis and improvement, from initial problem identification to proposing a redesigned system.

The acronyms of pieces stand for Performance, Information, Economics, Control, Efficiency, and Services, each representing a critical aspect of system functionality and effectiveness.(refer to Appendix G)

The framework includes 4 phases, the first phase is the Fact-Finding phase. In this initial phase, the goal is to gather comprehensive information about the current system to identify any existing problems. This involves a variety of fact-finding techniques such as interviews, questionnaires, observation, and review of documentation. The key objective is to uncover issues related to system performance, user satisfaction, and operational efficiency.

The second phase includes the Preparation for Analysis in other words mapping the problems to the PIECES categories. Once problems and opportunities have been identified, the next step

involves categorizing these issues according to the PIECES framework. This categorization helps in understanding the nature of each problem and its impact on the system. By mapping problems to specific PIECES categories, we can better focus our investigation on the underlying causes and identify areas that require immediate attention.

The third phase is Data Analysis where we identified the “Underlying Problems” and mapped the Processes (Ps) and Data stores (Ds) within the system. This phase starts by identifying the underlying problems that are affecting these processes and then providing each underlying problem with a corresponding underlying problem code. Then during the data analysis phase, we dive deeper into the identified problems to understand their root causes. This involves a detailed examination of processes, data flows, and system interactions to pinpoint specific triggers that cause these problems. Each identified problem that is linked to a process or datastore is associated with specific references to our DFD (refer to Appendix H), combined with an analysis of the PIECES elements, and a link to the associated underlying problem codes. This phase aims to link each observed problem with its underlying causes, providing a clear basis for developing solutions.

The fourth and final phase is providing the “Proposed System” solutions, where we list the process numbers and Data stores numbers associated with each underlying problem in each subsystem. In this phase, solutions are formulated to address the problems identified in the previous phase. For each subsystem of the project, specific process numbers and datastore numbers are listed along with proposed changes or enhancements, linked to the underlying problem code. This comprehensive listing serves as a blueprint for the proposed system, outlining how each change addresses a particular issue. The proposed solutions may include system redesigns, process reengineering, implementation of new technologies, or changes in operational procedures. The aim is to create a more efficient, effective, and user-friendly system that meets the organization's needs and objectives of our clients. In the proposed system you

will find color palettes that highlight the changes or recommendations in the proposed system. Where the red colors are referencing deleted changes in the proposed DFD or narrative, the blue references modifications to the proposed DFD or narrative, the green references additions added to the proposed DFD and narrative.

Each phase of the project builds on the findings of the previous one, leading to a systematic approach to problem-solving and system improvement. This structured methodology ensures that the proposed solutions are well-grounded in thorough analysis and directly address the identified problems and opportunities.

NUMBER ONE BARBER SHOP PIECES ANALYSIS

For the first phase of this framework problems and opportunities were identified across various subsystems of the Number One Barbershop. The subsystems include the “Booking & Scheduling”, “Payment & Commission”, and “Inventory Management”. Problems such as inability to enforce cancellation policies, lack of phone authentication, and issues with payment and commission tracking have been noted. Various other problems have been recorded and identified in the analysis of problems and opportunities of each subsystem. (refer to Appendix G)

The problems and opportunities link to requirements gathered in the user stories, user requirements, and problems identified during the fact finding phase of this project. Opportunities have been identified using observation techniques and walkthroughs of the barbershop using the triangulation method. Problems have been identified for each subsystem and labeled under “Project phase 1: Fact finding (identify the problems)” (refer to Appendix G)

The second phase of the framework we mapped the problems against the PIECES framework to categorize the types of problems within each subsystem.

Performance: we concluded that cancellation policies are not enforced, which affects the barbershop's performance in maximizing appointment bookings and managing customer flow efficiently.

Information: we verified that the absence of phone authentication and separate recording practices for sales and tips highlight information integrity issues. This leads to potential security risks and errors in financial reconciliation.

Economics: we realized that reducing service fees for ATM users and having cash-only payment options impact the economics of the barbershop, leading to revenue loss and customer dissatisfaction.

Control: we identified various issues such as vulnerability to bot attacks due to lack of authentication in the booking system reflect the need for better control mechanisms to protect the integrity of the booking process. In other occurrences too much control has been identified and creating managerial inefficiencies.

Efficiency: the manual process of updating work schedules through the owner and reconciliation of tips and commissions indicate inefficiencies in the current system. Inefficient inventory tracking contributes to this as well.

Services: the lack of integrated payment options and inventory management shows a gap in services that affects customer satisfaction and operational effectiveness.

The third phase involved identifying the underlying problems and linking them to the following data stores and process numbers, linking the problems in each subsystem to their data stores and processes in the DFD. We then categorize each underlying problem with the corresponding problems in each subsystem level of Phase 3.

The Underlying Problems identified by analyzing problems in the subsystems of Number one barber shop and used in the PIECES framework are the following:

- Code A - Lack of control & security of the process and the data:

This issue, identified across all subsystems, highlights a fundamental problem with the system's integrity and protection against unauthorized actions such as cybersecurity threats, which impacts Performance and Control.

- Code B - Data is recorded in a fragmented way and not integrated in the system:

Data issues within the Payment & Commission and Inventory Management Subsystems lead to inefficiency, inaccuracies, and economic repercussions, impacting Information and Data, and Economics.

- Code C - Data is not accessible and searchable in the system:

The current system's limitations in retrieving and managing data effectively touch on Efficiency and Control where no clear record is impacting the business potential for analysis.

- Code D - Data is not efficiently communicated between the system entities:

Problems with schedule updating and inventory management reflect the system's inefficiency in facilitating smooth operational processes, impacting Performance and Efficiency.

- Code E - System has limited payment options:

This economic issue, arising from the Payment & Commission Subsystem, affects customer satisfaction and revenue, categorized under Economics.

- Code F - System limitation forcing data redundancy and anomaly:

Redundant data entries like the walk-ins' duplicate accounts contribute to inefficiencies and data cluttering, affecting Information and Services.

By relating these underlying problems to the PIECES categories and initial problems, it becomes clear where the current system's deficiencies lie. The following 4 phases discussed will act as an outline for the proposed DFD narrative and will be guiding the next steps for proposed improvements in the proposed phase 4 level PIECES, the proposed narrative and DFD.

Opportunities IT can offer to Number One Barbershop.

The utilization of Information Technology (IT) presents a valuable opportunity for Number One Barbershop to enhance its operations significantly. IT solutions can streamline the barbershop's booking system, incorporating streamlined scheduling with integrated payment options and robust cancellation policies, thereby elevating customer convenience and reducing no-shows. Enhanced security protocols, such as two-factor authentication, can safeguard against unauthorized bookings. Additionally, the deployment of an integrated Point of Sale (POS) system can facilitate efficient financial transactions and enable real-time tracking of the barbershop's financial performance. Digital record-keeping and automated inventory management systems can reduce manual errors, optimize stock levels, and improve overall operational efficiency. Overall IT can leverage data analytics to extract actionable insights into customer behaviors and business performance, guiding informed decision-making. Collectively, these IT-driven strategies can transform challenges into growth opportunities, positioning Number One Barbershop for sustained success and operational superiority. Greater details of the IT opportunities are outlined in Section I of the project.

User Requirements:

The narratives offered here provide insights into the user stories from three different perspectives: customers, employees (barbers), and the owner. These stories capture the diverse relationships and experiences that occur within the barbershop. By recognizing these many points of view, we hope to create a holistic approach to our services, delivering a seamless and satisfying experience for everyone involved in the barbershop system.

As the Owner:

Appointment Booking

- As the owner, I want to be able to have easy access to scheduled appointments for the day so that I can prepare for each client.
- As the owner, I want clients to be able to book appointments online, through social media, or in person, choosing their preferred way.

Customer Management

- As the owner, I want to have a robust customer database so I can keep track of my clients' preferences and contact information.
- As the owner, I want the automated appointment reminders to be sent to clients to minimize the no-shows.

Inventory Management

- As the owner, I want to track the inventory of grooming products so that I know when to reorder supplies.

Employee Scheduling

- As the owner, I want to manage my employees' schedules through the system to ensure coverage during business hours.

- As the owner, I want to allow my employees to request time off through the system for a more streamlined process.

Financial Reporting

- As the owner, I want to generate financial reports from the system to track the profitability of my business.

Feedback Collection

- As the owner, I want to collect feedback from customers after their appointments to improve our services.
- As the owner, I want to be notified of any negative feedback to address issues promptly.

Payment and Commission

- As the owner, I want to have a clear record of payments and commissions I owe to my employees.

As the Employee:

Appointment Management

- As a barber, I want to view my schedule in real-time so I can prepare for upcoming appointments.
- As a barber, I want to receive notifications for new, canceled, or rescheduled appointments so I can manage my time efficiently.

Schedule Flexibility

- As a barber, I want to input my availability into the system so that appointments can be booked only during these times.
- As a barber, I want to be able to request a time off through the Setmore system.

Inventory and Tool Management

- As a barber, I want to be able to report low stock on essential supplies so that they can be reordered promptly to my station.

Performance Feedback

- As a barber, I want to receive feedback from clients after their appointments to improve my skills and services.

Payment and Commission

- As a barber, I want to track my daily earnings and tips to manage my finances better.
- As a barber, I want to have access to reports summarizing my performance and earnings over time.

Communication

- As a barber, I want to communicate easily with clients about their appointments or any pre-appointment instructions.

As the Customer:

Booking and Appointment Management

- As a customer, I want to book appointments online at any time, so I don't have to call during business hours.
- As a customer, I want to easily reschedule or cancel my appointment through the website without needing to call.
- As a customer, I want to have different ways of booking an appointment

Personalized Service

- As a customer, I want to be able to select my preferred barber when booking an appointment for a more personalized experience.

Notifications and Reminders

- As a customer, I want to receive reminders for my upcoming appointments so that I don't forget them.

Feedback and Ratings

- As a customer, I want to easily provide feedback on my experience to help the barbershop improve its service.

Payment

- As a customer, I want to pay for my haircut and tip my barber if desired.
- As a customer, I want to have an ATM machine present incase of not carrying enough cash.

Access to Information

- As a customer, I want to view the list of services offered and their prices before I book an appointment.
- As a customer, I want to access the barbershop's hours, location, and contact information easily.

Waiting Time and Efficiency

- As a customer, I want to know the estimated waiting time for walk-ins so I can plan my visit better.
- As a customer, I want to receive updates if my barber alters the appointment schedule.

User Requirements

User requirements is a major factor in the improvement of the barbershop's system, helping to make sure that the system serves the needs of the owner, the clients and barbers. After classifying requirements into functional and non-functional groups, we further divided them

into mandatory and non-mandatory categories based on how important they are to the functioning of the system. This strategy allows to take into account performance, usability, and security factors while concentrating on crucial functions like appointment scheduling, inventory management, and payment processing. We aimed to develop a user-friendly and effective system that improves the overall experience for both the barbershop staff and their clients by analyzing what users need, how the system should meet these needs, and why these criteria are crucial.

Booking and scheduling

User requirement	Functional/ Non Functional	Mandatory/ Non mandatory	Description
Input availability	Functional	Mandatory	When a barber is unavailable the system must allow him to update his availability for appointments.
Customer details	Functional	Mandatory	Customers must be able to provide their personal and booking details, including name and contact information, to initiate an appointment request.
Walk-in booking	Functional	Mandatory	The system must allow walk-in customers to negotiate bookings with the owner or attending barber, suggesting alternative time slots if needed.

Placeholder booking	Functional	Mandatory	The system must enable barbers to create a 'walk-in' booking for customers who arrive without an appointment.
Booking confirmation	Functional	Mandatory	A confirmation of the booking must be sent to both the customer and the barber after finalizing the appointment date and time.
Appointment cancellation	Functional	Mandatory	The system must allow customers to cancel appointments, with an email confirmation sent to the customer and relevant details processed from the booking data store.
Credit card information	Functional	Non Mandatory	The system should require customers to provide credit card information at the time of booking to secure their appointment and avoid no shows.
Performance	Non functional	Mandatory	The system must be able to handle a high volume of booking requests efficiently, ensuring minimal wait times for customers.
Usability	Non functional	Non mandatory	The booking process should be user-friendly, requiring minimal training for barbers and customers.
Reliability	Non functional	Mandatory	The system must be reliable, ensuring that

			appointments are not lost or double-booked.
Security	Non functional	Mandatory	Customer and booking information must be stored securely, with access restricted to authorized personnel only.

Inventory Management

User Requirement	Functional/ Non functional	Mandatory/ Non mandatory	Description
Inventory Check	Functional	Mandatory	The owner must be able to initiate an inventory check to assess stock levels at random times, pulling current levels from the physical drawers where inventory is stored.
Ordering	Functional	Mandatory	The owner must be able to order inventory from the preferred vendor, with order details provided to the vendor.
Efficiency	Non functional	Non mandatory	The inventory management process should be efficient, ensuring that stock levels are maintained without excessive manual intervention.
Accuracy	Non functional	Non mandatory	Inventory checks and ordering processes should be accurate, preventing overstocking or stockouts.

Vendor Relationship	Non functional	Non mandatory	The system should facilitate good relationships with vendors, ensuring timely deliveries and accurate invoicing.
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Payment and commission

User requirement	Functional /Non	Mandatory/Non mandatory	Description
Payment Processing	Functional	Mandatory	Customers must be able to make payments using their preferred payment method.
Receipt Issuance	Functional	Mandatory	A receipt must be issued to the customer upon request, detailing the service, total cost, and change given if any.
Commission Calculation	Functional	Mandatory	Barbers' commissions must be calculated bi-weekly based on the services they have provided, and the shop owner's commission must be calculated reflecting their share of the shop's earnings.
Tips Recording	Functional	Mandatory	Tips received by each barber must be promptly recorded daily in a consolidated store with the services to avoid discrepancies and loss of data.

Accuracy	Non functional	Non mandatory	The system should accurately calculate service costs, tips, and commissions, ensuring no errors in financial transactions.
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Specification & Models of the Proposed System

The new proposed system delivered to our client is built with the user requirement in mind and the underlined problems identified in the PIECES analysis. The solution is meant to address the control and security weakness of the subsystems, the quality and the way data flows through the systems in general and address the automation of certain processes that require a lot of resources and hinder performance.

In the proposed system the modifications aim to streamline operations, enhance customer experience, and optimize financial management. The changes are color-coded in the proposed system narrative: green for additions, blue for modifications, and red for removals. This approach facilitates a clear understanding of the evolution from the current to the proposed system.

Justification for the Proposed System

Underlying Problems in the Current System:

1. Booking and Scheduling:

- The current system lacks mechanisms to enforce cancellation policies effectively, leading to potential revenue loss.
- The absence of phone authentication in the booking software poses a security risk, and the process for updating barbers' schedules is cumbersome, requiring manual intervention by the owner.
- The handling of walk-in customers creates data redundancy and complicates database management.

2. Payment and Commission:

- Limited payment options and the manual process of handling ATM fee adjustments lead to reduced customer satisfaction and operational inefficiencies.
- The separation of sales and tips recording, coupled with the manual reconciliation process, increases the likelihood of errors in financial management.

3. Inventory Management:

- Lack of an up-to-date inventory record system and inefficient stock level tracking can lead to stock shortages or surpluses, impacting service delivery.

Opportunities IT Offers and Proposed Changes:

1. Booking and Scheduling:

- Implement an improved online scheduling system that allows barbers to update their schedules directly, reducing administrative overhead and improving accuracy.
- Introduce credit card information requirements for bookings to enforce cancellation policies and reduce no-shows.

2. Payment and Commission:

- Introduce more payment options, including credit card processing, to enhance customer convenience and integrate these transactions into the system for streamlined financial management.
- Adopt an integrated POS system to eliminate manual record-keeping of sales and tips, ensuring accuracy in financial reporting and simplifying the process of calculating commissions and tips.

3. Inventory Management:

- Implement an integrated inventory management system to provide real-time data on stock levels, reducing the risk of stockouts or excess inventory and improving order efficiency.

The proposed system is justified through its comprehensive approach to resolving the current system's inefficiencies, leveraging IT to improve operational processes, and aligning with the strategic goals and user requirements of the business.

Narrative description of the changes from the current system

1- Narrative for sub-process : Booking & Scheduling Subprocess

The barbershop uses an online scheduling software named Setmore. This software has all the barbers schedule and open slots to be booked. ~~To update working hours or block off time for personal reasons barbers have to go through the owner to update their schedule (P1.1). They communicate their shift update details either in person or by phone. The owner manually updates their requests.~~ To update working hours or block off time for personal reasons barbers make their change request on the Setmore app through their personal login. This prompt process P1.1 “Request Schedule Update” requires the owner to approve or reject the request.

This information and any updates are stored in the data store D1: "Barber Schedule" that will be used to book appointments accordingly.

Customers can book appointments with the barbers in 4 different ways: Using the software booking tool embedded on the website, phoning in to the shop, walkin-in without any appointments, or reaching it out to the barber via their instagram account. The process for all scenarios to book an appointment is represented in the same way in the DFD, any slight differences that are beyond the boundary of the process are covered below.

For online booking a customer starts the booking process P1.2 by selecting the type of service they require and selecting the specific barber. Barber's availability is retrieved from the D1: "Barber Schedule". Customers select the appropriate time that is suitable for them. If this is a returning customer who has an account, they are prompted to enter their login details, their data is retrieved to the process from D2: "Customer Details". Brand new customers input their details (first name, last name, etc) they are also required by the system to provide their contact details, email or phone number or both. Customers are also now required to add a payment method to their booking and to agree to the no-show and missed booking policy where a specified fee or a percentage of their booked service can be charged to their payment method in case of canceling with short notice or missing their appointment. Their data is then stored in D2: "Customer Details" for future appointment requests.

Customers who reach out through the phone follow the same process but the only difference is that the barber on the line is guiding them through the process. Customers who reach out via Instagram are provided the Setmore booking link to set up their appointment or can be booked by the barber or owner corresponding with them. This situation is more common for the existing customers who have a close relationship with the barber.

Walk-in customers are greeted by the owner or the attending barber, they negotiate the booking by verifying if there is a current opening. If there is no available time slot the barber will suggest an alternative to the customer. If there is an immediate opening, new customers can choose to provide their contact information to make an account at their discretion, otherwise a stand-in dummy customer contact is used to validate the booking. When the barber is booking the appointment from the admin portal the requirement to provide contact information is bypassed. Walk-in customers who don't share their contact information are ones who are visiting the city and will not return to the barber for the foreseeable future.~~For these situations the barber making the booking will type "Walk In" in the customer detail section prompting to create multiple records of customers under that pseudonym.~~ For these situations the barber will check the box of "Null" that will not require to reference a customer account or customer details and will store all these types of booking under one customer account.

Once all the required data for the booking are provided and collected, process P1.3 "Confirm Booking" is initiated. This process consolidate all the information provided in the previous process P1.2 and store the booking record in the D3: "Booking Details", update the availability of the barber in the D1: "Barber Schedule" to avoid double booking, and send a confirmation notification to both the customer and the selected barber.

Customers who are booked in the future and have received a confirmation notification can cancel or update the time or date of their booking. Process P1.4 "Cancel/Update Booking" is initiated by the client request to change, it retrieves their booking details from the D3: "Booking Details". The process will then update both data stores D1: "Barber Schedules" and D3: "Booking Details". Finally the process will update both the customer and the booked barber of the changes made.

The system is designed to send appointment reminders to both the customer and the barbers for their upcoming booking. This time trigger initiates the process P1.5 “Send Appointment Reminder” where it fetches the booking details from D3: “Booking Details” and proceeds to send the notification to the customer and the barber. Customers receive a reminder 24 hours before their scheduled appointment and the barber receives the remainder 15 minutes before the appointment.

Narrative for sub-process : Payment & Commission Subprocess

The process begins with the barber checking his schedule in P2.1 “Check Schedule” to know the details and the type of service he will provide so they can prepare their station for any additional product that they might require. The details of their appointments, including the services to be rendered, are retrieved from Setmore in D3: “Booking Details”. If the client is running late or is a no-show, the barber updates D3 by process P2.2 “Update Booking Status”. This step is important because D3 is used later to verify the daily and Bi-Weekly bookings and service completed as it shows their daily completed/booked appointments that calculate the projected revenue.

Some customers might ask for additional service while on the chair, the barber has to update the records in process P2.3 “Record Additional Request ” that will update D3 as well to reflect the new price and additional services. If no additional service is requested the barber and customer move to the next phase. Each barber quotes their customer in P2.4 “Provide Quote” and the customer pays their barber directly in P2.5 “Collect Payment”. This process is not formal, as a customer can pay in the chair or at the cash register. ~~The business only accepts cash payments at the moment. If the customer doesn't have cash they are pointed to an ATM located inside the store to withdraw. The ATM charges customers a \$3 service fee. To retain customer satisfaction~~

~~the owner most times absorbs the service fee charged by the ATM by reducing the service amount to be charged to the customer.~~ Customers can pay for their service in cash or by card including contactless method. ~~If a customer requests a receipt at P2.5, the barber writes a hand-written receipt to provide to the customer. Copies of the receipts are not stored in any manner.~~ The POS system integrated with cash registers will issue an electronic receipt if paid by card or a paper generated receipt if paid by cash.

The process of each barber collecting the payment from their client is done this way for two specific reasons. Customers are more prone to provide tips when dealing with their respective barber than dealing with a different employee in the shop. Barbers are paid 100% of their tip and have a 60/40 commission split on the service amount. ~~After receiving the payment with tips, each barber record in their individual paper book called “Barber #1 Service Book” D4, D5, D6 etc. The information recorded that is coming from P2.5 is the date and the type of service provided, the amount for the service and the amount for the tip. At the end of the day, or as needed, barbers or the owner delete the no show appointments in P2.6 from D3: “Booking Details”.~~ After receiving the payment with tips, each barber updates the status of the booking to “completed” and the POS integrated with the scheduling will update the amount of service and tips on each booking.

~~On a daily basis after closing the owner starts process P2.7 “Reconcile Appointment & Service Books” where they calculate the amount of tips to be paid to each barber. Data is reconciled from two data stores collections, the barber service book (D4, D5 and D6) and D3 “Booking Details”. This process verifies that the information recorded in (D4, D5 and D6) matches with the information in D3. It then provides the information to process P2.8 “Tip Payments & Breakdown” to make the payment to the barber at the end.~~

On a daily basis the owner will start P2.11 "Generate Tips & Commissions Reports" to batch off each barber's daily tips report from D3: "Booking Details" that will be paid at P2.12 "Pay Tips & Commissions" to the other barbers. Commission is also done in the same process on a bi-weekly basis.

~~Commission is also done in the same manner as the tip in process P2.7 "Reconcile Appointment & Service Books" on a bi-weekly basis and paid in process P2.9 "Commission Payment & Breakdown" to the barber and the owner.~~

Narrative for sub-process : Inventory Management Subprocess:

Barbers have the required product to provide their daily services on their personal station. That serves as a data store D7: "Barber's Product Station" when a certain product runs low it initiates process P3.1 "Check Station Product" for the barber to be alerted of the low stock. The barber then starts process P3.2 "Request Product from Owner" where they ask the owner for the product they are missing. ~~At this level the owner from his memory can confirm if there is enough stock in D8 "Inventory Database (Drawer)" or he checks manually.~~ The owner will initiate P3.4 per a request from the barber and verify the inventory stock level from D11: Inventory Record System. If the item is in stock then the station is replenished at process P3.3 "Distribute Product", otherwise the owner takes into D9: mental note to reorder the product when he has time.

~~Another way for the owner to initiate an inventory check is if he remembers from his mind that it is time to verify their product levels.~~ The owner initiates inventory checks on a regular basis to verify product level. To assess this process P3.4 "Check Inventory Levels" pulls current levels from ~~D8: the physical drawers~~ D11: "Inventory Record System" where inventory stock level is recorded. ~~There isn't any record keeping of inventory in stock and in current use.~~ If stock levels are above the threshold, no action is taken. However, if levels are below the threshold, indicating

items are out of stock or are low on stock, the owner identifies the required inventory to be replenished.

~~Next phase of this system is the ordering of the product. P3.5 “Request Product” is either initiated from the owner’s memory or from the previous process P3.4 “Check Inventory Level” when the stock level is low.~~ Next phase of this system is the ordering of the product. P3.5 “Request Product” is initiated from the regular check of inventory. The barber starts this process with the Montreal vendor first. ~~The owner drives to the vendor’s physical location on Acadie St and asks for the product requested from his barbers.~~ The owner calls the vendor to verify if needed products are in stock. The vendor confirms if the requested products are in stock. If the stock is available the barber proceeds to P3.6 “Place Order” by validating the product details and the quantity needed. Vendor confirms the price for the order and the barber provides the payment information at the stage of process P3.7 “Vendor Payment”. ~~The owner also does not keep any written notes or record of the order placed at this vendor and any receipts provided from the vendor are unkept or discarded.~~ The owner will update his D11: “Inventory Record System” with the new levels of product at P3.8 “Receive Goods”.

In case of no stock, the owner ~~travels back to his store and~~ proceeds to his second vendor based in Vancouver. The transaction takes place on the website of the vendor where the owner browses the product and adds to the cart the required quantity. Once satisfied he places the order at P3.6 and confirms cheek out. The owner is then prompted to confirm the payment by clicking pay for order P3.7 and then waits to receive a shipment to his physical location. The owner receives an order and shipment confirmation to his email ~~but he does not store them separately on his own.~~ The owner updates D11 with his order and the product once received.

Conclusion and Limitations:

We managed to conduct a thorough analysis of Number One Barbershop processes, providing our clients with key takeaways and recommendations to improve their business. The project has focused on providing resolutions to the identified problems in the PIECES framework and the detailed System Descriptions. We've learned to identify critical system issues. These findings emphasized the need for a secure, reliable, and efficient system that supports business operations.

Managing the project from inception to conclusion has taught us valuable project management principles. We applied project planning tools to sequence activities, manage timeframes, and allocate resources efficiently such as task management. Risk management was another key learning point, helping us to anticipate and mitigate potential issues. Our experience highlighted the significance of collaborative effort and the distribution of roles based on expertise. The peer evaluation forms reflected the importance of evaluating team contributions objectively, ensuring equitable workload distribution and recognizing individual efforts. Client interactions taught us the delicacy of balancing client expectations with project deliverables. The narrative sections and user stories from different stakeholders, such as owners and customers, underscored the necessity to understand and integrate diverse perspectives into the system design.

The project's phased approach, from fact-finding to proposing a new system, reinforced our understanding of the project lifecycle. The User Requirement and User Stories documents were particularly informative. They helped us appreciate the nuances of requirement gathering and the importance of designing a system that addresses specific user needs, such as a user-friendly booking system, effective inventory management, and a flexible payment and commission subsystem.

The project faced several limitations, such as time constraints that restricted the depth of our analysis in certain areas excluding certain subsystems. Limited access to proprietary data and tools also presented challenges, compelling us to find alternative methods to achieve our objectives.

This project served as a comprehensive learning experience, equipping us with valuable insights into the multifaceted nature of IT projects. The skills and knowledge gained from this experience are invaluable assets that we will carry forward into our future academic and professional endeavors.

Appendices:

Appendix A:

Client & Group Agreement

Number One Barbershop

February 8th, 2024

1228 Mackay St,
Montreal,
QC H3G 2H4

We are delighted to inform you of our decision to embark on the enhancement and optimization of your company's information system. Following thorough assessment and analysis, we are excited about the opportunity to collaborate with your business and your team. We extend our sincere gratitude for entrusting us with this pivotal project, and we are eager to commence our partnership to deliver impactful solutions that propel your business forward.

The scope of the project encompasses a comprehensive overhaul of key business processes within your company's information system which includes:

1. Optimizing the operation's efficiency by refining appointment scheduling and client data record-keeping systems.
2. Addressing the enhancement of payment processing mechanisms to streamline financial transactions and ensure seamless customer experiences.
3. Improving marketing and promotional activities, leveraging advanced tools and strategies to maximize outreach and engagement with your target audience.

By analyzing these critical subsystems, we aim to deliver holistic improvements that drive growth and success for your business.

In order to ensure the success of this project, we would like to present you with the mutual expectation between our team and your business:

Team's:

- Clear and transparent communication with regular updates on project progress.
- A positive collaborative experience without causing interference or delaying your operations.
- Comprehensive support and guidance throughout the analysis process.
- Dedication to delivering valuable insights that contribute to organizational success.

Client's:

- Active collaboration and support from the client for a period of four months.
- Interviews 1 hour per week, (7-9 hrs. in total) scheduled with mutual agreement.
- Permission to interview users of the system when needed with prior approval.
- Permission to observe the daily activities during regular work hours.
- Access to samples of documents and reports that have been used and generated.

At the very end of our project, this is what you will expect from our team to deliver to you:

- A complete report of the systems analysis to be conducted including both the documentation and the analysis of the company's information system as well as the proposed system.
- Proposal of improvements in the company's current information system that will bring solutions to problems and meet users' requirements.
- An invitation to a 20-minute presentation given by the team to the class at the end of the semester.
- An optional follow-up meeting after completion of the systems analysis report to further discuss the client's feedback and comments. This will be done upon client's consent.

The team is genuinely thrilled to have the opportunity to collaborate with Number One Barbershop. We are honored to be entrusted with the task of enhancing your company's information system and are eager to embark on this journey together.

Should you have any concerns, questions, or requests throughout the course of our collaboration, please do not hesitate to reach out to our team. Additionally, if you require further clarification or guidance, our professor, Dr. Suchit Ahuja and Dr. Arman Sadreddin, can be reached at their respective contact information below.

We are committed to providing prompt and effective support to address any issues or inquiries you may have and ensure a smooth and successful project experience.

Dr. Sushi Ahuja Phone: (514) 848-2424 ext.2611 Email: suchit.ahuja@concordia.ca	Dr. Arman Sadreddin Phone: (514) 848-2424 ext. 2357 Email: arman.sadreddin@concordia.ca
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Sincerely,

Nader Hedfi



George Marchenko



Ryan-Patrick El Kassis



Jasmine Rodriguez



Wassim Shaar



Robert Tueni

R. Tueni

Moe Zogheib

M. Zogheib

Final Letter to Client

Number One Barbershop
1228 Mackay St, Montreal, QC H3G 2H4

Thursday, April 11th

Dear Mr Zogheib,

We are pleased to inform you that the systems analysis report for Number One Barbershop has been thoroughly completed. Your invaluable efforts, time, and unwavering support have been instrumental throughout this project's lifecycle. We would also like to extend our deepest gratitude to your staff for their indispensable contributions and active participation, which significantly enriched the project's outcome.

Looking ahead, our team is eagerly anticipating the commencement of the design phase of the proposed system. The design phase should you choose to accept will be started by Fall 2024 of the academic year. We are scheduled to begin working on the design and software solutions shortly and are optimistic about the positive impact these enhancements will bring to your operations. We are enthusiastic about the prospect of continuing our collaboration with you on this venture, and we're confident that the design of the proposed system will meet the high standards of your establishment.

Reflecting on the project, we wholeheartedly appreciate the opportunity you've provided us. It has allowed our team to extend our practical skills beyond the academic environment, thereby significantly enriching our learning experience. Working with Number One Barbershop has not only granted us the chance to apply our theoretical knowledge but also to understand the real-world challenges and rewards of IT systems implementation.

We look forward to the possibility of future collaborations and are committed to supporting the ongoing success of Number One Barbershop.

Should you have any further inquiries or require additional assistance, please do not hesitate to contact us. Below, you will find the contact information for our team and Professors, who can also address any concerns or requests you might have:

- Nader Hedfi, nad.hedfi@gmail.com, 438-527-2555
- George Marchenko, goshasapps@gmail.com, 438-928-7714
- Wassim Shaar, Shaarwassim22@gmail.com, 514-297-5320
- Robert Tueni, Roberttueni2003@gmail.com, 514-212-5989

- Jasmine Rodriguez, jasminerodriguezmanon@gmail.com, 514-501-2805
- Ryan-Patrick El Kassis, ryankassis@hotmail.com, +1(514) 218-7553

Dr. Sushi Ahuja Phone: (514) 848-2424 ext.2611 Email: suchit.ahuja@concordia.ca	Dr. Arman Sadreddin Phone: (514) 848-2424 ext. 2357 Email: arman.sadreddin@concordia.ca
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Sincerely,

Nader Hedfi

George Marchenko

Ryan-Patrick El Kassis

Jasmine Rodriguez

Wassim Shaar

Robert Tueni

Client Background Information

E-mail : ahmedzogheib@gmail.com

Phone number : +1 (514) 577 5514

Appendix B

Team 4 - Contract

1. Meeting Coordinates

- Location: Team Member's Study Room
- Thursday
- Time: 6 pm - 9 pm
- Duration: 3 Hours
- Additional meetings coordinates: Microsoft Teams

2. Responsibilities

2.1. Team Leader

- Leader assignment:
- Rotational On Bi-Weekly Basis
- Responsibilities and rights:
 - Weekly download.
 - Managing the discussions.
 - Managing time and schedule.
 - Managing project tasks.
 -
- Consequences of failure to carry out responsibilities:
 - The team will provide feedback and constructive criticism to the weekly team leader in case of failure.

2.2. Scribe (Secretary)

- Secretary assignment:
- Rotational On Bi-Weekly Basis
- Responsibilities of the scribe:
 - Preparing the agenda for the meeting
 - Taking notes during the meeting.
 - Organizing and sending the notes from a meeting in a minute's template
 - Consequences of failure to carry out responsibilities
 - The team will provide feedback and constructive criticism to the weekly secretary in case of failure.

2.3. Members

- Rights:
 - Equal treatment
 - Majority vote
 - Provide feedback, express opinion.

- Seek Assistance and ask for help
- Have fun & learn!
- Responsibilities:
 - Respect team members and the majority's decision.
 - Abide by meeting schedule and agenda.
 - Follow contract rules.
 - Complete tasks on time.
 - Be open to constructive criticism.

3. Performance Expectations at Team Meetings

2.4. Attendance and Punctuality

- Define attendance: Proactively attending weekly team meetings, client meetings and professor touch point meetings on time.
- Valid reasons for absences are (e.g., Sickness, class conflict, technical connectivity, etc.).
- Time/day for advance notice of absence before the meeting date:
48 hours for planned absences
- Maximum number of absences allowed with prior notification:
There will be a total of 3 absences allowed for weekly meetings and meetings with the professor. Absence due to ongoing obligation (work, class etc.) will not be penalized.
- Consequences for unacceptable/unexcused absences:
Absences beyond the 3 allowed will be up for discussion by the team.
- Define lateness:
10 minutes after the meeting starts.
- Consequences for repeated lateness:
This will result in a group discussion and the outcome will be decided.
- Point Deduction System:
Deducting 1 point from a team member upon breaking the contract based on the majority vote. Each deduction must be followed with the reason for the deduction. Each member starts with 10 points. Document with the table is shared within the team and to be submitted with the project.

2.5. Participation in Discussions and Task Handling:

- Well-managed collaboration.
- Sufficient preparation.
- Meeting agreed upon deadlines.
- Members' collaboration is encouraged.
- Asking other members for help and providing help when asked.
- Fair and equal task sharing between members.
- Consequences of failure in taking responsibility of project tasks and/or completing them

- First late completion of a team member's task will result in 1 point deduction, any following late submission will be forwarded to the professors.
- Basis of assessment for the member's work quality
 - Using honour system responsibility, all team members are expected to review other member's work. Members should provide feedback on the quality of work.
- Consequences of low quality of work submitted by a member
 - If there is a collective consistent concern on a team member's work quality, the team will help orient the individual.

3. Communication Media:

- Whatsapp group for general communication, sub-teams and announcements.
- Google drive, Google docs.
- Microsoft Teams video conference on the occasion of virtual meetings.

4. Guidelines to Improve Meeting Effectiveness:

- The weekly team lead is to set the invite for the virtual meeting.
- Giving structured feedback to team members during and the end of the project.
- Demonstrating flexibility, responsibility, and motivation.
- Managing differences of opinion and conflicts among members.
- Domineering behaviour and non-constructive criticisms will be not tolerated and addressed by the team.

Date of Signature

Name

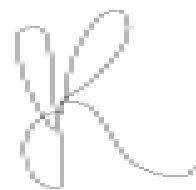
Signature



Nader Hedfi



Wassim Shaar



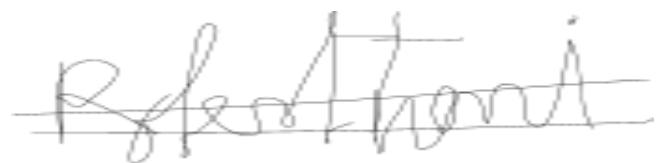
Jasmine Rodriguez

A simple, abstract handwritten signature consisting of a large, irregular loop on top and a smaller, vertical, more linear shape below it.

George Marchenko

A stylized handwritten signature featuring a large, open loop on the left and a series of smaller, fluid strokes to the right, ending with a vertical line.

Ryan-Patrick El Kassis

A handwritten signature that appears to read "Robert Tueni". It features a large, flowing 'R' on the left, followed by a series of smaller, connected letters that end with an 'i' on the right. There are horizontal lines through the signature, suggesting it might be a printed name with a handwritten style.

Robert Tueni

Team Meeting Minutes:

Meeting # 1

Date:	January 25 th , 2024
Start time:	6:00pm
End time:	9:00pm
Location:	1436 rue Mackay
Leader:	Wassim
Scribe:	Jasmine
Attendance:	George, Ryan, Nader, Jasmine, Robert and Wassim

Agenda (insert as many rows as needed)

- | |
|---------------------------------|
| I. Discuss potential clients |
| II. Work and finalize proposals |

Required Materials and files:

- All members worked in the shared files, specifically the proposal
(Any documents, work, files, etc. that needs to be brought to this specific meeting)

Minutes

- A. Introduction
 - o Leader's opening remarks
 - o Announcements
- B. Issues/Items Discussed
(List of items discussed)
 - Still waiting for a response from a potential client
 - Have contacted 2 other potential clients

C. Decisions

- *Included MAKAN as a list of potential clients*
- *Set date for Subteam B, and their upcoming presentation*

D. Adjournment of the meeting

The meeting adjourned at *9:00pm*, with the agreement of all members present.

E. Tasks Assigned

- Wassim: will contact the clinic Friday, January 26th
- Jasmine and Nader: will go to MAKAN Friday January 26th, to discuss with the potential clients and see if they are interested in this project.
- All members: Finish the proposals

F. Date, Time, and Location of the Next Meeting

- February 1st at 6:00 pm, 1436 rue Mackay

Meeting # 2

Date:	February 1
Start time:	6:00pm
End time:	9:00 pm
Location:	1436 rue Mackay
Leader:	Wassim
Scribe:	Jasmine
Attendance:	George, Ryan, Nader, Jasmine, Robert and Wassim

Agenda (insert as many rows as needed)

I. Finalize the client
II. Finalize the proposals

Required Materials and files:

- *All members worked through the shared files, specifically on the client proposals (Any documents, work, files, etc. that needs to be brought to this specific meeting)*

Minutes

A. Introduction

- o Leader's opening remarks
- o Announcements

B. Issues/Items Discussed

(List of items discussed)

- Discussed client options, the pros and cons of taking on each potential client

C. Decisions

(List of decisions made)

- Finalized the different client proposals
- The client that the team would like to work with is Number One Barbershop

D. Adjournment of the meeting

The meeting adjourned at 9:00pm, with the agreement of all members present.

E. Tasks Assigned

Wassim: will contact the follow up with the clinic

Ryan: Follow up with Number one Barbershop

F. Date, Time, and Location of the Next Meeting

February 8th, 6:00pm at 1436 Rue McKay

Meeting # 3

Date:	Thursday February 8 2024
Start time:	6:00 pm
End time:	9:00 pm
Location:	1436 mackay study room
Leader:	George
Scribe:	Robert
Attendance:	Ryan, Nader, George, Wassim, Jasmine and Robert

Agenda

I. Finding hours for meeting with the professor
II. Finalizing contract
III. Preparing questions for the first interview with the client
IV. Start a DFD template

Required Materials and files:

Questions list created by this week's leader (George), contract.

Minutes

A. Introduction

We agreed to meet with the client on Friday the 9th of February at 1:00pm

B. Issues/Items Discussed

Interview questions, DFD template, meeting hours, client contract.

C. Decisions

Meeting hours with prof: Tuesday 2:00-2:30 / Tuesday after class / Wednesday 3:30-4:00 (only 5 members available) / Friday between 3:00 and 5:00 (only 5 members will be available)

D. Adjournment of the meeting

The meeting adjourned at (exact time), with the agreement of all members present.

E. Tasks Assigned

Jasmine: Print the contract before meeting with the client + work on DFD for Monday

Robert: work on DFD for Monday

George: work on DFD for Monday

Ryan: work on DFD for Monday

Nader: work on DFD for Monday

Wassim: work on DFD for Monday

F. Date, Time, and Location of the Next Meeting

Thursday 15 February 2024, 1436 mackay study room.

Meeting # 4

Date:	Feb 29 2024
Start time:	9 AM
End time:	11 AM
Location:	Teams
Leader:	Jasmine
Scribe:	Nader
Attendance:	George, Robert, Ryan, Wassim, Jasmine, Nader

Agenda (insert as many rows as needed)

I. Tech briefing memo idea brainstorming
II. Idea selection and requirement discussion
III. Work Break down

Required Materials and files:

- Google Drive

Minutes

A. Introduction

- o Leader's opening remarks
- o Announcements

B. Issues/Items Discussed

- Worked on Tech Briefing Memo Presentation

C. Decisions

- Assigned tasks for each member to work on

D. Adjournment of the meeting

- The meeting was adjourned at 11am with the agreement of all members present.

E. Tasks Assigned

- Nader to cover project background, context and user story

- George to cover SDLC approach
- Ryan & Wassim BA /SA tools
- Robert & Jasmine Next steps

E. Date, Time, and Location of the Next Meeting

March 7th, 6:00pm in 1436 Rue McKay

Meeting # 5

Date:	March 7th 2024
Start time:	6:00 pm
End time:	9:00 pm
Location:	1436 mackay study room
Leader:	Jasmine
Scribe:	Nader
Attendance:	George, Robert, Ryan, Wassim, Jasmine, Nader

Agenda (insert as many rows as needed)

I. Feedback loop from the review (5 min each person 30 min total)
II. Review interview 2 answers
III. Nader Present DFD and Review
IV. Ryan present PIECES Analysis
V. Prepare Interview question for next meeting
VI. Decide the observation day

Required Materials and files:

Barbershop DFD, Interview 2 doc, Narrative

Minutes

A. Introduction

- Leader's opening remarks
- Announcements

B. Issues/Items Discussed

- Interview 2 was analysed, members went through it and prepared more interview questions for next interview
- Went over the DFD, different subsystems
- Analyzed PIECES analysis
(List of items discussed)

C. Decisions

- Deligated tasks to each member to work on for the project

D. Adjournment of the meeting

The meeting adjourned at 9:00pm, with the agreement of all members present.

E. Tasks Assigned

- Jasmine develops the narrative to the 3 sub-subsystems.
- Ryan Develop PIECES Analysis and book follow up meeting for Thursday.
- George & Wassim develop the next interview question and recap.
- Robert to develop user requirement.

F. Date, Time, and Location of the Next Meeting

Thursday, March 14th at 6:00pm in 1436 Rue McKay

Meeting # 6

Date:	Thursday March 14
Start time:	6:10 pm
End time:	9:19 pm
Location:	1436 mackay study room
Leader:	Nader
Scribe:	Ryan
Attendance:	George, Robert, Ryan, Wassim, Jasmine, Nader

Agenda (insert as many rows as needed)

I. Interview Recap - George & Jasmine [15 min]
II. PIECES Analysis (Workshop and Overview) - Ryan [45 min]
III. User Requirement (Prof Feedback & Overview) - Robert [30 min]

IV. DFD Update - Nader [30 min]

Required Materials and files:

Barbershop DFD, Interview 2 doc, Narrative

Minutes

A. Introduction

Leader's opening remarks +Announcements

- Review Timeline
- Book an hour with the prof
- Previous Meeting tasks update
- Book Social Outing

B. Issues/Items Discussed

- reviewed DFD and challenged class feedback.
- reviewed user requirements
- discussed the interview 4 conducted on march 15 with owner
- reviewed the Pieces analysis and conducted thorough analysis

C. Decisions

- *conduct two observations on week 9*
- *have the parts assigned ready for week 9*
- *review DFD, PIECES, and user requirements with professor*

D. Tasks Assigned

Ryan: Working on Pieces analysis and implement phase 2, update

Robert: Working on user requirements, classify them on mandatory and nonmandatory, update

George: Working on Pieces and implement phase 2, update

Jasmine: Working on user requirements, classify them on mandatory and nonmandatory, and update the Narrative

Nader: review DFD and update DFD

Wassim: conduct deep observation analysis and points to observe.

E. Date, Time, and Location of the Next Meeting

Thursday 15 March. 1436 mackay study room 6:00 pm

Meeting # 7

Date:	march 21, 2024
Start time:	6:30 PM
End time:	9:00 PM
Location:	Teams
Leader:	NADER
Scribe:	RYAN
Attendance:	George, Robert, Ryan, Wassim, Jasmine, Nader

***Agenda* (insert as many rows as needed)**

I. DFD finalization
II. Pieces rundown, and completion of phase 2-3
III. observation overview and narrative rundown
IV. finalize team outing

Required Materials and files:

- DFD documents
- PIECES documents
- google drive

Minutes

A. Introduction

- o Leader's opening remarks
 - DFD finalization
 - Pieces rundown, and completion of phase 2-3
 - observation overview and narrative rundown
 - finalize team outing
- o Announcements
 - Meeting with client canceled

B. Issues/Items Discussed

- *DFD rundown for each subprocess*
- *fixed and reviewed each subprocess*
- *fixed and revised observation*
- *generate questions to professor*
- *generate questions to client*

- reviewed narrative for each subprocess

C. Tasks Assigned

- NADER: in general only questions to professor needed
- (Booking and scheduling :
- review with professor 1.4 → barber to 1.4 (booking cancelation)
- Payment and commission :
- ask professor about process 3.1 linked to D3 if we keep or remove
 - processes 3.2, 3.3 ask Suchit if we should minimize details or keep as is)
- George and Ryan: Need to work on PIECES phase 2-3, conduct observation and interview 4 in the following week
 - Wassim: Help George finalize project binder and conduct observation with the observation team the following week.
 - Jasmine: Adjust narrative with Pieces problems.
 - Robert : Help finalize project requirements, as in the general Binder. set up the outline and plan to submit.

D. Date, Time, and Location of the Next Meeting

Date is Thursday march 28th, 1436 rue mackay, at 6:00 pm

Meeting # 8

Date:	March 29th, 2024
Start time:	11:00 am
End time:	1:00 pm
Location:	1436 Mackay (Ryan and Robert Building)
Leader:	Robert Tueni
Scribe:	Wassim Shaar
Attendance:	George, Robert, Ryan, Wassim, Nader

Agenda (insert as many rows as needed)

I. Observation Finalization
II. DFD Finalization
III. Focus on PIECES
IV. Discuss Binder Assembly and Action Plan

Required Materials and files: Google Drive files

Minutes

A. Introduction

- o Scribes opening remarks
 - Observation Finalization
 - DFD Finalization
 - Focus on PIECES
 - Discuss Binder and Presentation action

B. Issues/Items Discussed

- *Ryan to take over the observation process*
- *Nader reorganized the drive and the DFD has been finalized*
- *In the drive Whatever is in the archive wont be used, all important documents need to be uploaded in the master folder to be used in binder and presentation*

C. Decision

- Assigned roles for the observation process
- Each member will have an assigned part of the master folder to be responsible for

D. Adjournment of the meeting

The meeting was adjourned at 9:00pm with all members present

E. Tasks Assigned

Ryan: Take care of the observation process and document

Nader: Finish the DFD narrative + use case models

Wassim: Scan contract and upload it to client background section, finish minutes; go over past meeting minutes; and assign confusions to responsible people

Ryan: Finish pieces

Robert: Finalize user requirements and finish working on report

George: Finish pieces

E. Date, Time, and Location of the Next Meeting

1436 Mackay (Ryan and Robert Building), April 4th, 2024, 6pm-9pm.

Meeting # 9

Date:	April 4th, 2024
Start time:	6:00 pm
End time:	9:00 pm
Location:	TEAMS
Leader:	Robert Tueni
Scribe:	Wassim Shaar
Attendance:	George, Nader, Wassim, Robert, Ryan, Jasmine

***Agenda* (insert as many rows as needed)**

I. Wassim and Robert update on user stories
II. Nader, Ryan, and george to update us on PIECES
III. Split into 2 groups of 3

Required Materials and files: Files on Google Drive

Minutes

A. Introduction

- Split into 2 groups of 3:
 1. Group 1 working and Finalizing PIECES
 2. Group 2 working on Presentation outline and requirments

B. Issues/Items Discussed

- *User stories*
- *presentation formatting*
- *PIECES*

C. Decisions

- *Further develop PIECES analysis*

D. Adjournment of the meeting

9:23 pm

E. Tasks Assigned

Nader: Complete DFD for proposed sysetm

Ryan: Complete observation

Robert: Read PIECES and write comments

Jasmine: Read PIECES and write comments

Wassim1: Read PIECES and write comments

E. Date, Time, and Location of the Next Meeting

Sunday 07 April, 1436 Mackay (Ryan and Robert Building), 6pm-9pm.

Meeting # 10

Date:	April 7th, 2024
Start time:	5:00 pm
End time:	8:00 pm
Location:	TEAMS
Leader:	Ryan Kassis
Scribe:	Heorhii (George) Marchenko
Attendance:	George, Nader, Wassim, Robert, Ryan, Jasmine

Agenda

I. All team members share their work from the assigned work by the team leader:
II. Team leader covers what we are left to do in the project. Defines the preparation for the presentation as the main focus of today's meeting.
III. Start preparing the final presentation in 3 separate rate groups.
IV. Review together and set next meeting time and location

Require Materials and Files:

- Team Contract
- System Descriptions
- PIECES

Minutes #11

A. Introduction

I. All team members share their work from the assigned work by the team leader:

- A. @Nader: review the proposed DFD and narrative, send email to professor regarding the pieces phase 4

- B. @George: help with DFD proposed system and identify if initial letter to client, team contract, and system description is accurate and in a complete format ready first presentation
 - C. @~Robert Tueni : fix the format for the interview 1-4 to be good and ready to present. This should be similar to the heading information in interview 4 , also identify what needs time to be added into the fact finding folder and provide analysis on what is missing or completed.
 - D. @Jasmine Btm : please review the meeting minutes and make sure the formats are clean and ready to be submitted for the binder. Also identify what needs to be added to the client background (2) and what is missing
 - E. @~Wassim Shaar: make sure the user story is in a precise format that each user has a story and not bullet points. Needs to be ready for submission. And review the team management (3) and what is missing or needs to be adjusted
 - F. @Ryan will be reviewing the conclusion and limitations and trying to identify what is required. I will map a final report for this step.
- II. Team leader covers what we are left to do in the project. Defines the preparation for the presentation as the main focus of today's meeting.**
- A. Missing Parts for the Project Binder:
1. Executive Summary
 2. System Investigation/Description
 3. Specification & Model(s) of the Proposed System
 4. Conclusion and Limitations
- B. Presentation Requirements & Outline:
1. Theme Introduction - nad.hedfi@gmail.com
 2. Business Introduction - jasminerodriguezmanon@gmail.com
 3. 1st Rhetoric Question - ryanelkassis@gmail.com
 4. Business Rundown
 - a) Current System - jasminerodriguezmanon@gmail.com
 - b) Fact Finding - shaarwassim22@gmail.com
 5. PIECES - George App ryanelkassis@gmail.com
 6. 2nd Rhetoric Question - nad.hedfi@gmail.com
 7. User Requirements - roberttueni2003@gmail.com
 8. Proposed System - nad.hedfi@gmail.com
 9. Conclusion - ryanelkassis@gmail.com
- III. Start preparing the final presentation in 3 separate rate groups.**
- A. Was NOT used
- IV. Review together and set next meeting time and location**

- B. Issues/Items Discussed**
- Presentation Themes
 - Shark Tank
- C. Decisions**
- Style The Presentation in a Shark Tank Theme

D. Adjournment of the meeting:

8:00 pm

E. Tasks Assigned:

• **Ask Professor:**

- Can we suggest a POS system?
- Nader: to ask about IT requirements tomorrow

• **Member Tasks:**

- Ryan: Ask Moe to take some pictures
- Other members

Date, Time, and Location of the Next Meeting

Monday 08 April, 2:00 pm

Meeting # 12

Date:	April 9th, 2024
Start time:	12:00 am
End time:	2:00 pm
Location:	Robert's/Ryan's Building
Leader:	Ryan Kassis
Scribe:	Heorhii (George) Marchenko
Attendance:	George, Nader, Wassim, Robert, Ryan, Jasmine

Agenda

- | |
|----------------------------------|
| I. Practice Presentation 3 times |
|----------------------------------|

Required Materials and Files:

- Canva Slides
- Presentation Supporting Docs

Minutes

A. Introduction

I. Practice Presentation 3 times

- A. One Practice
- B. Two Practice
- C. Three Par

B. Issues/Items Discussed

- Class Presentation

C. Decisions

- NAIL the presentation tonigh

D. Adjournment of the meeting:

2:00 pm

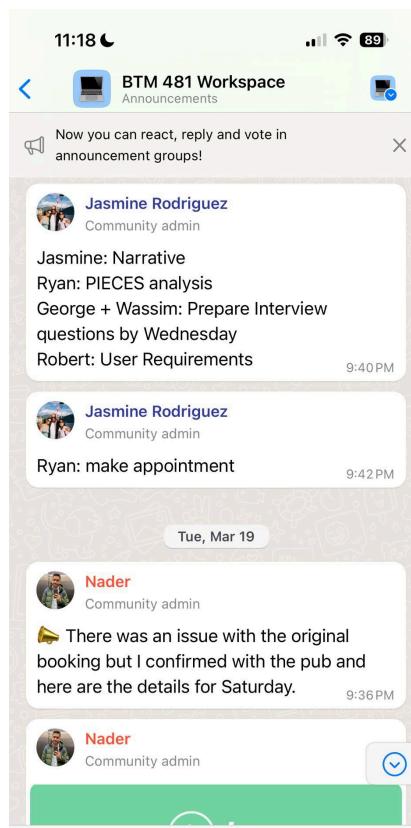
E. Tasks Assigned:

- Ask Professor:
 - -
- Member Tasks:
 - Finalize assigned parts for the binder before Thursday's meeting

F. Date, Time, and Location of the Next Meeting

Thursday 11 April, 6:00 pm

Example of group chat communication:



Appendix C

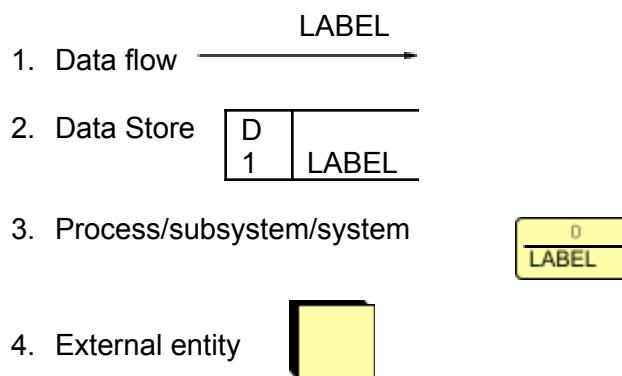
Glossary of Terms

GLOSSARY OF TERMS

This document is **to be included in the project report as an appendix**. Its purpose is to provide the relevant terminology to the clients while they are reading the project report.

DFD (DATA FLOW DIAGRAM)

- A DFD is used as a communication tool between the systems analyst and the system user/owner to verify the accuracy of the system analyst's understanding of the current information system. It is also used as a representation of the system proposed by the systems analyst following the analysis of the current system and user requirements. The latter is used in designing the proposed system.
- A DFD is a graphic process modeling tool used to depict the flow of data as it travels from the external entities to an information system and passes through the system's processes and data stores.
- Four basic symbols are used in a DFD to represent its four components of DFD:



- There are two kinds of process modeling: logical and physical. During the systems analysis phase of systems development, logical process modeling is used to represent "what" information processing is done in the system without suggesting how the processes are carried out. During the design phase of system development, physical process modeling is used to represent "how" the information processing is done.

PIECES FRAMEWORK

- PIECES is a framework that is used to categorize the vast amount of information gathered during the systems analysis phase into problems, opportunities, and directives by the system owner. Each category addresses the need to correct or improve some

aspect of the current information system. This aids the systems analyst in generating alternatives.

- PIECES is an acronym comprised of the first letter of each of the six categories of the framework:
 - P**erformance
 - I**nformation (and data)
 - E**conomics, control costs, or increase profits
 - C**ontrol or security
 - E**fficiency of people and processes
 - S**ervice to customers, suppliers, partners, employers...
- The categories of the PIECES framework are neither exhaustive nor mutually exclusive.
The same problem/oppo

Appendix D

Project Proposal

Company Name: Number One Barber Shop

<https://www.numberonebarbier.ca/>

1228 rue mackay, Montreal, QC,H3G2H4

Company background:

In the heart of a bustling city, adjacent to the vibrant campus of Concordia University, Number One Barbershop stands as a beacon of entrepreneurial spirit and personal dedication. Founded by Moe and Masoud, two seasoned barbers with a shared vision, this establishment is the culmination of their journey from colleagues to co-owners. Having honed their skills and built a loyal clientele in their previous roles, they ventured out to create their own legacy. With ambition fueling their leap, Number One Barbershop was born out of the desire to not just offer exemplary grooming services, but to also carve out a space that reflects their own values and aspirations. This introduction to Number One Barbershop isn't just about a place where hair meets scissors; it's about the realization of dreams and the creation of a community cornerstone right next to Concordia University, where every cut and shave is a testament to what passion and partnership can achieve.

Company Sub-Processes to address (at least two):

1. Operation:

Appointment Scheduling and client data record keeping:

The company utilizes a 3rd party vendor for appointment booking where they track the appointments history and generate a new schedule for appointments every week.

Payment Processing:

The company uses an old school method of payment processing as they are only taking cash payments, they have not introduced any card or contactless

payment methods. The use of an ATM machine in the barber shop facilitates this method.

2. Marketing and Promotion:

The company promotes its business using social media marketing throughout instagram and facebook, their instagram page grosses around 5.5k followers and counting. They attract various clientele from mouth to mouth marketing, community referrals, and instagram posts marketing.

Initial Discussion:

Approached the business and discussed with Moe the spearhead in this company, Moe was genuinely excited as he is facing many difficulties in his business. Lacking the experience as a first time business owner. Moe confirmed his dedication and invited us to look at the barber shop on different occasions with different members from the consulting team present. The owners expressed genuine interest in the project and promised dedication throughout the project scope. They believe they would benefit from our findings and apply the improvements to their process as they grow their business.

Team size:

2 owners and 4 employees. A team of 6 barbers jointly working the space.

Employees are working on a commission per cut basis.

Competitors:

Too many to list, the environment is too dense and very competitive in the area and in the men's barbershop space.

Appendix E

Interview 1

Wednesday January 24 2024

**Location : Number One barbershop, 1228 Mackay St, Montreal,
Quebec H3G 2H4**

Interviewed the owner Mohammad Zogheib.

Interviewers : Robert, George , Wassim

**Objective: Gain solid understanding of the Context Level and Level 1
(subprocesses)**

Overview Questions:

Q: For how long were you operating? (General knowledge)

A: Since January 1st 2023

Q: What does the day in your work life look like?

A: Every day is different, depending if busy or not, no specific routine. There are days that are “bad” and some that are good and busy. Depends on the day.

Q: What is something you pride yourself in your business?

A: “That we are number one”

Q: What one thing about your business you WON’T change?

A: The price will not change, even though the students want to. He is aware of the service that he is providing. He gives more time, more attention, consultation about the hair etc More professional compared to other barbers, so he thinks it’s right to have these prices.

Q: Can you describe the main services offered by your barbershop?

A: Number One Barbershop in Downtown Montreal offers a range of grooming services in a relaxing and stylish atmosphere. Their services include professional haircuts (\$33), children's haircuts for those 13 and below (\$23), long hair haircuts (\$37), combined haircut and beard grooming (\$56), beard grooming alone (\$33), and a full set service that includes a haircut, beard trim, and a face mask treatment (\$65). The shop provides experienced stylists to cater to various hair and beard grooming needs.

Notes: Elaborate on the customer segment, is it men only?

Miguel does women's hair cuts sometimes but very rarely, but is open to doing women in the future, exploring the option of expanding and doing a women's section (hair,nails...) in the long term.

Customer Interactions:

Q: What is the primary way of scheduling appointments for customers?

A: Website mostly, including new people. 3-4 per day walk in, not all the time they get served. They get phone calls, mostly to ask about the price. Haircut price is fine to them, but haircut + beard is a bit too high in the customer's opinion. Haircuts and beard service is expensive because of the length and depth of the service (steam machine...)

Q: Do you have any cancellation policies?

A: 2 hours before the appointment. Around 3-4 cancellations without notice per week.

Q: How do you record and track service history?

A: They have the data of the clients that come in through Setmore. Even if they walk in they add manually to the database.

Q: Do you have a receptionist? If not, what method are you using?

A: They always have somebody sitting since 1 barber is extra, so there is always someone. If someone walk in, the barber that will cut depends on who's turn it is

Employee Interactions:

Q: How many employees do you have and what are their roles?

A: 5 barbers.

Q: How are tasks and responsibilities distributed among your staff?

A: Masoud and Mo clean the whole shop once a week, the barbers clean their station between every client + disinfect their tools. At the end of the day, they clean mirror and their space.

Q: Do you have any systems in place for tracking employee hours and performance?

A: Setmore

Q: What is the payment structure for the employees?

A: They are paid in Cash or interac, 50/50 depends on the barber. Miguel 60/40

Q: How do you manage the allocation of clients to barbers (assuming it is a new customer)?

A: Rotational

Q: Do contractors do walk-ins or only scheduled appointments?

A: Both, if a customer walks in, depends on the turn.

Inventory Management:

Q: What kind of supplies do you need for your operations?

A: Gel, blades, wax, wax to remove hair, every month resupply. He has products on display but he's Planning on replacing these products since he didn't like them.

Q: What is the process for ordering and receiving new supplies; Who is responsible for it?

A: Every month, Mo does it

Financial Transactions:

Q: Can you describe the process for billing and payment?

A: People use ATM, he discounts the commission from ATM, say i need to pay 64, I can withdraw 60 from ATM plus the commission, he will accept 60\$

Q: How do you track and manage business income and expenses?

A: He and Masoud go over the earnings every week and pay the salaries to the barbers and keep the rest to see how much will go to rent, electricity, phone...

Q: Where did you get the ATM from and the commission distribution?

A: he rents the ATM machine, the bank takes all the commission since it's cheaper $2.99/3.49$. He didn't want to earn commission since it would be more expensive for clients.

Technology & Software Systems

Q: What kind of technology or software do you currently use in your operations?

A: only Setmore

Q: Are there any manual processes that you think could be improved with technology?

A: No, he used to write everyday earning per barber and tips by excel, he stopped because it's too complicated. Not 100% accurate because of cancellation on set more

Q: Who is responsible for managing the IT side of the business?

A: One of the student barbers and for Google he has a Lebanese guy with a social media company for ads etc.

Business Challenges:

Q: What are the most significant challenges you face in managing your barbershop?

A: getting new clients for the barbers, getting enough clients for every barber, difficult because more pricey (for students) compared to other barbershops

Q: Are there any recurring issues in your day-to-day operations?

A: He mentioned the blocked road due to construction, his barbershop is hidden

Q: Have you taken any actions to try to solve these issues?

A: no

Additional information

Used to do 15% for students but barbers don't want anymore.

Used to accept interacts and debit but they used to charge fees. At the end of the day barbers lose. When he did 15%, he would earn less by 7.5% and barbers would earn less by 7.5%.

He can't reduce ONLY HIS earnings by 15% since he pays all the bills from his own pocket.

Planning on doing 15%-20% off for 2 specific barbers that have less experience since they don't have enough clients.

He uses Instagram google + website to promote this discount.

Other barbers don't have to reduce prices since they have their clients and they're happy with them.

Interview 2

Thursday March 7 2024

**Location : Number One barbershop, 1228 Mackay St, Montreal,
Quebec H3G 2H4**

Interviewed the owner Mohammad Zogheib.

Interviewers : Nader, George and Jasmine

Objective: Understand the different processes of the system

Customer Interactions: Walk-IN CUSTOMERS

Q: What are the communication channels post booking(Reminders, Reviews)? How do you gather feedback from clients regarding their service experience, and how is this feedback used to improve service delivery and customer satisfaction?

A: Email is set automatically 24 hours to the client the paid version will have text message the barber get 15 min before the appointment

A: He doesn't have a form but he asks the client and has a guarantee service 24 hours after the haircut to make fixes. Clients come back walking any time.

Q: When a client finishes his appointment, do you book the next appointment on the spot? If no, Why?

A: The type of clients don't do that. Some clients do that. Because they have a typical schedule. He leaves for the discretion of the customer. He doesn't ask all clients but only recurring customers.

Risk of booking an appointment for them and then not showing up.

Q: Talk to us more about the rotation system? Is there a data store? How important is rotation to you? What do you do when a walk-in comes in and the barber who's turn take the walk-in is busy?

A: Owners don't take walkins unless no one is available, they try to push it to the new guys. The barbers/ owner keep track of the rotation,

Q: Do you ask new customers how they found out about the barbershop? If yes, what has been the most common answer?

A: Google Reviews, I saw that you were close and had good reviews, Word of mouth from friends is second. (Instagram is not active, he's concentrating on google). Someone else is doing the google marketing \$300 (PPC) a month. Pay per click.

Sales/ Service :

Q: Why is there a centralised payment system (Receptionist collects the payment)?

Q: Customer pays the barber, so how do you keep track of all the cash in-flow?

Q: Does each barber keep track or invoices of their appointments?

A: It used to be done by the owner (lack of tips) now he leaves it one for one. Each barber gets the money and puts it in the front desk.. each barber has their own book and writes down the service, the tip and the type of haircut and the amount paid. The book is Barber takes the tip at the end of the day and the commission every 2 weeks.

Q: Do you know how many services you provide monthly?

A: We can check the number on setmore.

Q: Do you provide receipts to clients? If not: why not? And how do you reconcile?

A: Nobody asks but written receipts are given to the client if they ask otherwise no receipts are provided.

SETMORE:

Q: Who has access to setmore?

A: Moe has admin access and the barber has different access. Moe has the info for all appointments and can modify info prices and times. Barber has only view and can modify their own schedule, they block out time and view their daily appointment.

Q: Who is responsible for adding walk-ins to setmore?(Barber, Owner, Receptionist) Is the system currently working?

A: Anyone who is available can add walk-in clients to the central laptop in the front desk on setmore.

Q: Are the appointment details for a walk-in customer added to setmore before or after the appointment?

A: Before. They do negotiation.

Q: What statistics does setmore provide?

A: How much money is made. How many appointments we get.

Q: What are the functionalities that you are currently missing on Setmore that you would like to have? What are you looking forward to getting with the premium version?

A: many users and text reminders.

Q: Does setmore provide email blast functionality?

A: yes.

Inventory:

Q: Walk us through the process of ordering supplies (Online/Phone Call)? Is there a single vendor that has all the required supplies? Who are the vendors?

A: 2 vendors. You do it with the phone with one guy or in person. If you're busy you buy it online from vancouver. Moe and Massoud do the inventory.

Q: How do you keep track of inventory? What metrics do you use to measure inventory needs and refills and restock of supplies? Have there been instances where inefficiencies in this area affected service delivery?

A: He checks his inventory in the drawers and on average he places orders once a month.

Q: How are you ordering them? Is there a centralised system?

A:

Q: Do you have one supplier or many?

A: 2 suppliers, one in Montreal and one in Vancouver.

Q: Let's say you're on vacation, is it easy for someone else to order the products needed for inventory?

A: Massoud and Moe coordinate vacation for responsibilities and inventory ordering.

Q: What are some challenges you face when working with vendors?

A: Pretty good, no issues there.

Interview 3

Thursday March 14 2024

Location : Number One barbershop, 1228 Mackay St, Montreal, Quebec H3G 2H4

Interviewed the owner Mohammad Zogheib.

Interviewers : Nader, George and Ryan

Objective: Further understand the system

Booking Subsystem: customers are now calling on the phone.

Q: Simulation on Setmore when a customer is new/out of the city (Data flow, 3 examples; existing client W/I, New client W/I, outside of city W/I).

A: Case: New Customer: Name, email(optional), phone number

Case: New Customer No Account: just mark as a walk in, add the service type

Q: What do you do on Setmore after the service has been completed, do you have the option? (Show, No Show, update of service)

A: Update no show => remove completely because it keeps the price, so it seems like the customer have paid => messes up the calculations

Q: Show us what report Setmore gives you? (Potential remove the books)

A: Number Projected revenue (booked not paid), confirmed revenue (booked and paid) , estimated the total (projected + confirmed).

Q: What if barbers do not have any scheduled appointments and they do not come to the shop? Simulating short staffed scenarios with no available staff. Is there a minimum number of hours a barber has to be at work per day? Per week?

A: Moe blocks the time for the barber (some barbers like Miguel can block their own schedule) Moe also can set the settings of who can change their own schedule.

Barber has to be in from 12 to 6-7ish, prefers if they are here but in some cases they can leave early (has resulted in lost sales) Minimum 6 hours. Based on the experience, he thinks free schedule works better than micromanagement

Q: How soon before the appointment can a customer book an appointment? (Barber is still at home and a client books the 1st hour).

A: Can be booked up to 15 minutes before the start time.

Q: Do you get a booking notification a soon as the appt is booked (process trigger) or 15 min before the appt (time trigger)

A: Both right away and 15 min before start time.

Q: When a client cancels an appointment on setmore do you (owner/barber) get a notification?

A: Right away notification for changes and cancellation.

Q: When a client walks in and their info is recorded in setmore, does the system send them an immediate email? [Jump over if answered]

A: Yes, if account is created, otherwise no (email or phone added)

Inventory Subsystem:

Q: When you order inventory, do you get confirmation from suppliers (both) If you don't, do you write down that you placed an order?

A: Montreal: Goes in person to Acadie. Does everything in person. Pays + provides receipt

Vancouver: does online, gets all the confirmation emails.

The supplier in Montreal sometimes gives sales if he buys in bulk in Montreal.

Q: Do you write down what you have received from a shipment somewhere?

A: He checks the emails. (DS to be added??)

Q: Do you keep a written track of the inventory on a regular basis (Daily weekly etc) ? [Management & Ordering Process]

A: No, he believes that he doesn't need to. After one week he starts checking. He doesn't check each barber's use. (Entity Trigger)

Q: When you check the drawer, how do you decide that what you have is enough or you need to order more? How do you decide how much Q you need to order?

A: It depends on the level of the product of each category. Say it's expected to have 10 blades at all times, so he would order the missing amount. $3+7=10$

Q: For the montreal vendor

Does it ever happen to you run out of operational products?

A: Not usually, maybe only have product for one day and need to replenish for the next day.

Q: Do you distribute supplies between barbers or is it free use/grab?

A: Provides all the supplies to the chairs, some are common like wax, gels. He re-supplies the chairs himself once in a while.

Q: Do you keep track of who uses what?

A: No, he doesn't care how much you use. To get something, a barber comes to Moe, to ask him directly: "I need this and this", unless it's a product for a common use.

Payment Subsystem:

Q: If the client comes in for a haircut but then on the chair asks for a haircut and beard, do you update it on the new service on Setmore? If not how do you keep track of quote changes?

A: Yes, refer to questions above

Q: Can the barber update the service himself on the laptop or you have to do it for everyone?

A: Barbers can do that, and it's expected of them.

Q: Do barbers provide discounts at their own discretion?

A: Not possible.

Q: Are the prices listed in the booking schedule ? (dates store D3 Booking details)

A: Yes, the service is listed in the appointment and the service has a price.

Interview 4

THURSDAY 21ST MARCH 2024

location : Number One barbershop, 1228 Mackay St, Montreal, Quebec H3G 2H4

Interviewed the owner Mohammad Zogheib.

Interviewers : Ryan, George , Wassim

Objective: Further understand the system

The purpose of interview 4 is to assign the correct information to the Missing sub process in the DFD and narrative

1)When a walk-in does not want to create an account; you create a service appointment, during creating you need to reference a user; you choose walk-in (a dummy account). The question is: is it a single dummy account that you reference every time OR you have many dummy accounts?

Many dummy accounts need to be created and added because he did not organise from the beginning and did not use a single dummy account to keep track of data. When he doesn't feel like it he does not add it.

2)What is the purpose of the individual barber books, if everything is stored in setmore? Are the tips the main reason why the books are kept, because setmore does not allow to input this information?

He does not count on setmore, and this process lets him keep visual records.

3)Is there a cash registry (Is revenue centralized or decentralized between the barber books)?

The cash registry is a big pouch where they keep the money

4)Are tips shared between all, or added separately in each barber book/box ? Where is the book and can we have a better look at the process ?

Separately for each barber, the cash commission+tips are left at counter

5)Do you ever call the Montreal supplier before driving to Acadia to ensure that they are stocked?

No he does not, he drives directly when he encompasses many missing items

7) Do you have problems with tracking inventory levels, leading to potential challenges in identifying theft or loss ?

He feels there is no threat because he gives the face of authority

8)When a customer is a no show, do you delete it right away, or mark it no show and then

delete it? Do barber have permission to delete or they mark it no show and then

Delete right away, so it does not messes with booking on setmore

9)When a customer requests an appointment through social media, is the appointment done through the application or do you send them a link to setmore?

Manually the owner does it and adds it himself

Observation Document:

Observation of Number One Barbershop Processes

- Through our three main Sub-processes, we want to observe how the data flows through the system of the business and is being delivered from 3 perspectives:
 1. Customers
 2. Barbers (Employees)
 3. Owner
- When an Observation is marked as “**No**”, it means did not get the chance to observe the detail needed as it did not take place during our observation sessions.
- Triangulation is a vital factor we focused on in our observation. It involves using multiple sources, methods, or approaches to study the same phenomenon. The aim is to cross-validate the results from different perspectives to ensure that conclusions are robust and accurate.

- Regarding the Customer's perspectives, in addition to observing what goes on in the business with regular customers, 2 team members from our team volunteered to get a service done at "Number One Barbershop" to properly grasp the client journey and better understand it.

Booking and Scheduling Sub-process

Observation	Observation Detail	Observed	Comments
Online Booking	Smooth Booking	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input type="checkbox"/> No	Observed customer booking hair cut on the Number One barbershop website
	Check In	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input type="checkbox"/> No	Customer walks in and is greeted by barber, asked to wait until the barber ready's station.
	Booking Confirmation	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input type="checkbox"/> No	Verified confirmation of booking, as the client receives email.
	Cancelation Process	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input type="checkbox"/> No	Client booked wrong booking and canceled on website. Email sent about cancelation to both parties. (barbers and customers)
Walk-In Booking	Appointment request	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input type="checkbox"/> No	Walk in customer is greeted by owner and is asked if he is a new customer.
	Detail recording	<input checked="" type="checkbox"/> Yes	Customer did not want to create

		<input type="checkbox"/> Observed <input type="checkbox"/> Differently <input type="checkbox"/> No	account, the owner assigns customer to barber and creates dummy account.
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Additional Notes:

The following process was observed on Thursday 21st March 2024.

For the purpose of the observation, we have observed a fellow teammate go through the process of booking, payment and having their hair cut at Number One Barbershop.

After discussing with the owner and acquiring their acceptance towards conducting an observation and walkthrough of the process, we have initiated the observation and captured the details concerning the booking subprocess.

Inventory Management Sub-Process

Additional Notes:

Observation	Observation Detail	Observed	Comments
Inventory Review	Inventory Storage	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed <input type="checkbox"/> Differently <input type="checkbox"/> No	The owner guides us through he inventories closet that is badly organised.
	Inventory Assessment	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed <input type="checkbox"/> Differently <input type="checkbox"/> No	The owner visually reviews inventory and conducts assessment.
	Inventory Distribution	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed <input type="checkbox"/> Differently <input type="checkbox"/> No	The distribution of Inventory in the shop is conducted by adding products on barber stations.

Inventory Ordering	Contacting Montreal Vendor	<input type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input checked="" type="checkbox"/> No	We did not observe this process as the barber did not have low stock to reorder.
	Contacting Vancouver Vendor	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input type="checkbox"/> No	The owner logs in on website and reviews product that needs to be ordered.
	Alternative Vendor	<input type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input checked="" type="checkbox"/> No	We did not observe this process as the barber did not have low stock to reorder.
Receiving Goods	Order Collection	<input type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input checked="" type="checkbox"/> No	The collection of the order was not observed as the order requires 2 business days to be shipped
	Order Revision	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input checked="" type="checkbox"/> No	The revision is not possible because the product is not yet received.
	Inventory Stashing	<input type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input checked="" type="checkbox"/> No	The stashing is not reviewed as product is yet to be received.
Order Purchase	Payment Of Order	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input type="checkbox"/> No	The payment of the order is done online using a credit card on the website.

The following process was observed on Thursday 21st March 2024.

For the purpose of the observation, we have observed the owner go through the process of inventory management.

After discussing with the owner and acquiring their acceptance towards conducting an observation and walkthrough of the process, we have initiated the observation and captured the details concerning the inventory subprocess.

Payment & Commission Sub-process

Observation	Observation Detail	Observed	Comments
Payment Submission	ATM Withdraw	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input type="checkbox"/> No	The customer withdraws the money needed for payment from ATM in the barbershop.
	Paying for service	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input type="checkbox"/> No	The customer either gives the money to barber or owner. In our observation the customer gave the money to the owner, on a second occurrence a different customer gave the money to the barber. We have identified it is based on the familiarity of the customer with the process. Certain confusion is identified.
	Providing Invoice	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input type="checkbox"/> No	The barber or owner do not provide invoice for their cash payments, only provides when the

			customer asked. The invoice was handwritten on sample invoice sheets papers.
	Providing Change	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input type="checkbox"/> No	The barber gives changed taken from a money bag at the casher and gives to customer.
Payment Collection	Collection by responsible barber	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input type="checkbox"/> No	The barber collected the payment and put it on the desk so that the owner takes the money when he sits at the desk.
	Editing Setmore for editing service	<input type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input checked="" type="checkbox"/> No	When observing a customer did not ask for additional service.
	Recording Payment	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Observed Differently <input type="checkbox"/> No	The recording of the payment was said to be done by the barber, because they were busy the owner wrote it on the individual barber pages.
Paying Employee	Daily Tip Payments	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input type="checkbox"/> No	In the end of the day the owner calls the barbers, reads the amount of tips they have gotten and takes the money out of a cash bag and gives it to barbers.
	Bi-Weekly Commission Payment	<input type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input checked="" type="checkbox"/> No	Did not observe this process as the bi weekly payments

			were initiated the earlier week.
	Calculating Commission and Tips Payment	<input type="checkbox"/> Yes <input type="checkbox"/> Observed Differently <input checked="" type="checkbox"/> No	Did not observe this process as the weekly payments were initiated the earlier week.

Additional Notes:

The following process was observed on Thursday 21st March 2024.

For the purpose of the observation, we have observed the owner go through the process of payments and commissions.

After discussing with the owner and acquiring their acceptance towards conducting an observation and walkthrough of the process, we have initiated the observation and captured the details concerning the payment and commission sub process that is initiated by the owner and barbers.

Walkthrough:



Market Research:



Lakshya

Active 14h ago

Staff Working Hours, Breaks and Time Off



More in the Help Center

Hello, Thank you for contacting Setmore. This is Lakshya.

In this case, you can simply add the name of the client and save it.



But, at least a name would be required, otherwise, unfortunately, the appointment cannot be booked.

March 18

Write a reply...





Prem
Active

Can I generate reports by Label?

Unfortunately, we do not have the option to generate by label.



But you can download the report in Excel format and set the filter according to the label.



but if the no-label is set to no-show would it deduct the price out the weekly total or it will still add the price to total?

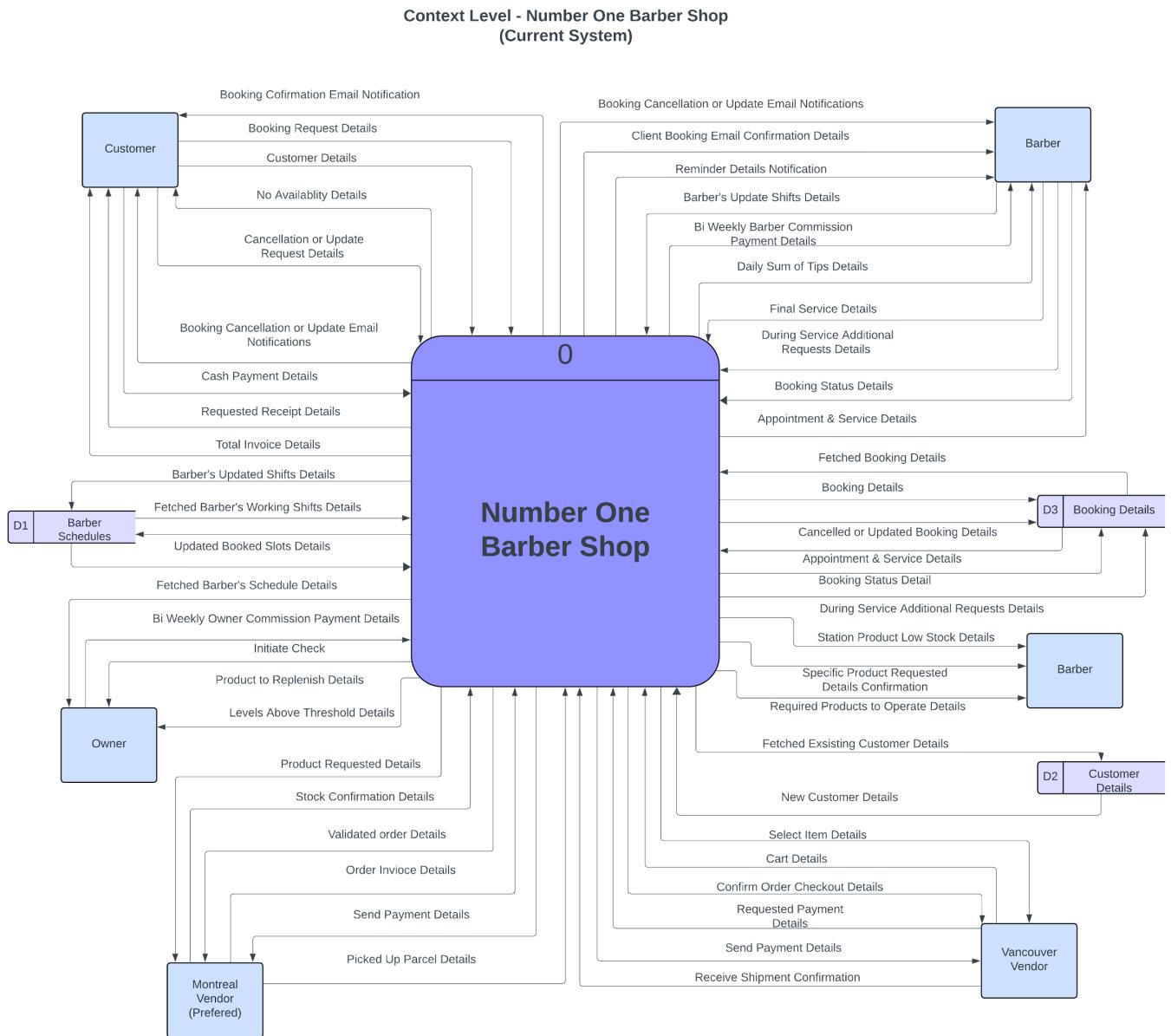
I will also go ahead and raise a feature request for this.

Write a reply...

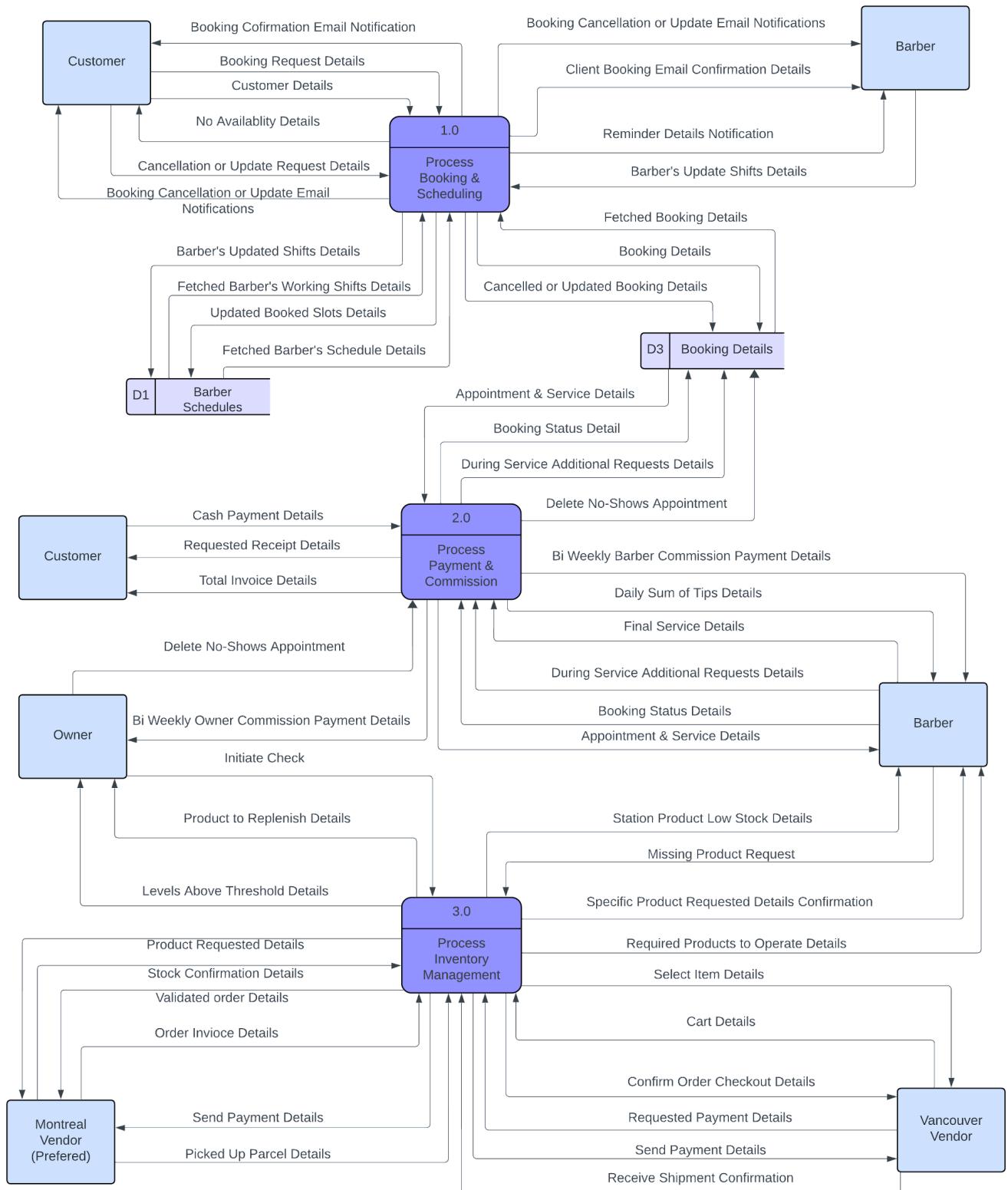
GIF ☺ 🪟

Appendix F

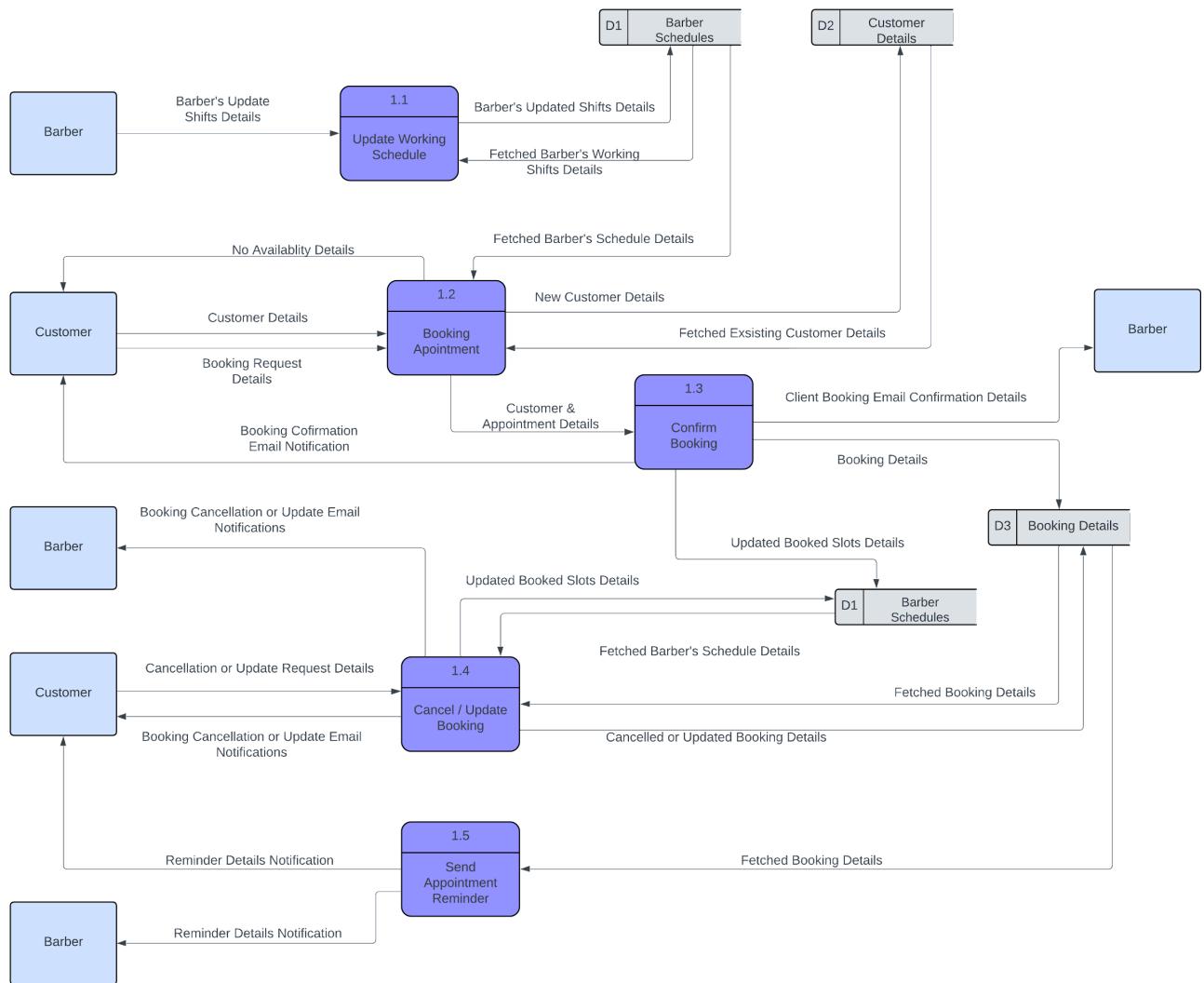
Current System DFD



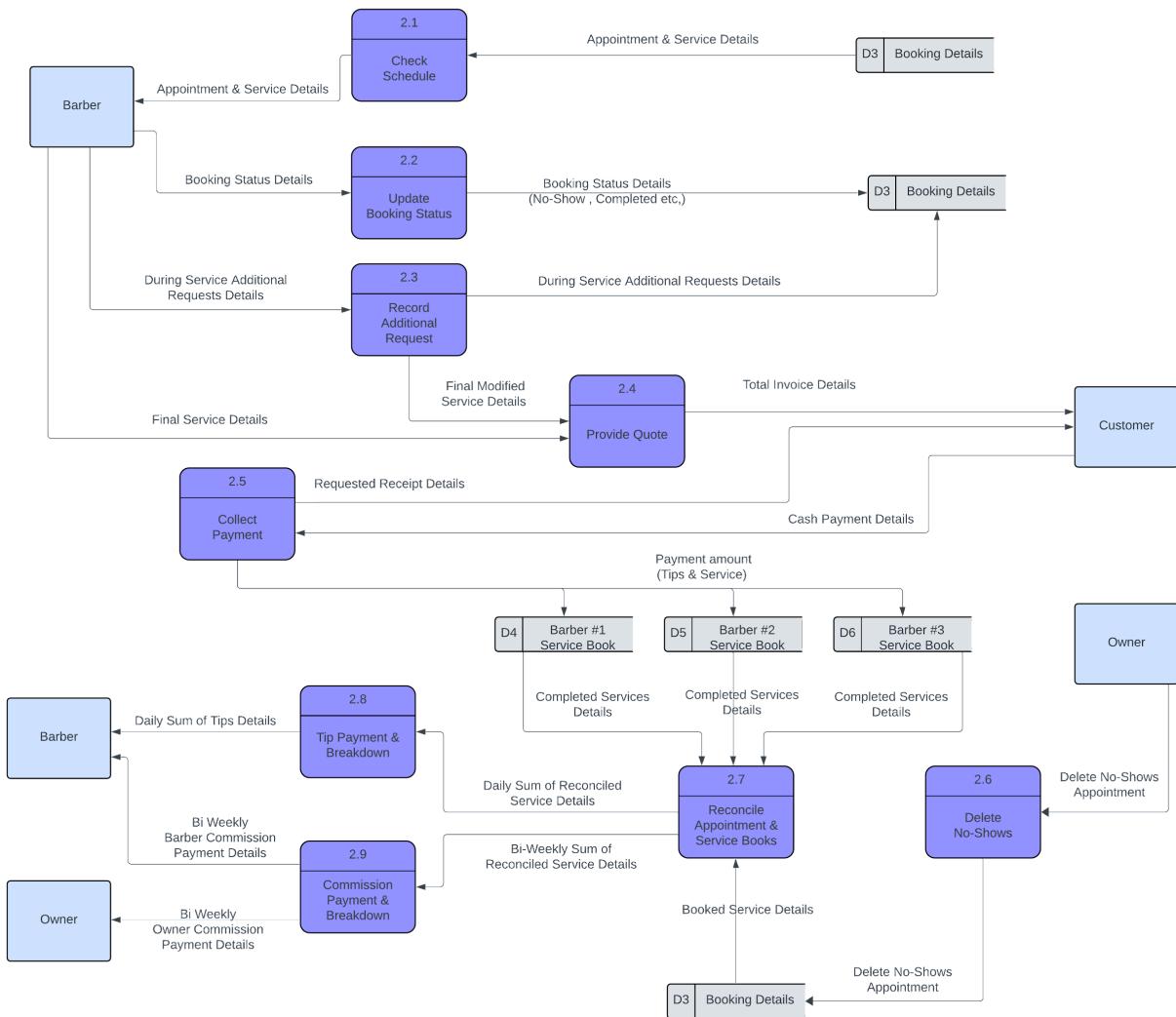
Level 0 - Number One Barber Shop (Current System)



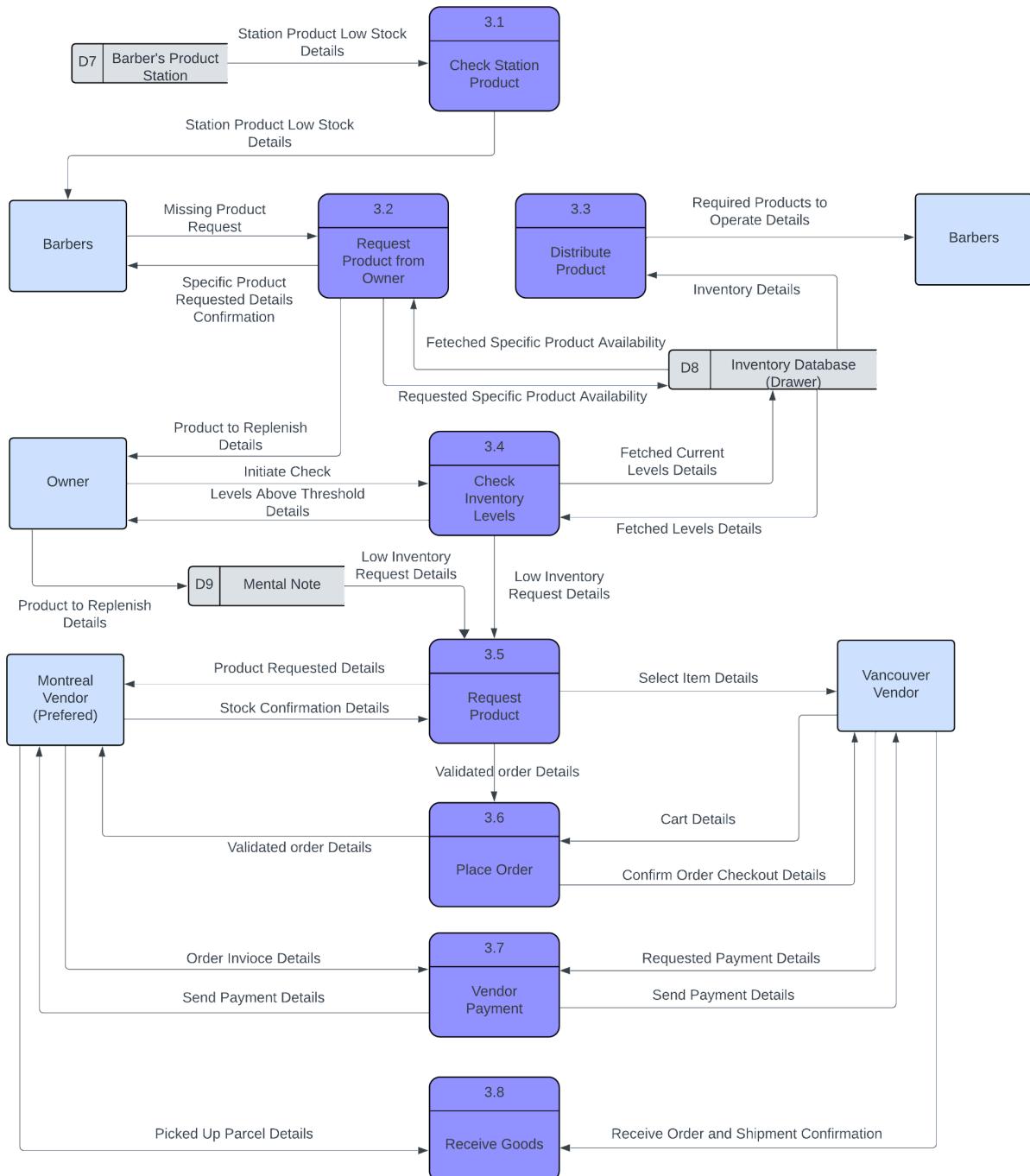
**Level 1 - Booking & Scheduling
(Current System)**

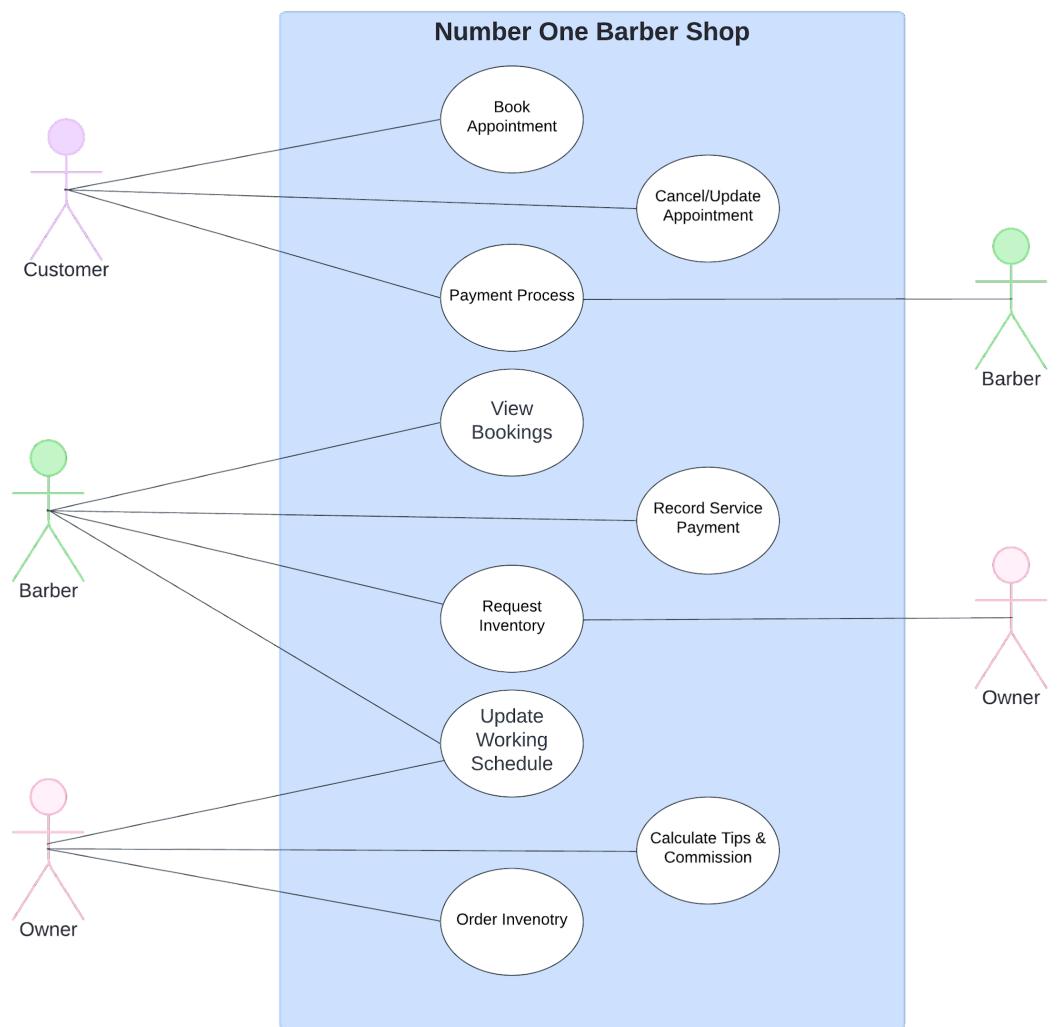


**Level 1 - Payment & Commission
(Current System)**



Level 1 - Inventory Management (Current System)





Appendix G

PIECES Framework: Number One Barbershop

Project phase 1: Fact finding (identify the problems)

<u>Booking & Scheduling Subsystem</u>
<u>Problems</u>
The barbershop does not have leverage to enforce cancellation policies when a customer does not show for an appointment.
Absence of phone authentication process in Setmore poses a security risk making Number One Barbershop vulnerable to bot attacks creating fictional bookings.
When a new walk-in comes in and does not want to create an account; a <u>new</u> dummy account is referenced, causing data redundancy and cluttering the database.
Barbers must go through the owner to update their working schedule adding additional steps to the process.

<u>Payment & Commission Subsystem</u>
<u>Problems</u>
Barber accommodates customers who are forced to withdraw from the ATM by reducing the service fee from their total quoted amount, leading to revenue reduction.
Limited payment options (cash only) causing a decrease in customer satisfaction and retention as well as the adoption of new customers.
Sales & Tips are recorded separately under the Daily Sum of Sales & Tips in Barber's Individual

<u>Inventory Management Subsystem</u>
Problems
Absence of an up to date inventory record leading to un-captured data.
Absence of tracking inventory levels potentially leading to abuse/theft.
Absence of tracking stock levels, and missing regular reorder points leading to extreme shortage/surplus in stock.
Not calling before driving to the Montreal vendor at Acadie will waste time, and resources.
Supply invoices are not recorded in a system leading to revenue loss.

Project phase 2: Preparation for analysis (map the problems to PIECES categories)

<u>Booking & Scheduling Subsystem</u>	P	I	E	C	E	S
Problems						
The barbershop does not have leverage to enforce late cancellations and missed appointment policies when a customer does not show for an appointment. .		X	X	X		X
Absence of phone authentication process in Setmore poses a security risk making Number One Barbershop vulnerable to bot attacks creating fictional bookings.		X	X	X		X
When a new walk-in comes in and does not want to create an account; a <u>new</u> dummy account is referenced, causing data redundancy and cluttering the database.	X	X			X	X
Barbers must go through the owner to update their working schedule adding additional steps to the process.	X	X		X		X

<u>Inventory Management Subsystem</u>	P	I	E	C	E	S
Problems						
Absence of an up to date inventory record leading to un-captured data.		X	X			
Absence of tracking inventory levels potentially leading to abuse/theft.		X	X	X		
Absence of tracking stock levels, and missing regular reorder points leading to extreme shortage/surplus in stock.		X	X	X	X	X
Not calling before driving to the Montreal vendor at Acadie will waste time, and resources.	X		X		X	
Supply invoices are not recorded in a system leading to revenue loss.		X	X	X		

Payment & Commission Subsystem	P	I	E	C	E	S
Problems						
Barber accommodates customers who are forced to withdraw from the ATM by reducing the service fee from their total quoted amount, leading to revenue reduction.			X	X		X
Limited payment options (cash only) causing a decrease in customer satisfaction and retention as well as the adoption of new customers.			X	X		X
Sales & Tips are recorded separately under the Daily Sum of Sales & Tips in Barber's Individual Book and are not integrated into the primary booking system (Setmore), making the process of sales reconciliation and tips allocation prone to error.	X	X		X	X	
Manual reconciliation for Tips & Commissions between the Barber's Individual Book and the Setmore on a daily basis, is inefficient and prone to error in daily calculation of tip distribution and bi-weekly distribution of commissions.	X	X	X	X	X	X
The process for issuing receipts upon customer request is provided manually and is not archived.		X		X		X
Sales and tips are recorded separately by each barber providing the service in their <u>own</u> barber book.	X	X		X	X	
Barber deletes no-call no-show at the end of the day when he reconciles the tips and the commission.	X	X		X	X	
No-show label for absent customers adds the revenue to the "Confirmed Revenue" in Setmore software causing inflated sales.		X	X	X	X	

Booking & Scheduling Subsystem

P # & DS #	Problems	P	I	E	C	E	S	Underlying Problem Codes
P1.2	The barbershop does not have leverage to enforce late cancellations and missed appointment policies when a customer does not show for an appointment.		X	X	X		X	A
P1.2	Absence of phone authentication process in Setmore poses a security risk making Number One Barbershop vulnerable to bot attacks creating fictional bookings.		X	X	X		X	A
P1.2, D2	When a new walk-in comes in and does not want to create an account; a <u>new</u> dummy account is referenced, causing data redundancy and cluttering the database.	X	X			X	X	F
P1.1	Barbers must go through the owner to update their working schedule adding additional steps to the process.	X	X		X		X	D

Project phase 3: Data analysis (identify the underlying problems and map them to the Ps & Ds associated with each problem)

symptoms:

- Client's can't pay with digital payment systems, this causes inconvenience and possibly turns away potential customers
- Clients sometimes pay the barber or the receptionist or the owner, how do they keep track when they need to reconcile for commission.
- Some information of clients walked in are written down or imputed into the system or are updated after the appointment.

Booking & Scheduling Subsystem

P # & DS #	Problems	P	I	E	C	E	S	Underlying Problem Codes
P1.2	The barbershop does not have leverage to enforce late cancellations and missed appointment policies when a customer does not show for an appointment.		X	X	X		X	A
P1.2	Absence of phone authentication process in Setmore poses a security risk making Number One Barbershop vulnerable to bot attacks creating fictional bookings.		X	X	X		X	A
P1.2, D2	When a new walk-in comes in and does not want to create an account; a <u>new</u> dummy account is referenced, causing data redundancy and cluttering the database.	X	X			X	X	F
P1.1	Barbers must go through the owner to update their working schedule adding additional steps to the process.	X	X		X		X	D

Payment & Commission Subsystem

P # & DS #	Problems	P	I	E	C	E	S	Underlying Problem Codes
P2.5	Barber accommodates customers who are forced to withdraw from the ATM by reducing the service fee from their total quoted amount, leading to revenue reduction.			X	X		X	E, B
P2.5	Limited payment options (cash only) causing a decrease in customer satisfaction and retention as well as the adoption of new customers.			X	X		X	E
D4, D5, D6	Sales & Tips are recorded separately under the Daily Sum of Sales & Tips in Barber's Individual Book and are not integrated into the primary booking system (Setmore),	X	X		X	X		B, A, C, F

	making the process of sales reconciliation and tips allocation prone to error.						
P2.7, D3, D4, D5, D6	Manual reconciliation for Tips & Commissions between the Barber's Individual Book and the Setmore on a daily basis, is inefficient and prone to error in daily calculation of tip distribution and bi-weekly distribution of commissions.	X	X	X	X	X	B, A, C, F
P2.5	The process for issuing receipts upon customer request is provided manually and is not archived.		X		X		X
D4, D5, D6	Sales and tips are recorded separately by each barber providing the service in their <u>own</u> barber book.	X	X		X	X	B, A, C, F
P2.6, D3	Barber deletes no-call no-show at the end of the day when he reconciles the tips and the commission.	X	X		X	X	A, B, F
P 2.2, D3	No-show label for absent customers adds the revenue to the "Confirmed Revenue" in Setmore software causing inflated sales.		X	X	X	X	B, A, F

Inventory Management Subsystem

P # & DS #	Problems	P	I	E	C	E	S	Underlying Problem Codes
D9, D8	Absence of an up to date inventory record leading to un-captured data.		X	X				B, A, C, D
P3.2, P3.3, D7	Absence of tracking inventory levels potentially leading to abuse/theft.		X	X	X			B, A, C, D
P3.3, P3.2, D8	Absence of tracking stock levels, and missing regular reorder points leading to extreme shortage/surplus in stock.		X	X	X	X	X	B, A, C, D
P3.5	Not calling before driving to the Montreal vendor at Acadie will waste time, and resources.	X		X		X		D
P3.8	Supply invoices are not recorded in a system leading to revenue loss.		X	X	X			C, F

Underlying Problem Codes	Code Descriptions
Lack of control & security of the process and the data.	A
Data is recorded in a fragmented way and not integrated in the system.	B
Data is not accessible and searchable in the system.	C
Data is not efficiently communicated between the system entities	D
System has limited payment options.	E
System limitation forcing data <u>redundancy</u> and anomaly	F

Project Phase 4: Proposed system (List the P#s & D#s associated with each underlying problem in each subsystem)

Underlying Problem Code	From the current system DFD (Subsystem#, P#s, DS#s)	Changes in the proposed system DFD (P#s, D#s in the proposed system DFD)
Booking System		
A	P1.2,	<p>Add a requirement to add credit card information when booking.</p> <p>Update the Cancellation/No-Show policy to inform the customer of a fee charged for missed appointment or appointment cancelled without a sufficient prior notice.</p>
A	P1.2,	<p>Add a requirement to add credit card information when booking.</p>
F	P1.2, D2	<p>Contact Setmore customer support and ask them to modify the Booking Database schedule to allow to have the Foreign Key for the user as null for appointments booked by the administrator of the system. (Barber/Owner)</p>
D	P1.1	<p>Process 1.1 to be replaced.</p> <p>A new process that allows junior barbers to request time off through Setmore by blocking hours in the calendar that needed to be approved or rejected by higher management.</p>
Underlying Problem Code	From the current system DFD (Subsystem#, P#s, DS#s)	Changes in the proposed system DFD (P#s, D#s in the proposed system DFD)
Payment & Commission Subsystem		
E, B	P2.5	<p>Provide to customers more payment options including credit cards, and integrate payment record status into the system.</p>
E	P2.5	<p>Provide to customers more payment options including credit cards.</p>

Underlying Problem Code	From the current system DFD (Subsystem#, P#s, DS#s)	Changes in the proposed system DFD (P#s, D#s in the proposed system DFD)
Booking System		
A	P1.2,	<p>Add a requirement to add credit card information when booking.</p> <p>Update the Cancellation/No-Show policy to inform the customer of a fee charged for missed appointment or appointment cancelled without a sufficient prior notice.</p>
A	P1.2,	<p>Add a requirement to add credit card information when booking.</p>
F	P1.2, D2	<p>Contact Setmore customer support and ask them to modify the Booking Database schedule to allow to have the Foreign Key for the user as null for appointments booked by the administrator of the system. (Barber/Owner)</p>
D	P1.1	<p>Process 1.1 to be replaced.</p> <p>A new process that allows junior barbers to request time off through Setmore by blocking hours in the calendar that needed to be approved or rejected by higher management.</p>
Underlying Problem Code	From the current system DFD (Subsystem#, P#s, DS#s)	Changes in the proposed system DFD (P#s, D#s in the proposed system DFD)
B, A, C, F	D4, D5, D6	<p>Eliminate the physical individual barbers book.</p> <p>Implement an integrated POS environment that would store all the transaction data that will be used for tips and commission calculation.</p>
B, A, C, F	P2.7, D3, D4, D5, D6	<p>Implement an integrated POS environment that would store all the transaction data, that will be used for tips and commission calculation.</p>
B, C	P2.5	<p>Implement an integrated POS environment that would store all the transaction data, that will issue electronic or physical receipts.</p>

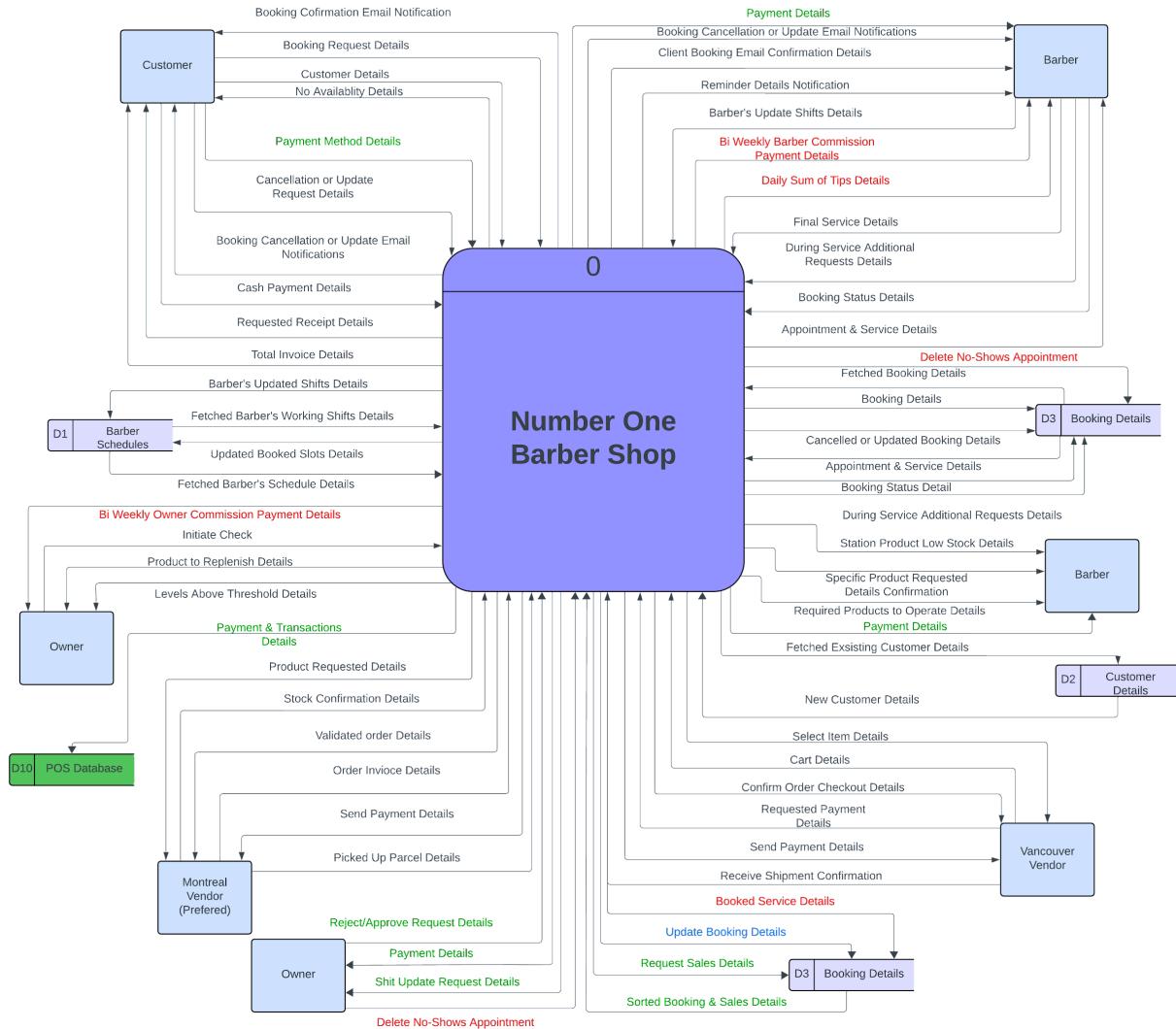
Underlying Problem Code	From the current system DFD (Subsystem#, P#s, DS#s)	Changes in the proposed system DFD (P#s, D#s in the proposed system DFD)
Booking System		
A	P1.2,	<p>Add a requirement to add credit card information when booking.</p> <p>Update the Cancellation/No-Show policy to inform the customer of a fee charged for missed appointment or appointment cancelled without a sufficient prior notice.</p>
A	P1.2,	<p>Add a requirement to add credit card information when booking.</p>
F	P1.2, D2	<p>Contact Setmore customer support and ask them to modify the Booking Database schedule to allow to have the Foreign Key for the user as null for appointments booked by the administrator of the system. (Barber/Owner)</p>
D	P1.1	<p>Process 1.1 to be replaced.</p> <p>A new process that allows junior barbers to request time off through Setmore by blocking hours in the calendar that needed to be approved or rejected by higher management.</p>
Underlying Problem Code	From the current system DFD (Subsystem#, P#s, DS#s)	Changes in the proposed system DFD (P#s, D#s in the proposed system DFD)
B, A, C, F	D4, D5, D6	<p>Eliminate the physical individual barbers book and use integrated systems or devices</p>
A, B, F	P2.6, D3	<p>Eliminate Process 2.6, barbers and owners are not to delete booking records and keep all data stored.</p>
B, A, F	P 2.2, D3	<p>Process 2.2 to be modified: Contact Setmore to ask them to add a proper “No Show” label to that would not count to the “Confirmed Revenue” column.</p>

Inventory Management Subsystem

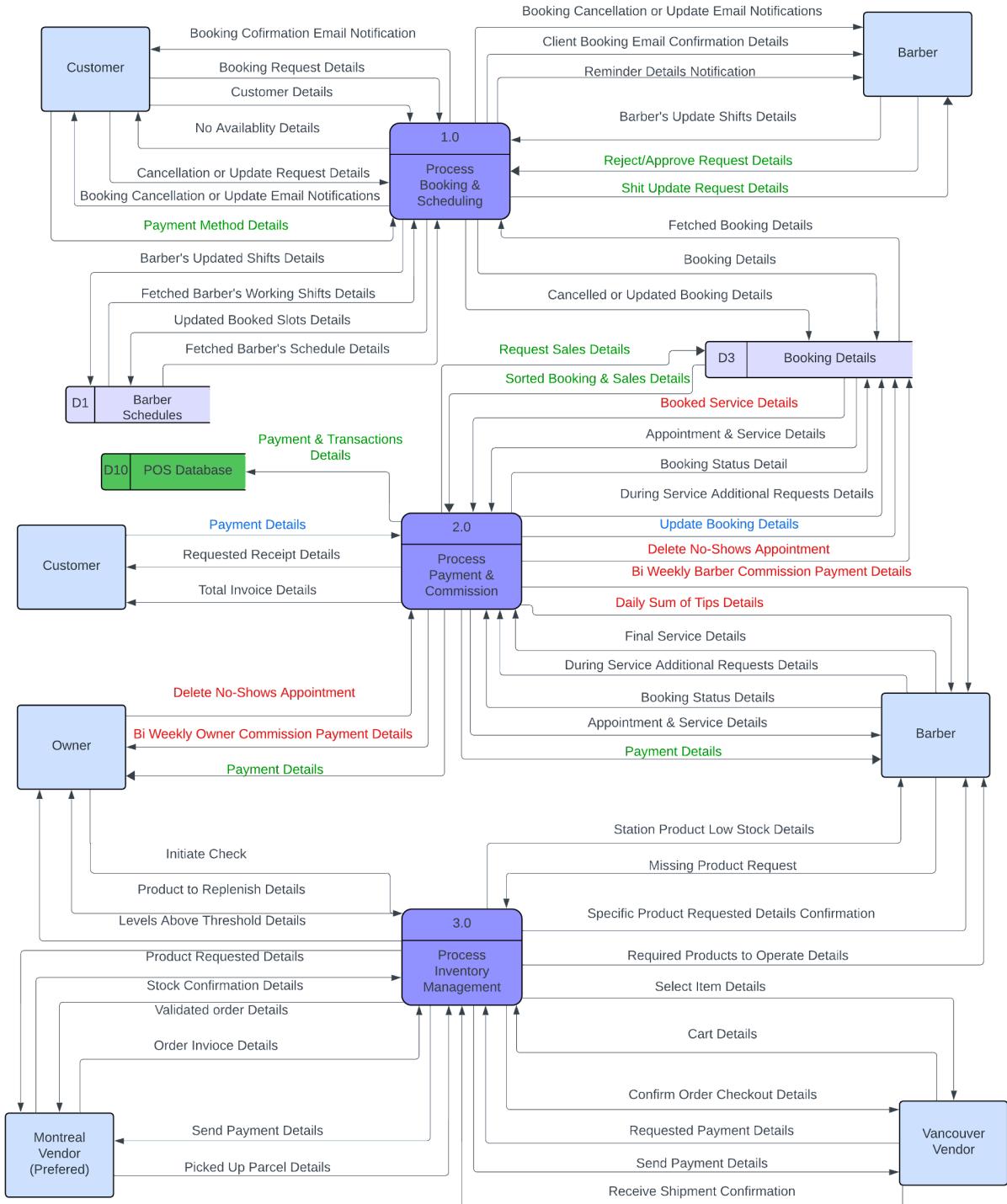
Inventory Management Subsystem		
B, A, C, D	D9, D8	<p>Integrate inventory record system with the current environment that stores inventory levels and supply invoices.</p> <p>Eliminate D8 and D9 with D10 a proper DS for inventory record keeping.</p>
B, A, C, D	P3.2, P3.3, D7	<p>Integrate inventory record system with the current environment that stores inventory levels and supply invoices to be checked on a regular basis to trigger restock requests.</p>
B, A, C, D	P3.3, P3.2, D8	<p>Integrate inventory record system with the current environment that stores inventory levels and supply invoices to be checked on a regular basis to trigger restock requests.</p>
D	P3.5	<p>Owner to call the preferred vendor to check stock status and availability before driving.</p>
C, F	P3.8	<p>Integrate inventory record system with the current environment that stores inventory levels and supply invoices.</p> <p>Add a new DS D11 that will store both invoice and receipts related to inventory.</p>

Appendix H

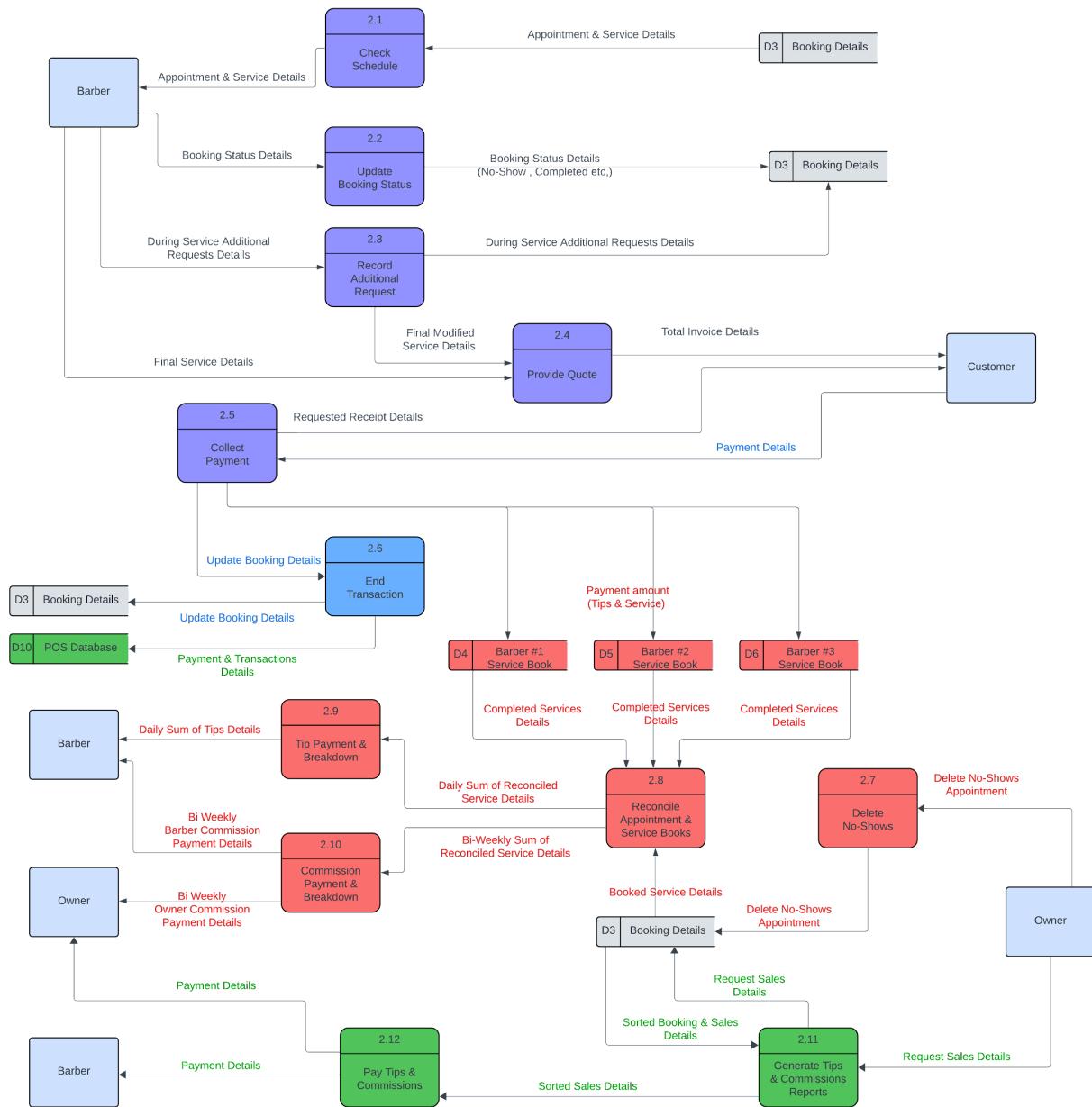
Context Level - Number One Barber Shop
(Proposed System)



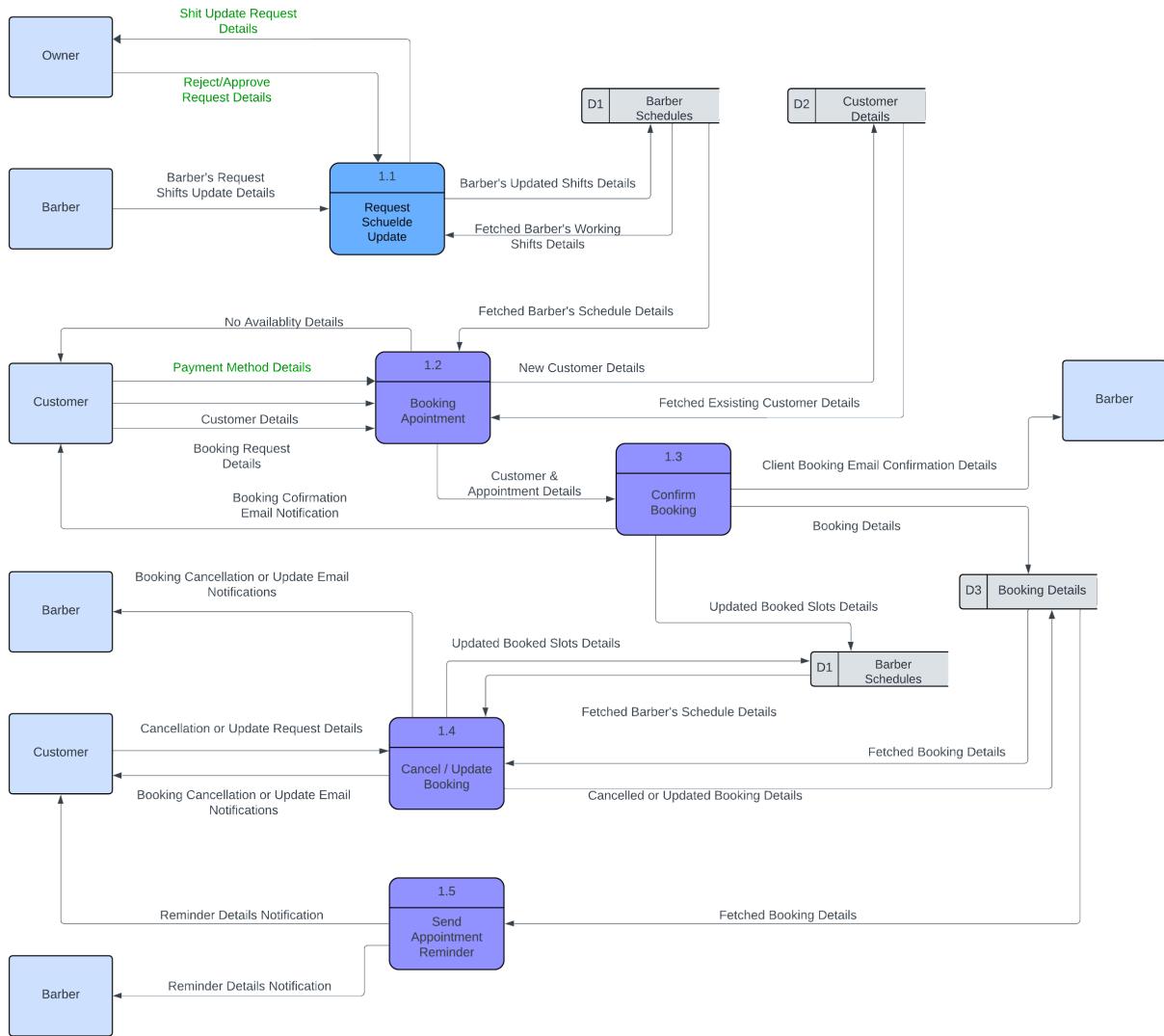
**Level 0 - Number One Barber Shop
(Proposed System)**



**Level 1 - Payment & Commission
(Proposed System)**



**Level 1 - Booking & Scheduling
(Proposed System)**



Level 1 - Inventory Management (Proposed System)

