Business Requirements Document (BRD)

Project Name: espressoself

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Document History

Version	Date	Author	Description
1.0	4/27/2024	Shreya Kasturia	Initial draft of the BRD
2.0	5/14/2024	Shreya Kasturia	Removal of delivery system

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1. Introduction

1.1 Purpose of the Document

The aim of this project is to design and build a database for espressoself, focusing specifically on orders to capture all pertinent information generated by the business. Additionally, the project will involve the creation of dashboards to analyze the business's performance.

1.2 Scope of the Project

The scope of the project encompasses three key areas of focus identified by espressoself:

- Orders: Capture and manage information related to orders, including customer details, order items, payment information, etc.
- Stock Control: Track inventory levels of ingredients and other items used in the preparation of coffee and other menu items.
- Staff: Manage information about employees, including their roles, schedules, contact details, and payroll information.

1.3 Document Overview

- Proposed Solution: This section will detail the proposed approach to designing and implementing the database for espressoself, including the database schema, data modeling considerations, and technology stack.
- Constraints: Any limitations or restrictions that may impact the design or implementation of the database will be identified and discussed in this section.
- Risks: Potential risks associated with the project, such as data security concerns, technical challenges, or resource constraints, will be outlined along with mitigation strategies.
- Dependencies: Any external factors or dependencies that may impact the project timeline or success will be listed and addressed in this section.

2. Business Objectives

2.1 Business Goals

The goal of this project is to efficiently analyze the business performance of espressoself.

2.2 Project Objectives

- Develop a comprehensive database to store and manage all relevant data pertaining to espressoself operations, including sales, inventory, customer information, and employee records.
- Implement data analysis techniques to derive actionable insights into key aspects of the business, such as sales trends, customer preferences, and operational efficiency.
- Create informative reports and dashboards that visualize the analyzed data in a user-friendly format, enabling Rhea and his team to make data-driven decisions to improve business performance.
- Establish a framework for continuous monitoring and evaluation of key performance indicators (KPIs) to track progress towards business goals and identify areas for optimization.

2.3 Success Criteria

- Increased sales revenue: Measure the impact of data-driven decisions on sales performance, aiming for a significant improvement in revenue compared to previous periods.
- Improved customer satisfaction: Assess customer feedback and retention rates to ensure that business decisions positively impact the overall customer experience.
- Enhanced operational efficiency: Evaluate the efficiency of business operations by monitoring metrics such as inventory turnover, order processing time, and staff productivity.
- Sustainable growth: Ensure that the implemented strategies contribute to the long-term growth and sustainability of espressoself, reflected in metrics such as market share expansion and profitability.
- Positive feedback from stakeholders: Solicit feedback from Rhea, his staff, and other relevant stakeholders to gauge satisfaction with the project outcomes and identify areas for further improvement.

3. Current Business Environment

3.1 Current Processes

The current business processes at espressoself involve various operational aspects, including order management, inventory control, customer service, and financial management. Typically, customers place their orders either in-person at the restaurant or through phone calls. The orders are manually recorded by staff members onto paper tickets or entered a basic computer system. The kitchen staff then prepares the coffee based on the orders received. Inventory management involves tracking ingredient levels manually, often leading to inconsistencies and occasional shortages. Financial transactions, including sales revenue and expenses, are managed through basic accounting methods.

3.2 Challenges and Issues

- Manual Order Processing: The current manual method of order processing is prone to errors and inefficiencies. Handwritten tickets or basic computer systems for order entry can lead to mistakes in order details, resulting in delays, incorrect orders, and customer dissatisfaction.

- Inventory Management: The lack of a systematic inventory management system makes it difficult to track ingredient levels accurately. This can lead to overstocking, understocking, and potential waste, impacting both operational costs and customer satisfaction.

- Limited Data Insights: Without a centralized database and data analysis tools, the cafe misses out on valuable insights into customer preferences, ordering patterns, and overall business performance. This lack of data-driven decision-making hampers the ability to optimize menu offerings, marketing strategies, and operational processes.

- Inefficient Financial Tracking: The reliance on manual accounting methods makes it challenging to maintain accurate financial records. This can result in discrepancies in revenue reporting, difficulty in expense tracking, and hindered financial analysis, ultimately impacting profitability and strategic planning.

- Scalability Concerns: With manual processes and rudimentary systems in place, scaling the business to accommodate growth becomes challenging. The current setup may struggle to handle increased order volumes, leading to operational bottlenecks and decreased customer satisfaction as the business expands.

4. Proposed Solution

4.1 Description of the Solution

The proposed solution involves implementing a comprehensive database and data analysis system tailored to the needs of espressoself. This solution will include:

- Centralized Database: A relational database management system (e.g., MySQL, PostgreSQL) will be set up to store all relevant data, including customer information, orders, inventory levels, and financial records.
- Inventory Control: The solution will include an inventory management module to track ingredient levels, monitor stock levels in real-time, and generate alerts for low inventory levels. This will optimize ingredient procurement, minimize waste, and ensure consistent product availability.
- Data Analysis Tools: Business intelligence and analytics tools will be integrated to analyze customer data, identify trends, and generate actionable insights. This will enable data-driven decision-making for menu optimization, targeted marketing campaigns, and operational improvements.
- Financial Tracking: A financial management module will facilitate accurate tracking of sales revenue, expenses, and profitability. This will include features such as automated revenue reporting, expense categorization, and financial analysis capabilities.
- Scalability: The solution will be designed with scalability in mind to accommodate future growth. This includes scalability in terms of handling increased order volumes, expanding menu offerings, and supporting additional locations if applicable.

4.2 Functional Requirements

Requirement ID	1.1
Requirement Name	Ability to Manage Orders
Requirement Description	The system should allow for efficient order management, including order entry, tracking, and status updates.
Impacted Stakeholders	Staff members, customers
Business Objective	Improve order accuracy and streamline order processing workflow.

Requirement ID	1.2
Requirement Name	Inventory Control
Requirement Description	The system should track ingredient levels, generate alerts for low inventory, and facilitate seamless ingredient procurement.
Impacted Stakeholders	Kitchen staff, procurement team
Business Objective	Optimize ingredient usage, minimize waste, and ensure consistent product availability.

Requirement ID	1.3
Requirement Name	Customer Relationship Management (CRM)
Requirement Description	The system should capture and analyze customer data to personalize marketing efforts, track customer preferences, and enhance customer loyalty.
Impacted Stakeholders	Marketing team, customer service representatives
Business Objective	Improve customer satisfaction and retention through targeted marketing and personalized experiences.

Use Case ID	2.1
Use Case Name	Place Order
Actors	Customer, Staff
Pre Conditions	Customer selects items and provides necessary details.
PImary Steps	Staff enters order details into the system, system confirms order receipt.
Alternate Steps	None
Business Objective	Facilitate seamless order placement process for customers.

Use Case ID	2.2
Use Case Name	Receive Inventory Alert
Actors	Kitchen Staff, Procurement Team
Pre Conditions	Ingredient levels fall below a predefined threshold.
PImary Steps	System generates an alert for low inventory, procurement team is notified to replenish stock.
Alternate Steps	None
Business Objective	Ensure timely replenishment of inventory to prevent shortages.

Use Case ID	2.3
Use Case Name	Analyze Customer Data
Actors	Marketing Team, Customer Service Representatives

Pre Conditions	Customer data is collected and stored in the system.
PImary Steps	Marketing team accesses customer data, analyzes preferences and behavior patterns. Customer service representatives utilize data to provide personalized assistance.
Alternate Steps	None
Business Objective	Improve targeted marketing strategies and customer satisfaction through personalized experiences.

Scenario ID	3.1
Scenario Name	Order Modification
GIVEN	A customer places an order.
WHEN	Customer requests a modification (e.g., adding or removing toppings).
THEN	Staff updates the order details in the system accordingly and confirms the modification with the customer.
Business Objective	Accommodate customer preferences and ensure order accuracy.

Scenario ID	3.2
Scenario Name	Expedited Procurement
GIVEN	Inventory alert is generated for low stock.
WHEN	Procurement team receives the alert.
THEN	Procurement team expedite the procurement process to replenish stock promptly.
Business Objective	Minimize downtime due to ingredient shortages and ensure uninterrupted operations.

Scenario ID	3.3
Scenario Name	Targeted Marketing Campaign
GIVEN	Customer data is analyzed to identify preferences.
WHEN	Marketing team launches a targeted marketing campaign based on customer segments.
THEN	Customers receive personalized promotions and offers tailored to their preferences.
Business Objective	Increase customer engagement and sales through targeted marketing efforts.

4.3 Non-Functional Requirements

- Performance: The system should respond promptly to user interactions and data queries, even during peak hours of operation.
- Security: Access to sensitive data should be restricted based on user roles, and data encryption should be implemented to protect customer information.
- Scalability: The system should be able to scale to accommodate increased data volume and user traffic as the business grows.
- Serviceability: Regular maintenance and updates should be performed to ensure system reliability and minimize downtime.
- Maintainability: The system should be well-documented, modular, and easy to maintain and update as needed.
- Usability: The user interface should be intuitive and user-friendly, requiring minimal training for staff members to use effectively.

5. Stakeholders

5.1 List of Stakeholders

- Rhea (Owner)
- Manager (Operations)
- Kitchen Staff
- Customer Service Representatives
- Procurement Team
- Marketing Team
- IT Team (if applicable)
- Customers

5.2 Roles and Responsibilities

- Rhea (Owner):
  Overall project oversight and decision-making.
  Providing resources and support for project implementation.
  Approving project milestones and budget.

- Manager (Operations):
  Liaising between stakeholders and project team.
  Providing operational insights and requirements.
  Ensuring smooth integration of the solution into existing processes.

- Kitchen Staff:
  Providing input on inventory management needs.
  Utilizing the system for order processing and inventory tracking.
  Reporting any issues or concerns with the system to the project team.

- Customer Service Representatives:
  Utilizing customer data from the system to provide personalized assistance.
  Assisting customers with order-related inquiries or issues.
  Providing feedback on customer satisfaction and preferences.

- Procurement Team:
  Using the system to receive inventory alerts and manage procurement processes.
  Ensuring timely replenishment of inventory to prevent shortages.
  Collaborating with the project team to optimize inventory management practices.

- Marketing Team:
  Utilizing customer data for targeted marketing campaigns.
  Providing input on CRM functionalities and marketing automation features.
  Monitoring campaign performance and adjusting strategies based on insights from the system.

- IT Team:

  Developing and maintaining the technical infrastructure for the system.
  Ensuring data security and system reliability.
  Providing technical support and troubleshooting assistance as needed.

- Customers:

  Interacting with the system for placing orders and receiving updates.
  Providing feedback on the user experience and overall satisfaction with the service.
  Playing a crucial role in driving business success through their engagement and loyalty.

6. Constraints

6.1 Budgetary Constraints

- espressoself has allocated a budget of $50,000 for the implementation of the database and data analysis solution.
- The budget must cover expenses related to software licenses, hardware (if necessary), development and implementation costs, training, and ongoing maintenance.

6.2 Timeline Constraints

- The project is expected to be completed within a timeline of six months from the project initiation date.
- Key milestones and deliverables must be achieved according to the project schedule to ensure timely implementation and minimize disruption to business operations.

6.3 Regulatory Constraints

- Compliance with food safety regulations: The cafe must adhere to local health and safety regulations regarding food preparation, handling, and storage. The system should support compliance with these regulations by providing features such as inventory tracking and expiration date management.
- Data privacy regulations: Any customer data collected and stored by the system must comply with relevant data privacy laws, such as the General Data Protection Regulation (GDPR) or the California Consumer Privacy Act (CCPA). Measures should be implemented to ensure the security and confidentiality of customer information.
- Payment card industry compliance: If the system processes payment transactions, it must comply with the Payment Card Industry Data Security Standard (PCI DSS) to safeguard cardholder data and prevent unauthorized access. Encryption, tokenization, and other security measures should be implemented to protect payment information.

7. Assumptions

7.1 List of Assumptions

- Availability of Necessary Resources: It is assumed that the required resources, including hardware, software licenses, and personnel, will be available as needed throughout the project.
- Stakeholder Collaboration: It is assumed that stakeholders, including Rhea, the manager, and relevant staff members, will actively participate in project meetings, provide timely feedback, and support project activities.
- Data Availability: It is assumed that necessary data for system implementation, such as existing customer information, menu items, and inventory records, will be accessible and can be migrated to the new system without significant challenges.
- Compliance with Regulations: It is assumed that the espressoself is currently compliant with relevant regulations and that any necessary adjustments to ensure regulatory compliance will be manageable within the project scope.
- Training and Adoption: It is assumed that sufficient training will be provided to staff members to familiarize them with the new system and ensure its successful adoption within the organization.
- Business Continuity: It is assumed that the implementation of the new system will not significantly disrupt ongoing business operations and that measures will be in place to address any potential issues or downtime effectively.
- Scalability: It is assumed that the proposed solution will be scalable to accommodate future growth and expansion of the espressoself's operations without requiring significant modifications or investments in the near term.

8. Risks

8.1 List of Risks

- Technical Issues:
  Risk: Unexpected technical challenges or system failures could delay the implementation timeline and increase project costs.
- Data Migration Challenges:
  Risk: Difficulty in migrating existing data to the new system could result in data loss or inconsistencies, impacting business operations.
- Resistance to Change:
  Risk: Staff members may resist adopting the new system, leading to decreased productivity and effectiveness during the transition period.
- Budget Overruns:
  Risk: Unforeseen expenses or scope changes could result in budget overruns, limiting the project's ability to deliver all planned functionalities.
- Security Breaches:
  Risk: Data breaches or security vulnerabilities in the system could compromise sensitive customer information and damage the cafe's reputation.
- Regulatory Compliance:
  Risk: Failure to comply with relevant regulations, such as data privacy laws or food safety regulations, could result in legal consequences and financial penalties.
- Vendor Dependence:
  Risk: Dependence on third-party vendors for software licenses or technical support could lead to disruptions if the vendor experiences issues or goes out of business.

8.2 Risk Mitigation Strategies

1. Technical Issues:
   - Conduct thorough testing and quality assurance throughout the development process to identify and address any technical issues early.
   - Maintain open communication with the development team and allocate resources for troubleshooting and problem-solving as needed.

2. Data Migration Challenges:
   - Perform a comprehensive data audit and cleanup before migration to ensure data integrity and compatibility with the new system.
   - Implement data backup and recovery procedures to mitigate the risk of data loss during migration.

3. Resistance to Change:
   - Provide comprehensive training and support to staff members to familiarize them with the new system and address any concerns or questions they may have.
   - Solicit feedback from staff members throughout the implementation process and incorporate their input into system design and training materials.

4. Budget Overruns:
   - Conduct regular budget reviews and monitor expenses closely to identify any potential budget overruns early.
   - Prioritize project activities based on their impact on business objectives and adjust the scope or timeline as needed to stay within budget constraints.

5. Security Breaches:
   - Implement robust security measures, such as encryption, access controls, and regular security audits, to protect against data breaches and unauthorized access.
   - Stay informed about emerging security threats and vulnerabilities and promptly apply patches and updates to mitigate risks.

6. Regulatory Compliance:
   - Consult with legal experts or regulatory advisors to ensure full compliance with relevant regulations throughout the project lifecycle.
   - Document compliance requirements and incorporate them into project planning and implementation processes.

7. Vendor Dependence:
   - Diversify vendor relationships where possible to reduce dependence on a single vendor.
   - Include contractual provisions for service level agreements (SLAs) and contingency plans in case of vendor disruptions or failures.

9. Dependencies

9.1 List of Dependencies

1. Resource Availability:
   The project's progress depends on the availability of necessary resources, including personnel, equipment, and software licenses.
2. Data Access:
   The successful implementation of the database and data analysis system relies on access to relevant data sources, including existing customer information, inventory records, and financial data.
3. Vendor Support:
   Dependencies exist on third-party vendors for software licenses, technical support, and hardware procurement. The project timeline and success are influenced by the availability and reliability of vendor services.
4. Regulatory Compliance:
   The project's scope and requirements are influenced by regulatory compliance requirements, such as data privacy laws and food safety regulations. Compliance with these regulations is a dependency for project execution.
5. Training:
   The effectiveness of the new system relies on the training and adoption by staff members. The project's success is dependent on the availability of resources and time for comprehensive training sessions.
6. Stakeholder Collaboration:
   Dependencies exist on stakeholder collaboration and feedback throughout the project lifecycle. Timely input and decision-making from stakeholders, including Rhea, the manager, and staff members, are essential for project success.
7. Integration with Existing Systems:
   If the cafe already uses other systems or software for certain operations (e.g., accounting software), dependencies exist on successful integration with the new database and data analysis system to ensure seamless operations and data flow.
8. External Factors:
   External factors such as market conditions, economic changes, and technological advancements may impact project timelines, resource availability, and requirements. Dependencies on these external factors require monitoring and adaptation throughout the project lifecycle.

10. Approval

10.1 Sign-off

I, Rhea Christopher, acknowledge that I have reviewed and approved the project plan outlined above.

Signature: _____ Date: _____