[ISD31D PROJECT]

[Exploring Culinary Delights: A Gastronomic Journey at "The Black" Restaurant]

ABSTRACT

"The Black," a unique and vibrant restaurant that offers an exceptional dining experience. Located in the heart of a bustling city, "The Black" aims to redefine the culinary landscape by blending innovative flavours, impeccable service, and a captivating ambiance.

GROUP 24 ISD316D

[Final Phase]

Tshwane University of Technology We empower people	**INFORMATION SYSTEM DEPLOYMENT (ISD316D)**

Department Of Informatics

Assignment Cover Page

FINAL DOCUMENTATION: GROUP 24		**Due Date: 09 June 2024**	
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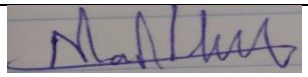
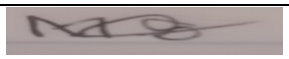
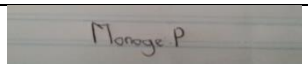
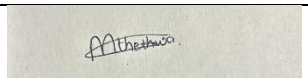
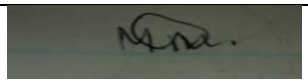
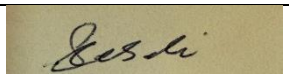
Alpheus	MAILULA	221743318	
Mpumelelo	SITHOLE	221928148	
Prince	MONOGE	221158725	
Refiloe	MTHETHWA	221967283	
Mpilonhle	MOTLOUNG	221233379	
Lesedi	MANGENA	222299373	

Assessment Criteria

GROUP 24	FINAL DOCUMENTATION	ISD316D
Own Work	No copying of friends works (current or present) No copying from the Internet No copying from reference material (books, journals)	
Bibliography – Harvard method	Use TUT's format of referencing research	

	In your summaries, you need to refer to the pages and notes so that you can find it again	
Total		
I declare that all the work contained herein is **my own original work** and **all sources have been duly referenced**. The following assignment abides by the rules and regulations with regard to Intellectual Property set out by Tshwane University of Technology.		

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THE BLACK RESTAURANT

Phase 1: Scope Statement

Overview of the Client/Company

The Black is an enterprise that offers a diverse menu of dishes, prides itself on advertising a wide assortment of dishes that cater to assorted tastes and dietary requirements. The Black offers Appetizers, Main Courses, Desserts and also Beverages. It has become a popular choice for locals and visitors as it caters for all people from different locations. The Black focuses on delivering first grade meals which is top quality meals made from the best ingredients, ensuring that every dish meets a high standard of taste and presentation at affordable price. The convenient location, it is located in the vibrant neighbourhood of block L, Soshanguve. The restaurant engages with the local community through various initiatives, supporting local events and empowering local DJ artists the platform to showcase their talents. Seasonal special introduced by the restaurant, providing fresh and intriguing dishes throughout the year. The menu at The Black Restaurant showcases a selection of mouth-watering dishes that are sure to satisfy any craving and gives the people the Kasi flavour love.

The goals and objectives of the client's company

In defining the goals and objectives of The Black Restaurant, considering its current operations and methods, consider the following aspects

Goals

Efficient Food Delivery: Ensure timely and accurate delivery of food to customers.

Customer Satisfaction: Maintain high levels of customer satisfaction through quality food and service.

Cost Management: Keep operational costs low to maximize profitability.

Objectives

Cost Management Strategies: Implement strategies to control and reduce operational costs without compromising on service or food quality.

Customer Feedback Mechanism: Establish a robust customer feedback system to gather insights and make data-driven improvements.

Maintain Quality Control: Carry out regular quality control of food preparation and delivery to ensure high standards are consistently met.

Optimize Order and Pay at Cashier Method: Simplify the ordering and payment process to reduce wait times and improve the customer experience Identify Key Stakeholders.

Stakeholders Involved

Business Owners/Investors: This are the individuals or group of investors that are responsible for the overall direction, profitability, and success.

Managers: This are the individuals responsible for day-to-day operations, including staffing, inventory management, customer service, and ensuring that the restaurant runs smoothly.

Employees: Including chefs, cooks, servers, bartenders, hosts/hostesses, dishwashers, and other staff who contribute to the functioning of the restaurant.

Customers: This are the individuals or group who patronize the restaurant, providing revenue and feedback on the dining experience.

Suppliers: This individual who provide the restaurant with food, beverages, equipment, and other necessary supplies.

Local Community: This are the residents and businesses in the surrounding area who are impacted by the restaurant's, such as through noise, traffic, or economic contributions.

Regulatory Bodies: The government agencies that are responsible for ensuring that the restaurant complies with health, safety, zoning, and other regulations.

Media and Reviewers: The critics, bloggers, and journalist who can influence public perception of the restaurant through reviews, articles, and social media.

Define the Project Need and explain why it is needed

The Restaurant offers diverse food that brings Soshanguve to life, it serves as a venue where individuals can partake in a meal without expending the time and energy necessary for home preparation. Restaurants contribute significantly to the local economy by generating employment opportunities and supporting food suppliers. It aims to satisfy hunger, facilitate gatherings, and provide a memorable culinary experience. Restaurants increases their chances of success in a competitive industry and create memorable dining experiences for their customers by addressing these needs effectively:

Processes: Restaurant need to use processes such as scheduling appointments for their clients and ordering supplies for their office as It will keep business be organized for the routine of employees.

Better customer experience: better customer experience gives better profile as they will establish your goodness services.

Licenses and Permits: Restaurants typically require various licenses and permits to operate legally, including health permits, liquor licenses, food handler permits, and business licenses. These requirements vary depending on location and type of establishment.

Equipment and Supplies: Essential equipment includes kitchen appliances (e.g., ovens, stoves, and refrigerators), cooking utensils, serving ware, furniture, POS (Point

of Sale) systems, and cleaning supplies. Depending on the concept and cuisine, specialized equipment may also be needed.

Inventory: Restaurants need to maintain an inventory of food and beverages to meet customer demand. This includes sourcing quality ingredients, managing inventory levels, and minimizing waste.

Menu Development: Developing a menu that reflects the restaurant's concept, target audience, and culinary vision is essential. This involves creating recipes, pricing dishes, and balancing variety, taste, and profitability.

Staffing: Hiring and training competent staff is critical for providing excellent service and maintaining operational efficiency. This includes chefs, cooks, servers, bartenders, hosts/hostesses, dishwashers, and managerial staff.

Marketing and Branding: Effective marketing and branding strategies are essential for attracting customers and building a loyal clientele. This may involve creating a distinctive brand identity, designing marketing materials, implementing digital marketing campaigns, and engaging with the local community.

Financial Management: Proper financial management is vital for the sustainability of the restaurant. This includes budgeting, forecasting, tracking expenses, managing cash flow, and monitoring profitability.

Customer Experience: Restaurant need to provide an exceptional dining experience is key to building a positive reputation and fostering customer loyalty. This includes offering high-quality food, attentive service, inviting ambiance, and addressing customer feedback effectively.

Technology and Innovation: Restaurant need to embrace technology and innovation to streamline operations, enhance efficiency, and improve the overall guest experience. This may include implementing reservation systems, online ordering platforms, and digital marketing tools.

Sustainability Practices: Incorporating sustainable practices into restaurant operations is becoming increasingly important for both ethical and business reasons. This may involve sourcing local and organic ingredients, minimizing food waste, reducing energy consumption, and implementing eco-friendly initiatives.

Define the work that must be done to deliver a product

The ordering system for The Black restaurant will serve as a digital platform designed to streamline the process of browsing, selecting and purchasing menu items.

The system will be doing the following:

Account Creation: The system will be developed so that users are able to create accounts and be able to login.

Menu Display: The system will showcase the restaurants diverse menu offering, in a user-friendly interface. Each menu item will include the details of the product being offered such as its name, description, price and image of the product.

Order Placement: The system will allow the users to add items to their virtual cart, and they will be able to customize their orders to their preferences, such as adding extra ingredients.

Checkout Process: Once a user finalizes their order, they will be able to move on to the next process, the system will guide them throughout a seamless checkout process. The process involves reviewing the order summary, providing pickup details and selection of the preferred type of payment method.

Payment Process: The system ensures that all payments process online are secured through a Secured Socket Layer (SSL) gateway, it enables the end-customers of online businesses and E-commerce merchants to perform secured transactions from the customer's card, mobile wallet or bank account.

Order Management: The restaurant staff will be to efficiently manage incoming orders in the backend. It includes functions such as order confirmation, preparation status updates and coordination of the order.

Notification System: The system has a function to keep users informed with real-time notifications, such as estimated pickup times, updates on order preparation and order confirmation notifications.

User Feedback: It includes a process that allows users to rate their experience and provide insightful comments or suggestions to help the restaurants manager to create reports to help improve the restaurant.

Admin Dashboard: The system will have an administrative dashboard for the restaurant owners to oversee operations, manage menus, update stock inventory and create reports.

What's not included in this project:

Physical Infrastructure: The renovations of the physical restaurant is not within the scope of the document, the building materials and kitchen equipment.

Supply Chain Management: Restaurant's inventory, the supplier relationship and ingredients procurement are outside the scope of the ordering system.

Marketing and Promotion: Marketing efforts such as promoting the restaurant using social media platforms, advertising campaigns are separate and do not relate to the deployment of the ordering system.

Customer Service: Handling customer services which are beyond technical assistance for the ordering system such as handling complaints is not included.

Training: Training the restaurants staff on how to use the system or getting new staff on board with how the system works is not part of the scope of the project.

Describe the appropriate tools/techniques that will be used to communicate the information

Email/Reviews – Reviews from satisfied customers to highlight restaurant's popularity and quality.

Price point – Emphasise the affordability of the food(s) sold

Restaurant Management Tools/ Location Based Marketing – Highlights the restaurant and location in active society around block L, Soshanguve.

Staff training techniques, techniques such as training your employees to be able to interact with customers and be professional at all times which will help enhance the customer experience.

Point-Of-Sale System: It can be used to input orders, manage tables, and track orders successfully.

Kitchen Display System: Implement digital screens in the kitchen to display orders, preparation times, and status updates regarding the orders.

Order Callers: The verbal communication of orders to kitchen staff, expediters or the runners.

White Boards: The visual boards for tracking orders, specials and menu items can also take part to help in communicating to customers.

Visual Cues: The color-coded systems, flags, or lights to signal order status or requests during ordering processes to know how far your order is and to track the number of waiting customers.

Digital Messaging App: It includes tools like slack or messaging app for the team communication between the cashier and the kitchen staff.

External Interfaces

The Black Restaurant does not have an external system, as its focus is mainly to deliver food to its customers. Employing the system interface, it's not within their scope, they'll have to outsource the system so that they are not responsible for the risks that come with running a restaurant management system. The black restaurant uses the order and pay at the cashier method, the cash drawer system and Handheld Point of Sale Systems.

Interfaces not interacting with our system and reasons why:

Complex Inventory Management: The Black Restaurant is a small restaurant and has limited storage space and simplified menu it does not deal with extensive ingredient variety. This type of interface is designed for large-scale operations.

Elaborate Marketing Channels: The restaurant has a local customer base and limited marketing budgets, the restaurant focuses on word of mouth, local advertising or community engagement.

Large-Scale Security Systems: The restaurant prioritizes cost-effectiveness and practical security measure, introducing measures such as biometric access control, extensive camera networks or alarm systems are common in large restaurants this might not align with their budget or risk assessment.

Describe in detail the Method for Managing Scope Creep

Due to the increase in customer demand, contingency measures such as having tents on standby allows the restaurant to accommodate the unexpected rise in customer demand. Additional sitting helps avoid overcrowding and maintain a pleasant dining experience. Having staff on support ensures that during peak hours, they will be enough personnel to assist with tasks such as serving, managing customer inquiries ensuring that service quality is not compromised. Preparing additional food stocks helps prevent shortages, restaurant manager should regularly monitor inventory levels and restock when there's a decline in stock to ensure that the restaurant meet customer demands without running out of essential ingredients maintaining consistency in menu offerings.

Project Communication

The company uses a notice board to inform employees about important company events, and meetings. They use black boards and posters to advertise their company. They use social media platforms to promote or advertise events and to share duty roasters. The restaurant owner can conduct regular meetings with stakeholders, discuss the project status and potential scope creep. Share updates on project milestones, challenges encountered and their impact. They should project documentation to share the document with stakeholders to ensure that the project aligns with their goals and vision. Establish a change control process, when scope changes occur follow process to evaluate their impact. Use collaboration platforms such as Microsoft Teams for real time communication. Conduct workshops to assess the project risks and develop strategies to mitigate these risks.

Project Plan (Phase 2)

Introduction

Purpose of this document

Purpose of this document is to serve as a roadmap for successfully executing a project initiation about an enterprise called THE BLACK restaurant. It provides a structured outline of the enterprise objectives, scope, schedule, resources, and other key components to guide the enterprise team and stakeholders throughout the enterprise's lifecycle.

What ought to be in the project plan:

Enterprise Overview: it provides a high-level description of the enterprise, including its objectives, purpose and their scope target as it sets the context for the rest of the enterprise plan.

Enterprise Objectives: it outlines the goals and deliverables the enterprise wants to reach and offer to its customers.

Enterprise Schedule: create a detailed timeline that outline the sequence of activities, milestone, and deadlines for making the enterprise a success.

Enterprise Monitoring and Evaluation: it defines how the progress of the enterprise will be tracked, measured and evaluated through some tasks and service that will be given to customers in order to make adjustment and ensure that the enterprise stays on track.

Reiterate the project scope

Define what the project will and won't do

Project Deliverables: What the Project Will Do:

A restaurant is a place where food and drinks are prepared and sold to satisfy customers. It offers services like table service, home delivery, and different payment options. The restaurant's mission statement outlines its purpose, goals, and values, guiding business decisions and brand alignment. Ultimately, restaurants aim to create delightful culinary experiences and foster community connections! Receiving Deliveries/ Supplier Communication: There are designated team members to receive deliveries and provide them with a comprehensive checklist to ensure that all the items are up to the restaurant(s) safety and quality standards. Menu Enhancement: The project will enhance the existing menu of The Black Restaurant by introducing new, diverse dishes that cater to a wide range of tastes and preferences. Pricing Strategy: The project will develop a pricing strategy to ensure that the meals offered at The Black Restaurant remain affordable while maintaining their high quality. Customer Satisfaction: The project will prioritize customer satisfaction by ensuring that the meals served at The Black Restaurant consistently meet high-quality standards and exceed customer expectations.

What the Project Won't Do:

Price Increase: The project won't result in a significant price increase for the meals offered at The Black Restaurant, as affordability is a key aspect of its value proposition.

Relocation: The project won't involve relocating The Black Restaurant to a different neighbourhood or area, as it aims to leverage its current location.

The black does not have a restaurant management system, it falls outside the core scope of their primary focus for the business is to provide food, create a welcoming atmosphere and deliver exceptional services to their customers and not be liable for the risks that come with having an IT project implemented in the company.

Customer Acceptance Criteria

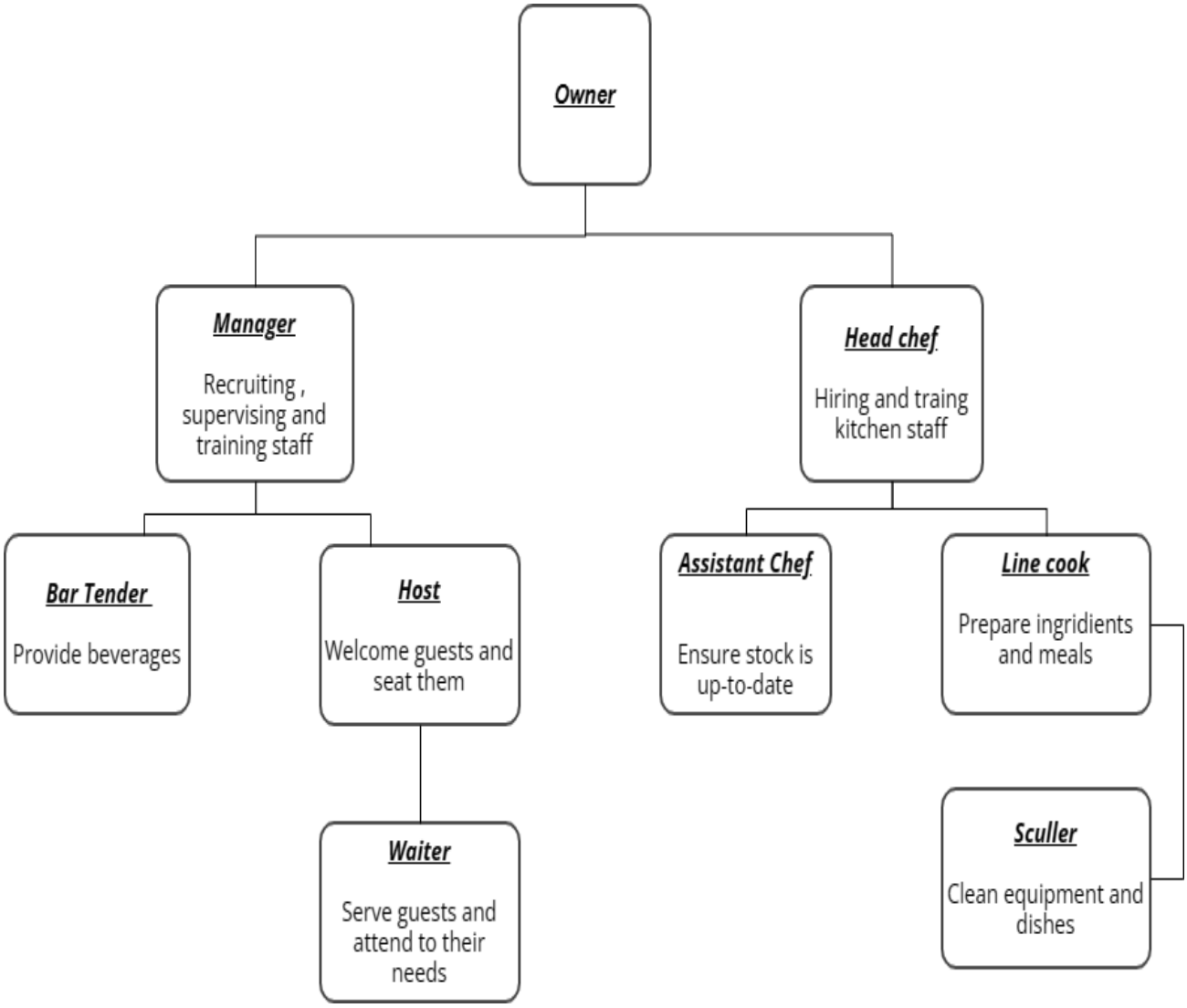
User Story: As a customer, I want to be able to adjust my order to my preferences

Acceptance Criteria: Increased Repeat Visits: The customer will consider the loyalty program successful if it leads to an increase in visits from existing customers, indicating that they are engaged with the program and incentivized to return.

Positive Customer Feedback: Satisfaction with the loyalty program will be measured through customer feedback, including reviews, comments, and surveys, indicating whether customers perceive the program as valuable and beneficial.

Increase in Sales: The customer will use sales data to determine if the loyalty program has contributed to an increase in overall sales and revenue for the bookstore, demonstrating its impact on driving business growth.

The organizational chart for the project



Show all the project tasks or milestones, phases, activities and tasks as well as the interim outputs for each milestone and the person accountable for each milestone:

Manager - Oversees all activities that must be done do deliver a good system that meets the users' requirements.

Menu Development Milestone (1 month):

Person Accountable: Head Chef

Activities: Menu discussions, recipe development and finalization.

Interim Output: Menu and pricing strategy

Kitchen Operation Milestone (3 weeks):

Person Accountable: Head Chef

Activities: Develop food preparation processes and improve kitchen efficiency.

Interim Output: Revised kitchen layout

Customer Service Training Milestone (2 weeks):

Person Accountable: Manager

Activities: Train new staff on customer service standards.

Interim Output: Trained staff

Inventory Management Milestone (3 weeks):

Person Accountable: Manager

Activities: Analyse customer trends and do supplier evaluation.

Interim Output: Updated inventory management procedures.

Customer Engagement Campaign Launch Milestone (1 week):

Person Accountable: Host

Activities: Plan the restaurant marketing campaigns

Interim Output: Increased number of customers

Train Staff to prepare Special Dish Milestone (2 days):

Person Accountable: Assistant chef

Activities: Train staff on how to prepare the restaurant finest dish

Interim Output: The restaurant finest dish.

Quantify the efforts required for each effort, percentage of days compared to the total number of days:

The total preparation time is 60 days, we can calculate the effort percentage for each task as follows:

Menu Planning: 8 days

Ingredient Sourcing: 12 days

Staff Training: 14 days

Marketing and Promotion: 5 days

Interior Setup: 16 days

Final Preparations: 5 days

Menu Planning Effort: (8/60) * 100 = 13.33

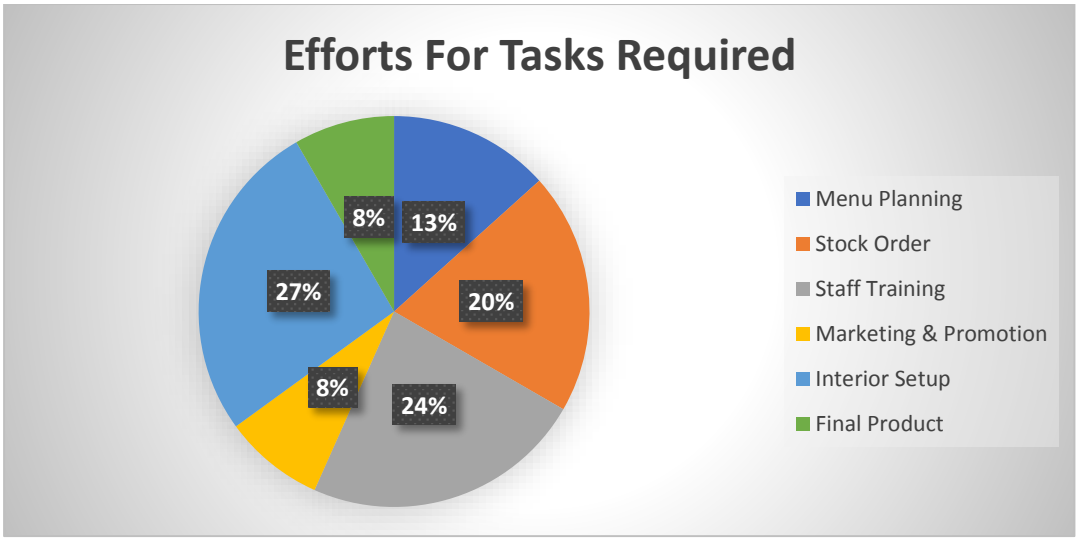
Ingredient Sourcing Effort: (12/6) * 100 = 20

Staff Training Effort: (14/60) * 100 = 23.33

Marketing and Promotion Effort: (5/60) * 100 = 8.33

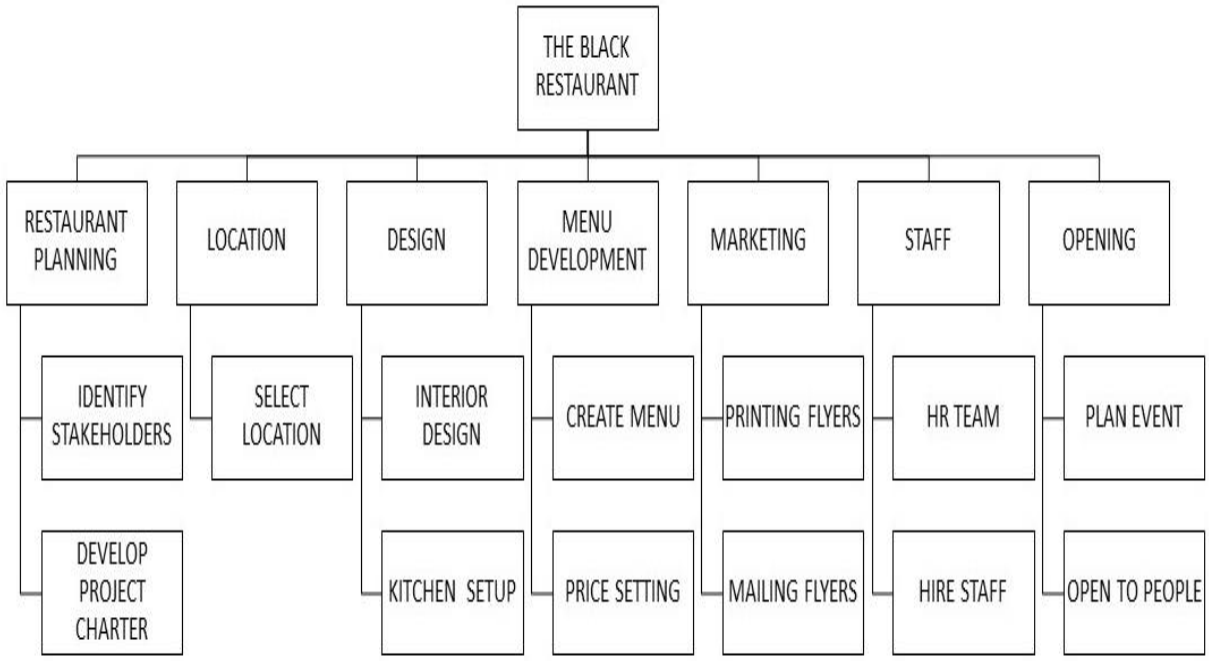
Interior Setup Effort: (16/60) * 100 = 26.66

Final Preparations Effort: (5/60) * 100 = 8.33



Allocate project resource and project schedule

Work Breakdown Structure



WBS Schedule:

Restaurant Planning (3 weeks):

Week1: Define the restaurant objectives, identify stakeholders and allocate project team members.

Week 2-3: Develop the project charter and communication plan.

Location (4 weeks):

Week 3-4: Look for the right location, and secure location.

Week 4-5: Design restaurant layout and procure furniture, fixtures and equipment.

Week 5: Install sink, tap and kitchen base units and complete kitchen setup.

Menu Development (7 weeks):

Week 6: Conduct research to find customer preferences, design menu and source out ingredients.

Week 7: Set prices for each item sold.

Marketing (9 weeks):

Week 8: Develop restaurant marketing strategy and materials, print flyers.

Week 9: Implement promotional campaigns and community engagement programs and mail flyers out.

Staff (11 weeks)

Week 10: Hire Human Resource team to be responsible for training on food preparation, customer service and safety protocols.

Week 11: Hire staff members.

Restaurant Opening (Ongoing):

Week 12 onwards: Plan the restaurant opening day and open the restaurant to community and support local people.

List any planning dependencies

Menu Development: The menu development process depends on market research, customer preferences, and ingredient availability.

Location Setup: Setting up the restaurant's location depends on obtaining necessary permits, securing the space, and completing any renovations.

Staff Hiring and Training: Hiring and training staff depend on the completion of other tasks such as finalizing the menu, setting up the location, and establishing operational procedures

Marketing and Promotion: Marketing efforts depend on having a finalized menu, a functional location, and trained staff to deliver a consistent experience.

Customer Feedback and Iteration: Gathering feedback from customers depends on having the restaurant operational and serving meals.

Assumptions

When people visit a restaurant, they expect to find the following in place, a comfortable sitting place with chairs and tables suitable for dining. A menu with a list of food and beverage options available for order. Delivery of service that is up to standard, staff take orders, serve food and assist guests. Payment Methods for guests to pay for their meals, such as cash, credit/debit cards or mobile payments. Restrooms which are clean for guests, and Accessibility features like ramps or accessible restrooms for guests with disabilities.

Constraints

Restaurant encounters the following limitations, a poor location with low foot traffic negatively affects the number of guests and revenue. The restaurant industry often faces high staff turnover or shortages of staff, which ends up disrupting operations. Operating a physical location incurs expenses like rent, utilities, salaries, and supplies which impact profit margins. They have to ensure the safe transportation and handling of food to prevent contamination. Not utilizing technology for efficiency can put a restaurant at a disadvantage. Weather can play a part especially for those restaurants with outdoor sitting, when it rains it will cause low turnaround.

Identify the risks, countermeasures, and the person accountable for each countermeasure.

Storage of food

Risks: When food items are not stored properly and there's poor stock management practices by the restaurant, it leads to food spillages and food shortages which can potentially lead to customer dissatisfaction and lost sales opportunities.

Countermeasures: Implement proper food handling and storage procedures, always ensure that important ingredients are always in stock.

Accountable Person: The kitchen Manager is the one responsible for overseeing food storage and ensuring that the restaurant complies with food safety regulations.

Increasing Food Prices

Risks: Food prices are not constant they increase whenever there's change in economy which leads to risk of insufficient cash flows.

Countermeasure: Negotiate with suppliers to get supply of products at a reasonable rate and adjust menu prices strategically.

Accountable Person: The restaurant owner is the one responsible for financial planning.

Employee Injuries

Risks: Employees encounter injuries while in the work place, common injuries like cuts, burns and slips.

Countermeasures: Provide safety training for staff, enforce hygiene practices, and provide protective equipment.

Accountable Person: Human Resources Manager is the one responsible for employee training and ensuring workplace safety compliance.

Customer Injuries

Risks: Customers also become victims of getting injured in a restaurant if safety measures are not imposed.

Countermeasures: Maintain a safe dining environment, address potential hazards promptly, and train staff in emergency response procedures.

Accountable Person: Restaurant Manager is the one responsible for ensuring customer safety and overseeing restaurant operations.

Project Budget

Start-Up Costs

Lease and Renovations: R23,000

Kitchen Equipment: R55,000

Furniture and Decor: R80,000

Initial Food and Beverage Stock: R20,000

Licenses and Permits: R6,250

Marketing and Advertising: R3,000

Staff Training: R10,000

Total Start-up Costs: R197,250

Recurring Monthly Costs

Rent: R4, 000

Utilities: R3,500

Payroll: R15,000

Food and Beverage Restock: R10,000

Marketing: R1,125

Insurance: R2,000.00

Maintenance and Repairs: R3,250.00

Total Monthly Costs: R39,750

Annual Costs

License Renewals: R850

Equipment Updating: R1, 000

Marketing Campaigns: R13, 500

Staff Training: R4, 000

Total Annual Costs: R19, 350

Total Expenses: (R39, 750 + (19, 350/12)) * 12

=R477, 019.35

Reporting

Weekly Reports

Sales Report: It's a report that is used to keep track of revenue trends on a shorter time scale, it allows the managers to identify patterns and make changes to operations as needed.

Inventory Report: It's a report that help ensure that stock levels are maintained and any issues such as overstocking are addressed when they arise.

Labour Report: It tracks staffing levels and labour costs for the week, helping managers to monitor labour efficiency and plan for the following week.

Reservation Report: It tracks upcoming reservations and help plan seating arrangements.

Quality Control Report: It is conducted regularly to ensure consistency in food and service quality.

Monthly Reports

On a weekly basis they take meeting minutes to summarize concepts and for record keeping of staff meetings, staff coordination and also serve as a tool to communicate with all employees by updating all of the staff and those who could not attend the meeting. They use the following:

Expense Report: It's a report that helps managers track spending and identify areas where costs can be reduced.

Menu Performance Report: It's a report that analyses sales and profitability of menu items over a long period, it allows managers to make informed decisions about menu changes.

Customer Feedback Report: It's a report that takes customers feedback and provides insights into overall customer satisfaction levels and makes improvements on the feedbacks.

Financial Statement: This report summarizes the restaurant's financial performance for the month and help managers make correct financial decisions.

Marketing Reporting: This type of report helps managers assess the return on investments and adjust marketing strategies as needed.

Alternative Solution Analysis (Phase 3)

Overview of the business problem or opportunity.

The Black Restaurant is facing challenges when it comes to staff, the manger mentioned that finding and retaining skilled staff, including chefs, servers and kitchen workers can be difficult in the food offering industry of which leads to issues with service quality and consistency. Seasonal Fluctuations: The manager mentioned many restaurants experience seasonal fluctuations in demand which can impact revenue and profitability of the enterprise as during winter the prices of meat products becomes more expensive than other seasons and that lead to financial instability for the restaurant. Online reviews and Reputation Management: In today's digital age online reviews and reputation management are essential for restaurants, so it will be of a great honour to also have one as a growing enterprise to improve their service delivery to the customers. Online Ordering System: we learnt that to become one of the performing restaurants in the industry you need to have an online ordering system to instigate with more customers who live far and those near. The Black Restaurant faces staffing issues, seasonal revenue fluctuations, and the need for better online presence. Strategically addressing these challenges is crucial for The Black Restaurant to improve its service delivery, achieve financial stability, and succeed in the competitive food industry. Implementing solutions such as enhanced recruitment strategies, seasonal menu adjustments, online reputation management, and an efficient online ordering system can significantly contribute to overcoming these obstacles. By focusing on these areas, The Black Restaurant can position itself for long-term success and growth.

Scan the IT industry for possible solutions

Alternative Solutions for the Black Restaurant.

Point of Sale (POS) Systems: Modern POS systems offer comprehensive features for processing orders, managing inventory, tracking sales, and generating reports.

Online Ordering and Delivery Platforms: With the growing trend of online ordering and food delivery, restaurants can benefit from integrating with popular delivery platforms or implementing their own branded online ordering systems. This streamlines the ordering process for customers and expands the restaurant's reach beyond its physical location.

Tableside Ordering and Payment Systems: Tableside ordering and payment solutions enable servers to take orders and process payments directly at the table using handheld devices or tablets. This improves accuracy, speeds up service, and enhances the overall dining experience for customers.

Kitchen Display Systems (KDS): KDS solutions replace traditional paper tickets with digital displays in the kitchen, allowing chefs to view and manage orders in real time. KDS streamlines communication between the front and back of house, reduces errors, and improves kitchen efficiency within the Black restaurant.

Inventory Management Software: Inventory management software helps restaurants track and manage ingredient levels, monitor stock levels in real time, and automate replenishment processes. This reduces waste, prevents stock-outs, and optimizes inventory turnover.

Customer Relationship Management (CRM) Systems: CRM systems enable restaurants to capture customer data, track preferences, and personalize marketing efforts. By understanding customer behaviour and preferences, restaurants can tailor promotions, loyalty programs, and communication to enhance customer satisfaction and loyalty.

Reservation and Table Management Systems: Reservation and table management systems streamline the booking process, manage table assignments, and optimize

seating arrangements to maximize restaurant capacity. This reduces wait times, minimizes overbooking, and improves the overall guest experience.

Staff Scheduling and Management Software: Staff scheduling and management software will simplify the scheduling process, tracks employee hours, and manages labour costs for the Black restaurant. Advanced features may include forecasting labour demand, optimizing schedules, and integrating with payroll systems.

Feedback and Review Management Platforms: Feedback and review management platforms allow Black restaurants to collect feedback from customers, monitor online reviews, and respond to feedback in a timely manner. This helps restaurants address issues, improve service quality, and build positive relationships with customers.

Contactless Payment Solutions: Contactless payment solutions, such as mobile wallets and NFC-enabled payment terminals, provide a convenient and hygienic way for customers to pay for their meals in the black restaurant. This reduces physical contact and enhances safety, especially in the context of the COVID-19 pandemic.

Assess, compare, and conclude on the Alternative Solution using formal analysis techniques.

1. Table Reservation System:

Strengths: Reduces wait times by allowing customers to book tables in advance.

Weaknesses: Implementation costs and maintenance.

Opportunities: Attracts more customers who prefer reservations.

Threats: Competition from other restaurants with similar systems.

Cost: Moderate (implementation costs).
Efficiency: High (reduces wait times).
Scalability: Limited (depends on restaurant capacity).

2. Feedback Collection Tools:

Strengths: Provides valuable insights for continuous improvement.

Weaknesses: Requires active participation from customers.

Opportunities: Improves customer satisfaction and loyalty.

Threats: Mismanagement of negative feedback.

Cost: Low to moderate (depends on the tool).
Efficiency: High (provides valuable insights).
Scalability: High (can adapt to changing needs).

3. Online Ordering System:

Strengths: Increases revenue by offering online ordering.

Weaknesses: Initial setup and ongoing maintenance.

Opportunities: Promotions and discounts drive sales.

Threats: Competition from food delivery apps.

Cost: Moderate (initial setup and maintenance).
Efficiency: High (increases revenue, convenience).
Scalability: High (can handle increased orders).
Alignment with Business Goals: High (increased sales).
Customer Satisfaction: High (convenience for customers).

4. Mobile Optimization:

Strengths: Enhances user experience.

Weaknesses: Development costs.

Opportunities: Increased mobile traffic.

Threats: Rival restaurants with better mobile interfaces.

Cost: Moderate to high (initial investment, training).

Efficiency: High (streamlines transactions).
Scalability: Moderate (depends on system capacity).

5. Point of Sale System:

Strengths: Streamlines transactions and inventory management.

Weaknesses: Initial investment and training.

Opportunities: Improved efficiency and accuracy.

Threats: Technical glitches affecting sales.

Cost: Moderate to high (requires consistent effort).
Efficiency: Moderate (reaches wider audience).
Scalability: High (can reach larger audience over time).

6. Digital Marketing:

Strengths: Reaches a wider audience.

Weaknesses: Requires consistent effort and content creation.

Opportunities: Builds brand awareness.

Threats: Negative online sentiment.

7. Staff Scheduling and Management Software:

Strength: Improved Employee Satisfaction and also Integration Capabilities

Weaknesses: Risks associated with data breaches and privacy violations.

Opportunities: Growing demand for automation in small and medium-sized businesses

Threats: Intense competition from established players and new entrants in the market.

Cost: Moderate to high (depends on the software).
Efficiency: High (improved scheduling).
Scalability: High (can handle more employees).

8. Inventory Management Software:

Strength: Automates routine inventory tasks, reducing manual labour

Weaknesses: High upfront costs for software purchase and setup. Time-consuming implementation and staff training requirements.

Opportunities: E-commerce Growth: Rising e-commerce trends creating demand for efficient inventory management.

Threats: Technological Obsolescence rapid technological changes necessitate continuous updates and innovations.

Cost: Moderate to high (initial setup costs).
Efficiency: High (automates inventory tasks).
Scalability: High (can handle more products).

Conclusion

The suitable solution is the Online Ordering System offers a comprehensive solution that addresses key business needs, looking at the evaluation factors such as efficiency, scalability, alignment with business goals, customer satisfaction, cost effective and adaptability the Online Ordering System meets them. Online ordering streamlines the ordering process for both customers and restaurant staff. Customers can browse the menu, place orders, and make payments from the convenience of their devices, reducing the time and effort required compared to traditional phone orders or in-person visits. Online ordering systems can easily scale to accommodate increased demand, implementing an online ordering system directly aligns with the business goal of increasing revenue and customers appreciate the ability to browse menus, customize their orders, and track delivery or pickup status in real-time. The might be initial setup and maintenance costs associated with the implementation of the online ordering system but the long-term benefits outweigh the investment. The system will be able to adapt to evolving customer preferences and industry trends.

Risk Analysis of each Alternative Solution

Risks	Impact	Likelihood

Point of Sale System: Implementation costs high initial investment and potential hidden costs. Technical issues system downtime or malfunctions could disrupt operations. Data Security risk of data breaches and unauthorized access.	High: Financial losses and operational disruption if the system fails. Medium: Data breaches could damage reputation and incur legal penalties	Moderate: Depends on the reliability of the POS provider and cyber-security measures.
Online Ordering and Delivery Platform: Integration challenges like technical difficulties in integrating with existing systems. Quality control maintains food quality during delivery. Increased competition with established delivery platforms.	Medium to High: This can significantly boost revenue but may incur high initial setup costs and ongoing fees. Medium: Quality issues can affect customer satisfaction and repeat business.	Moderate: Depends on execution and market demand.
Tableside Ordering and Payments: Hardware costs are high upfront costs for handheld devices or tablets. Technical issues potential for device malfunctions or connectivity problems. Training requirements for staff need to use the new system effectively.	Medium: Can enhance customer experience and operational efficiency. Low: Technical and training issues are usually manageable.	Low to Moderate: Depends on the quality of hardware and training programs.

Kitchen Display System: Implementation costs initial investment in hardware and software. Technical issues like system failures can disrupt kitchen operations. Resistance to change as staff may be resistant to adopting on new technology.	Medium: improves kitchen efficiency and reduces errors. Low: Resistance can be mitigated with proper training.	Low to Moderate: Depends on staff adaptability and system reliability.
Inventory Management Software: Data accuracy as data entry can lead to stock issues. Integration challenges cause difficulty in integrating with existing POS and other systems. Costs of ongoing subscription or licensing fees.	Medium: Optimizes inventory and reduces waste, leading to cost savings. Low: Most issues are manageable with proper setup and usage.	Low to Moderate: Depends on system user-friendliness and integration capabilities.
Customer Relationship Management: Data privacy leads to a risk of mishandling customer data. The complexity of implementation and usage. Costs for subscription and data management.	Medium: Can improve customer satisfaction and loyalty. High: Data breaches can have severe consequences.	Moderate: Depends on data security measures and staff training.
Reservation and Table Management System: Technical issues like system failures can disrupt	Medium: Improves operational efficiency	Low to Moderate: Depends on the system's

reservations and seating. Customer data risk of mishandling reservation data. Integration challenges of difficulty integrating with existing systems.	and customer experience. Low: Most risks are manageable with proper setup.	reliability and security measures.
Staff Scheduling and Management Software: Data Accuracy of incorrect data entry can lead to scheduling conflicts. Integration challenges cause difficulty in integration with payroll systems.	Medium: Optimizes labor costs and improves staff management. Low: Data accuracy issues are usually manageable.	Low: Most risks are manageable with proper procedures.

Analyse the Cost/Benefit of the Alternative Solution

All the estimated values were conducted by GROUP 24 to give a broad idea of how to select an alternative solution looking at the monetary costs. (ROI, NPV and IRR). The estimated discount for each alternative solution is 13% (0.13).

Point of Sale (POS) Systems:

Costs:

The initial setup fees for hardware and software (R3000), subscription fees (R500), training costs for staff (R4000) and the integration costs (R1000). The ongoing maintenance (R2200).

Total costs: R10, 700 per year

Benefits: Using a POS system offers comprehensive features for order processing, inventory management and sales tracking, and report generation.

Total annual benefits: R16, 700

Analysis Calculations:

ROI = (Net Benefits / Costs) * 100 = (10,700/16,700) *100=64.07%

NPV = Annual benefits - Initial costs + (Annual benefits / (1 + r) ^ n)

= R16, 700 - R10, 700 + (R16, 700 / (1 + 0.13) ^1) = R5, 739.82

Online Ordering and Delivery Platforms:

Costs: The following costs arise with the implementation of the online delivery and delivery platforms, costs such as fees associated with using third-party delivery services or developing an in-house system.

Total costs: R14, 135 per year

Benefits: The online delivery and delivery platforms improves convenience, integration of this systems with popular delivery platforms expands customer reach.

Total annual benefits: R15, 470

Analysis Calculations:

ROI = (Net Benefits / Costs) * 100 = (14,135/15,470) *100=91.37%

NPV = Annual benefits - Initial costs + (Annual benefits / (1 + r) ^ n)

= R15, 470 - R14, 135 + (R15, 470 / (1 + 0.13) ^1) = R1, 167.52

Tableside Ordering and Payment system:

Benefits: It improves accuracy, providing pleasing service and enhanced dining experience for customers.

Total annual benefits: R6, 575

Costs: It includes costs for the following the initial setup for hardware (equipment) and it will require potential maintenance expenses.

Total costs: R13, 350 per year

Analysis Calculations:

ROI = (Net Benefits / Costs) * 100 = (6,575/13,350) *100=49.25%

NPV = Annual benefits - Initial costs + (Annual benefits / (1 + r) ^ n)

= R6, 575 - R13, 350 + (R6, 575 / (1 + 0.13) ^1) = -R6, 014.95 (negative NPV)

Kitchen Display Systems (KDS):

Benefits: It offers real-time order management by providing efficient and effective communication amongst the staff and reduces errors in the kitchen.

Total annual benefits: R8, 980

Costs: Investments in Kitchen Display Systems for hardware and software.

Total costs: R12, 200 per year

Analysis Calculations:

ROI = (Net Benefits / Costs) *100 = (8980/12,200) *100=73.60%

NPV = Annual benefits - Initial costs + (Annual benefits / (1 + r) ^ n)

= R8980-R12200+ (R8980/ (1+0.13) ^1) = R 4 726.90

Inventory Management Software:

Benefits: The system offers real-time tracking of stock levels and waste reduction and having an optimized inventory turnover, it enhances cost control.

Total annual benefits: R5000

Costs: It includes costs for software licensing fees and implementation costs.

Total costs: R16, 750 per year

Analysis Calculations:

ROI = (Net Benefits / Costs) *100 = (5000/16750) *100=29.85%

NPV = Annual benefits - Initial costs + (Annual benefits / (1 + r) ^ n)

= R5000- R16750 + (R5000/ (1+0.13) ^1) = R4, 424

Customer Relationship Management:

Benefits: The system captures customer data and uses predictive analysis to create personalized marketing and creates loyalty program customization.

Total annual benefits: R7, 550

Costs: The following costs are included as part of the implementation, software costs and potential training expenses.

Total costs: R16, 650 per year

Analysis Calculations:

ROI = (Net Benefits / Costs) * 100= (7,550/16,650) *100= 45.34%

NPV = Annual benefits - Initial costs + (Annual benefits / (1 + r) ^ n)

= R7550 – R16650 + (R7550/ (1+ 0.13) ^1) = R6, 681

Reservation and Table Management Systems:

Benefits: Includes the following, the system offers efficient reservations by allowing customers to reserve tables easily, helps manage table arrangements by minimizing overbooking and provides real-time information when there’s a table available.

Total annual benefits: R13, 000

Costs: Implementing the reservation system requires an initial investment in software, hardware and staff training. The system will require further maintenance and technical support may incur ongoing costs.

Total costs: R24, 800 per year

Analysis Calculations:

ROI = (Net Benefits / Costs) * 100= (13000/ 24,800) *100= 52.41%

NPV = Annual benefits - Initial costs + (Annual benefits / (1 + r) ^ n)

= R13000 - R24800 + (13000/ (1+0.13) ^1) =

Staff Scheduling and Management Software:

Benefits: The system simplifies employee scheduling and tracks their work hours and manage labour costs.

Total annual benefits: R6, 000

Costs: The staff scheduling system ranges from R350 per user per customer, it includes costs such as operational maintenance and software licensing fees.

Total costs: R23, 000 per year

Analysis Calculations:

ROI = (Net Benefits / Costs) * 100= (6000/23000) *100=26.08%

NPV = Annual benefits - Initial costs + (Annual benefits / (1 + r) ^ n)

= R13000 – R24800 + (13000/ (1+0.13) ^1) = R11, 504

Feedback and Review Management Platforms:

Benefits: This enables the Black Restaurant to collect customer feedback using different platforms and be able to improve service quality and build positive customer relationships.

Total annual benefits: R2, 300

Costs: The price varies to house such platforms as group 24 we have estimated that it will cost R750 monthly to implement.

Total costs: R9, 000 per year

Analysis Calculations:

ROI = (Net Benefits / Costs) * 100 = 25.55%

NPV = Annual benefits - Initial costs + (Annual benefits / (1 + r) ^ n)

= R2300 – R9000 + (R2300/ (1+0.13) ^1) = R2, 035

User Requirements (Phase 4)

Introduction

Purpose & Objectives:

The main goal of developing this application is to help the restaurant reach more people beyond its local neighbourhood. By allowing the restaurant to serve customers from different areas, the app becomes a powerful marketing tool, attracting new customers across the entire country. Moreover, the order management system efficiently handles sales, processes order, manages inventory, and ensures timely delivery, resulting in happy customers.

Project Team & Key Contributors:

Customers:

User Requirements: Customers expect delicious and well-prepared food. They want their meals to be tasty and satisfying, service that is of good quality, customers appreciate friendly and attentive staff who take care of their needs promptly and to have a pleasant dining experience.

Role: They are the ones who drives the restaurant revenue and provide feedback that influences menu changes and overall satisfaction.

Employees:

User Requirements: They expect fair wages from the managers, safe working conditions, regularly training and opportunities for growth.

Role: They prepare and serve food, maintain cleanliness, and ensure smooth operations. Managers: Role: Oversees the entire development process, coordinates tasks, manages timelines, and ensures effective communication between.

Responsibilities: Vision alignment, project planning, and team coordination.

Suppliers and Vendors:

User Requirements: Timely payments, consistent orders, and adherence to safety standards.

Role: They supply ingredients, equipment, and services necessary for restaurant operations.

Investors:

User Requirements: Profitability, growth, and a well-managed business.

Role: They provide capital, monitor financial health, and expect a return on their investment.

Local Community:

User Requirements: Support for local events, employment opportunities, and responsible business practices.

Role: The restaurant contributes to the community's well-being and reputation.

Description

System Requirements

Operating System: it should be compatible with major web browser like Google chrome and other web-based apps.

- Management: High priority: The system be compatible with major browsers like Google Chrome to ensure that the system can accommodate a larger user base.
- End Users: High priority: Users of the system expect the system to work smoothly on the web browsers they like to use.

Hardware Requirement: the app will be optimized to run smoothly on a variety of devices ranging from low-end to high-end devices.

- Management: Medium priority: It is important for overall user experience.
- End User: High priority for low-end device users, user expect the system must operate smoothly on different devices and it's crucial for user satisfaction and accessibility.

Internet Connection: it will offer a stable internet connection for both the user and the server whom is hosting the app.

- Management: Highest priority: A stable internet connection is important for the system functionality and performance.
- End Users: High priority: Users rely on the system for different tasks and a stable internet connection ensures uninterrupted usage.

Security: it will implement appropriate security measures to protect user data, including encryption for data transmission and storage.

- Management: High priority: Data security is important to protect user's information and that they comply with regulations.
- End Users: Medium priority: Users expect their data such as personal information to be secured, through secure gateways.

Compatibility with Third-Party Services: for integration with payment gateways or mapping services, compatibility is essential.

- Management: Medium priority, compatibility with third party services help optimize the system performance and meet evolving business needs.
- End Users: High priority, users are the ones the system the most and they benefit from seamless integration.

Database Requirements

Relational Database Management System: it's a database that is suitable for structured data and offers robust features and managing transactions, enforcing data integrity and support complex queries.

- Management: High priority: a robust RDBMS is important for ensuring data integrity and support for complex queries, it is essential for the system functionality.
- End Users: Medium priority: users do not directly interact with the database; they rely on its capabilities for efficient data management.

Data Model: it is designed to efficiently store and manage the app's data model, which include entities such as users, orders, products, menus, payment and reviews.

- Management: High priority, designing the data model is essential for scalability, performance, and maintaining data integrity which aligns with the restaurant's objectives.
- End Users: Medium priority, users expect smooth interactions with different app entities and a well-designed data model contributes to a seamless user experience.

Scalability: it is capable of scaling horizontally or vertically to accommodate increases in data volume and user traffic.

- Management: High priority, the system ability to adjust to the increasing data volume and user traffic are important for the restaurant growth and maintaining performance.
- End Users: Medium to high priority, users expect the system to remain responsive and accessible even during periods of high demand.

Backup and Recovery: regular backups of the database should be performed to prevent data loss in case of hardware failure, software errors, or other disasters.

- Management: High priority, regular backups and reliable recovery processes are important for data protection, compliance and business continuity planning.
- End Users: Medium priority, users are not directly involved in the backup and recovery processes, they expect to benefit from the reliability and continuity of services ensured by these measures.

Managerial Report Requirements

Mission, Vision, and Values: The company values and vision should summarize. The statement should help assist in making strategic decision making and also align the decisions and overall company strategy.

- Management: High priority, these elements form the foundation of the company's identity and strategic direction, guiding decision-making and fostering alignment throughout the restaurant.
- End Users: Medium priority, users do not directly interact with these statements.

Audience Relevance: the report/statement should be relevant and easy for the intended audience to interpret and understand.

- Management: Medium priority, ensuring that reports and statements suit the specific audience helps enhance communication and leads to better decision-making by management.
- End Users: High priority, users need to understand the information presented to them clearly.

Visual Appeal: Reports should be visually appealing so managers can analyse the data easily. Charts, graphs can make presentation more effective.

- Management: Medium priority, managers expect reports that are accurate and relevant even though visually attractive reports can help managers understand data better.
- End Users: Low to medium priority, while eye-catching presentations are nice, what truly matters for users is the content it must be clear and relevant for the audience to understand.

Clear objectives: Define the objectives clearly so that everyone knows what goals are being tried to achieve.

- Management: High priority, managers expect objectives to be clearly defined and provide a roadmap for decision-making and ensure efforts are focused on achieving specific goals.
- End Users: High priority, users benefit from clearly defined objectives, they provide transparency and direction, helping them understand the purpose and goals of the project.

Operational Reports Requirements

Manufacturing:

Resource usage and costs: Tracking how resources are being divided/spent and all the costs associated from them.

- Management: High priority, managers regard this as important for optimizing operations, tracking resource usage and costs is important for maintaining profitability.
- End Users: High priority, understanding resource allocation and costs is important for the production staff it helps teams make informed decisions and identify areas of improvement.

Production Efficiency: Monitoring how efficient the production of the product is and how effective is the work staff in fulfilling objectives.

- Management: High priority, it's important for managers to maximize production efficiently as it directly impacts profitability and competitiveness.
- End Users: Medium to high priority, efficient production processes contribute to job satisfaction and goal achievement for staff.

Defect Rates: analyse how often defects happen and dedicate staff on fixing those defects.

- Management: High priority, analysing defect rate helps managers identify areas for quality environment and cost reduction.
- End Users: High priority, minimizing defects ensures that product quality and customer satisfaction and contributes to a positive work environment.

Retail:

Identify Trends: Understanding which products are customers into and which they are not into.

- Management: High priority, it helps managers identify customer preferences and market trends, it is important for inventory management and strategic decision-making.
- End Users: High priority, it is important for marketing staff to understand customer preferences, it enables targeted marketing efforts and better inventory management.

Supply Chain Management: Making proper use of the supply chain and ensuring that the smooth movement from one phase to the other.

- Management: High priority, effective supply chain management ensures timely delivery of products and costs efficiently.
- End Users: High priority, the logistics staff expect smooth operations through the supply chain for maintaining inventory levels and meeting customer demands.

Customer Satisfaction: assist customers with queries and improve on area that customers are having issues on.

- Management: High priority, it is important for managers to ensure that customers are satisfied as it is key to retaining customers and maintaining a positive brand image.
- End Users: High priority, human resources are expected to assist customers and address their issues promptly to improve satisfaction and loyalty.

Security Requirements

Cyber-security: Protect the restaurant's digital assets, including its website and online ordering systems, from cyber threats such as hacking or malware attacks.

- Management: High priority, protecting digital assets is important for maintaining the restaurant’s reputation and preventing financial losses.
- End Users: High priority, users expect their online interactions with the restaurant to be secure, sensitive data must be protected.

Financial Security: Implement robust cash-handling procedures to minimize the risk of theft or fraud.

- Management: High priority, it is important to minimize the risk of theft or fraud for financial stability and regulatory compliance.
- End Users (Cashiers): High priority, staff handling cash transactions require clear procedures and safeguards to protect against theft and fraud.

Data Security: Safeguard customer information, especially payment details, through encryption and secure storage systems.

- Management: Highest priority: Safeguarding customer information is important for compliance with data protection regulations.
- End Users: Highest priority, users expect their personal and payment information to be secure when interacting with the restaurant.

Physical Security: Ensure the safety of patrons and staff by implementing measures such as surveillance cameras, well-lit parking areas, and secure entry points.

- Management: High priority: Ensuring the safety of customers and staff is important for maintaining a positive reputation and legal compliance.
- End Users: High priority, both the staff and customers expect to feel safe and secure while at the restaurant premises.

Vendor Security: Vet vendors and suppliers to ensure they meet security standards and do not pose a risk to the business or its customers.

- Management: High priority, vetting vendors and suppliers helps mitigate risks to the business and its customers.
- End Users: High priority, procurement and supply chain staff are directly involved in selecting and managing vendors, it is important to secure vendor security for operations.

Interface Requirements

Menu Display: Ensure clarity in descriptions and prices. Highlight popular or signature dishes.

- Management: Medium priority, managers expect the system to highlight popular or signature dishes that can drive sales and promote brand image.
- End Users: High priority, users expect the system that shows menu in detail showcasing the prices, which enhances user experience and help customers make informed decisions.

Location Information: Provide directions or a map interface for visitors unfamiliar with the area.

- Management: Medium priority, managers expect the system to provide direction about the restaurant which can attract new customers and improve accessibility.
- End Users: High priority, users who are unfamiliar with the place rely on location information to find the restaurant easily.

Online Ordering/Reservations: Ensure a user-friendly interface for smooth transactions.

- Management: High priority, managers expect online ordering and reservation to increase sales.
- End Users: High priority, users expect a user-friendly interface for smooth transactions.

Customer Reviews: Include a section showcasing positive feedback from satisfied customers.

- Management: Medium priority, managers expect positive feedback to enhance the restaurant reputation and attract new customers.
- End Users: High priority, customers expect the restaurant review to be high so they can assess the quality of the restaurant and make dining decisions.

Contact Information: Include operating hours to inform customers of when they can visit.

- Management: Low priority, showcasing operating hours is standard practice for managers but it may not directly impact business performance.
- End Users: High priority, users expect to see the restaurant operating hours and their contact details to plan their visits effectively.

Forms, Reports, and Messages in the System:

There are 3 forms, 2 reports and 3 messages in the system.

Forms:

Online Order Form: Allows customers to input their orders, select delivery or pickup options, and provide contact information.

Reservation Form: Enables customers to reserve a table by specifying the date, time, and number of guests.

Customer Feedback Form: Allows customers to submit feedback or reviews about their dining experience.

Reports:

Weekly Sales Report: Provides insights into weekly sales performance, including revenue, popular dishes, and customer feedback.

Inventory Report: Details the current inventory levels of ingredients and supplies, aiding in restocking and inventory management.

Messages:

Customer Confirmation Messages: Sent to customers confirming their online orders or reservations, including relevant details such as order number or reservation time.

Promotional Messages: Sent to customers to inform them about ongoing promotions or special offers at The Black Restaurant.

Error Messages: Prompted in case of any errors during online transactions or form submissions, providing guidance on how to rectify the issue.

Look and Feel Requirements

Simple Screen Design: Keep the design clean and uncluttered. Use a limited colour palette and legible typefaces to ensure the content is the focus.

- Management: Medium priority, managers expect a clean and uncluttered design which enhances user experience and reflect a professional image.
- End Users: High priority, users expect designs that are easy to navigate and focus on content rather than distractions.
- Easy to Learn: The clean and uncluttered design with simple colours and easy to read text helps users understand information quickly.
- Easy to Use: By avoiding distractions, users can focus better on finding what they need without feeling overwhelmed.

Visual Elements: Arrange elements in a way that guides visitors to the most important information first. (Homepage, Contact, About)

- Management: High priority, managers expect visual elements that guide visitors to important information which improves engagements and conversion rates.
- End Users: High priority, user's value system that helps them find what they need quickly and easily.
- Easy to Learn: Arranging elements in a way that guides users to important information helps them understand how the system is organized.
- Easy to Use: Clear visual cues make it easy for users to navigate and find what they are looking for.

Navigation: Ensure that the site is easy to navigate with a clear menu structure and intuitive user interface. (Hamburger menu for easy access)

- Management: High priority, managers expect the system to be easy to navigate as it is important for ensuring guests can find their desired information efficiently.

- End Users: High priority, users expect an intuitive navigation process to enhance their user experience and encourages exploration of the system.
- Easy to Learn: Intuitive navigation, like a simple menu helps users understand how to move around the system.
- Easy to Use: Clear navigation encourages users to explore different parts of the system making it easy to find what they want.

Consistency: Maintain a consistent look across all pages, including colours, typefaces, and layout styles. (Don't use colours that are too bright and too much, make use of pictures)

- Management: Medium priority, managers expect a consistent design element that contributes to brand identity and professionalism.
- End Users: High priority, users expect consistency across pages, it improves usability and familiarity for users.
- Easy to Learn: Using a consistent design across all pages makes it predictable for users, so they can quickly understand how to navigate.
- Easy to Use: Consistency in design elements means users don't have to re-learn how to interact with the system, the system is easy.

Responsive: Design the website to be responsive, so it looks and functions well on various devices and screen sizes, buttons should react on click.

- Management: High priority, managers expect a responsive design to ensure a positive user experience across different devices, which can impact engagement.
- End Users: High priority, users expect the system to function well on their preferred devices.
- Easy to Learn: A responsive design means users can access the system on any device, no matter the type of device.

- Easy to Use: The system adapts to different devices, so users have a consistent experience.

Accessibility: Make sure the website is accessible to all users, including those with disabilities, by following accessibility guidelines.

- Management: High priority, managers ensure accessibility aligns with corporate values.
- End Users: High priority, users expect an accessible design, they want to access the system at any time and use the website effectively.
- Easy to Learn: The guidelines assist users to use the system effectively.
- Easy to Use: An accessible design removes barriers for users with disabilities making it easy for them to access and interact with the system.

Operational Requirements

Kitchen/ Dining Area Setup & Menu Implementation: A functional kitchen is crucial for food preparation and storage. Create a well-thought-out menu that aligns with the restaurant concept. Set up a comfortable dining space with tables, chairs, and appropriate décor.

- Management: High priority: a functional and well-designed menu are important for the restaurant's success and customer satisfaction.
- End Users: High priority, customers expect a comfortable dining space and a menu that aligns with the restaurant's concept and meet their preferences.

Staffing: Employ a manager to run the restaurant.

- Management: High priority, hiring a manager to oversee restaurant operations is important and ensuring efficiency and maintaining quality standards.
- End Users: Low to medium priority, customers do not directly interact with the manager, they benefit from a well ran restaurant.

Customer Service: Train staff to provide excellent customer service.

- Management: High priority, excellent customer service is important for creating positive dining experiences for customers and building customer loyalty.
- End Users: Highest priority, customers expect quality service when dining out and a well-trained staff contribute to overall satisfaction.

Licenses and Permits: Obtain a food service license from the local health department. If the restaurant plans to sell alcohol, they must secure a liquor license.

- Management: High priority, obtaining the appropriate license and permit is important for legal compliance and avoiding potential fines.
- End Users: Low priority, customers do not directly get involved in the licensing process of the restaurant, but they expect the restaurant to operate within the law.

Transaction Equipment: Have cash registers or card terminals available.

- Management: High priority, cash registers and card terminal are important for processing payments efficiently and accurately.
- End Users: High priority, customers expect the restaurant to have cash registers and card terminals, this convenient payment options are important for their experience.

Safety Measures: Implement food safety protocols. Regularly inspect kitchen equipment and maintain it.

- Management: Implementing food safety protocols and regularly maintaining kitchen equipment is important for ensuring the health and safety of customers and staff.
- End Users: High priority, customers expect the restaurant to adhere to safety standards to protect their well-being while dining.

Inventory Management: Keep track of inventory levels for ingredients, beverages, and supplies.

- Management: High priority, managers expect an efficient inventory management system to help control costs, minimize waste and ensure availability of ingredients and supplies.
- End Users: Low priority: customers are not directly involved in inventory management; they do benefit from consistent availability of menu items and quality ingredients.

Describe in detail the steps in managing New Requirement Changes

1. Be Consistent

By being consistent as a manager it helps set clear expectations for everyone. Communicate consistently with your team, it helps employees handle high stress situations effectively.

2. Manage Proactively

Anticipating staffing needs, plan menu changes and updates, identifying market trends and opportunities.

3. Learn the Operation by doing the work yourself

As a manager you need to gain hands-on experience in different roles within your restaurant.

4. Change Control Process

Implement a well-defined change control process for the restaurant, by documenting proposed changes, analysing their impact on the restaurant and prioritize changes.

5. Effective Communication Communicate the change and the reasons behind the implementation of the change to your team. Ensure that multiple channels such as weekly reports, SMS's, Email are used to ensure everyone is informed.

6. Team Involvement Involve employees on system, seek their input and buy in from the start.

7. Provide Training and Support

Train employees on new system, offer support during the transition.

8. Check in with your team

Do a weekly basis report to assess how the changes are affecting the team, address any small problems that might arise and show empathy and understanding.

9. Create Positive Energy

Encourage the team that the transition is there to help them do their work with minimum effort, encourage team work.

Systems Specification (Phase 5)

Definition of the system

Purpose of the document

The documentation provides clear instructions on how the ordering system, it serves as a comprehensive blueprint outlining the functionality, requirements, and specifications. It ensures that all staff members understand the processing consistently reducing errors. New employees can quickly learn how to use the system by referring to the documentation, it covers topics such as order placement, payment processing and order fulfilment. It includes details about system requirements, testing process, installation this helps the IT team and managers to address issues if they arise. Security measures such as data encryption, user access controls, and compliance with privacy regulations are outlined.

Purpose of the system

The online ordering system is a diverse system and can greatly benefit the restaurant and its customers. Its overall purpose is to improve customer convenience, enhance operational efficiency, increase in revenue opportunities, and to adapt to the evolving landscape of the food-service industry.

Background of the company

The Black is an enterprise that offers a diverse menu of dishes. It has become a popular choice for locals and visitors as it caters for all people from different

locations, it focuses on delivering first grade meals at an affordable price, with its convenient location, it is located in the vibrant neighborhood of block L, Soshanguve. The menu at The Black Restaurant showcases a selection of mouth-watering dishes that are sure to satisfy any craving. The restaurant prides itself on its commitment to sustainability, supporting local food store and reducing its environmental footprint wherever possible. The Black Restaurant aims to create memorable dining experiences that celebrate the bounty of the region while fostering a sense of community.

Success Criteria according to client

User Satisfaction: The system should meet the needs and expectations of the users, providing customers with an efficient and user-friendly interface.

Order Accuracy: The system should effectively improve security measures and mitigate risks, and ensuring that orders received are accurate, minimizing errors such as incorrect items, missing items or order mix-ups for operational efficiency.

Order Volume: The client is able to track metrics such as the number of orders processed daily, weekly, or monthly to assess the system's impact on sales and revenue.

Efficiency and Turnaround Time: The client will monitor how orders are processed from placement to pick-up.

Improved communication and collaboration: The system should facilitate effective communication and collaboration among security staff, supervisors, and management.

Timely response: The system should enable quick identification, notification, and response to security incidents, ensuring timely action and resolution.

Scalability and flexibility: The system should be scalable to accommodate future growth and adaptable to evolving security needs and technologies.

Revenue Growth: The client wants to see a positive impact on revenue as a result of implementing the ordering system.

Customer Retention and Loyalty: Usual customers are measures of success, the client may track metrics such as customer retention rates, frequency of orders, and participation in loyalty programs to assess customer satisfaction and business success.

Features of the system

Account Creation: The user is able to create the account in the system to place orders.

Menu Browsing: Customers have an opportunity to explore the restaurant's digital menu using a website or mobile app.

Order Selection: Customers chose the items they want by adding them to the shopping cart. They are able to customize their options.

Payment Processing: Customers make payments using various methods. (Cash on pick-up, credit/debit cards, coupons, etc.)

Order confirmation|: After the customer has made payment, they receive a confirmation notification via email or SMS.

Order Fulfilment: The restaurant staff receives the order and they start preparing the ordered items.

Order Tracking: The ordering system includes order tracking features which enables customers to monitor their order status in real-time.

Feedback: Upon completion of the order, after it has been picked, customers are provided with the opportunity to provide feedback or rate the experience through the online ordering system.

Post-Order Operations: The restaurant manager can perform post-order operations such as updating inventory, liquidation and creating reports.

Security Requirements listed by client

To ensure that there's security for The Black Restaurant operations, both online and offline the following requirements must be considered as set of security Requirements.

Data Protection: Code sensitive customer data such as payment information.

Network Security: Use firewalls, encryption, and secure Wi-Fi networks. Ensure that guest Wi-Fi is separate from the business network.

Payment Security

Secure Payment Gateways: Use secure and reputable payment processors that comply with PCI DSS (Payment Card Industry Data Security Standard).

Employee Security Training

Awareness Programs: Regularly train employees on security best practices, including recognizing phishing attempts, safe handling of customer data, and emergency response procedures.

Encryption: Implementing encryption techniques to protect sensitive data and communication channels from unauthorized access or interception.

Intrusion Detection: Incorporating intrusion detection systems to detect and prevent unauthorized access attempts or malicious activities within the system.

Incident Response: Implementing mechanisms to identify, report, and respond to security incidents promptly and effectively.

Customer Privacy

Privacy Policies: Clearly communicate privacy policies to customers, especially regarding data collection and usage.

Secure Reservations: Ensure that online reservation systems are secure and protect customer data.

These security requirements aim to establish a secure and protected environment for the Black Restaurant Ordering System, safeguarding sensitive information, preventing unauthorized access, and mitigating potential security risks.

Performance & Response Time Requirements of the system

Online Ordering System

Website Responsiveness: Ensure the restaurant's website loads quickly on both desktop and mobile devices, with a page load time of under 5 seconds.

Order Placement: Allow customers to place orders smoothly and quickly, with minimal steps required

Reservation System

Reservation Confirmation: Confirm reservations instantly or within a few minutes of booking to provide customers with peace of mind.

Customer Service

Response Time: Respond to customer inquiries via phone, email, or social media within 24 hours

Issue Resolution: Resolve customer complaints or issues promptly, aiming for a resolution within the same visit or within 1-2 days for online feedback.

Overall System Performance

Scalability: Design the system to handle peak loads during busy periods, such as weekends or holidays, without degradation in performance.

System Availability: The system should have a high level of availability, minimizing downtime and ensuring that it is accessible to users whenever needed.

Batch Processing**:** For large-scale data processing tasks, such as generating reports or performing system backups, the system should complete batch processes within an acceptable timeframe, considering the volume of data and complexity of the operation.

Network Performance: The system should be designed to optimize network performance, minimizing data transfer latency and ensuring efficient communication between system components.

Monitoring: Implement performance monitoring tools to track system performance metrics and identify any bottlenecks or areas for improvement.

Regular Maintenance: Conduct routine maintenance and updates to the system to ensure optimal performance and reliability over time.

Data Backup for the system (detail for system analyst – like who, when, how)

The Black Restaurant, located in Block L, Soshanguve, is an enterprise known for its diverse menu and quality meals at affordable prices. To maintain operational efficiency and protect critical business data, it is essential to establish a robust data backup strategy.

Who is Responsible?

IT Manager: This role ensures that backups are executed, verified, and maintained.

System Administrator: Supports the IT Manager by managing the technical aspects of the backup systems, including configuration and troubleshooting.

Database Administrator (DBA): Handles the backup of databases, ensuring that all restaurant data, including customer information, menus, and transaction records, are securely backed up.

When to Perform Backups?

Regularly test the backup process to ensure the integrity and recoverability of the backed-up data.

Daily Backups: Essential operational data, such as customer orders, transactions, and inventory, should be backed up daily at the end of business hours.

Weekly Backups: Full system backups, including all applications, databases, and configurations, should be performed weekly.

Monthly Backups: A comprehensive backup of all data should be done monthly and stored offsite for disaster recovery purposes.

How to Perform Backups?

Backup Types:

Full Back-up: A complete copy of all data. This is performed weekly and monthly.

Incremental Backup: Only the data that has changed since the last backup is saved. This is performed daily.

Differential Backup: Data that has changed since the last full backup.

Onsite Backup

Network-Attached Storage (NAS): Local storage devices connected to the network for quick backup and restore.

Consider encrypting the backup data to ensure its confidentiality during transit and storage, protecting sensitive information from unauthorized access.

External Hard Drives

Offsite Backup

Cloud Backup Services: Secure cloud storage solutions like AWS, Google Cloud for daily incremental and monthly full backups.

Physical Offsite Storage: Monthly backups stored in a secure offsite location, such as a safety deposit box or a dedicated storage facility.

Reports (Operational/Managerial) required from the system

Operational Reports

Incident Reports: Comprehensive records of security incidents, including details and outcomes

Attendance Reports: Summaries of officer presence and compliance with attendance.

Incident Response Reports: Records of actions and decisions made in response to security incidents.

Managerial Reports

Performance Reports: Evaluation of how well the development team perform their duties, following the success criteria of the client.

Compliance Reports: Assessments of compliance with the established security rules and regulations, no breach of the POPIA ACT.

Resource Allocation Reports: Details on how security resources (equipment, staff, etc) are distributed and utilized.

Ad hoc Reports: Customized reports are created as needed to address specific security-related inquiries.

Hardware and Software Requirements

Hardware requirements

Server: A dedicated server to host the system and handle data processing and storage.

Network Infrastructure: Reliable network connectivity to ensure smooth communication between system components.

Workstations: Sufficient number of workstations for users to access the system (Desktop computers, laptops, or mobile devices for system users to access and interact with the system)

Receipt Printers: The printing machines that are used to print order receipts for customers and kitchen tickets for order preparation.

Mobile Devices: Tablets or smartphones for staff members to manage orders, monitor performance and communicate with colleagues.

Software requirements

Sales management in a restaurant involves planning, directing, and controlling sales activities to maximize revenue and ensure a high level of customer satisfaction. Software plays a crucial role in modern restaurant operations, enhancing efficiency, customer experience, and sales management.

Point of Sale (POS) Systems

Order Processing: Streamlines order taking and processing, both for dine-in and takeout.

Sales Tracking: Records sales data, tracks inventory, and generates reports.

Payment Processing: Integrates with various payment methods, including credit/debit cards and mobile payments.

Reservation and Table Management Systems

Online Reservations: Allows customers to book tables online, reducing phone bookings and optimizing seating.

Managing employee timesheets in a restaurant involves tracking work hours accurately, ensuring compliance with labour laws, and optimizing labour costs

Customer Relationship Management Software:

The software manages customer interactions, customer preferences and feedback, it uses a feedback collection mechanism to gather customer reviews and ratings.

Online Ordering Platform:

The platform enables customers to place orders online using the restaurants website.

Installation (when, how, who)

When

The installation of The Black Restaurant ordering system involves a careful consideration of various factors such as system readiness, staff availability and any downtime for the restauration to ensure minimal disruption to the restaurants operations while maximizing efficiency and effectiveness. Sufficient time must be allocated for pre-installation preparations, including hardware setup, software configuration and testing.

How: The installation process involves several processes

Preparation: Ensure that all hardware and software requirements for the ordering system are met.

Software Installation: The ordering system software must be installed on the designated devices; the software can be downloaded from a trusted source or be bought as a package from software vendors.

Configurations: The software must be configured according to the restaurant's requirements, according to the acceptance criteria of the client, including menu setup, user accounts and permissions.

Integration: The system must be integrated with other systems and services as needed, such as inventory management systems or customer relationship management software.

Testing: Full system testing must be performed thoroughly of the installed system to ensure functionality, compatibility with existing processes and accuracy.

Training: Staff must undergo training sessions and learn how to use the ordering system effectively; they should be provided with guidelines about the system features.

Go-Live: Once all the processes are done, installation and testing, officially launch the ordering system for live use in the restaurant.

Monitoring: Monitor the system performance closely during the initial rollout to address any issues that may arise promptly.

Documentation: The installation processes are document, preparation, software installation, configurations, integration, testing and troubleshooting guidelines.

Who: The people responsible for the installation process?

The installation process is managed by the restaurant owner or manager, collaboration with developers and system analyst ensures a successful setup.

Business Owners/Managers: this team/group of stakeholders will oversee the project, sets goals, and approves the decisions regarding the systems.

IT Team: this team is responsible for any technical implementation, including integration with existing systems.

App Developers: this team is responsible to create or customize the app to fit the business's needs and ensures the app is user-friendly and meets design standards.

Marketing Team: this team is responsible to plans the promotion and rollout of the app to customers.

Customer Support Team: this team is responsible for handling any issues customers may have with the app.

Customers: this are the most important team who will be using the app to place orders, review the place and the service of the restaurant.

Testing (when, how, who)

WHEN (TESTING STAGES)

Unit Testing: Developers test individual components or functions of the system.

Integration Testing: Testing the interaction between different modules in the system.

System Testing: This testing is checking the entire system's functionality.

User Acceptance Testing: this testing is done by end users to ensure that the system meets the requirements.

WHO (PARTICIPANTS)

Developers: They conduct unit and integration testing.

QA Team: This team conduct system testing and may assist in user acceptance testing

Restaurant Staff: Provide feedback on usability and functionality of the system.

Customers: This team engage in the user acceptance testing to provide real-world feedback.

Project Managers: This team oversee the testing process and ensure deadlines are met to complete the system.

HOW (PROCESSES)

Testing Cases: It creates test cases covering all features and functionality.

Automation: They use automated testing tools for repetitive tasks.

Real-World Testing: It simulate real-world scenarios to ensure the application performs well under various condition.

Feedback-Loops: This testing it continuously gather feedback from all stakeholders throughout the testing process

Select the most appropriate methodology and use the required tools

The appropriate methodology

Model: Scrum

Methodologies	Description	Benefits	Drawbacks	Risk Assessment	Risk Level
Waterfall	It provides a simple framework for planning projects; tasks are in sequential order.	It has clear goal milestones, well defined requirements and planning.	It lacks flexibility for change. Once project starts it limits adaptability.	Changes may disrupt the entire project, its posses' high risk due to the inflexible nature of it.	High Risk
Agile	It is a flexible, iterative design and build process.	It is flexible, able to adapt to changes and fast feedback to customers.	Continuous changes may delay the completion of the project. Scope creep	Scope creep needs to be carefully monitored.	Moderate Risk
Kanban	Tasks are represented visually on a board; the team are able to see the state of every piece of work at any time.	It is flexible to accommodate changes and it has an efficient work flow.	It is less structured	Lack of structure may lead to inefficiencies.	Moderate Risk
Lean	It's a tool that eliminates waste removing wasteful activities that don't add	Reduced waste It reduces unnecessary steps and waiting time.	It requires attentive documentation, and process mapping. Resistance to change.	The need for documentation and process mapping is time consuming and can be challenging.	Moderate Risk

The agile scrum methodology is a suitable for the Black restaurant looking at its risk levels and the flexibility for it to allow quick adjustments based on customer feedback, which is important for website design. The website will be able to evolve

	value to the project.				
Six-sigma	It provides organizational tools to improve the capability of their business processes.	It improves project quality and consistency.	It requires attentive documentation and planning.	It slows down the development process.	Moderate Risk

continuously meeting business needs and user expectations, it is an excellent choice for creating a responsive, adaptable and customer centric web experience.

Tools:

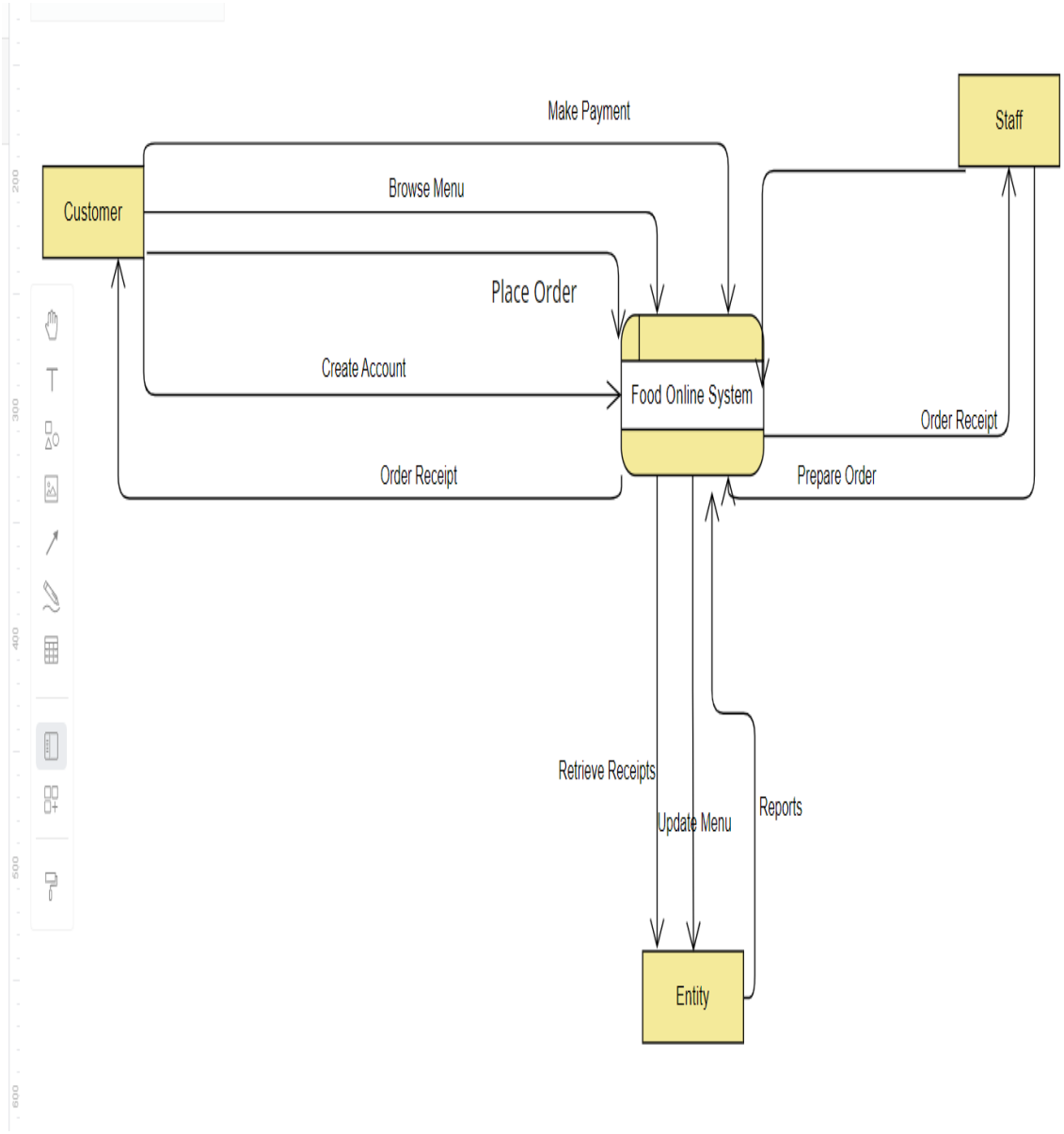
Project Management Tool: Smart sheet, Zoho Projects, Jira and Notion can be utilized for overseeing and monitoring project progress, handling user stories, planning sprints, and managing task assignments

Communication and Collaboration Tool: Monday.com, Microsoft Teams, or Zoom can be utilized for effective communication, team collaboration, and coordination between team members.

Version Control System: Git with platforms like GitHub or Bit bucket can be used for source code management, collaboration, and version control.

Testing and Continuous Integration Tools: Tools like Selenium, JUnit, or Cypress can be used for automated testing, while Jenkins or Travis CI can be employed for continuous integration and delivery.

Context Diagram



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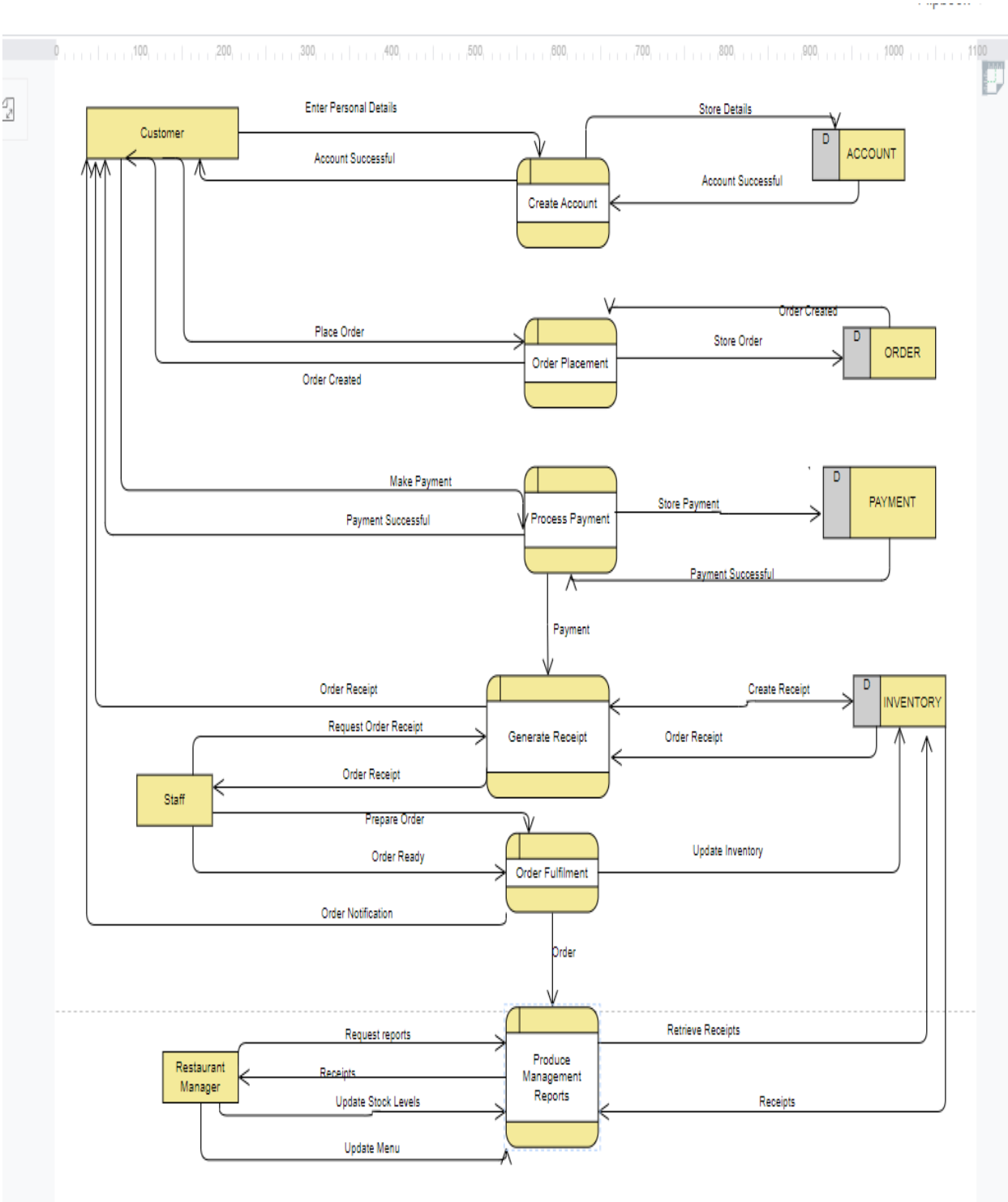


Processes	Data Stores
1. **Create Account** 2. **Order Placement** 3. **Process Payment**	1. Account 2. Order File 3. Payment

4. Generate Receipt **5. Order Fulfilment** **6. Produce Management Reports**	4. Inventory

Data Dictionary

Table for Customer

Field Name	Data Type	Field Size	Constraints	Description	Examples
Customer_ID	Int	10	Primary Key	Customer ID, Auto generated	101
Customer_Name	varchar	45	Not Null	Customer Name	Lesedi
C_Surname	varchar	45	Not Null	Customer Surname	Mudau
Email_id	varchar	60	Not Null	Customer Email	Mudau12@gmail
Contact	varchar	13	Not Null	Customer Contact	081 740 1418
Address	varchar	30	Not Null	Customer Address	621 Sosh Plata
Gender	Numeric	2	1= male 2 = female	Gender of Customer	1

Table for staff

Field Name	Data Type	Field Size	Constraints	Description	Examples
Staff_ID	Int	10	Primary Key	Staff ID, Auto generated	135
Staff_Name	varchar	45	Not Null	Staff Name	Mpiloenhle
Staff_Surname	varchar	45	Not Null	Staff Surname	Mabunda
Role	varchar	30	Not Null	Staff Position	Manager

Table for order

Field Name	Data Type	Field Size	Constraints	Description	Examples
Order_ID	Int	10	Primary Key	Order ID, Auto generated	121
Customer_ID	Int	10	Foreign Key	Primary Key for Customer table	101
Menu_Item	varchar	45	Not Null	Menu items	Pizza
Quantity	int	30	Not Null	Order Quantity	2
Price	Numeric	15	Not Null	Price Due	40

Table for payment

Field Name	Data Type	Field Size	Constraints	Description	Examples

Payment_ID	Int	10	Primary Key	Payment ID, Auto generated	1
Order_ID	Int	10	Foreign Key	Foreign key from table order	101
Payment_Method	varchar	30	Not Null	Type of payment method	Cash
Amount_Paid	Numeric	15	Not Null	Amount paid for food items	50

Table for Menu

Field Name	Data Type	Field Size	Constraints	Description	Examples
Menu_ID	Int	10	Primary Key	Menu ID, Auto generated	141
Menu_Name	varchar	30	Not Null	Menu items name	The Black Menu
Description	varchar	60	Not Null	Description of the menu	Food items
Price	Numeric	15	Not Null	The cost converted to two decimal places	Burger R30

Table for Food Items

Field Name	Data Type	Field Size	Constraints	Description	Examples

FoodItems	Int	10	Primary Key	Food Items ID, Auto generated	131
Menu_ID	Int	10	Foreign Key	Primary key for table Food_Items	141
Ingredients	Varchar	30	Not Null	Needed ingredients	Sauces
Preparation	varchar	30	Not Null	Food preparation	Marinating

Table for Pick-Up

Field Name	Data Type	Field Size	Constraints	Description	Examples
PickUp_ID	Int	10	Primary Key	PickUp ID, Auto generated	111
Order_ID	Int	10	Foreign Key	Primary key for table order	101
PickUp_Status	varchar	15	Not Null	Order Pick up status	Ready

Table for Report

Field Name	Data Type	Field Size	Constraints	Description	Examples
Report_ID	Int	10	Primary Key	Report ID, Auto generated	222
Date	DATE/TIME	10	DD/MM/YYYY	Date of the report	26/06/2024

Total_Sales	Numeric	15	Not Null	The total sales converted to two decimal places	R 123,987.98

Normalize Tables

Customer:

1NF: CustomerID, FirstName, LastName, Phone, Email, Address

2NF: No partial dependencies exist.

3NF: No transitive dependencies exist.

1st Form

Customer_ID	Cust_Name	Cust_Surname	Email_id	Contact	Address	Gender
101	Lesedi	Mudau	Mudau12@gmail.com	0817401418	621 Sosh Plata	1

2nd Form

Customer_ID	Cust_Name	Cust_Surname	Email_id	Contact	Address	Gender
101	Lesedi	Mudau	Mudau12@gmail.com	0817401418	621 Sosh Plata	1

3rd Form

Customer_ID	Cust_Name	Cust_Surname	Email_id	Gender
101	Lesedi	Mudau	Mudau12@gmail.com	1

Customer_Contact Table

Contact_ID	Customer_ID	Contact	Address
1	101	0817401418	621 Sosh Plata

Staff:

1NF: StaffID, FirstName, LastName, Role,

2NF: No partial dependencies exist.

3NF: No transitive dependencies exist.

1st Form

Staff_ID	Staff_Name	Staff_Surname	Role
135	Mpilonhle	Mabunda	Manager

2nd Form

Staff_ID	Staff_Name	Staff_Surname	Role
135	Mpilonhle	Mabunda	Manager

3rd Form

Staff_ID	Staff_Name	Staff_Surname	Role
135	Mpilonhle	Mabunda	Manager

Order Details:

1NF: OrderID, CustomerID, MenuItemID, Quantity, TotalPrice

2NF: No partial dependencies exist.

3NF: No transitive dependencies exist.

1st Form

Field Name	Data Type	Field Size	Constraints	Description	Examples
Order_ID	Int	10	PK	Order Id	121
Customer_ID	Int	10	FK	PK for customer table	101

2nd Form

Field Name	Data Type	Field Size	Constraints	Description	Examples
Order_ID	Int	10	PK	Order Id	121
Customer_ID	Int	10	FK	PK for customer table	101

Order_Details Table

Field Name	Data Type	Field Size	Constraints	Description	Examples
Order_ID	Int	10	FK	Order Id	121
Menu_Item	varchar	45	Not Null	Menu Items	Pizza
Quantity	Int	30	Not Null	Order Quantity	2
Price	Numeric	15	Not Null	Price Due	40

3rd Form

Field Name	Data Type	Field Size	Constraints	Description	Examples

Order_ID	Int	10	PK	Order Id	121
Customer_ID	Int	10	FK	PK for customer table	101

Order_Details Table

Field Name	Data Type	Field Size	Constraints	Description	Examples
Order_ID	Int	10	FK	Order Id	121
Menu_Item	varchar	45	Not Null	Menu Items	Pizza
Quantity	Int	30	Not Null	Order Quantity	2
Price	Numeric	15	Not Null	Price Due	40

Menu Tables

Field Name	Data Type	Field Size	Constraints	Description	Examples
Menu_Items	Varchar	45	PK	Menu_items	Pizza
Price	Numeric	15	Not Null	Price	20

Payment:

1NF: PaymentID, OrderID, PaymentMethod, AmountPaid

2NF: No partial dependencies exist.

3NF: No transitive dependencies exist.

1st Form

Payment_Id	Order_Id	Payment_Method	Amount_Paid

1	101	Cash	50

2nd Form

Payment_Id	Order_Id	Payment_Method	Amount_Paid
1	101	Cash	50

3rd Form

Payment_Id	Order_Id	Payment_Method	Amount_Paid
1	101	Cash	50

Report:

1NF: ReportID, Date, TotalSales

2NF: No partial dependencies exist.

3NF: No transitive dependencies exist.

1st Form

Report_ID	Date	Total_Sales
222	26/06/2024	R123,987.98

2ND Form

Report_ID	Date	Total_Sales
222	26/06/2024	R123,987.98

3rd Form

Report_ID	Date	Total_Sales
222	26/06/2024	R123,987.98

Menu:

1NF: MenuItemID, Name, Description, Price

2NF: No partial dependencies exist.

3NF: No transitive dependencies exist.

1st Form

Menu_ID	Menu_Name	Description	Price
141	The Black Menu	Food items	Burger R30

2nd Form

Menu_ID	Menu_Name	Description	Price
141	The Black Menu	Food items	Burger R30

3rd Form

Menu_ID	Menu_Name	Description
141	The Black Menu	Food Items

Item_ID	Menu_ID	Item_Name	Price
1	141	Burger	R30

FoodItems:

1NF: MenuItemID, Ingredients, Preparation

2NF: No partial dependencies exist.

3NF: No transitive dependencies exist.

1st Form

FoodItems	Menu_ID	Ingredients	Preparation
131	141	Sauces	Marinating

2nd Form

FoodItems	Menu_ID	Ingredients	Preparation
131	141	Sauces	Marinating

3rd Form

FoodItems	Menu_ID
131	141

Ingredients Table

IngredientsID	FoodItems	Ingredient
1	131	Sauces

PreparationID	FoodItems	Preparation
1	131	Marinating

Pickup:

1NF: Pick-Up_ID, OrderID, DriverID, PickUp_Status

2NF: No partial dependencies exist.

3NF: No transitive dependencies exist.

1st Form

PickUp_ID	Order_ID	PickUp_Status
111	101	Ready

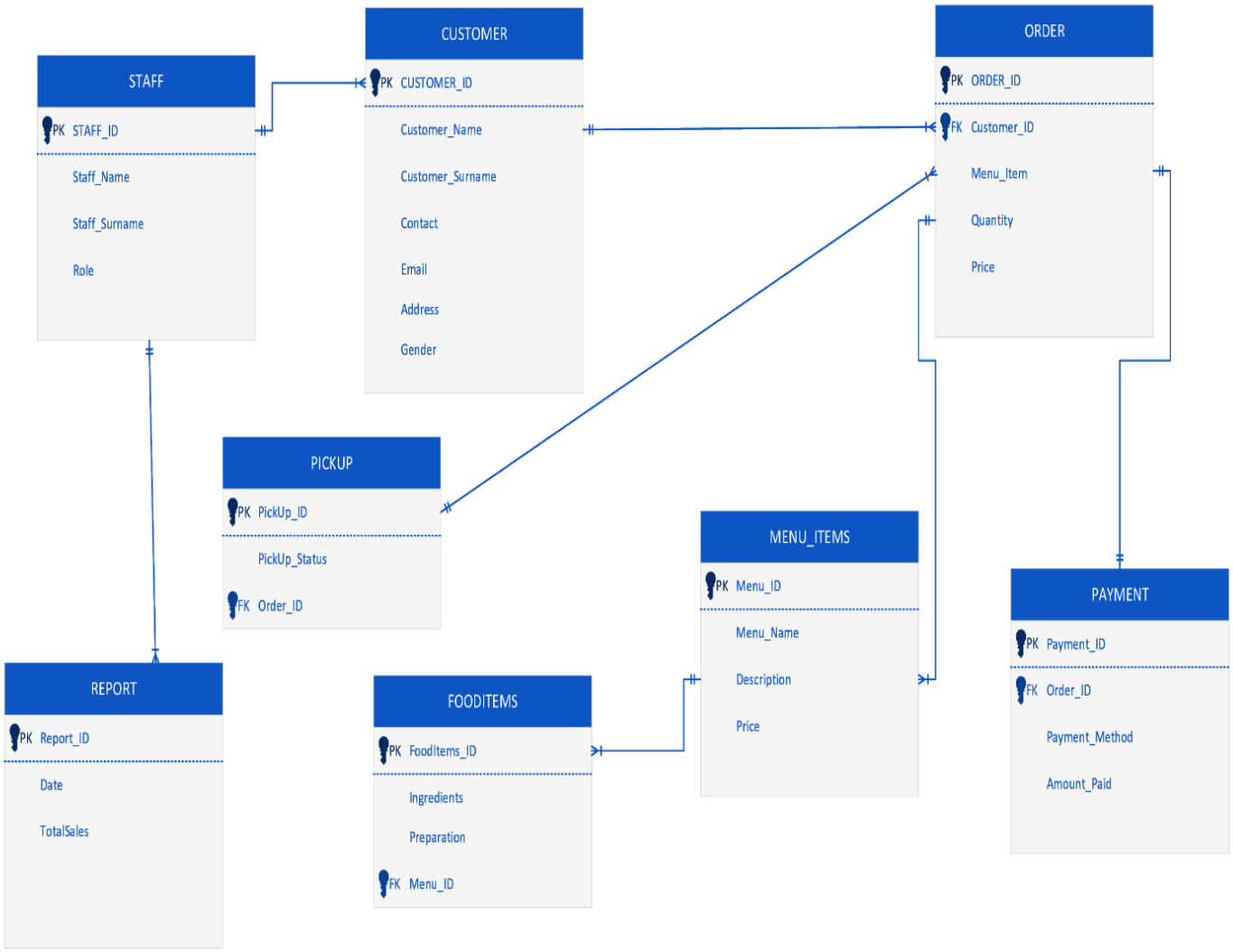
2nd Form

PickUp_ID	Order_ID	PickUp_Status
111	101	Ready

3rd Form

PickUp_ID	Order_ID	PickUp_Status
111	101	Ready

ERD



Relationships

1. Staff – Customer (One- Many)

One staff can serve one or many customers.

2. Staff - Report (One –to – Many)

One staff member can create one or many reports.

3. Customer – Order (One-to-Many)

One customer can place one or many orders.

4. Order- Payment (One-to-One)

An order can have one payment

5. Order-MenuItems (One-to-Many)

An order can contain multiple menu items.

6. PickUp-Order (One-to-Many)

One customer can pick up one or many orders

7. MenuItems-FoodItems (One-to-Many)

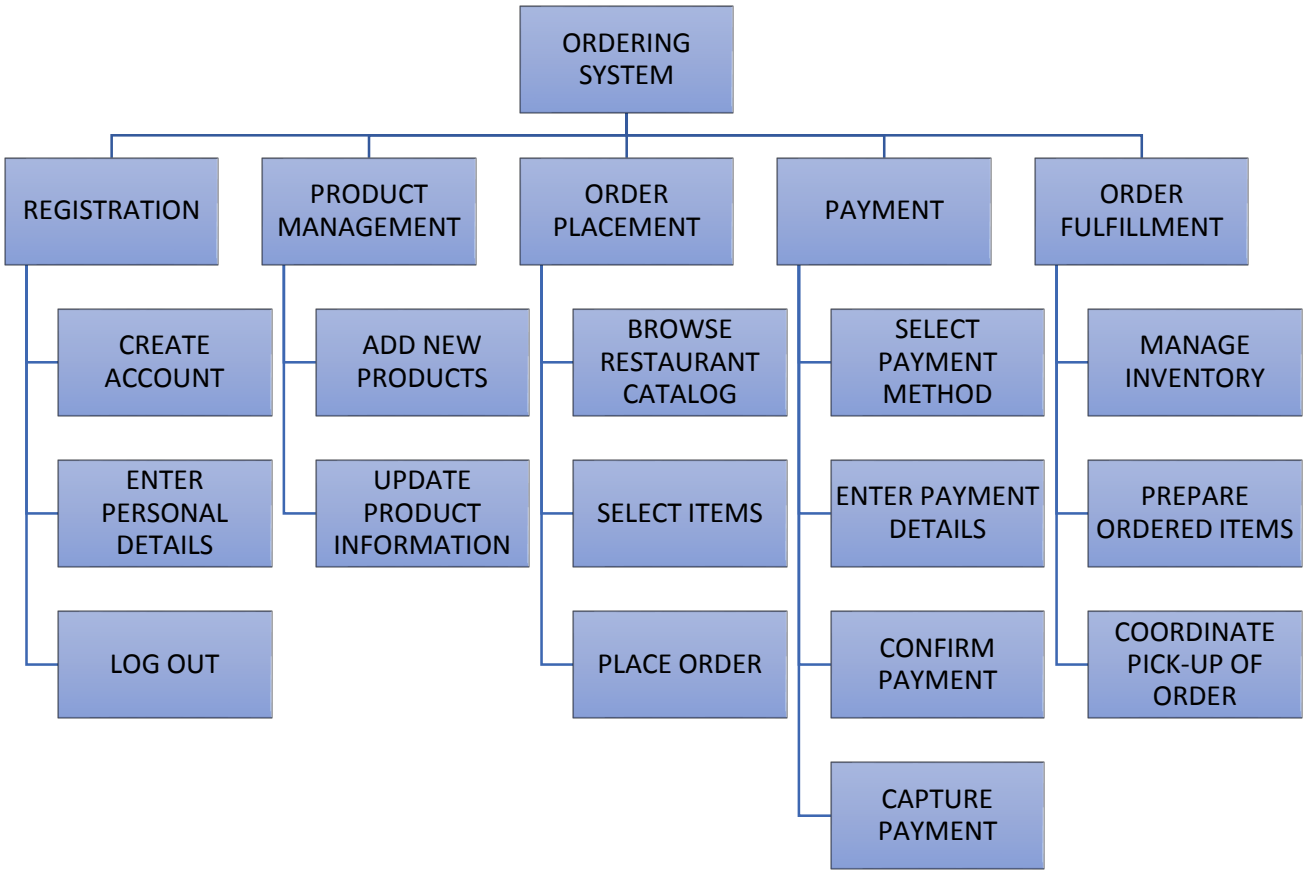
One menu-items can contain multiple food items

CRUD (Process and Location)

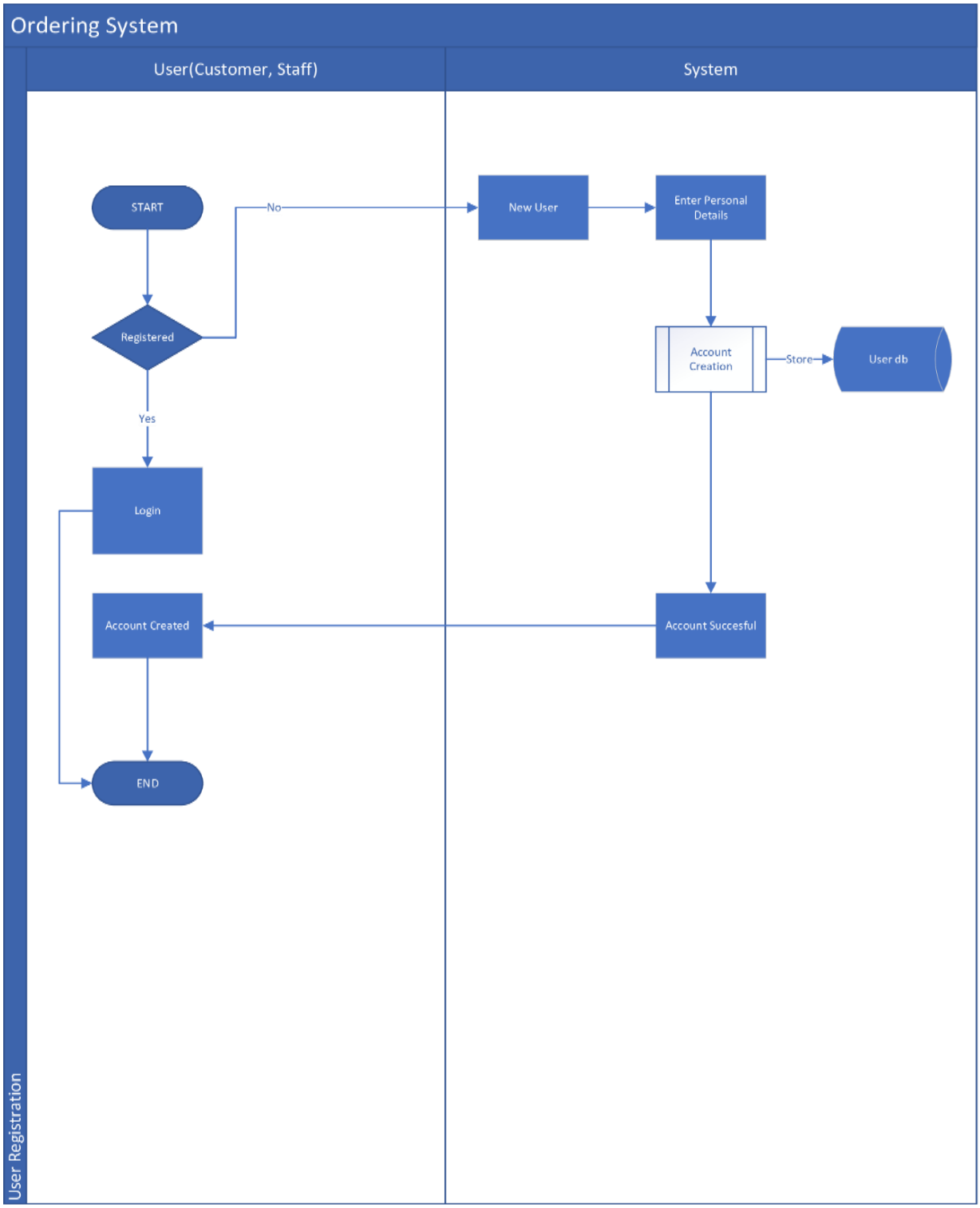
	Entities					
Processes	Customer	Staff	Restaurant Manager	Order	Invoice	Location
Create Account	C	C	C			Front Desk/ Online
Menu Browsing	R	U	C	C		Front Desk/ Online
Order Selection	C		U			Front Desk/ Online
Place Order	C	U	U	C		Front Desk/ Online
Update Order		U				Kitchen
Delete Orders		D	D			Kitchen
						Front Desk/Online
Make Payment	C	U	R		R	

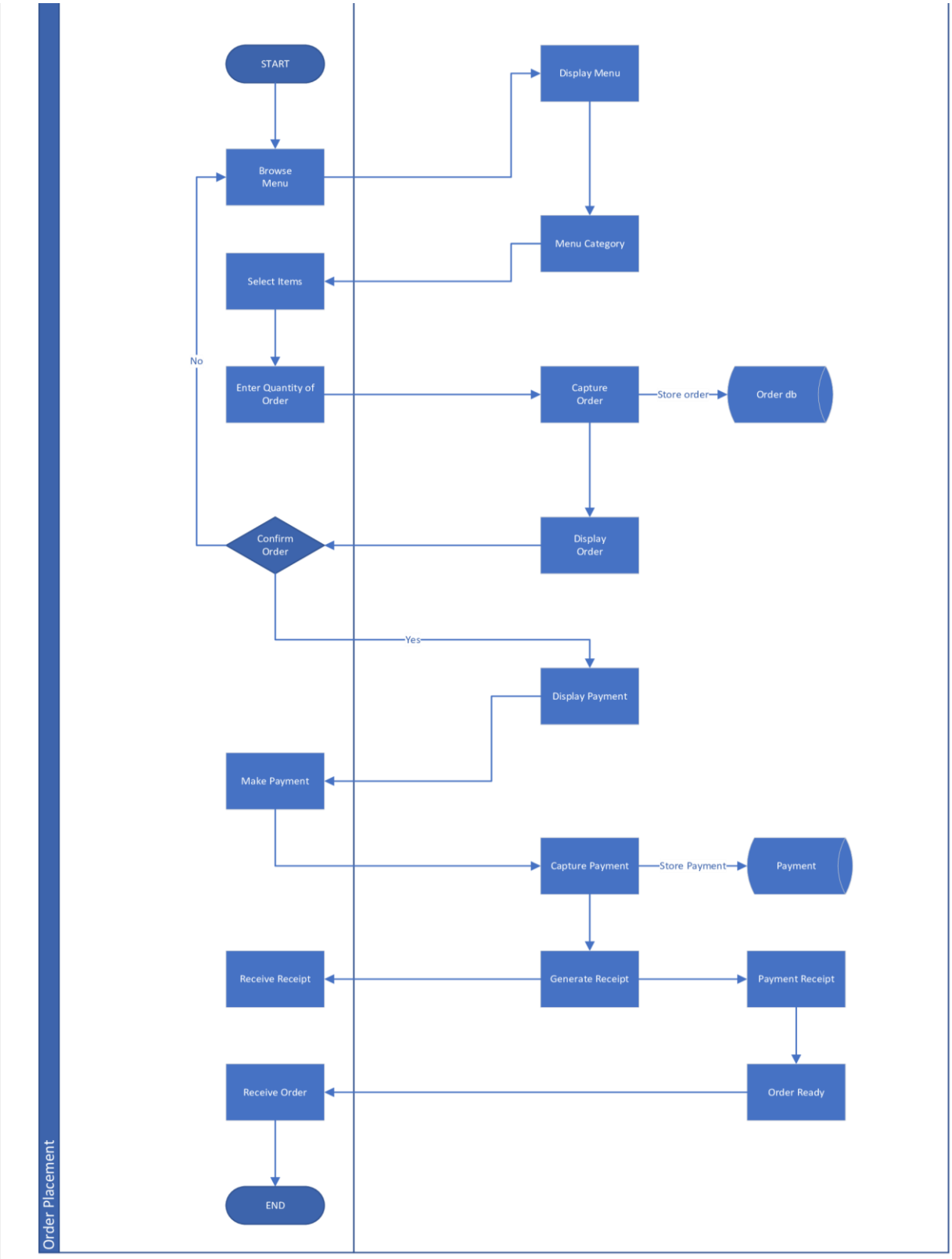
Stock Inventory	R	U	U		R	Office
Order Fulfilment	R		U	R		Kitchen
Report	R		C	D		Office
Update Menu	R		C		U	Office
Pick-Up	R		U			Front Desk

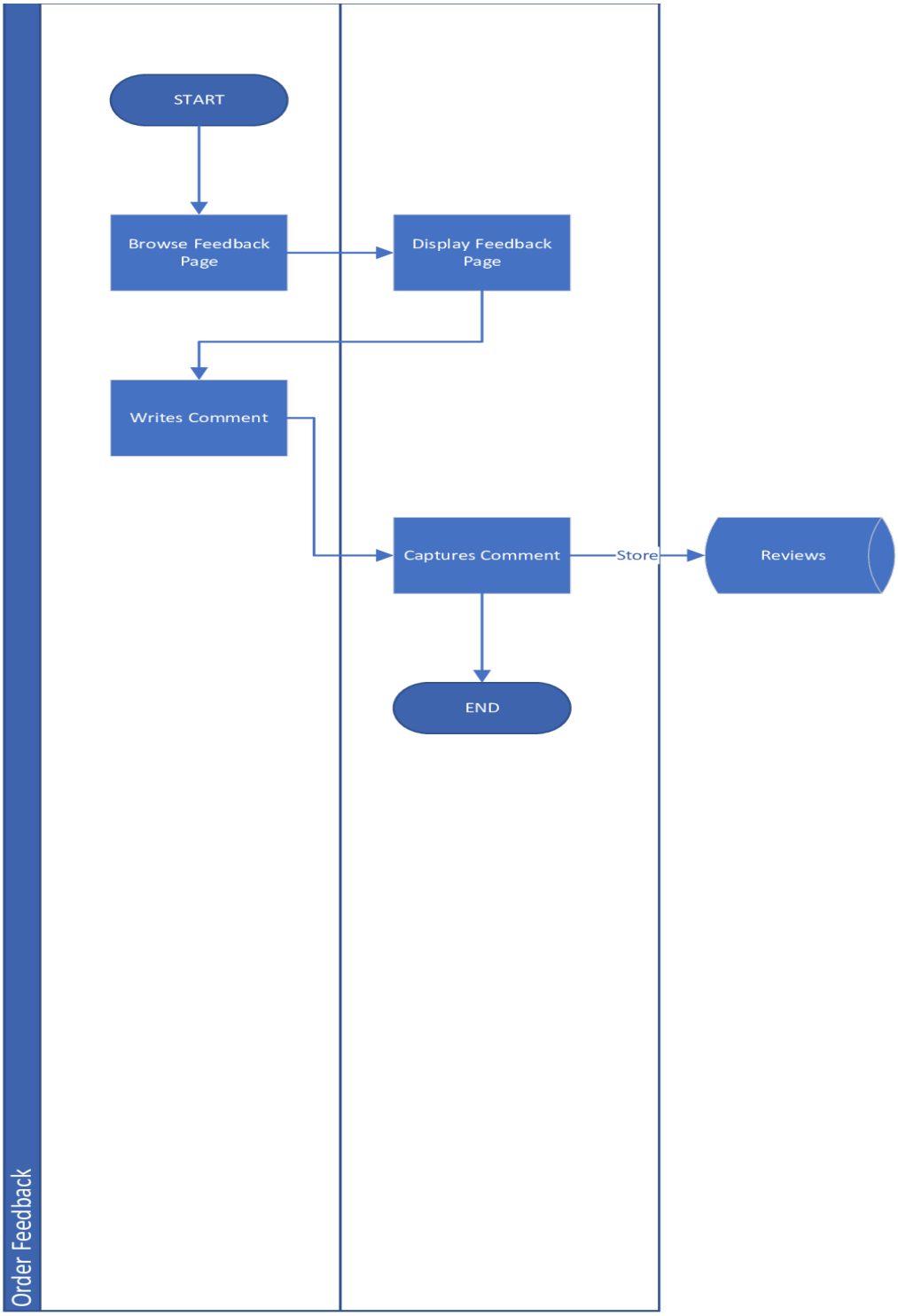
Functional Decomposition Diagram

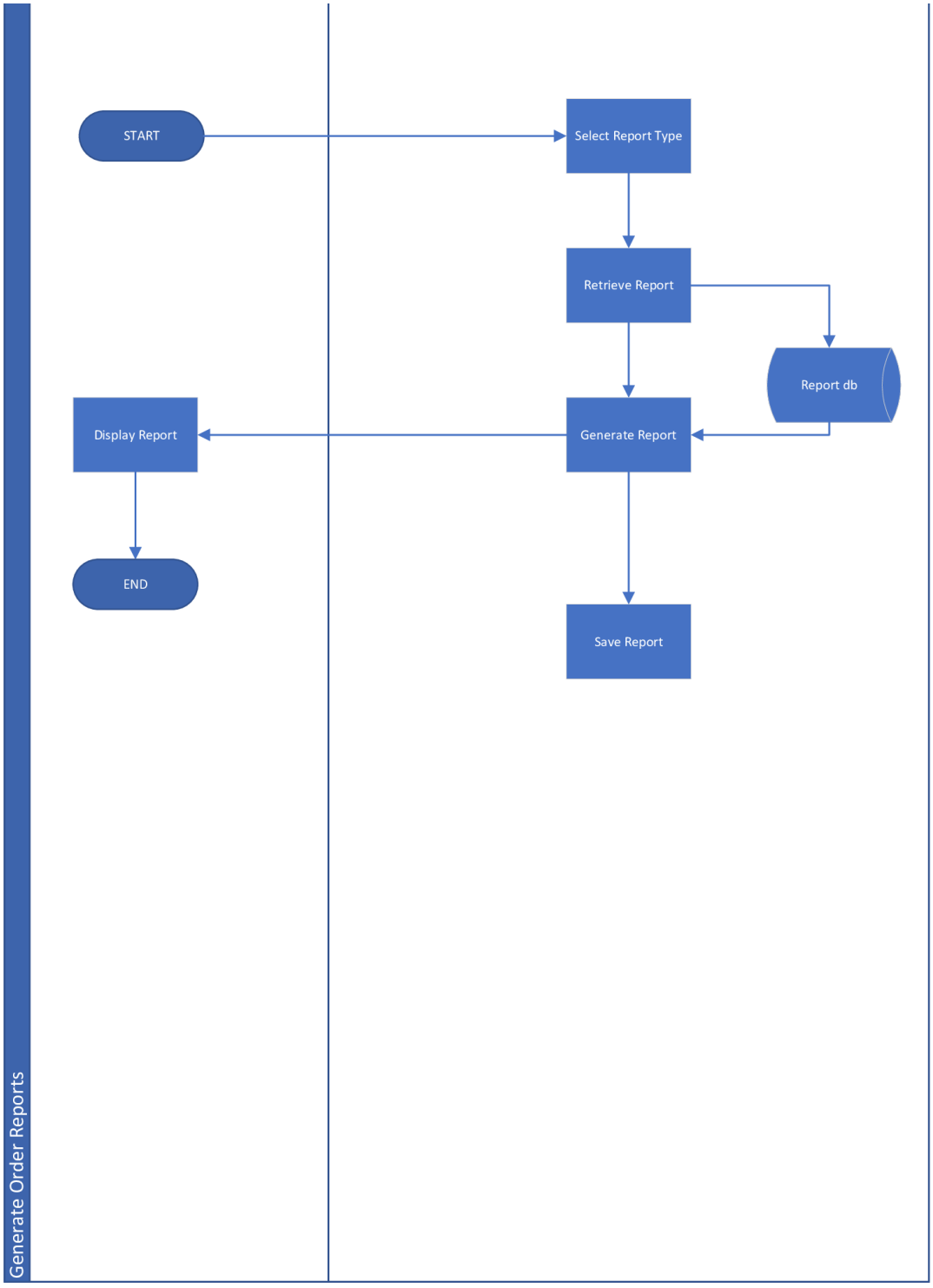


Process Specification




Order Placement
START
Browse Menu
Display Menu
Menu Category
Select Items
Enter Quantity of Order
No
Capture Order
Store order
Order db
Confirm Order
Display Order
Yes
Display Payment
Make Payment
Capture Payment
Store Payment
Payment
Receive Receipt
Generate Receipt
Payment Receipt
Receive Order
Order Ready
END


START
Browse Feedback Page
Display Feedback Page
Writes Comment
Captures Comment
Store
Reviews
END
Order Feedback


Generate Order Reports
START
Select Report Type
Retrieve Report
Report db
Display Report
Generate Report
END
Save Report

Test Plan (Phase 6)

Introduction

A test plan is a detailed document that outlines the strategy, objectives, resources, schedule, and scope of testing activities to ensure that the product meets its requirements and specifications. For “The Black Restaurant,” the test plan should include the following sections:

Purpose: Describe the main objectives of the test plan to ensure that all functions of the operation of The Black Restaurant, including menu variety, food quality, price and location comfort, meet the desired standards.

Scope: Determine which aspects of the restaurant will be tested, such as menu, food quality, price accuracy, customer service and local accessibility.

Objectives: Ensure that all menu items are available and accurately described. Make sure the food delivered is first class. Check if the prices are affordable and match what is mentioned in the menu. Make sure the restaurant is easily accessible and offers a lively atmosphere.

Testing Strategy: Approach to testing (it can be manual, automated, or exploratory testing), testing techniques and methodologies to be used, allocation of testing activities (functional, performance, or security testing).

Test Environment: Description of the testing environment, tools and technologies for testing, configuration management for test environments.

Test Deliverables: List of documents and artifacts to be produced during testing (test cases, test scripts, test reports), templates for test documentation.

Test Execution Schedule: Timeline for test execution including milestones and deliverables, allocation of resources, dependencies and constraints.

Test Cases: Detailed test cases covering various scenarios and conditions, test case identification, traceability matrix linking test cases to requirements.

Risk Management: Identification of potential risk and issues related to testing, risk assessment and prioritization, mitigation strategies and contingency plans.

Roles and Responsibilities: Responsibilities of team members involved in testing (like testers, test leads, developers, stakeholders), organizational structure and communications

Approval: Sign-off process for test plan, approval criteria and stakeholders.

Relationship to other documents

The test plan for The Black Restaurant is a crucial document that ties together various aspects of the project, ensuring that all testing activities align with the project's requirements and objectives

Requirements Specification Document

Purpose: This document outlines the functional and non-functional requirements of The Black Restaurant, detailing what the restaurant aims to achieve, including its diverse menu, first-grade meals, affordable pricing, and convenient location

Relationship: The test plan uses the design specification to develop test cases that validate the implementation of these components. For instance, if the design specifies a particular workflow for meal preparation, the test cases will verify that this workflow is followed correctly, ensuring meal quality and efficiency.

Marketing Plan

Purpose: This document outlines the strategies for promoting The Black Restaurant, highlighting its unique selling points such as diverse menu, quality meals, and affordability.

Relationship: The test plan ensures that the features promoted in the marketing plan are tested and verified. If the marketing plan emphasizes affordable pricing, the test plan will include cases to verify that the prices listed and charged are indeed affordable.

Implementation Plan

Purpose: This plan details how the restaurant's services and features will be implemented, including timelines and responsibilities.

Relationship: The test plan includes test cases that align with the milestones and deliverables of the implementation plan. It ensures that testing activities are scheduled appropriately and that any new features or services are tested as they are implemented

Operational Plan

Purpose: This plan outlines the day-to-day operations of the restaurant, including staff roles, kitchen processes, and customer service protocols.

Relationship: The test plan includes test cases that verify these operational procedures.

System Overview

The Black Restaurant ordering system a will reduce human effort it allows customers to order products online without having to visit a physical store. It encompasses of a range of technologies that work together to improve efficiency for customers by incorporating the following features.

User interface: The system has a user interface where customers are able to interact with the ordering system, create account.

Menu Display: The menu is user friendly and is displayed in a manner that carefully balance tastes, textures and colours to give sense of satisfaction to the customer that starts with the eyes and continues with the palate, customers are able to browse through for different products.

Order Customization: Customers have options to customize their order, add and remove orders.

Order Placement: Customers are able to proceed and place their orders through the interface.

Order Management: The system has features for managing orders efficiently. This includes sending order details to the kitchen staff, tracking the status of orders and handling order modifications or cancellations.

Payment Processing: Customers will be able to pay for their orders securely through the ordering system. It involves integration with various payment gateways to support different payment methods such as credit/debit cards, mobile wallets, or cash on delivery.

Inventory Management: The ordering system is integrating with the restaurant's inventory management system to ensure that items listed on the menu are available, it updates stock levels in real time as orders are placed and fulfilled.

Managerial Reporting: The system includes reporting tools to provide insights into customer preferences, popular menu items, peak hours, etc. This helps the restaurant manager to be able to create managerial reports.

Customer Feedback: The system has mechanisms for customers to provide feedback on their orders and overall experience.

Features to be tested/not to be tested

Features to be tested

Account Creation: This feature is of importance to the system; it ensures that users are able to create an account to be able to use the system.

Reason: Confirming that the account was successful and that account creation works correctly, validating user input, password security.

Payment Processing: Payment is important, ensuring that all transactions are securely transmitted, stored and processed as it deals with sensitive information such credit card details and personal identification.

Reason: To ensure that payment methods are working correctly, and that sensitive information is handled securely.

Core Functionality: All core functionalities of The Black Restaurant online ordering system, account creation, menu browsing, order selection, payment processing and order fulfilment.

Integration - Testing the integration between different modules and external systems to ensure seamless data flow and interoperability.

User Interface: - Testing the user interface for usability, accessibility, and consistency across different devices and browsers.

Data Accuracy and Integrity- Verifying the accuracy and integrity of data stored and processed by the system through various transactions and operations.

Performance- Testing the system's performance under different load conditions to ensure it meets performance requirements, including response time, throughput, and scalability. Order Fulfilment: The restaurant must be able to receive order notifications promptly and be able to process it.

Reason for testing: Verifying those orders are correctly processed and prepared promptly and received by the kitchen staff.

Security - Testing the system for vulnerabilities and ensuring compliance with security standards and regulations, including data encryption, access controls, and authentication mechanisms.

Error Handling- Testing how the system handles errors, exceptions, and edge cases to ensure graceful degradation and recovery.

Order Tracking: Users should be able track orders in real time and reveal accurate information about the order.

Reasons for testing: To validate that user are able to track their orders in real time and receive timely updates.

Feedback (Reporting and Analytics): Making sure that customers can rate, comment, and give feedback once they finish their orders. Checking that the tools for analysing and reporting work well, showing data in a clear way and giving helpful information that meets what the business needs.

Features not to be tested and the reasons for not testing:

Legacy Systems: Older systems that the new online ordering system is replacing might not be tested because the focus is on checking the new system's abilities.

Post-order operations: This feature does not directly involve users it has no impact on user experience, it involves backend operations such as inventory updates, generating reports.

Custom Schedules: This feature involves handling various scenarios, such as when orders cannot be placed (blackout periods), overlapping time slots and exception. The custom schedules need to sync well with the restaurant's existing workflows and testing for edge cases can be resource intensive, as restaurants experience different order volumes

Future Enhancements: Any new features planned for later updates might not be tested right now. Testing will concentrate on what's available in the current version.

Integration with other systems: This feature is not tested because it requires coordination between software components, this integration can be time consuming and may involve third-party APIs. Third-party tools or services added to the system might not get thorough testing. They should have their own testing procedures.

Automated Order Notifications: This feature involves testing for scenarios like network failures, device specific issues or processing multiple orders it is resource intensive, testing across different platforms and ensuring consistent delivery can be complex.

Reasons for not testing:

Legacy Systems: Testing is skipped because these older systems are being replaced by the new online ordering system.

Post-Order Operations: Testing will not happen because the main focus is on the ordering process itself rather than what happens after.

Custom Schedules: Testing might not occur because these schedules are seen as less critical.

Future Enhancements: Testing will not occur because the focus is on the now not the future.

Integration with other systems: Testing is skipped because of complexities or time constraints.

Automated Order Notification: This is not tested because it is regarded as low priority compared to the core ordering functionality of The Black ordering system.

Describe the generic pass/fail criteria to be used in this plan

Pass Criteria:

A test case is considered to pass when the actual outcome matches the expected outcome. This means that the system behaves as intended and meets the specified requirements.

- Core Functionality**:** When a user can create a new order without errors, and it's successfully saved in the system, the test case for order management passes.
- Integration: If data moves smoothly between different parts of the ordering system without any loss or damage, the integration test passes.
- Performance: When the system responds within acceptable time frames even during busy periods, the performance test passes.
- Security**:** If the system properly verifies and permits users based on their roles and ensures sensitive data remains protected, the security test passes.

The following features are tested to check the pass criteria:

- Account Creation: A user creates an account on the website, the account creation process completes without errors and the user should receive confirmation to show account was created.
- Validate Personal Information: Users should be able to provide valid information, the system verifies this information.
- Order Processing Pass: A user places an order online the prepared items must match the selected items during the ordering process.
- Service/Timelessness Orders are to be prepared and made ready in the estimated time frame provided during the order placement.
- Payment Processing A user’s payment is processed without issues.

- Confirmation Notification A user receives confirmation notification after placing an order promptly.
- Inventory Management The system tracks inventory accurately, preventing users from ordering items that are out of stock.
- Generate Report The report generation process successfully completes without errors the report contains accurate data.

Fail Criteria:

A test case is considered to fail when the actual outcome differs from the expected outcome. This indicates a deviation from the desired behaviour or a potential issue within the system. The following requirements are tested:

Core Functionality: If a user faces an error while trying to place an order, hindering them from completing the task, the test case for order processing fails.

Integration: When data fails to synchronize correctly between the online ordering system and an external platform, resulting in inconsistencies or data loss, the integration test fails.

Performance: If the system slows down significantly or crashes under heavy usage, surpassing the defined performance thresholds, the performance test fails.

Security: When unauthorized access to sensitive customer data becomes possible due to a flaw in the login system, the security test fails.

The following features are tested to check the Fail criteria:

Account Creation: If user encounters technical errors during the account creation, it's a failure.

Validate Personal Information: Valid information is incorrectly rejected, or invalid or incomplete information is accepted.

Order Processing Pass: If a user receives different items than what they ordered, it's a failure.

Service/Timelessness: The order took longer than the estimated time, it fails.

Payment Processing: If users' payment is not processed due to technicality.

Confirmation Notification: If user does not receive order confirmation notification either SMS or emails, it's a failure.

Inventory Management: If the system allows user to select and order items out of stock, it fails.

Generate Report: The generated report contains incorrect information, technicality occurred during report generation.

Why Pass/Fail Criteria:

Setting clear pass/fail standards helps keep testing fair and consistent for an online ordering system. These standards are like rules that help judge how well the system works compared to what's expected. They help find problems and ways to make things better. Following these rules lets the testing team share how the testing is going, focus on fixing the most important issues, and make sure the online ordering system works well before it's used.

Describe the general approach to the testing process

Test Planning: Create a comprehensive test plan for the online ordering system. Define testing objectives, scope, approach, available resources, and timelines.

Test Design: Design test cases that cover various scenarios related to the online ordering process.

Requirements Analysis: Understand the specific requirements of the online ordering system. This includes user expectations, system specifications, and any relevant documentation. Identify the desired functionalities, performance criteria, and security needs.

Functional Testing: Verify that core functionalities of the ordering system work as expected. Key test cases to be tested, home screen to ensure it displays relevant information, search functionality to ensure users can find dishes easily, registration users are able to create account and ordering process validate end to end processes.

Test Environment Setup: Set up the test environment to closely resemble the actual deployment environment of the online ordering system.

Performance Testing: Asses the system performance under varying conditions such high volumes of orders

Usability Testing: Users should be able to assess the website friendliness, check if the website is functioning well and that features are accessed easily.

Compatibility Testing: Test the website using different devices and browsers to see how it is displayed, ensure consistent appearance.

Security Testing: Validate that the information captured is encrypted and protected by different protection measures.

Geospatial Testing: Ensure that correct time zones are used, the system is able to adapt to user's location and ensures accurate location-based services.

Regression Testing: Continuously monitor the system and test after updates or changes to prevent new issues.

Test Orders: Create test runs to test orders to simulate real transactions: Simulating Order, use a payment unverified gateway to simulate an order or place a real order and immediately cancel it and request refund.

Employee Training Testing: Let staff get used to the system by logging in and place orders to understand how the system actual works.

Test Process Steps: Conduct research by gathering information about the system, analysing different data and defects that are identified and execute tests based on the identified requirements.

Test Reporting and Documentation: Create comprehensive test reports that summarizes test activities, results and expected outcomes. The document should be concise and easily understandable.

Test Completion Sign-Off: After the completion of testing activities, conduct a final review of the ordering system by obtaining approvals and signs-offs from relevant stakeholders.

By using this detailed testing method, the online ordering system can be carefully checked for how well it works, how dependable it is, how fast it runs, how safe it is, and how easy it is to use. This helps make sure the system works well when it's put into use for The Black Restaurant.

Suspension and resumption

When conducting testing of The Black Restaurant online ordering system implementation, it is important to establish clear criteria for suspending testing when critical issues arise with core system functionalities.

Criteria for Suspending Testing:

Critical System Failures: the failures that disturbs the functionality of the online ordering system should immediately suspend testing. Critical failures such as preventing customers from placing orders, viewing menu or completing transactions.

Financial Impact: Assess the potential financial implications of the issue, if the problem could result in significant revenue loss or damage to the brand reputation it may be necessary to pause testing until the issue is resolved.

Safety Concerns: If the issue poses a safety risk to customer or staff, such as incorrect food orders or compromised payment security, testing should be suspended immediately until the problem is addressed.

Frequency and severity of Issues: Consider the frequency and severity of the issues encountered, if critical issues are occurring frequently or if a single issue significantly impact multiple functionalities suspending testing may be necessary to prevent further disruption.

Regulatory Non-Compliance: Ensure that the app complies with relevant regulations and standards if critical issues compromise compliance with regulations related to data security, privacy, or accessibility testing should be suspended until compliance is ensured.

Severe Performance Issues: Performance degradation that significantly impacts the usability or responsiveness of the system, like slow response times or frequent crashes, should prompt a suspension of testing.

High-Risk Bugs: Discovery of critical bugs that pose a high risk to the stability, functionality, or security of the system lead to a temporary halt in testing until the issues are resolved.

Test Activities to be when testing is resumed:

Regression Testing: This involves re-running previously executed test cases to ensure that existing functionalities have not been affected by any changes made to address the critical issues.

Functionality Testing: Testing the critical functionalities of the system to ensure that they are working correctly after the fixes have been applied. This ensures that the system functions properly, functionality testing should be repeated.

Security Testing: Once critical security issues are resolved, security testing should be repeated to verify that the fixes adequately address vulnerabilities and that the system remains secure against potential threats.

Integration Testing: If the critical issues were related to interactions with external system or APIs, conduct integration testing to ensure that the system communicates effectively with this system and that data is exchanged accurately, the suspension of testing affected integrated components or interfaces, integration testing must be repeated to validate the interoperability and data exchange between different modules or systems.

Performance Testing: Validate the performance of the system to ensure that it can handle the expected load without degradation in response time or system stability.

User Acceptance Testing: Involves the stakeholders, including end-user and restaurant staff, and to validate that the fixes adequately address their needs and expectations, repeat this testing ensure that the system meet's users' expectations and requirements after necessary fixes have been made.

List all the Test Cases in table format

Test Case ID	User Requirements	Test Case Description	Steps	Expected Outcome

TC01	Account Creation	User provides personal details and submits registration form	1. User navigates to the registration page.	Account is created successfully
			2. User fills in personal details on the registration form.	
			3. User submits the registration form.	
TC02	Account Creation	User provides invalid details and submits registration form	1. User fills in invalid personal details on the registration form.	Error message is displayed.
			2. User submits the registration form	
TC03	Account Creation	User tries to register with an existing username	1. User navigates to the registration page.	Error message indicates username already exists
			2. User fills in registration details with an existing username.	
			3. User submits the registration form.	

TC04	Menu Browsing	User navigates through menu and selects items	1. User opens the menu page.	Menu is displayed successfully
			2.User navigates through the menu	
			3. User selects items from the menu.	
TC05	Menu	User browse for specific items	1.User enters search criteria	Items found in search results
TC05	Order Selection	User adds items to cart	1. User select items to add to cart.	Items are added successfully
TC06	Order Selection	User customize items	1. User selects an item to customize.	Customization successfully
TC07	Order Selection	User tries adds item out of stock	1. User attempts to add an out-of-stock item to the cart.	Error message displaying item out of stock
TC08	Payment Processing	User selects payment method	1. User proceeds to the checkout page.	Payment successfully
			2. User selects a payment method.	
TC09	Payment Processing	User selects cash as payment method	1. User selects cash as the payment method.	Order is confirmed, and cash payment is expected

TC10	Payment Processing	Users enters incorrect credit card information	1. User proceeds to the payment page.	Error message, invalid payment details.
			2. User enters incorrect card information.	
TC11	Order Confirmation	User completes payment and receives emails confirmation	1. User completes payment.	Confirmation email notification is received
TC12	Order Confirmation	User completes payment and receives SMS confirmation	1. User completes payment.	Confirmation SMS notification is received
TC13	Order Fulfilment	Restaurant receives order and confirms it	1. Restaurant receives the order.	Order status is updated
TC14	Order Fulfilment	Restaurant faces problems with order processing	1. Restaurant encounters problems with order processing.	Notification is sent to customer support
TC15	Order Tracking	User checks order status	1. User checks the order status.	Order status is displayed
TC16	Order Tracking	User receives notification when order ready for pick-up	1. User checks the order status.	Notification is sent to user
TC17	Feedback	User provides feedback	1. User receives prompt to provide feedback.	Feedback is recorded
			2. User provides feedback.	

	Feedback	User skips feedback	1. User skips providing feedback.	Feedback is skipped successfully
TC18	Report Generation	Restaurant updates inventory after order fulfilment	1. Restaurant updates inventory after order fulfilment.	Inventory is updated successfully
	Report Generation	Manager generates report	1. Manager navigates to the report generation section.	Report is created successfully
			2. Manager initiates report generation.	

Testing Schedule

Testing Responsibilities

Test Team: ISD316D GROUP 24 members are the dedicated team that will be responsible for planning, designing and executing the tests related to the online ordering system.

Development Team: They will collaborate with the test team to address any issues that occurred during the testing process. They will participate in code reviews to ensure code quality and proper error handling.

Project Manager: Oversees the overall testing process and will ensure that testing activities are completed in a timely manner. They will be implementing risk mitigation processes and facilitate communications between the test team, development team and stakeholders.

Stakeholder: Provide inputs, review test plans and offer feedback throughout the testing process.

Risk and Contingencies

Data Security Risk

Risk: Customer information, such as credit card numbers is transmitted and is often stored across multiple networks and system and is at threat.

Contingency: Security measures should be implemented to ensure that customer data is protected, regularly monitor the measures for potential breaches and promptly resolve problems when they arise.

Dependency on 3rd Party Applications

Risk: Restaurants lose control over their brand and customer experience because they rely on third party delivery apps which can be a threat to them.

Contingency: Investing in the online ordering system outlined in this document to ensure that it matches the convenience and transparency offered by other restaurants websites, it must be appealing and user friendly.

Technical Challenges and System Failures

Risk: Technical issues such as system failures can disrupt the ordering process.

Contingency: Collaborate with the development team to ensure that the system is regularly monitored to ensure smooth functionality and minimize website downtime. They will document and resolve technical issues promptly.

Resource Constraints

Risks: Limited availability of testing equipment impact the testing process.

Contingency: Apply the critical chain method to prioritize and allocate resources based of project importance. Outsource testing resources if necessary to maintain a reliable ordering system, it is cheap to outsource than in-sourcing.

Schedule Delays

Risk: Project delays affect the testing and implementation of the ordering system schedule.

Contingency: Regularly review and update the testing schedule to accommodate and changes, and regularly conduct sprint retrospective and sprint review.

Test Schedule

1. Planning (Week 1)

Finalize the plan for testing which includes the project objectives, areas the test plan will cover and the final product the online ordering system

Decide on the testing team and ensure that the resources are enough.

2. Creating Test Cases (Week 2-3)

Write detailed test cases based on what the users need.

Check and confirm these test cases with the project team and make sure that they align with their business goals.

3. Setting Up the Test Environment (Week 4-5):

Set up test environment to function and look like the actual system in plan.

Install and set up the software, databases and the test data according to acceptance criteria of the client.

4. Test Individual Parts Of the system (Week 6):

The development team will check each feature of the system to ensure that everything functions well.

If they are defects, they fix them.

5. Testing the Integration of the system (Week 7):

Test how each feature of the system functions together with other systems.

Check that data flows accurately and that it works well with the software.

6. Full System Testing (Week 8-9):

Test the entire system from the beginning to the end to ensure that it functions properly.

Test different features to see if they all function.

7. Checking With Users (Week 10):

Get stakeholders involved to check if the online ordering system meets the business needs.

Listen to their feedback and fix any issues relating to the use of the system during this testing phase.

8. Double-Checking (Week 11):

Repeat testing processes to ensure that recent changes haven't changed anything that was working before.

Ensure that the system still functions properly.

9. Fixing Errors and Testing Again (Week 12-13):

The development team will fix any problems found during testing and then test again to ensure that everything functions properly.

Ensure that all features are functioning properly before moving on to the next phase.

10. Wrap Up Testing (Week 14):
    Analyse all the test results, documents and lessons learned during testing.

Document everything and get the go-ahead from stakeholders and finish up the testing part of the project.

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Phase 4: User Requirements

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