

Final Project: Basic System Design

Crusty Muse Bakery Online Ordering System

Task 1A: Key Stakeholders

Stakeholder	Role
Customers	Browse products, add items to cart, place orders, and receive confirmation emails
Bakery Staff	View incoming orders, update order status, and prepare orders for pickup/delivery
Bakery Manager/ Owner	Manage product listings, monitor order volumes, and oversee system operations
Payment Processor	Process customer payments securely and handle transaction verification

Task 1B: System Components

Use Case	Input	Process	Output
Status confirmation email to customer	Order ID, customer email, order status update	System retrieves order details, formats email message with status information, and sends via email service	Confirmation email delivered to customer's inbox with order status

Task 2: SDLC Model Selection

Choice of SDLC Model: **Agile (Iterative)**

Reason: Agile is ideal for Crusty Muse Bakery because it allows for incremental development with frequent releases. Given the small budget and need for simplicity, we can start with core features (product display and ordering) and add features like staff dashboard and email confirmations in later iterations. This approach allows the bakery to start using the system

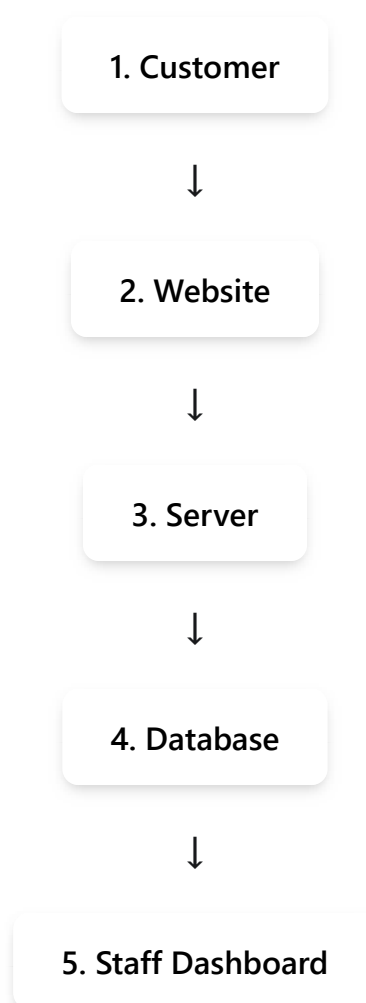
quickly, provide feedback, and make adjustments based on real-world usage. The iterative nature also reduces risk and allows for changes as business needs evolve.

Task 3: Architecture Pattern Selection

Choice of Architecture Pattern: **2-Tier (Client-Server)**

Reason: The 2-tier architecture is the best fit for Crusty Muse Bakery's needs. With only 20-30 orders per day and a small budget, the simpler client-server model is more cost-effective to build and maintain. The server can handle all business logic, data storage, and processing without the added complexity of separating layers. This architecture is easier for non-technical staff to troubleshoot and requires fewer resources to host. It also meets all requirements (mobile compatibility, order management, email notifications) while keeping development time and costs minimal.

Task 4: Basic System Flow Diagram



Number	Component
1	Customer (initiates the order by accessing the system)
2	Website (displays products and shopping cart interface to customer)
3	Server (processes orders, handles business logic, sends confirmation emails)
4	Database (stores product information, customer orders, and order status)
5	Staff Dashboard (allows bakery staff to view and update order status)

Task 5: Project Summary

Business Problem	Crusty Muse Bakery needs a simple, affordable online ordering system to allow customers to browse and order baked goods while enabling staff to manage orders efficiently. The current manual process is inefficient for handling 20-30 daily orders.
System Goal	Create a mobile-friendly online ordering system that displays products with prices, processes customer orders with cart functionality, allows staff to view and update order status, and automatically sends confirmation emails to customers.
Technical Choices	2-tier client-server architecture with responsive web design for mobile compatibility, integrated email service for notifications, and simple database for storing products and orders.
SDLC Model	Agile (Iterative)
Reason for SDLC Choice	Agile allows incremental development starting with core features, enabling quick deployment and feedback collection. This reduces risk, accommodates budget constraints, and allows for adjustments based on actual bakery operations and user feedback.
Architecture Pattern	2-Tier (Client-Server)
Reason for Architecture Choice	The 2-tier architecture is simpler and more cost-effective for a small business with 20-30 orders per day. It's easier to build, maintain, and troubleshoot while meeting all functional requirements. The reduced complexity aligns with the small

budget constraint and limited technical resources.

Note: This system design prioritizes simplicity, affordability, and ease of maintenance while meeting all business requirements. The choices reflect the constraints of a small bakery with limited budget and technical resources.