

Sprint 1 Deliverable

Team Project: Design of Coffee Shop Transaction System

Mission Statement

This concept was inspired by my daily experiences in coffee shops during peak hours, including rush times and meal periods. In these hectic periods, coffee shops frequently experience overcrowding, resulting in customers enduring prolonged waits at the counter or at restricted self-ordering kiosks. My aim is to create an efficient internet ordering system for small coffee shops that enables consumers to make orders simply scanning a QR code, eliminating the need for staff interaction or in-store kiosks. This method differs from the proprietary applications of major chains such as Starbucks, as it is tailored for small enterprises who may lack the resources to create and sustain a comprehensive mobile application. The system seeks to enhance customer service velocity and diminish wait times, while also allowing merchants to administer orders and inventory more effectively, lower personnel expenses, and optimize operational efficiency.

The program is primarily intended for general customers, office employees, students, time-constrained individuals, coffee shop staff, and retail managers. Regular consumers will gain from the capacity to place orders swiftly and conveniently, minimizing the time spent in queues. Office employees, students, and time-constrained clients require an efficient ordering and pickup system that accommodates their limited schedules. Coffee shop attendants and managers will value enhanced order management efficiency, decreased costs, expedited customer service, and the facilitation of data-driven analysis to optimize sales and inventory management.

Conventional ordering approaches possess numerous disadvantages. Manual ordering frequently leads to extended wait times for clients, particularly during peak hours. Furthermore, customers need increased flexibility in payment options and pickup schedules to accommodate their preferences. For retailers, manual ordering is both inefficient and susceptible to errors, especially during peak business hours. Manual inventory management and order status tracking exacerbate operational issues. The aforementioned restrictions can be easily mitigated with the use of an online ordering system.

This system's distinctive advantage is its capacity to improve consumer experience via contactless and paperless online ordering, while markedly diminishing queues and wait times. It provides merchants with real-time order management, inventory monitoring, and sales data analysis, enabling data-driven decision-making, labor cost reduction, and enhanced operational efficiency. The platform offers many payment alternatives and delivers tailored recommendations to users, enhancing consumer loyalty and promoting repeat transactions.

Target Users & User Stories

General Consumer

I am a general consumer, the primary customer of a coffee shop, looking for a convenient and fast service experience. I have to order fast, ideally by scanning a QR code to get straight access to the options. I can look over the choices and order without standing in line. Considering the growing inclination for contactless services—especially during the epidemic—I would like to reduce staff physical touch as well. From menu browsing to payment, I wish the whole ordering procedure to be done on my smartphone. Real-time order tracking will also help me to monitor the development of my order at any moment, thereby guaranteeing my knowledge of when it is available for collection.

Office Worker, Student, and Time-Sensitive User

I am an office worker, student, or a time-sensitive user, often pressed for time and needing to fit coffee orders into a tight daily schedule. Usually, I order during peak hours, say weekday mornings or lunch breaks. I want a method whereby I may choose a designated pickup window to reserve my coffee ahead of time, therefore guaranteeing it is ready when I get here. This helps me not to line up. I also want the pickup process to be speedy and effective so that my order is freshly made and ready for the precise moment I asked for, thereby enabling me to pick it up straight away.

Coffee Shop Waiter or Manager

I am a waiter or manager of a coffee shop, responsible for overseeing the ordering system. I have to check inventory levels, effectively handle all incoming orders, and real-time user data tracking. Easy view and management of order statuses in a backend system will help me to maximize the order preparation process. To stop running out of goods or overstocking on any one item, the system must automatically update inventory depending on orders. To guarantee seamless and effective team operations at peak times, I also need a mechanism that lets me allocate chores to my employees (e.g., making coffee, managing orders).

Delivery Driver

I am a takeaway delivery driver, and I need a streamlined process for order pickup. The system needs to let me rapidly find and access orders for delivery without wasting time. Real-time updates on the state of every order also help to guarantee timely collection and delivery to the client. Accuracy and speed are my top concerns since they will help me to satisfy clients and reach delivery targets.

Minimum Viable Product(MVP)

Since the goal of MVP is to realize the core functionality of the product as soon as possible, it needs to focus on the most important requirements in the user story. For a coffee shop's online ordering system, the following features can be the core of MVP:

QR Code Scanning for Ordering: The initial critical stage in a user's interaction with the system is to scan the QR code that is displayed in the store in order to access the ordering interface. Guarantee that the QR code leads users to a mobile-friendly ordering interface that is both responsive and lucid. To ensure compatibility and accessibility, this should be verified on a variety of devices.

Menu Navigation and Selection: Provide a menu layout that is user-friendly and enables consumers to effortlessly select the foods and beverages they desire. In the MVP stage, this section does not require an excessive amount of complexity; rather, it should concentrate on the clear display of the most popular and central products. Enable rapid customization options for the drinks, such as size and add-ons.

Payment System Integration: To guarantee that users can complete their orders and payments in a seamless manner, it is necessary to integrate at least one dependable online payment method, such as PayPal or Stripe. The system should facilitate the secure transmission of payment data and guarantee adherence to payment security standards (PCI DSS). Based on user demand, additional payment methods may be implemented at a later date.

Order Notification: The system should send an order confirmation and the store should receive an order notification after a user places an order. To guarantee seamless communication between the client and the store, push notifications or SMS can be implemented. Real-time status updates regarding the status of the customer's order are desirable (e.g., "Order Accepted," "Being Prepared," "Ready for Pickup").

When it comes to technological implementation, you should begin with the following:

Front-end Development: Utilize front-end frameworks such as React or Vue.js to develop a straightforward and uncomplicated ordering interface that users can access by scanning the QR code. The user interface should prioritize simplicity, guaranteeing that even novice users can effortlessly navigate the system. It should be mobile-friendly, responsive, and optimized for speed to minimize loading periods.

Back-end Development: Create a fundamental server that is capable of managing user order data. The storage and communication of order data between the front-end and the back-end can be managed using back-end frameworks such as Flask, Django, or Node.js. The back-end should be configured to securely manage order data and guarantee scalability as the volume of orders increases.

Database: Utilize a lightweight database, such as MySQL, PostgreSQL, or MongoDB, to maintain user orders, menu information, and order statuses. The database schema should be straightforward yet adaptable enough to facilitate future improvements, such as the addition of customer profiles or order history features. Prioritize the consistency and reliability of data.

Payment Integration: To guarantee that customers can make secure online payments, integrate a reputable payment gateway, such as PayPal, Square, or Stripe. Initially, the MVP necessitates only one payment method; however, the system architecture should facilitate the seamless integration of supplementary methods in the future. Basic fraud detection and security measures (SSL encryption) should be incorporated into the payment process.

Testing and Feedback Loop: Perform comprehensive testing of the MVP's user interface, payment processing, order notification, and QR code functionality. It is imperative to consistently collect feedback from actual users in order to pinpoint areas that require development and potential new

features. Guarantee that the system is capable of accommodating peak-time demands without experiencing any performance degradation.

The information mentioned above enables the rapid development of an MVP of an online ordering system for coffee shops that provides basic functionality. The system can be perpetually optimized through testing and feedback. The final completion will encompass the entire customer journey, including the following: scanning a QR code to access the menu, selecting beverages and making payments, notifying the store of the order, preparing the order by store staff, and finalizing the process by waiting for the customer to retrieve it.

Literature Review

Literature Review: *Factors Influencing Customer Decisions to Use Online Food Delivery Services during the COVID-19 Pandemic*

The main elements influencing consumers' choices to use online food delivery services during the COVID-19 epidemic is investigated in the study "Factors Influencing Customer Decisions to Use Online Food Delivery Services during the COVID-19 Pandemic". The study examines how elements including perceived utility, trust, enjoyment, and social influence impact users' attitudes and behavioral intentions by use of the Technology Acceptance Model (TAM). The results show that while trust and enjoyment also had major influence on behavioral intentions, perceived utility was the most important element influencing users' attitudes and behavioral intentions.

Particularly, the study revealed that consumers gave food delivery services' safety and efficiency top priority during the COVID-19 epidemic; trust was therefore quite important in the process of making decisions. Moreover, pleasure was found to be a natural motivation that greatly affected consumers' readiness to employ online meal delivery systems. On behavioral intentions, on the other hand, social influence had a less clear impact even if it did affect users' opinions of the service.

This study offers insightful analysis of how, especially by improving customer confidence and supplying high-quality service information, online food delivery companies might be maximized amid a worldwide health crisis. The study also emphasizes the need of fun in enhancing user experience and implies that by raising platform interaction and visual design, businesses may increase consumer happiness even more.

Jun, K., Yoon, B., Lee, S., & Lee, D.-S. (2022). Factors influencing customer decisions to use online food delivery service during the COVID-19 pandemic. *Foods*, 11(1), 64.

Literature Review: *Survey on Ordering and Eating Food Using Online Food Delivery Applications*

Particularly in view of the post-COVID-19 epidemic, Srinivasa Gopal's "Survey on Ordering and Eating Food Using Online Food Delivery Applications" offers a thorough summary of consumer behaviors and developments in online meal delivery. 287 people answered the poll on their

frequency of online food ordering, the kinds of food they ordered, and their practices concerning nutritional awareness and hygienic checks. The study produced some important new findings, among which the main consumers of online meal delivery services—younger generations under 40 years old—have more fast food orders. Furthermore, a good number of respondents said they did not routinely examine the nutritional value of the food they received or confirm the cleanliness of the restaurants from which they got it.

With 63% of respondents thinking it a benefit, the study also underlined the ease of online meal delivery as a main cause behind its popularity. Nonetheless, health-related issues including overconsumption and food nutritional quality were also found as possible hazards. The study underlines the need of public health awareness on appropriate meal choices made on internet food platforms.

By concentrating on features like simple access to nutritional information, ensuring order transparency, and stressing convenience, this study offers insightful analysis of consumer habits and perceptions on online food delivery that can be used to the design of an online coffee shop ordering system.

Gopal, S. (2023). Survey on Ordering and Eating Food Using Online Food Delivery Applications. *International Journal for Multidisciplinary Research (IJFMR)*, Volume 5, Issue 4, July-August 2023.