

# IMPLEMENTING A QR CODE-BASED MENU ORDERING SYSTEM INTEGRATED WITH PAYMENT GATEWAY, LOCATION VALIDATION, AND REAL-TIME NOTIFICATIONS

(Case Study: KEDAI MATMOEN, BOYOLALI)

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## ABSTRACT

Kedai Matmoen is a culinary business that currently relies on a manual ordering system, leading to long queues, order recording errors, and inefficient transaction management during peak hours. This research aims to design and develop a website-based ordering system integrated with QR Code technology, enabling customers to place orders independently from their tables. The system was developed using Node.js with the Express.js framework and Prisma ORM on the backend, and React.js with TypeScript on the frontend. To facilitate live order data updates, the system uses Socket.io for real-time communication between customers and the kitchen/administrator. Additionally, the system is integrated with the Midtrans Payment Gateway to support digital payment transactions. The development process included requirements analysis, UML design, implementation, and black-box testing. The results demonstrate that the system improves service efficiency, reduces order recording errors, and accelerates the transaction process at Kedai Matmoen.

**Keywords:** Ordering System, QR Code, Express.js, Prisma, React.js, Midtrans, Real-time.