

**UNIVERSITI TEKNOLOGI MARA**

**PERSONALIZED RULE-BASED  
PRODUCT RECOMMENDATIONS  
FOR SHANANA BOUTIQUE**

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## ABSTRACT

Shanana Boutique, a local fashion retailer in Chendering, Kuala Terengganu, specializes in selling various types of tudung such as Tudung Bawal, Shawl, Tudung Sarung, Tudung Syria, and Tudung Labuh. This project aimed to develop a complete e-commerce system to improve operational efficiency, reduce manual workload, and provide a personalized shopping experience for customers. The main objectives were to identify the system requirements, design and develop a functional e-commerce platform, and evaluate the effectiveness of the implemented system. The Rule-Based System theory was used to create a personalized product recommendation feature, where “IF-THEN” logic suggested relevant tudung products based on customer interactions, such as frequent views or previous purchases within a category. The system was developed using PHP and MySQL and structured through the adapted waterfall model, covering phases like planning, analysis, design, implementation, testing, and documentation. It included three types of users—customers, staff, and managers—with specific access roles and functionalities. Evaluation was conducted using a structured test plan involving 30 UiTM Kuala Terengganu students and 3 expert reviewers. The findings showed high satisfaction in areas such as navigation, personalization, and ease of use. Customers could browse and place orders efficiently, while staff and managers benefited from automated backend operations like inventory control and order status updates. The rule-based recommendation system was able to generate relevant product suggestions that increased engagement and purchase intent. However, the system had some limitations, including the absence of mobile responsiveness and integration with real payment gateways. Overall, this project successfully delivered a functional and user-friendly e-commerce platform tailored for small boutique operations, contributing to improved service delivery and business productivity while equipping the developer with practical system development skills applicable to real-world environments.

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