ABSTRACT

Manual inventory management systems often lead to human errors and slow response times. This study presents a notification system that utilizes Rule-Based for stock threshold monitoring and Periodic AJAX polling for real-time data synchronization. The system is evaluated for performance using Apache JMeter to simulate user load and measure important metrics, and the System Usability Scale (SUS) to collect user feedback. The test results with Apache JMeter show that the system operates reliably on five concurrent users, with a throughput of 17.10 requests per minute and an average response time of 9145 ms without errors. However, at 10 users, errors begin to appear with an error rate of 20.00%, the throughput increases to 29.30 requests per minute, and the average response time is 10162 ms, indicating the beginning of performance problems. Significant performance degradation is observed at higher loads, with an error rate of 73.33% at 25 users, and a response time exceeding 14211 ms. The SUS evaluation resulted in a score of 53, which is categorized as “Low Marginal,” with an adjective rating of “OK” and a scale grade of “E” in usability. These findings indicate that the system is adequate for inventory notification under standard operational conditions, but requires improvements in scalability and user experience to handle higher demand.

Keywords: *inventory management, rule-based programming, periodic* AJAX*, performance testing, system usability scale* (SUS)