

Informatics Institute of Technology
In Collaboration With
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Inventory Management System for Small and Medium Scale
Retail Grocery Shops in Sri Lanka

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ABSTRACT

The evaluation process of a mobile and web-based inventory management system targets small and medium-sized enterprises that operate in Sri Lanka. Automatic stock management along with supplier warning systems and stock prediction analytics backed by machine learning formed the core features of the system design. The developed system uses a multi-tier structure which combines Flutter-based cross-platform frontend with .NET 8 and SQL Server backend and Python-based XGBoost predictive module hosted by Flask. The system allows users to track inventory in real time alongside automatic stock alerts in addition to supporting users through their chatbot interface. The system's functionality and non-functional capabilities received evaluation by both expert opinions and system testing procedures. The developed system proves effective in improving stock control precision while cutting down supply chain waste and simplifying procurement processes which establishes it as an ideal solution for SMEs wanting to digitalize their inventory management systems.