

The Smart Merchandise Storage project addresses the challenges of manual management in wholesale storage, which includes security risks, improper stock management, safety hazards, and operational inefficiencies. This project proposes an automated storage and retrieval system utilizing three-axis movement to efficiently manage, store, and retrieve goods within a warehouse setting.

The main objectives of this project are to enhance security, streamline order placement, improve inventory management, increase handling efficiency, and ensure safety. The system incorporates various features such as restricted access with RFID technology, XYZ arm mechanism for handling large merchandise, voice and keypad order placement, fire detection, and real-time notifications.

Hardware components like Arduino Mega 2560, LCD, flame sensors, servo motors, and ESP8266 are integrated to build this system. The project also includes a schematic diagram, a detailed workflow of the system, and future work plans like expanding storage capacity, incorporating artificial intelligence for recommendations, implementing a restocking method, and using infrared sensors for product confirmation.