**Food Bank for the ICD**

**Abstract**

The ICD (Islamic Centre of Detroit) food bank management system optimizes processes associated with food assistance registration and verification and distribution operations for service recipients. The system uses automation to optimize business operations along with eliminating errors while distributing resources effectively through automated user processing, including verification functions and duplicate data protection. The system implements barcode scanner technology and real-time database updating mechanisms, which produce secure and precise data management capabilities. The system gives administrators powerful reporting capabilities to evaluate food distribution patterns through analytical tools. The system operates with three core functions to fully automate user signup by using either IDs or hand input followed by eligibility assessment through age and household screening and registration blocking for duplicates. Users with access receive unique registration slips from the system that allow tracking of food distribution for verification purposes. The system incorporates separate permission levels that allow ICD personnel, administrators, and kitchen staff to maintain secure and accurate data management. The application manages high registration flows, especially during large events such as the Turkey Drive each year, while respecting all relevant data protection standards. The system offers real-time data synchronization between different registration points and operates with PDF417 barcode scanners and extends its capabilities through scalable design. The system maintains its advanced features yet encounters two main limitations, which include hardware connection issues and networking requirements with additional requirements such as error prevention controls for duplicating data and system stability issues. Such system implementation will advance food distribution procedures by delivering more efficient processes that properly distribute resources to needy populations with transparent and accountable frameworks.