

# SMART SHOPPING TROLLEY SYSTEM USING AI

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## ABSTRACT

This project introduces an assistive barcode and QR code scanning system tailored for visually impaired individuals. Its primary goal is to help users identify products through voice feedback. The system uses a webcam to capture live video, from which it scans for barcodes or QR codes using computer vision. OpenCV handles image processing, while pyzbar detects and decodes the codes. Once decoded, the system searches for the corresponding product information in a predefined local database, such as a CSV or JSON file. This eliminates the need for internet access, making the solution fully offline and reliable. The retrieved information is then converted to speech using the pyttsx3 text-to-speech engine. This allows users to hear product names or details instantly. The process is seamless: users simply present a product to the webcam, and the system identifies and speaks its details automatically. Python is used for implementation due to its strong support for libraries in vision, audio, and data handling. The system is modular, enabling easy updates to the database or codebase. It can be used in homes, stores, or care facilities to support independent living. By combining low-cost hardware and open-source software, the project is both affordable and scalable. It showcases how accessible technology can empower people with visual impairments, improving their daily interactions and boosting their confidence.

**KEYWORDS:** Accessibility ,Visually Impaired, Barcode/QR Code, Computer Vision, OpenCv pyzbar, Text-to-Speech (TTS)