Smart Shopping Cart System

Revolutionizing the retail experience with RFID technology.

Agenda

- System Overview: RFID-based item management
- Adding and Removing Items: Streamlined process
- Billing and Checkout: Automated finalization
- Technical Considerations: Bluetooth module alternative

RFID-Based Item Management

Our system utilizes 3-4 RFID tags, each representing a different item, to track products in the shopping cart.

Item Tags

Each product has a unique RFID tag.

RFID Reader

A module in the cart scans tags.

Customer Log

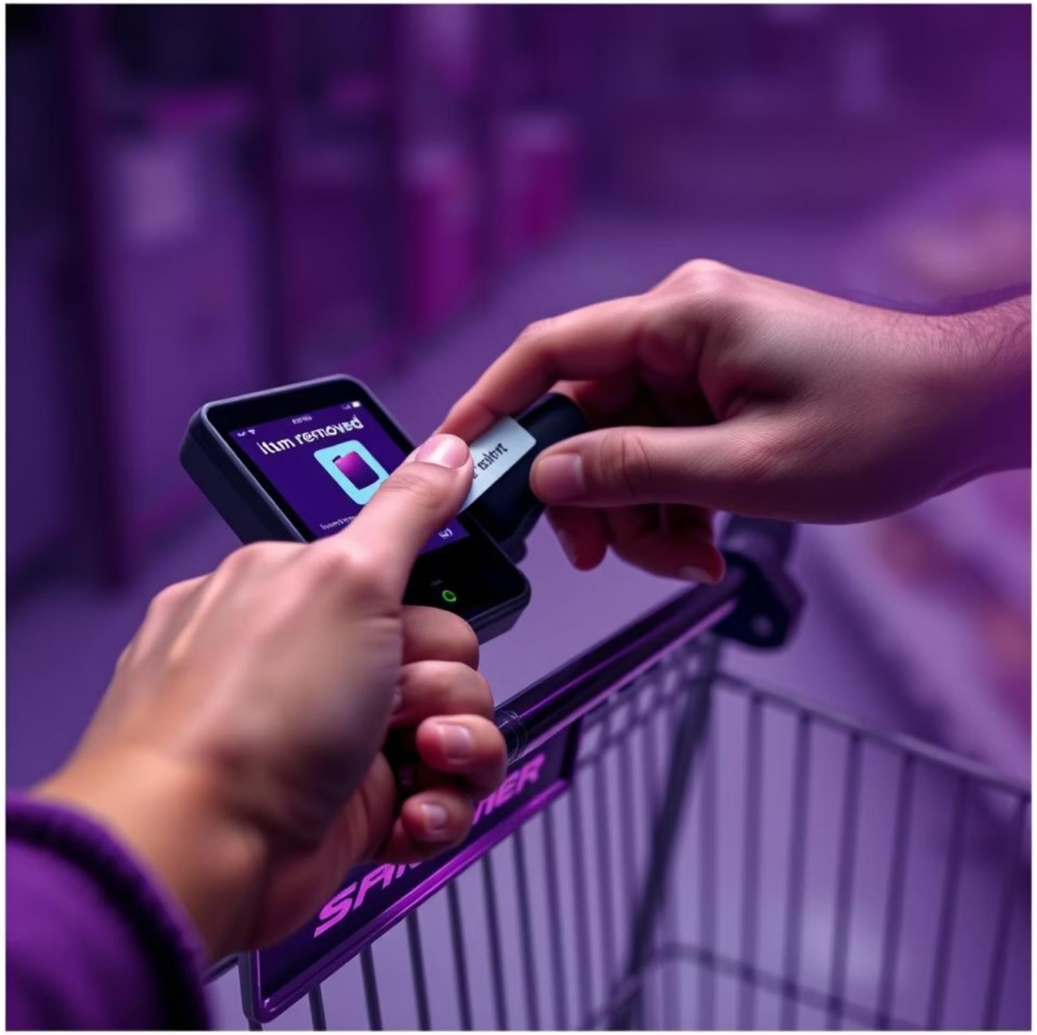
Items are added to a digital log.

Adding Items to Cart

To add an item, simply tap its RFID tag on the reader module.

Once scanned, place the item in the cart, and it will be automatically added to the customer's digital log.

Removing Items from Cart

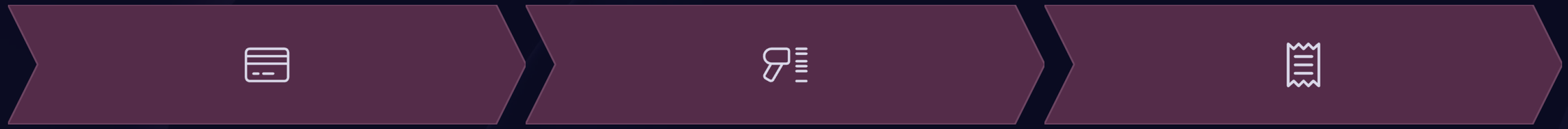


If a customer wishes to remove an item, they must tap its RFID tag on the reader module again.

This action will automatically remove the item from their customer log.

Automated Billing and Checkout

Once shopping is complete, the customer uses a dedicated "shopping card" to finalize their purchase.



Shopping Card

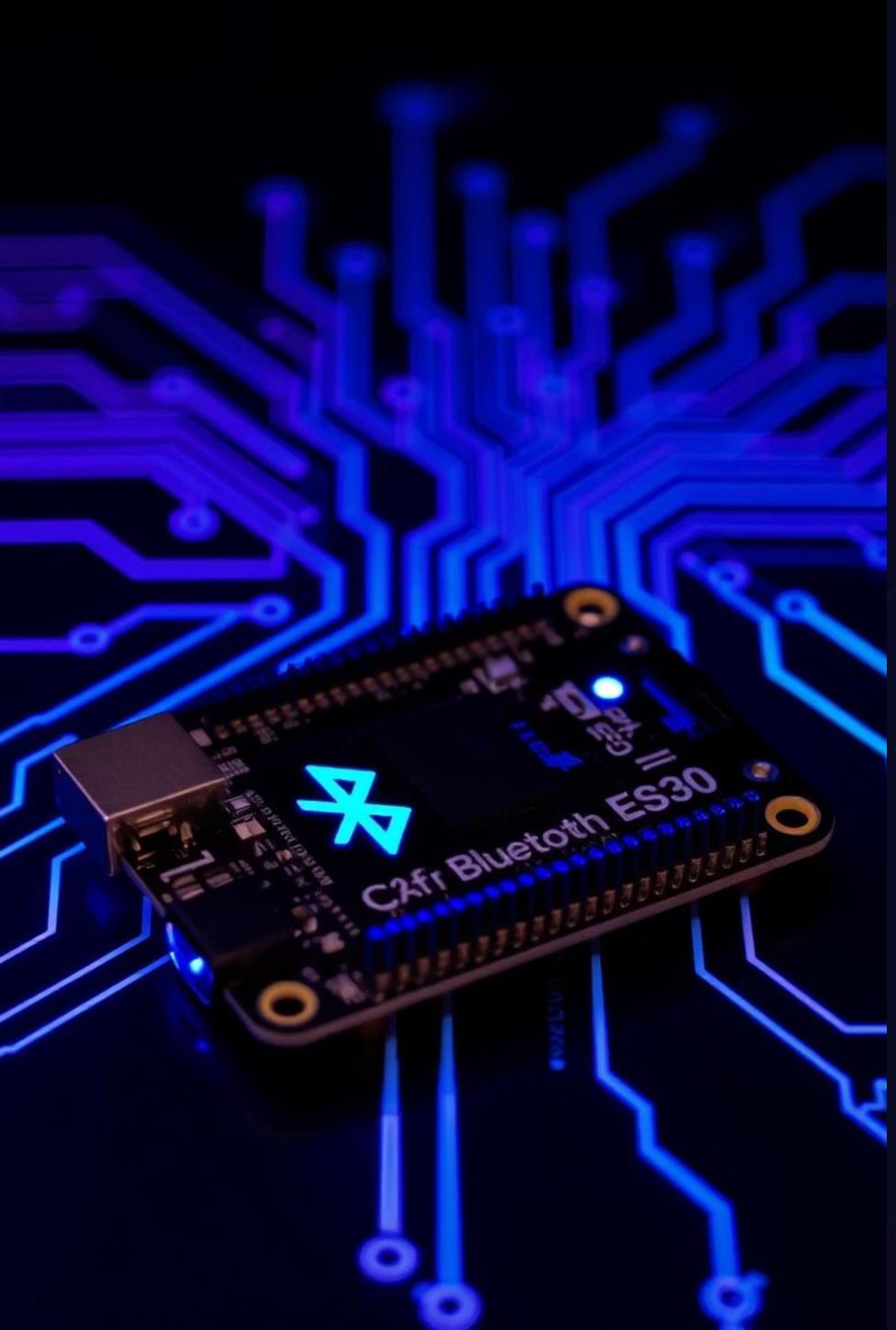
A separate RFID card for billing.

Tap to Close

Tap the card on the reader to finalize the bill.

Bill Generated

Automated bill based on customer log.



Technical Considerations

We have a contingency plan for potential issues with the L298 module.

Bluetooth Module Alternative

The code can be modified to utilize the ESP32's built-in Bluetooth module.

This would allow for communication via "Serial Bluetooth Terminal by Kai Morich" if needed.

Key Takeaways & Next Steps

- RFID tags enable seamless item tracking.
- Automated add/remove and billing processes.
- Bluetooth module provides a robust alternative for communication.
- Further testing and refinement of the system.