Group 3-12 Smart Trolley

Introduction:

With problems like waiting in a long queue to check out and having difficulty finding what you want to buy, a smart trolley, with a system that allows faster check-out and easy locating, is developed by the project team. A device that consists of an LCD screen, a RFID reader, PIC, LED-map, RF-transmitter, keypad and portable battery is implemented on the shopping cart.

Summary of four functionalities:

Navigation:

Navigation is for customers to locate the items they want to buy and know the shortest way to get there. The smart trolley will provide a shortest route from the user's current location to multiple items the user wants to find. The users need to first input their current location by scanning any item nearby over the scanning zone on the device, and then input the items into the system with keypad following the instructions shown on LCD. The keypad functions very much like the normal hand phone keypad, and the items available in the supermarket, which is stored in PIC, is browsed by initials. The result is displayed on the LED map. Users may choose to go over the display as many times as they want.

Price checking & purchasing:

The smart trolley allows customers to check price and purchase any item they want on spot. The users just need to scan all the items they want to buy or do price-checking over the scanning zone on the device. The item is considered bought on scanning unless users press DEL key on keypad, which is more convenient. A 10% discount will be offered if the users scan their member cards before purchase any item. The total sum is displayed on LCD for the users.

Purchase cancellation:

The user may choose to delete any items they have bought by rescanning them. A list of all items users have bought, including product name and amount, is available in case they need to double check. Attempts to scan items that are not in the list are, and warnings will be displayed.

Checkout:

The smart trolley provides a solution for long queuing time by realizing express checkout. As the total sum is already stored in the system, the users just need to press a key on keypad to send the sum to the cashier, which is realized using RF communication.

Main device on smart trolley

Cashier