



# iCart

In this project an intelligent shopping cart, called the iCart was developed which will eliminate the queuing time in supermarkets and will also act as a personal shopping assistant to the customer. The shopping cart has quite a few valuable features such as automatic scanning of items, auto-checkout on the cart, communication with the server for item details, product searching and location based navigation as well as location based advertisements and promotions.

The cart's main features are automatic scanning and the check out feature which allows the users to place the items from the shelves in the supermarket into the cart, they automatically get scanned by the RFID card reader and stored in the cart's memory. The proposed supermarket where this cart can operate should have passive RFID tags in all items, which are available in bulk for only a few cents each. This completes the automatic scanning feature of the cart, which eliminates the major queuing time in a supermarket since currently in supermarkets all items need to be extracted from the cart, scanned and placed back into the cart. The next part is the auto-checkout feature whereby the user can go to the payment area where there is an automatic gate. The user needs to scan his card on the cart and as soon as the server authorizes the card the gate is opened for him to walk out.

In order to enhance the shopping experience of the user, a product search feature was incorporated in the cart. This allows the user to search for a particular category of products, such as dairy, stationary etc. following which the cart gives the shortest path to navigate to the desired shelf. This is feasible since the cart is able to detect the current shelf using the floor pattern.



Another feature of the cart is the advertisement and promotion feature which brings the supermarket marketing to a new level. It advertises promotions and advertisements on the cart. The products advertised are from the shelf the user is currently nearer to, using the location detection mechanism on the cart. The cart also suggests items to the customer once he has bought a product for e.g. suggesting butter when he buys bread.

The iCart is the next generation cart which will make shopping experience in supermarkets much easier and this idea can also be extended to other similar stores.