

This project is developed to empower the Visually Impaired towards a fulfilling, independent, real life shopping experience. With the help of this device the Blind will not have to rely upon family and friends to help them shop for daily needs for groceries, instead can be free and independent by going to the supermarket and buying what they wish for with little fuss.

SHOPPING ASSISTANT FOR THE BLIND

[GROUP 1-12]

The description of the device and its components is as follows -

Menu Entry Sub-System

This sub system consists of custom designed Braille Menu List, Braille Keypad and voice prompts. The Braille list and Keypad was designed keeping in mind the ease of usability for the blind. The visually impaired can feel the list of items available in Braille and then select an item by punching in the corresponding number using Braille keypad followed by select button. A voice prompt is given indicating successful selection of item. A shopping list is now generated by selecting items one by one, and finally the done button is pressed to start shopping



Navigation Sub-System



This sub system is the “brain” of the device and consists of RFID Tags and reader, Finger Pointer and Voice Prompts. Once the full shopping list is entered the path for shopping is now generated using “custom shortest path algorithm”. This algorithm guides the user to each and every item in the list in the shortest and most efficient path possible. Voice prompts are used to guide the visually impaired in a step wise manner. As the blind have a strong sense of touch a finger pointer is provided as a failsafe option, in case of noisy environments where the voice prompts can be over heard. Once the shopping is finished the user is given the option to continue shopping, if he does not wish to do so, he is guided to the cashier.

Obstacle Detection Sub- System

This sub-system uses ultra sonic sensors to detect obstacles in front and make the user wary of potential danger. Buzzers are sounded if the obstacle is in front.

