

SMART ASSISTANCE FOR SHOPPER

Prepared by: Heryanto Koh

ABSTRACT

Nowadays, super markets have become a daily visiting place for most of the people who live in a city because most of their daily needs can be found in the super market. It could be a problem for them if they have no budget for shopping. People sometimes spend more than what they expect to without realizing that they have bought something that is unnecessary.

The Smart Assistance for Shopper device is designed and developed for every super market with a purpose to provide an extra service to help the users or shoppers to be able to key in the amount of budget for their shopping, and to monitor their grocery item's details from their trolley. It is a device that can be attached on the shopping trolley, and has features that can be used to monitor, budget, give a notification when overspent, and transmit the data to a computer to print out a receipt after payment.

The Smart Assistance for Shopper device is controlled by a PIC 16F877A 40-pins microcontroller, which acts as the main brain that controls the operations of the device. It has the capability to calculate and store the data or information into its EEPROM (Electrical Erasable Programmable Read Only Memory), and there are several components that are interfaced with the microcontroller to perform the device operations. A 4x20 (Liquid Crystal Display) LCD is used to display all the process details or information of the PIC 16F877A microcontroller. The buttons are used to select the displayed option on the LCD screen, and to send a HIGH or LOW signal to the PIC 16F877A microcontroller. The 3x4 keypad is used to key in the amount of budget into the PIC 16F877A microcontroller. LED's (Light Emitted Display) and a buzzer are used to give a notification to the user or shopper if overspending occurs. The UART/serial port is used to transmit the data or information from the PIC 16F877A microcontroller to the computer though USB to RS232 converter so that the receipt can be printed out, and of course software is used to program the PIC 16F877A microcontroller and computer application to perform the operations and receive the transmitted data or information. These software applications are MikroC PRO for PIC and Visual Basic 2010.

The Smart Assistance for Shopper prototype has successfully achieved the required aims and objectives of this project. The device can perform all the accumulation, budgeting, notification and transferring data or information via UART/serial port.

Keywords: PIC 16F877A microcontroller, LCD, Buttons, Keypad, LED, Buzzer, UART/serial port, USB to RS232 Converter, MikroC PRO for PIC, and Visual Basic 2010