Smart Shopping Cart

The shopping cart of the future

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Mechatronics

- Mechatronics is the system that is compromised of several components that work together in order to form a complete system. These components include:
  - Mechanical Components
  - Electrical Components
  - Electromechanical Components
  - Hardware
  - Computer Systems
Introduction to the BASIC Stamp

- BASIC Stamp is used in mechatronics to relay commands to mechanical components via computer programming.
- Commonly used in microcontrollers.
- It is able to control and monitor switches, timers, motors, sensors, relays, valves, and more.
Our BASIC Stamp

- BASIC Stamp 2 Module
- Personal uses:
  - Proximity sensors
  - Servos
  - Battery power supply
  - Customized program
Shopping Cart

Purpose

- We have designed an automatic shopping cart that is controlled by a basic stamp to be used in common shopping centers
- Provides the most logical route to retrieve needed products and leads the shopper to the products
Shopping Cart Procedure

- We built a prototype of the shopping cart out of plexi-glass, and used ultrasonic sensors as well as a customized PBasic program to ensure that the shopping cart follows the most logical route to all products and does not run into obstacles on the way.
Shopping Cart Programming

- A programmed coordinate plane
  - X- coordinates lead to aisle
  - Y-coordinates lead to section
- Allows for automatic ordering of products
- Program can be changed based on location of product and availability (i.e.: automatic inventory)
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