The SmartCart system aims to enhance a grocery shopper’s experience by streamlining the shopping process using a mobile app and RFID technology.

**Motivations and Objectives**

**Motivations**
- Why can’t the in-person shopping experience be as simple as it is online?
- Existing shopping-aid technologies only provide partial solutions or are too costly [1]

**Objectives**
- Provide assistance in locating and navigating to products in a store
- Enable the user to calculate the bill total before reaching the register
- Determine store occupancy to alert user when store is crowded

**Methodology**

**RFID Hardware**

**Mobile App**

**Server and Database**

**Research Challenges**

- Designing visuals for map navigation using Android Canvas [2]
- Creating the AStar algorithm for calculating shortest path
- Building the charging circuit

**Results**

- Navigation to products done through tracking RFIDs in store
- Cart total can be calculated through barcode scanning[3] & adding items to virtual cart
- Safely and easily charge battery in under 5 hours

**Future Work**

- Ability to recommend products to users based on shopping history & trends
- Chain-of-carts charging instead of individual plug-in

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**References**

[1] http://www.nbcnews.com/id/7723557/ns/health-fitness/t/new-grocery-carts-are-only-so-smart/#.WPgT01KZPR0