FedEx Services

Overview
The goal of this project was to eliminate the need for sortation associates to have to scan barcodes in order to assign themselves to particular loading dock areas. The solution was to use a Bluetooth Low Energy (BLE) beacon by Aruba Location Services to automatically connect the wrist scanners to specified loading dock areas.

Objectives
To develop an application that works with the currently used scanning devices to connect to the beacon signal. The constraint set by the use of the Aruba beacons required specific use of their code in order to work with the beacons.

Approach
- Develop a random number generator to test the application’s user interface
- Visit a warehouse to understand the dimensions at work, and properly establish beacon signal range
- Create multiple concepts regarding positioning of beacons and signal strength
- Determine optimal concept through analysis of the warehouse environment and beacon capability
- Establish connection between the device and the Bluetooth beacon
- Assign event triggers for the beacons, one for each loading dock
- Create a visual and tactile notification system within the application to notify a change in loading dock area (each loading dock area is defined by a different color)
- Troubleshooting to determine why the application has trouble accessing the beacon information
- Project deadline reached before application could be properly coded to function as needed

Outcomes
- A working system would save time and increase overall efficiency of the warehouse
- Time saved allows for higher flux of packages to be processed increasing profits
- System was not completed due to complications regarding communication with the beacon developer company
- Recommendation for further discussion with the Aruba company, specifically the approach to their code to properly establish a connection to the beacons, in order to finish development of application or to utilize a different beacon with less restrictions