|  |  |
| --- | --- |
|  | *Cost-Effective Food Monitoring System* |
| **Major:** | **Name:** |
| CS | Travis Wright |

**System Architecture**

Hardware Architecture

A drawing of a carton of milk

Description automatically generated

1. **Phone:** Android smartphone, with WiFi and Bluetooth Low Energy capabilities, used in conjunction with the food monitoring system’s mobile app.
2. **NFC Tag:** Adhesive Near-Field-Communication tag used to store product information, and to be scanned by the phone for transfer of programmed information such as nutritional data, expiration/manufacture date, etc.
3. **Bluetooth:** Bluetooth Low Energy protocol, used for communication between the humidity/temperature probe and the phone. Uses little energy, prolonging battery life.
4. **Microcontroller:** Basic device, such as an Arduino, used to send temperature and humidity data over Bluetooth to the phone. Will be powered off battery.
5. **Li-Ion Battery:** Lithium Ion battery, used to power the probe, and the sensors/microcontroller within.
6. **Dual Temperature Sensors:** Dual temperature sensors are used to calculate relative humidity, as well as temperature of the food product, by measuring conductivity between the two sensors.

Software Architecture

A diagram of a company

Description automatically generated

The software diagram above shows the options and menus available in the Android app. It shows the flow of the app, and the different choices the user can make to navigate through the different features and functionality. It also shows the different actions the app will take, such as notifying the user of expiration dates, and suggesting relevant recipes. This diagram encompasses the menu architecture, and what app features will be present in the final product.