Food Nutrition Mobile Application Proposal Evaluation of Implementation

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## Evaluation

Overall, I have successfully met all of the Threshold requirements of my proposed application. The implementation of these requirements were not as I had originally envisioned, but the functions were achieved. iOS building and testing were not realistic since I am an Android/Windows user, but this was an Objective requirement. Hashing the password would have been a nice feature and I have implemented this in a previous class using Java, but it can be added as a future feature. The cost of Heroku was an impediment that required some creative thinking on the database, but MongoDB Atlas was able to fill the gap through an API.

## Premise

My proposed final project will be an application that can scan a food item bar-code (native camera usage), lookup the data associated with the barcode, and display the nutritional data of the food item to the user. This application can be extended in the future to include nutrient and calorie tracking for the users. It could also be used for adding/updating information to the open source food facts data (world.openfoodfacts.org). I am proposing to develop this application with Ionic CLI (v7.2.0) using Capacitor rather than Cordova (for native support), MongoDB, and deploy it with Heroku. Below are my derived requirements for the proposed application. Note: Capacitor is the preferred native method recommended for Ionic Framework v7.2.0.

## Architecture

* Construction
  + Threshold: The application shall use Ionic CLI (Completed)
  + Threshold: The application shall use a device native capability (such as camera, location, etc.) (Completed)
  + Objective: The application shall utilize MongoDB for data storage (Completed)
  + Objective: The application shall utilize Heroku for deployment (Completed)
* Front-End
  + Login Screen View:
    - Threshold: The application shall have a login screen that will accept a username and password. (Completed)
  + Scan Barcode View:
    - Threshold: The application shall have a screen that takes a picture of a bar code. (Completed)
    - Objective: The camera view shall have a line and box to guide the user for framing the barcode correctly. (Completed, although not as originally thought)
  + Food Item View:
    - Threshold: The application shall have a screen that will show the nutritional data of the scanned food item. (Completed)
    - Objective: The application shall display an image of the food item (Completed through product link)
    - Objective: The application shall display other relevant information of the food item (Completed through product link)
* Back-End
  + Food Nutritional Data:
    - Threshold: Application shall decode the scanned barcode and retrieve the food item nutritional data. (Completed)
    - Data Options:
      * Call to the <https://world.openfoodfacts.org/> API to retrieve a JSON with the results (Completed)
      * MongoDB lookup of the data based on a database dump from <https://world.openfoodfacts.org/data>. (Tested, Not implemented)
  + User Authentication:
    - Threshold: The application shall store username and passwords in a MongoDB database. (Completed)
    - Threshold: The application shall store user credentials as plain text username and password (Completed)
    - Objective: The application shall store user credentials as plain text username and hashed passwords (Not Attempted)
* Deployment
  + Threshold: The application shall be deployed and tested on Android (Completed)
  + Objective: The application shall be deployed and tested on iOS (Not Attempted)
  + Objective: The application shall be deployed using Heroku. (Completed)
    - Note: I need to do more investigation due to my ignorance of this service, but I have created an account and I have applied for student credits.