X-Tray

Smart Food Check-out Assistant

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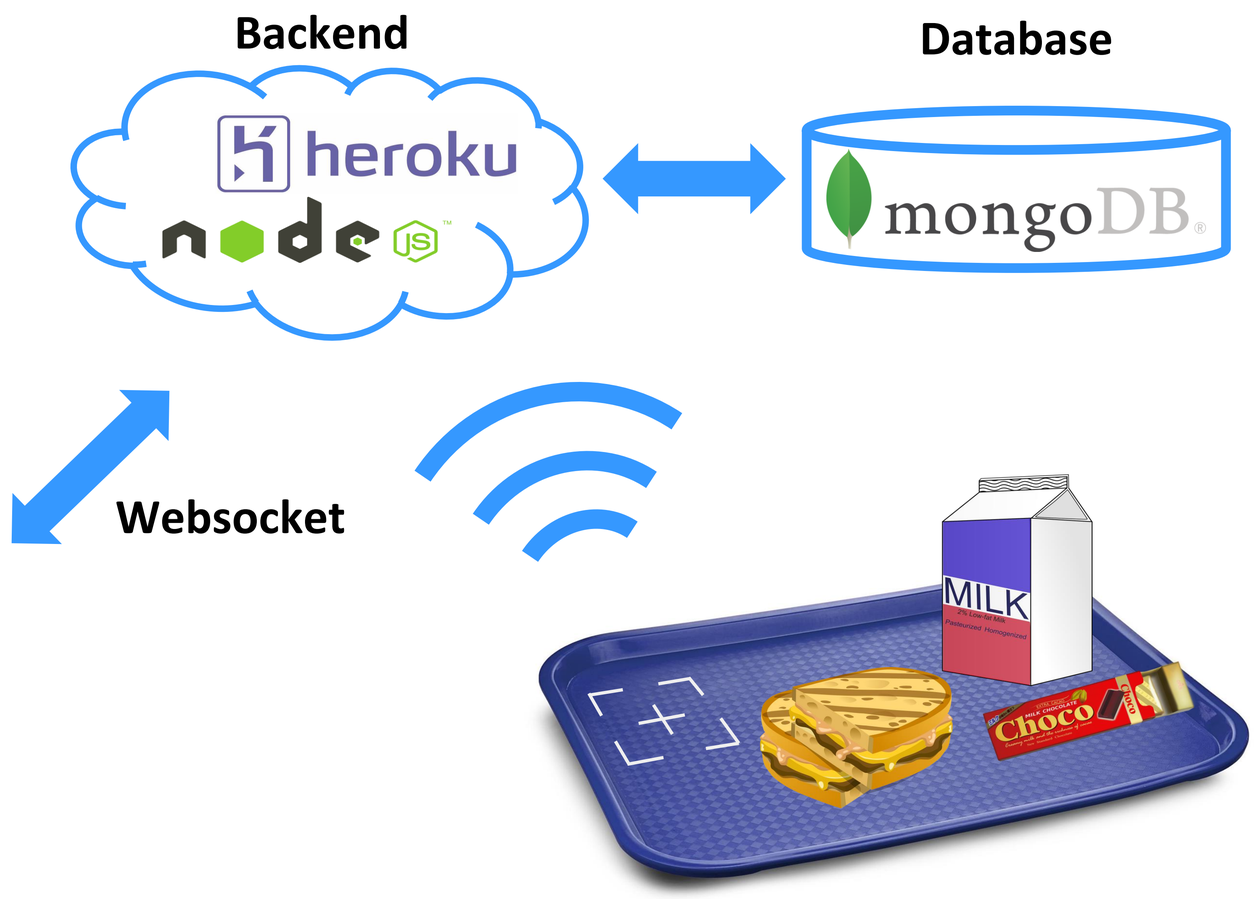
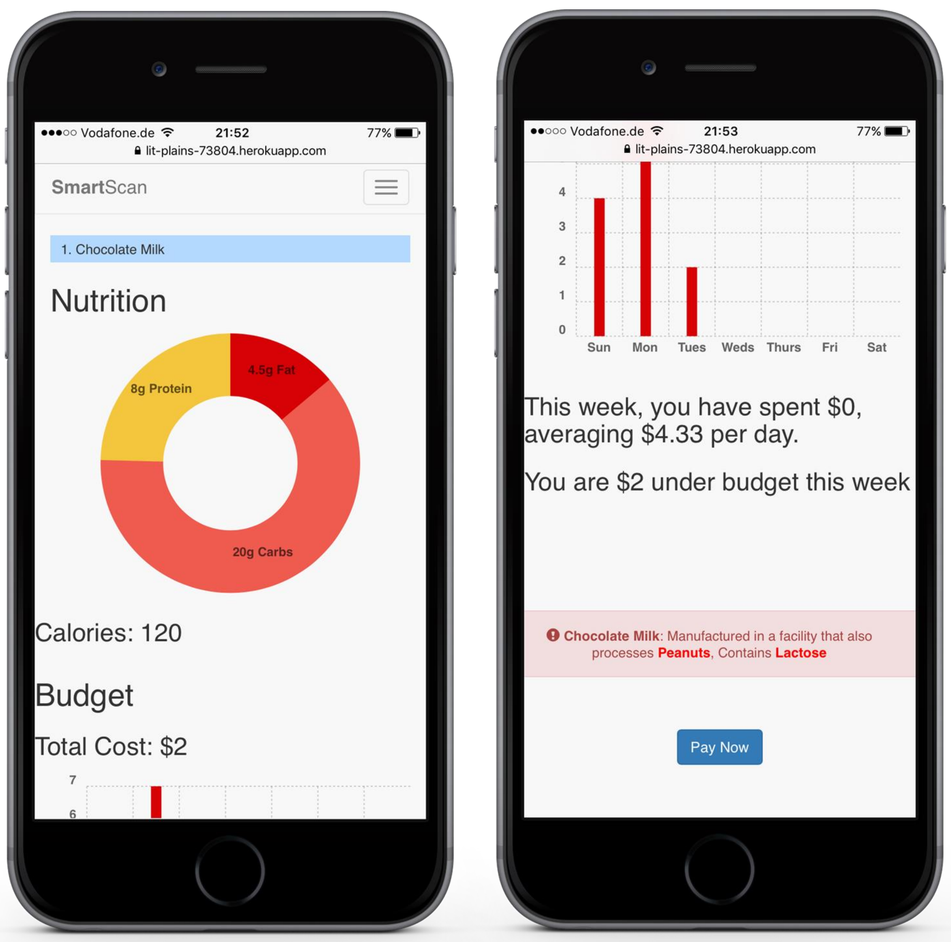
Abstract

This project involves creating an internet-connected assistant for canteen checkout lines. This model uses a networked scanner to scan food items and send data to a server, which processes the data and send information to a web app to be displayed on a smartphone. The app displays the net statistics for all scanned items about nutrition, budgeting and allergy warnings.

System Architecture

The X-Tray checkout line assistant is a smart, WiFi-enabled food tray with RFID scanning. When the scanner detects a product, the ID of the product is sent to the server. The server then displays information on nutrition, budgeting, and allergies, through a web app interface. The user can add and remove products from the tray and see changes in real time, allowing them to visualize how each product affects their nutrition and spending.





User interface

Bootstrap CHARTIST.JS

X-Tray Web App Features

- Allow the user to set custom dietary restrictions to watch for
- Alert the user of products containing:
  - Allergens
  - Religiously prohibited ingredients (beef, alcohol, etc.)
  - Non-Vegan / Non-Vegetarian ingredients
- Shows how the user's daily spending habits for the past week
- Show their current progress towards meeting their budget
- Visually-appealing charts of nutrition information

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