

MICHIGAN STATE
UNIVERSITY

Project Plan

Personal Shopping Assistant

The Capstone Experience

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From Students...
...to Professionals

Functional Specifications

- Chatbot that can answer questions about:
 - Item Location
 - Price Comparison
 - mPerks/Coupons
 - Item Stock Status
- Bluebird Integration
 - Allows guest to notify team members about things like: missing items, mislabeled items, etc.

Design Specifications

- Non-limiting interface

- "Thrifty" feels like a physical Meijer Team Member
- Interface is simple, yet powerful
- No options, user may ask "Thrifty" anything they wish

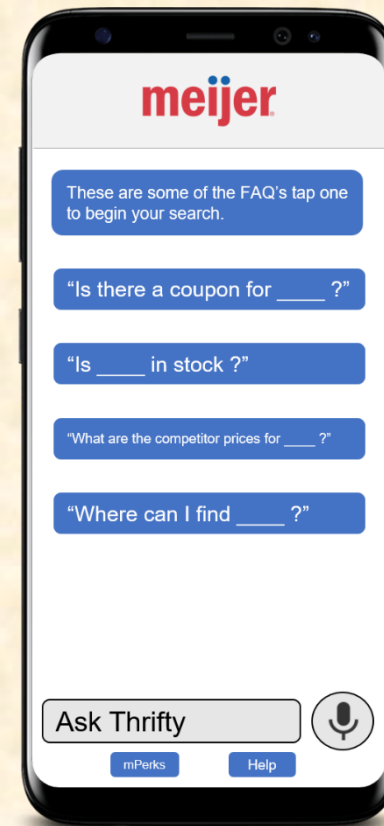
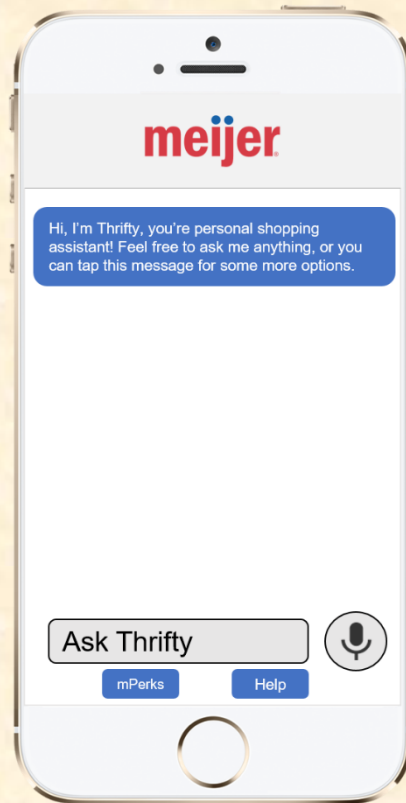
- Search

- The user can search for items in the store with a question, and the app will show items that fit the search description

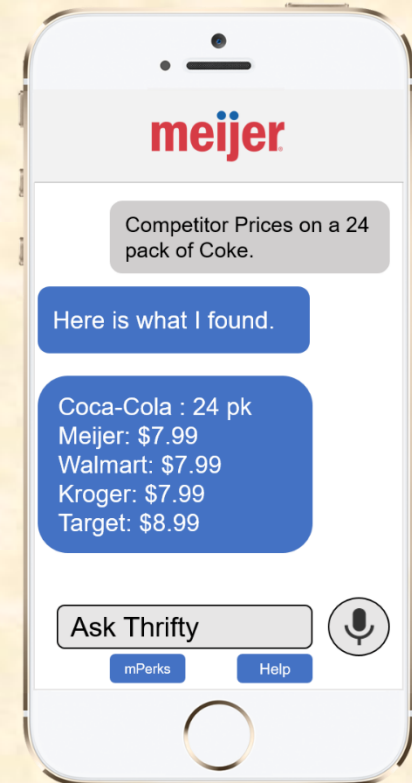
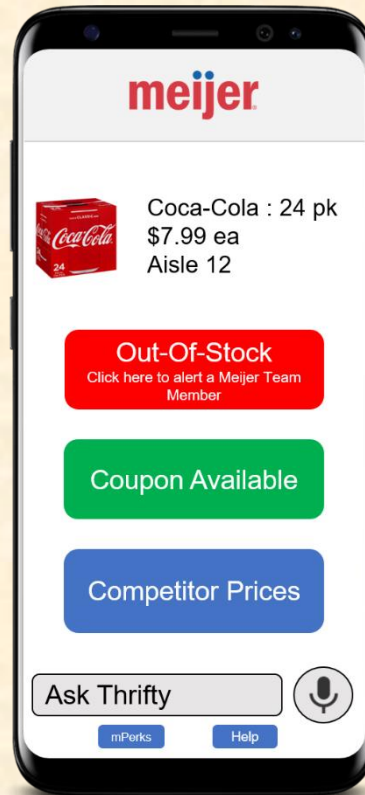
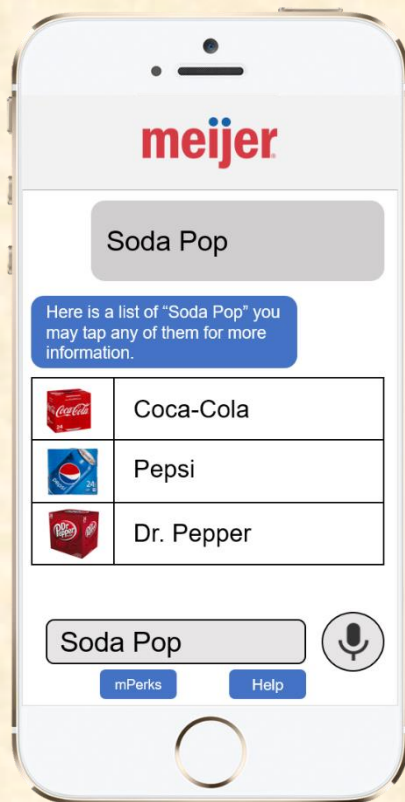
- Item information

- Location in the specific store
- Price
- Whether the item is in stock
- Competitor prices
- Related products
- If a coupon is available for the item they may clip it to their mPerks account.

Screen Mockup: Chat Interface



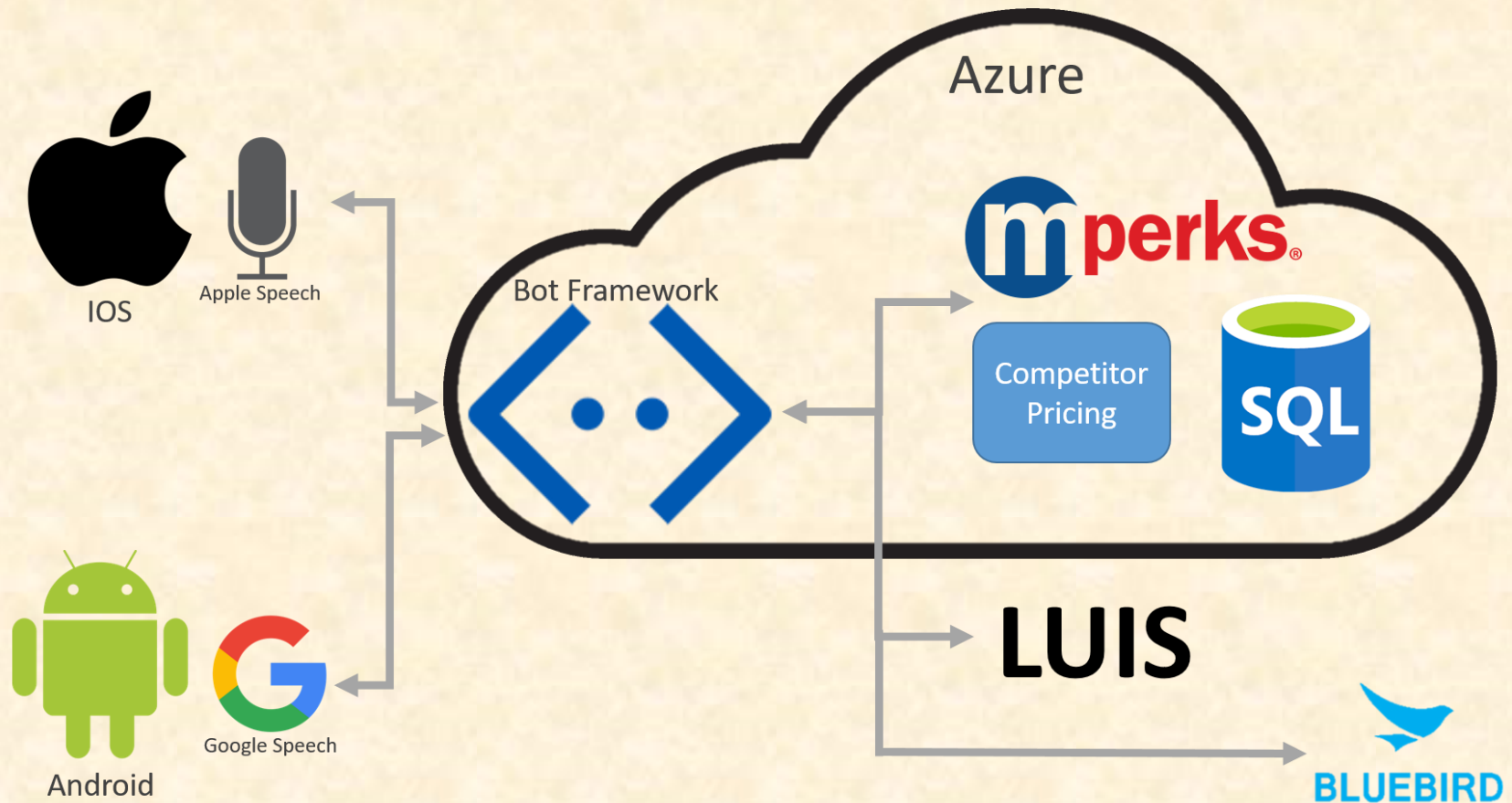
Screen Mockup: Functionality



Technical Specifications

- Frontend Speech Recognition
 - Google/Swift Speech APIs
- Backend
 - Item information Data (SQL)
 - Natural Language Processing (Microsoft LUIS)
 - mPerks data (stored in SQL)
- Bot Coordinates Between Frontend and Azure
 - Accepts Post Requests from Apps
 - Consolidates item information into concise response

System Architecture



System Components

- Hardware Platforms
 - Bluebird
- Software Platforms / Technologies
 - Microsoft Azure
 - SQL Server
 - Microsoft LUIS
 - Development IDEs
 - Visual Studio
 - Android Studio
 - XCode

Risks

- **Finding competitor pricing data**
 - Meijer does not store competitor price data internally, so we will have to find this information from outside sources.
 - Search for sources on the internet and work with the Meijer team to look for ways of gathering this data.
- **Making a bot using Microsoft Azure and Microsoft Bot Framework**
 - We need to implement a natural language bot to determine what shoppers are searching for in real time.
 - Learn how to implement this feature by reviewing Microsoft Bot Framework documentation.
- **Finding store-specific information about each product**
 - We need to be able to show the user information about a product in the store they are currently shopping at.
 - Use Meijer data and research how to get information that Meijer may not have immediately available for us.
- **Bluebird device integration**
 - Meijer Team Members carry around devices called Bluebirds that will alert them to perform various functions. The app should work with these devices to alert team members of out-of-stock items.
 - We will work with Meijer to obtain a Bluebird device and work with their systems to send the required messages to these devices
- **Ensure user interface is what Meijer wants and meets the needs of customers.**
 - We were not initially sure what Meijer wants the app to look like and what the interface should be.
 - We will make screen mockups of what the app could look like and work with Meijer to come up with a final design.



Questions?

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