

**MICHIGAN STATE**  

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**U N I V E R S I T Y**

**Project Plan**  
**Personal Shopping Assistant**  
**The Capstone Experience**

**Team Meijer**

Jacob Bonesteel

Aaron Carlson

Emerson Chen

Megan Lippert

Zach Richardson

Department of Computer Science and Engineering  
Michigan State University

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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

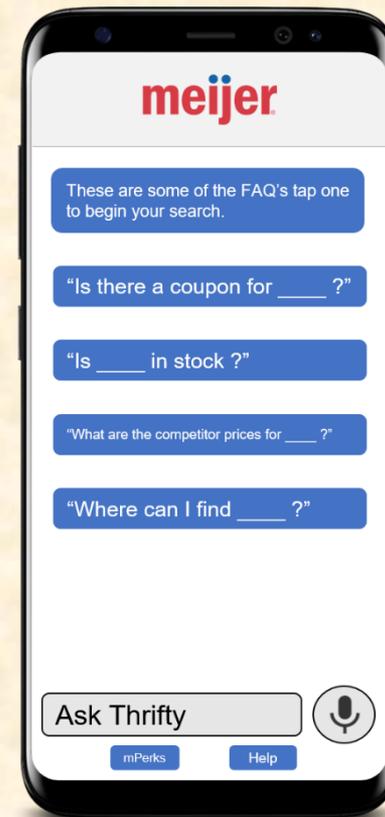
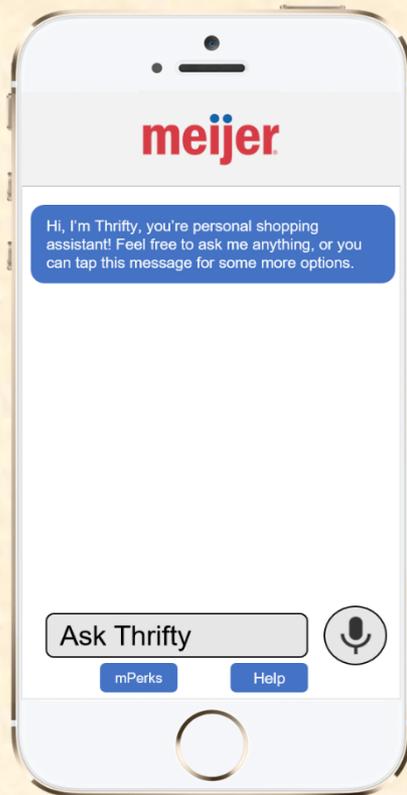
- The user can search for items in the store with a question, and the app will show items that fit the search description

- Item information

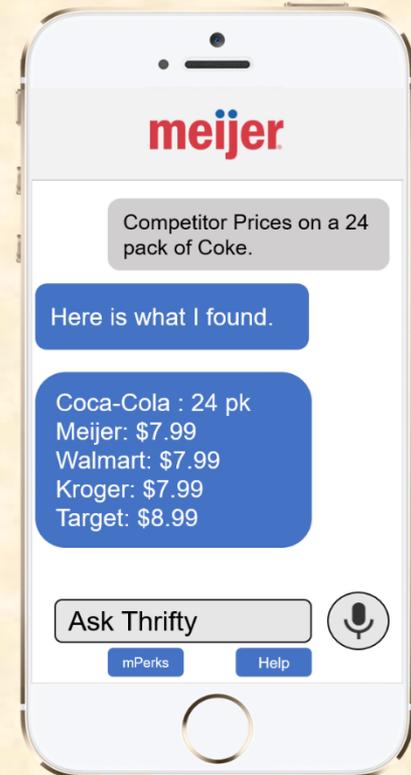
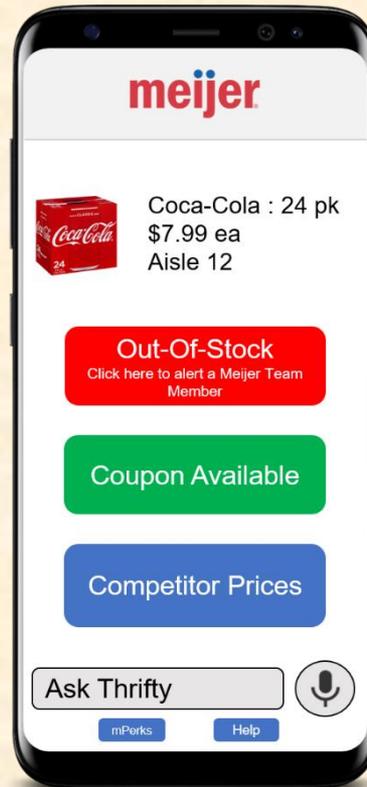
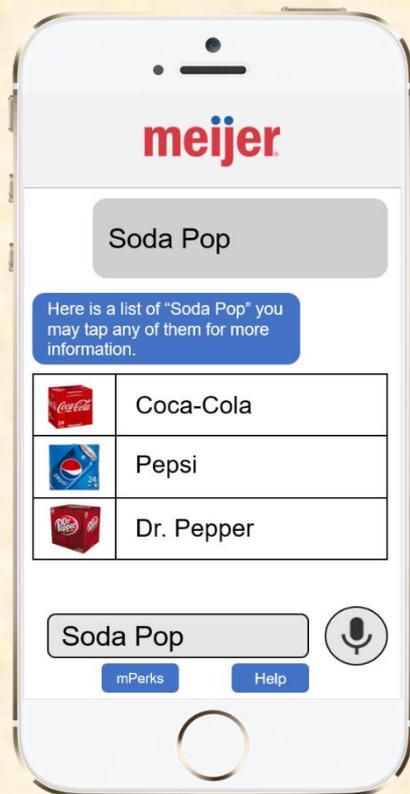
- Location in the specific store
- Price
- Whether the item is in stock
- Competitor prices
- Related products
- If a coupon is available for the item they may clip it to their mPerks account.



# Screen Mockup: Chat Interface



# Screen Mockup: Functionality

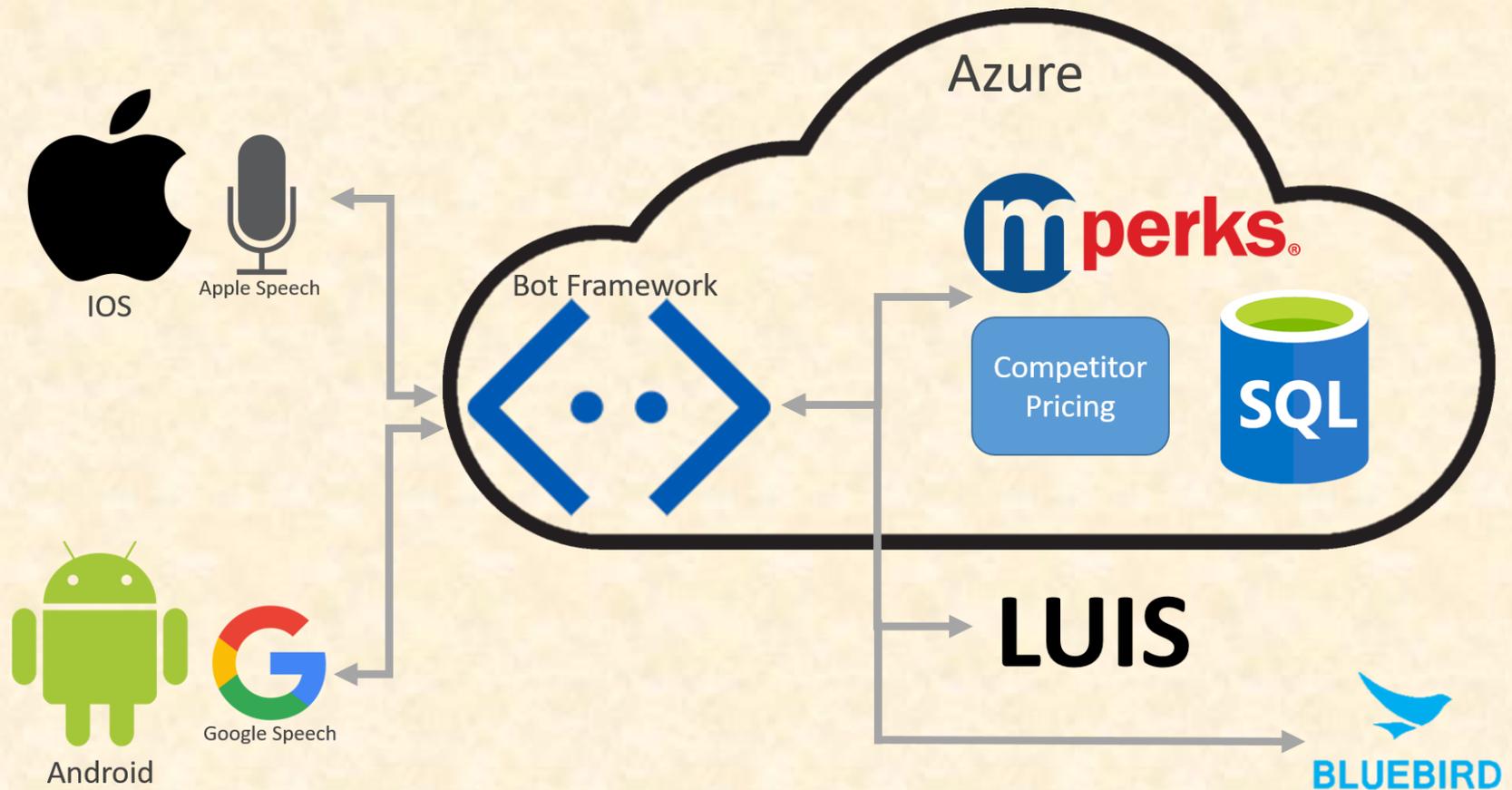


# Technical Specifications

- 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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