MICHIGAN STATE
U N I V E R S I T Y

Project Plan
Location-Based Personalized Shopping

The Capstone Experience

Team Meijer

Blaire Izbicki
Jacob Kalt
Chris Le
Sasha Morford
Jack Studzinski

Department of Computer Science and Engineering
Michigan State University

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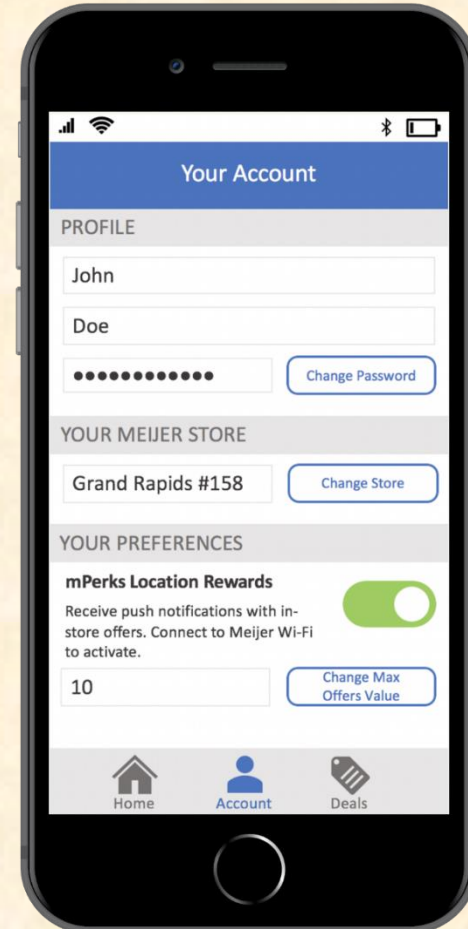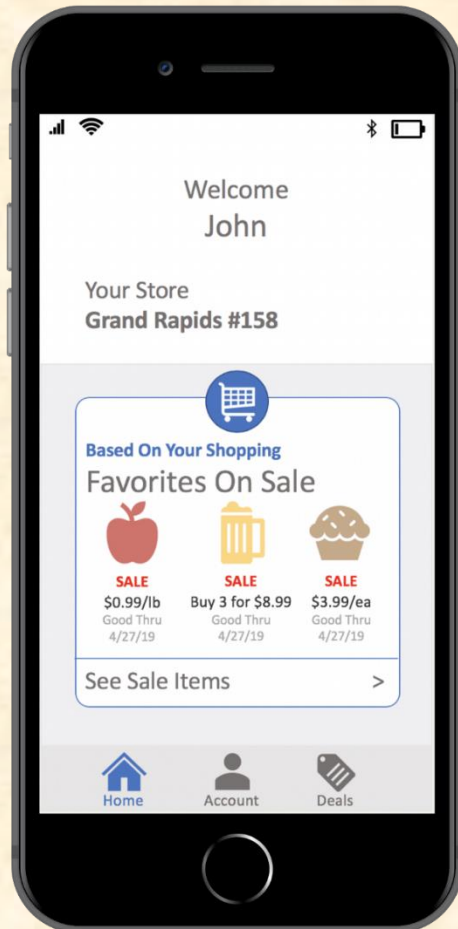*From Students…*
…to Professionals

Functional Specifications

- Enhance the mPerks mobile application
- Leverage the customer's in-store location and past purchases
- App will push personalized deals based on
  - Where the customer is in the store
  - Their past purchases
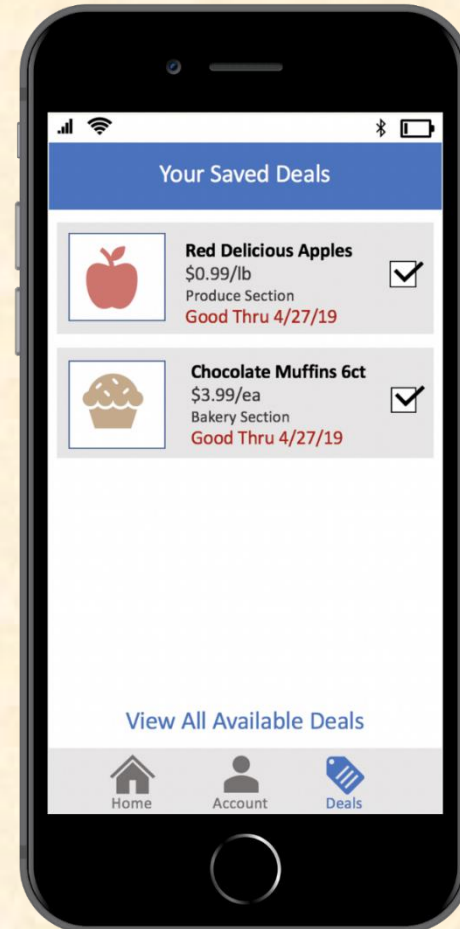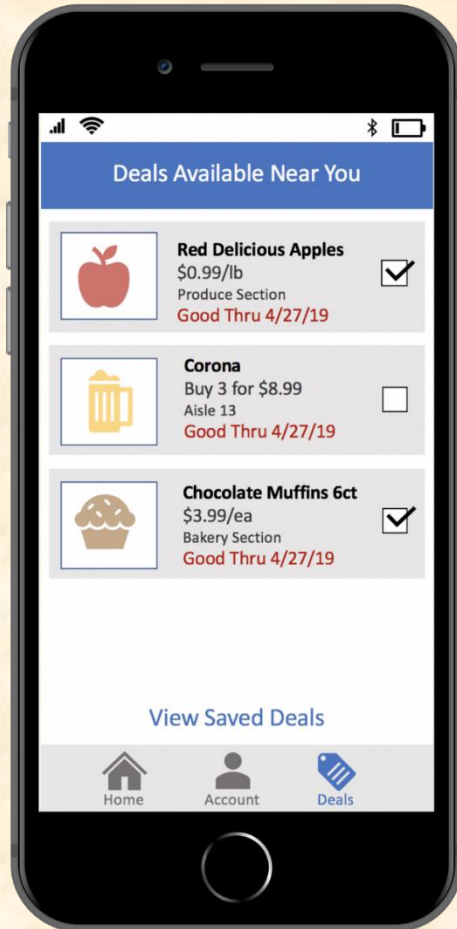- Goal is to drive additional sales

Design Specifications

- Two Deliverables
- Mobile Application
  - Home screen with user store and sale information
  - Account page with location rewards preferences
  - Deals page to view and save nearby sales
- Admin Data Dashboard
  - Home screen that overviews the result of the Location-Based Personalized Shopping feature
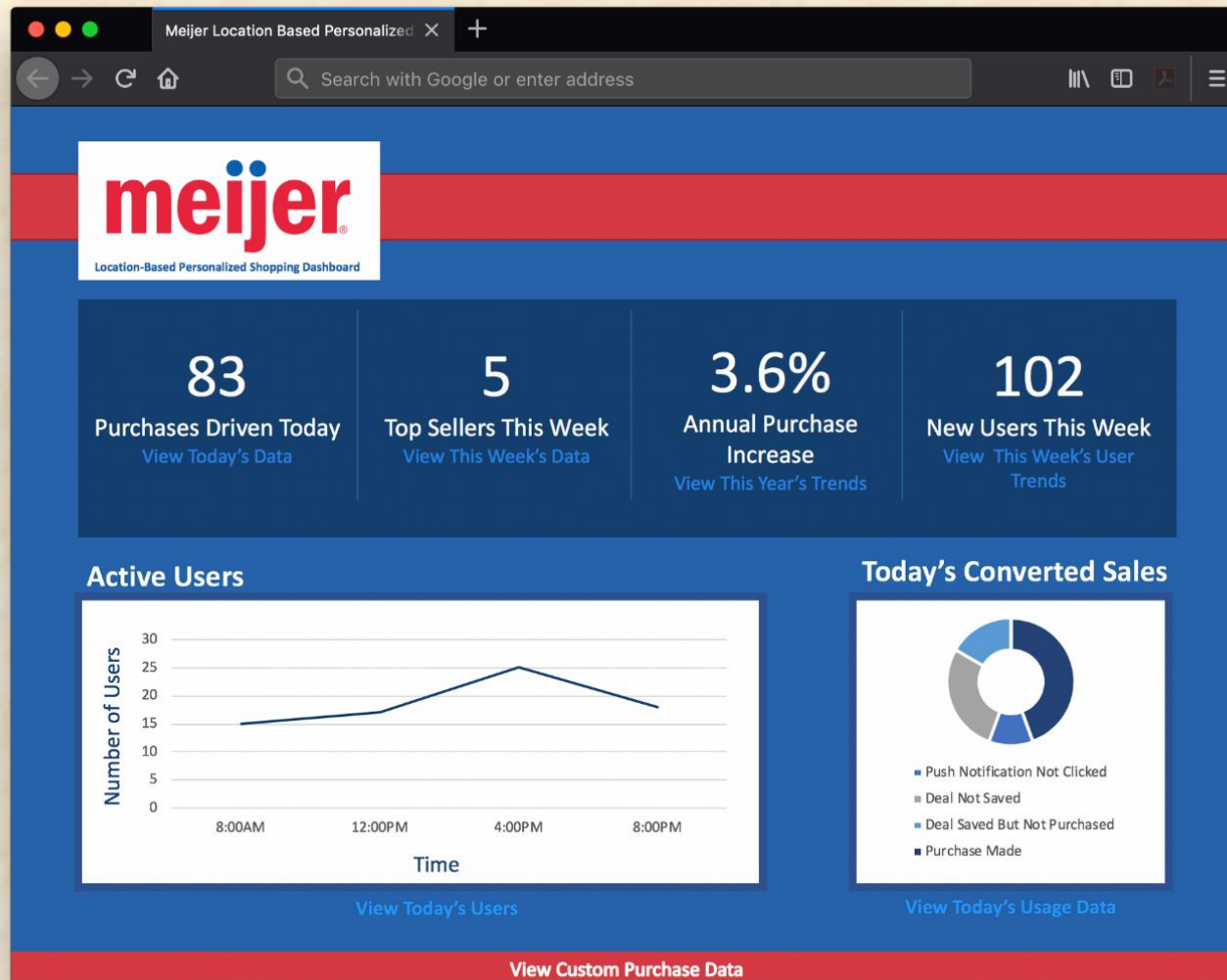 - Specification screen where purchase data can be visualized
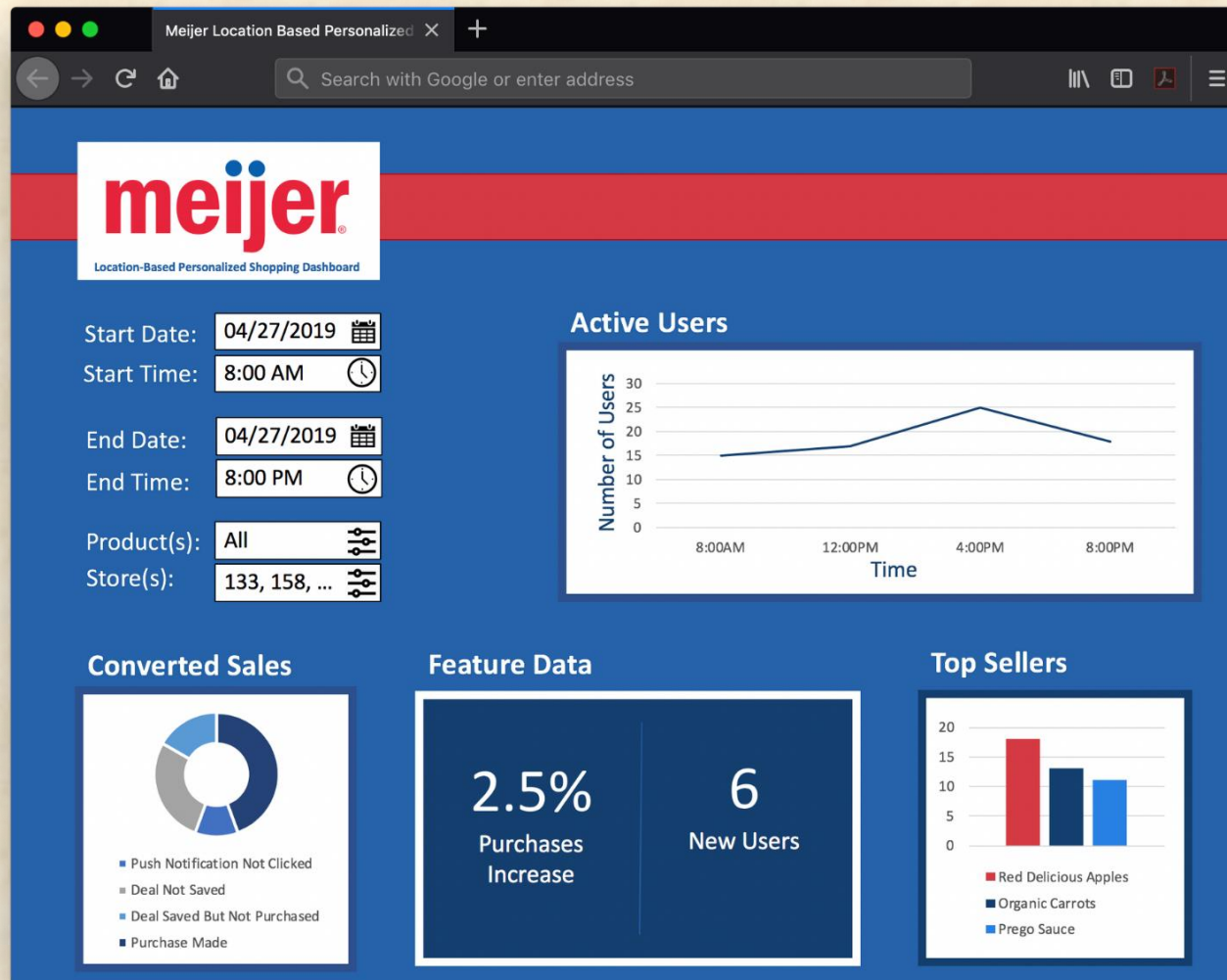
Screen Mockup: Home & Account

Screen Mockup: Deals
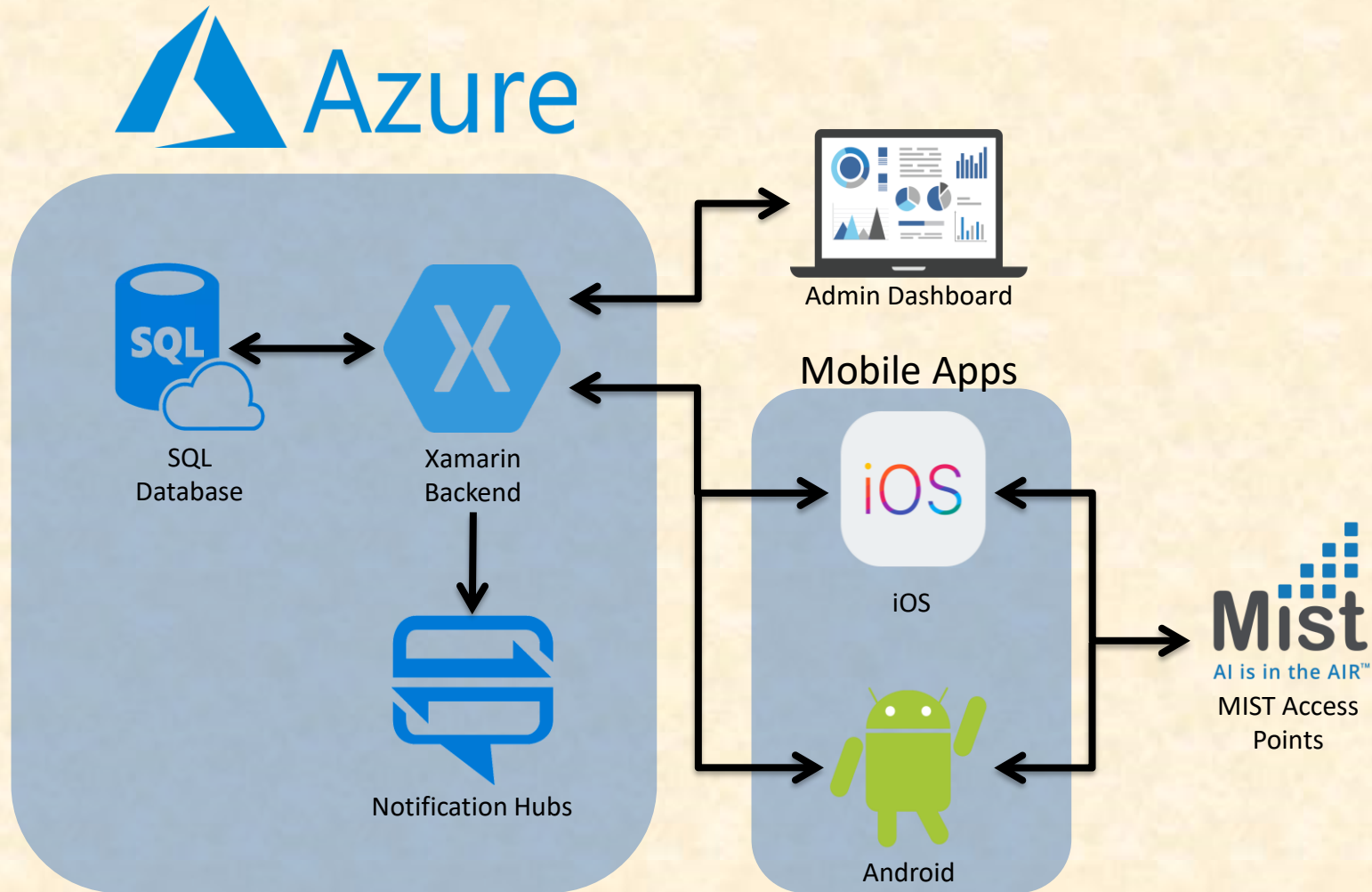
Screen Mockup: Admin Home

Screen Mockup: Specification Screen

Technical Specifications

- Mobile applications
  - Customer view and use
- Web Application
  - Employee view of analytic data
- .NET Backend Service
  - Data retrieval and computation
- SQL Database
  - Store customer purchase data
- Mist Access Points and SDK
  - Gather location data
- Machine Learning
  - Will be used to predict recommended items near the customer as they walk through the store

System Architecture

System Components

- Hardware Platforms
  - iOS and Android Devices
  - Mist Wireless Access Points
- Software Platforms / Technologies
  - Xamarin Framework
    - Native Android and iOS applications
  - Microsoft Azure
    - App Services
    - Notification Hubs
    - SQL Database
  - Mist SDK and APIs
  - AngularJS
  - Machine Learning Algorithm

Risks

- Modularity
  - Integrating with mPerks
  - Study app and consult team
- Mist Technology
  - Unfamiliar technology
  - Receive hardware for testing; Mist contacts and documentation
- Testing Viability
  - Field testing difficulty; Accuracy in location
  - Receive hardware for local testing
- Variability in Data
  - Changes in store layout and inventory
  - Decrease dependence on variability

Questions?

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