MICHIGAN STATE UNIVERSITY

Project Plan

Connected Appliances Analytics Dashboard

The Capstone Experience

Team Whirlpool

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From Students…
…to Professionals

Project Overview

- Collect information from existing customer and appliance databases
- Store this information in a database
- Provide a web-based application for searching customer data, examining static dashboards, and creating custom reports from this data
- Allow for role-based security managed through administrator functions

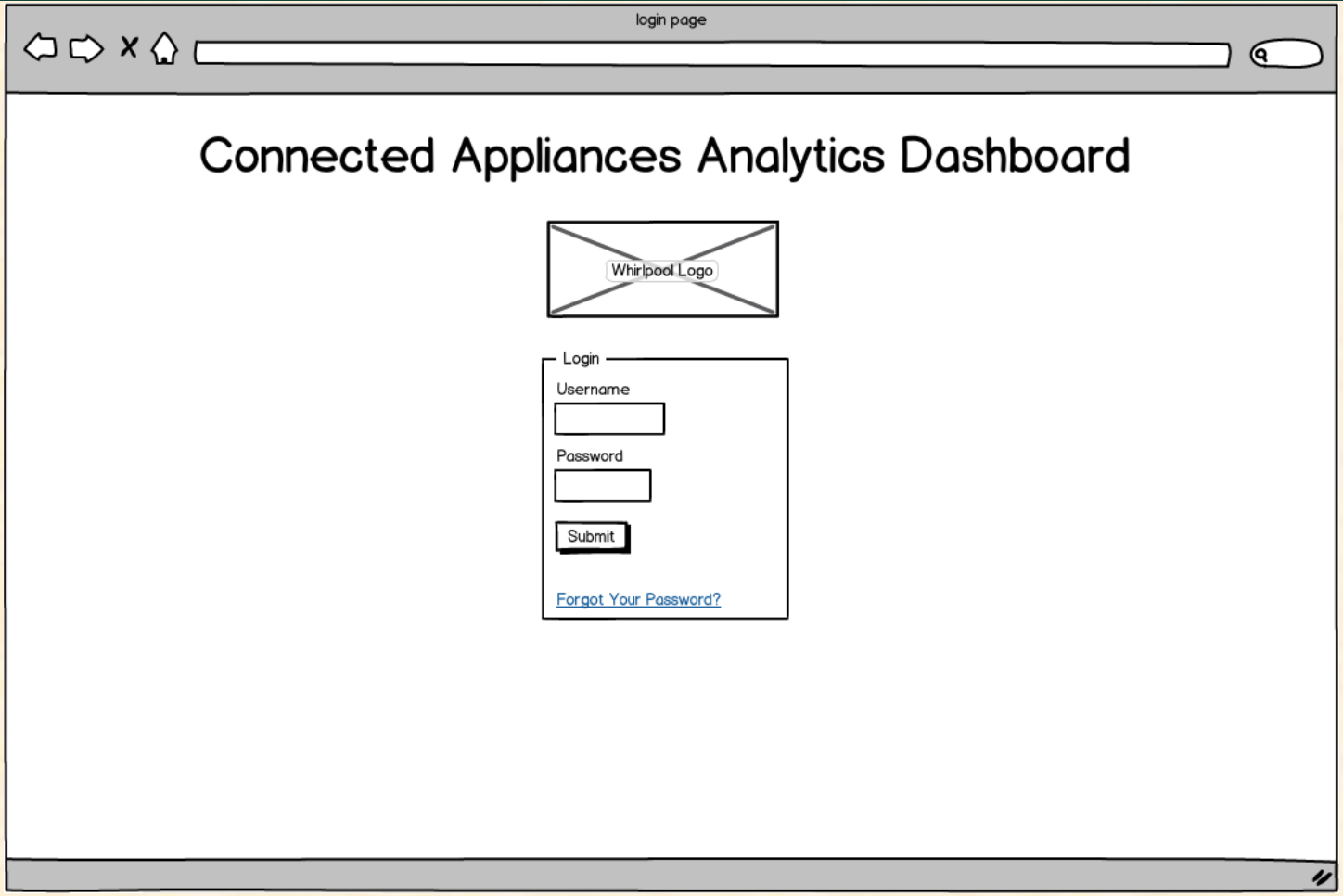
Functional Specifications

- Analytics Dashboard
  - Connected Appliances Information
  - Consumer Data
- Used For
  - Predictive Analytics
  - Customer Service
  - Marketing and Sales

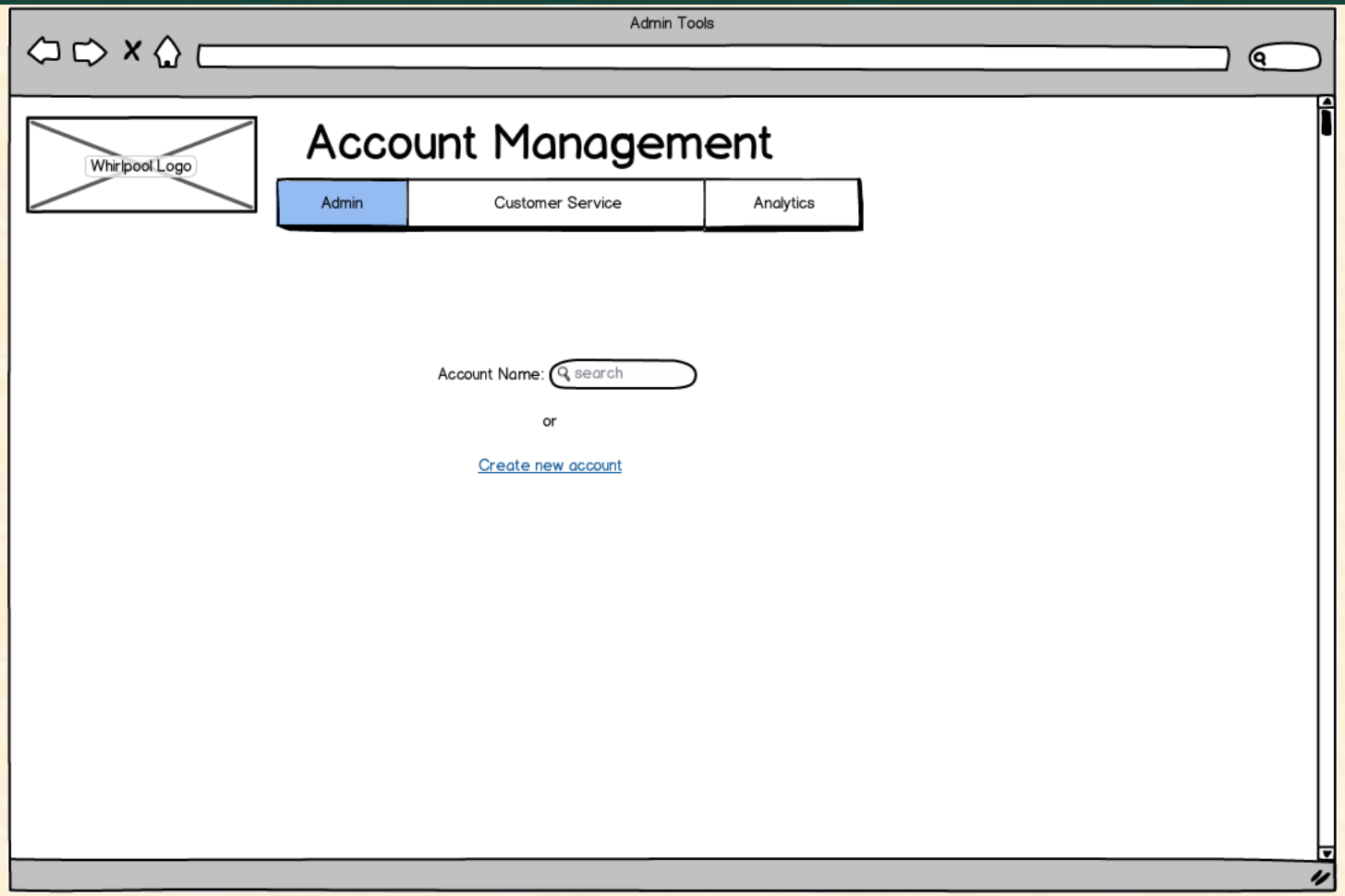
Design Specifications

- Role based functionality
  - Administration
    - Management of system users and permissions
  - Customer Service
    - Ability to lookup customer information through various search options
  - Analytics
    - Static dashboards for different appliances and custom ad-hoc report generation

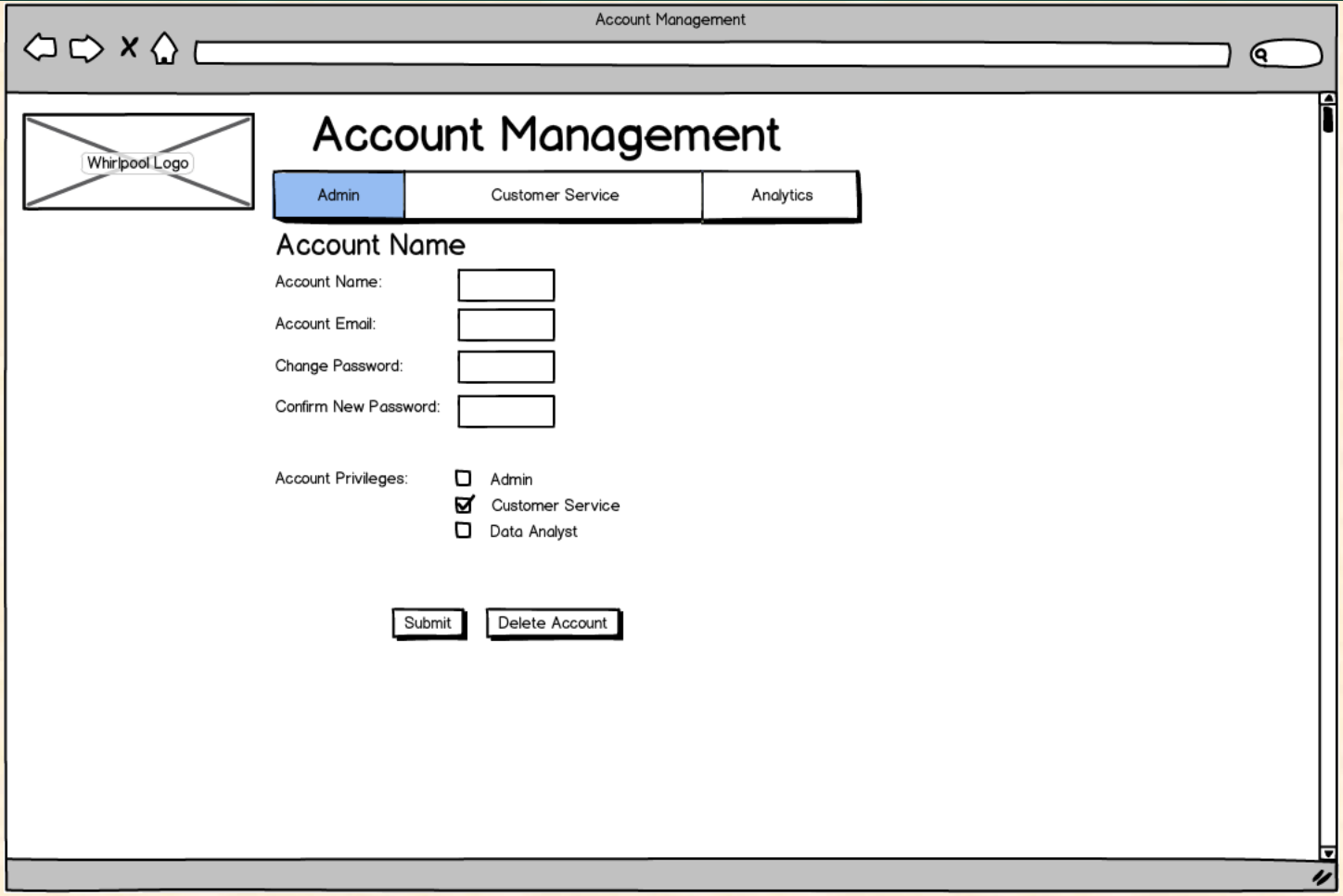
Screen Mockup: Login Screen



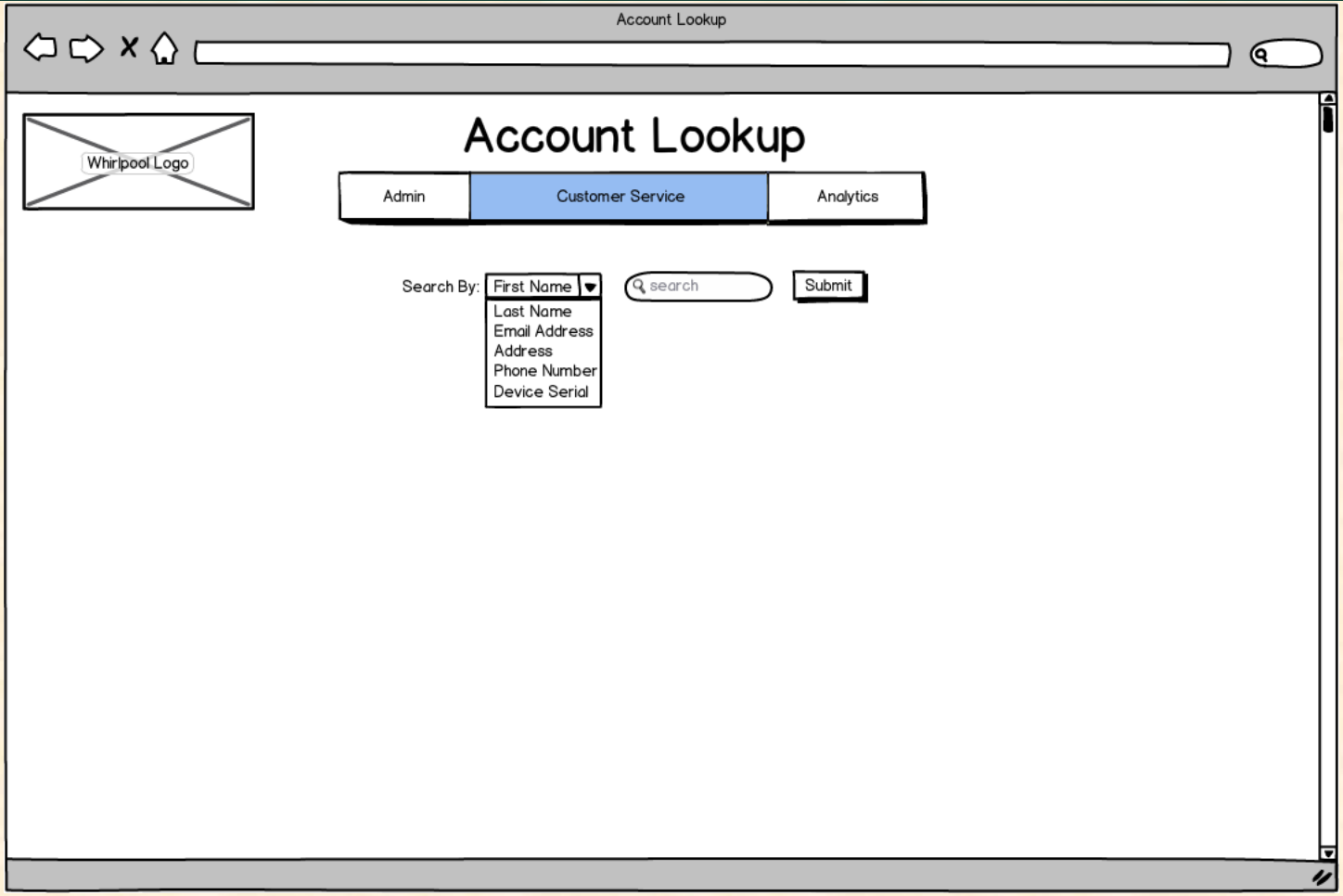
Screen Mockup: Admin User Search



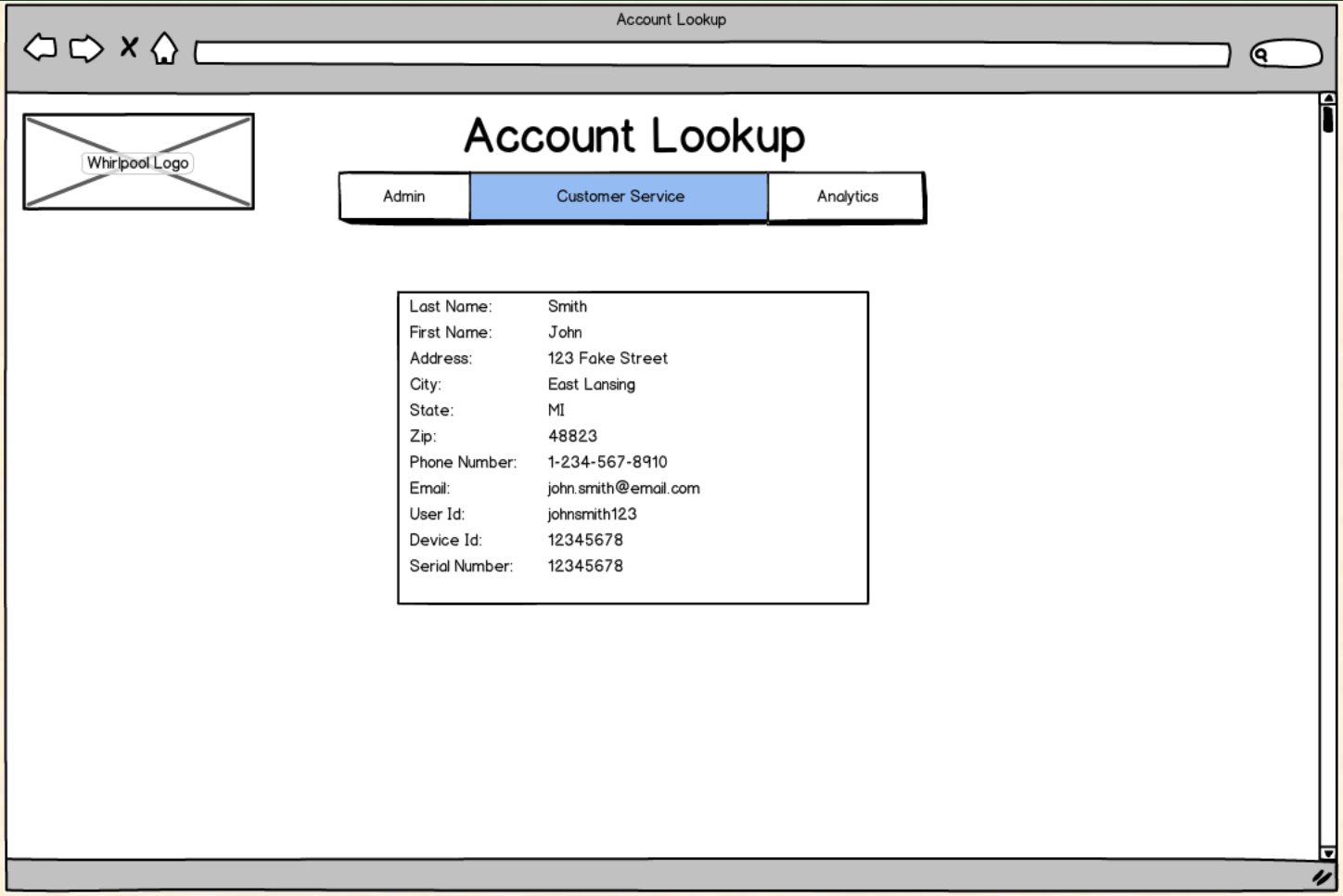
Screen Mockup: Account Manager



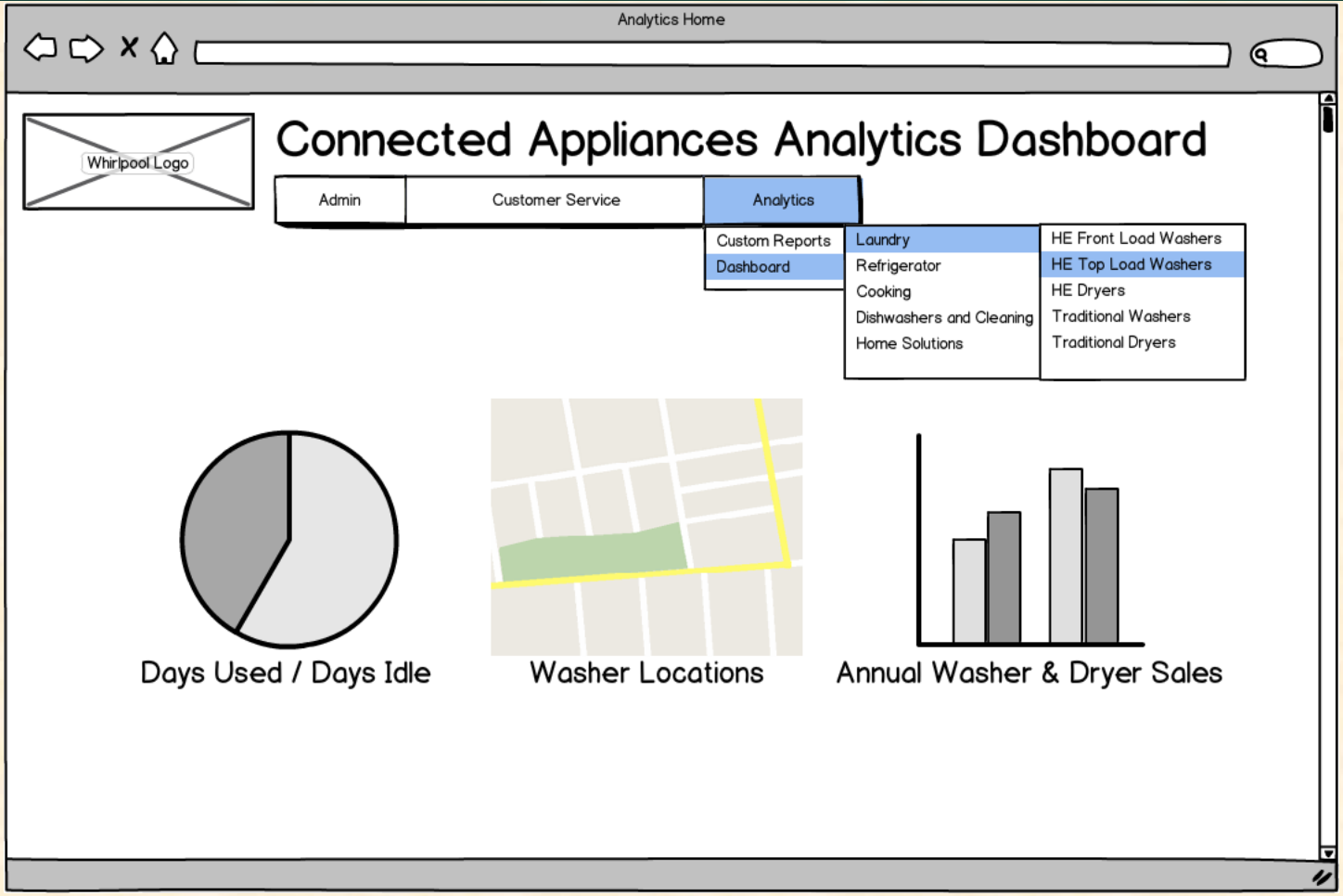
Screen Mockup: Account Lookup



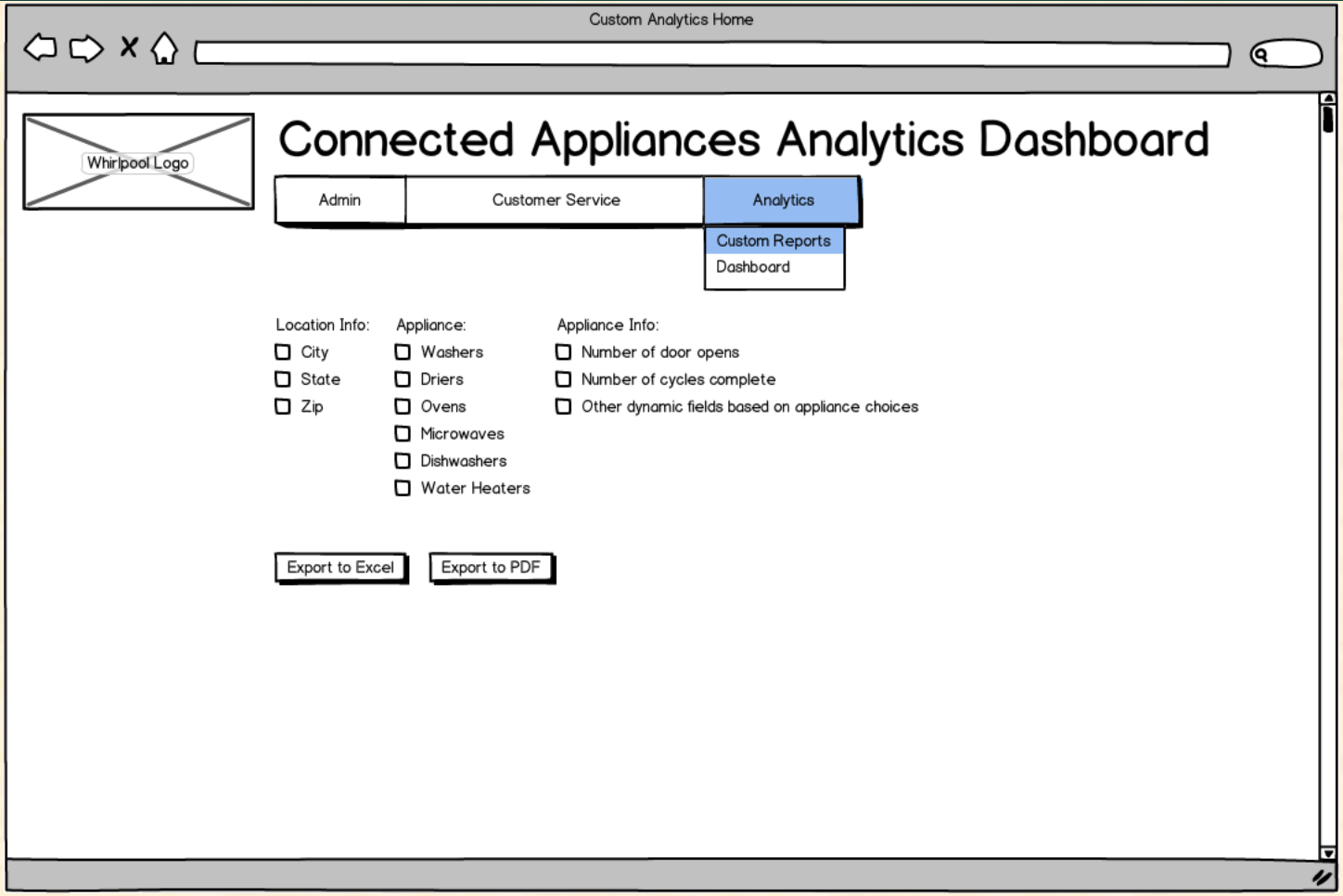
Screen Mockup: Lookup Results



Screen Mockup: Connected Dashboard



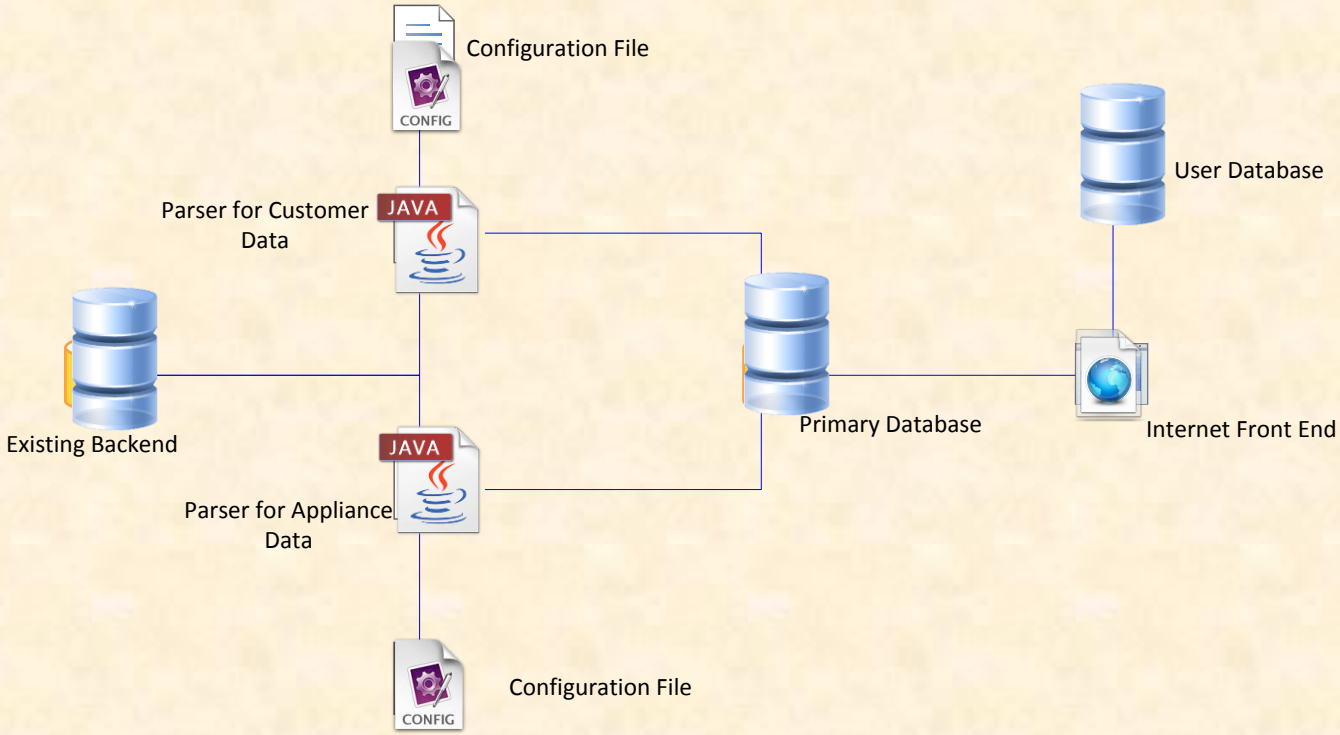
Screen Mockup: Custom Reports



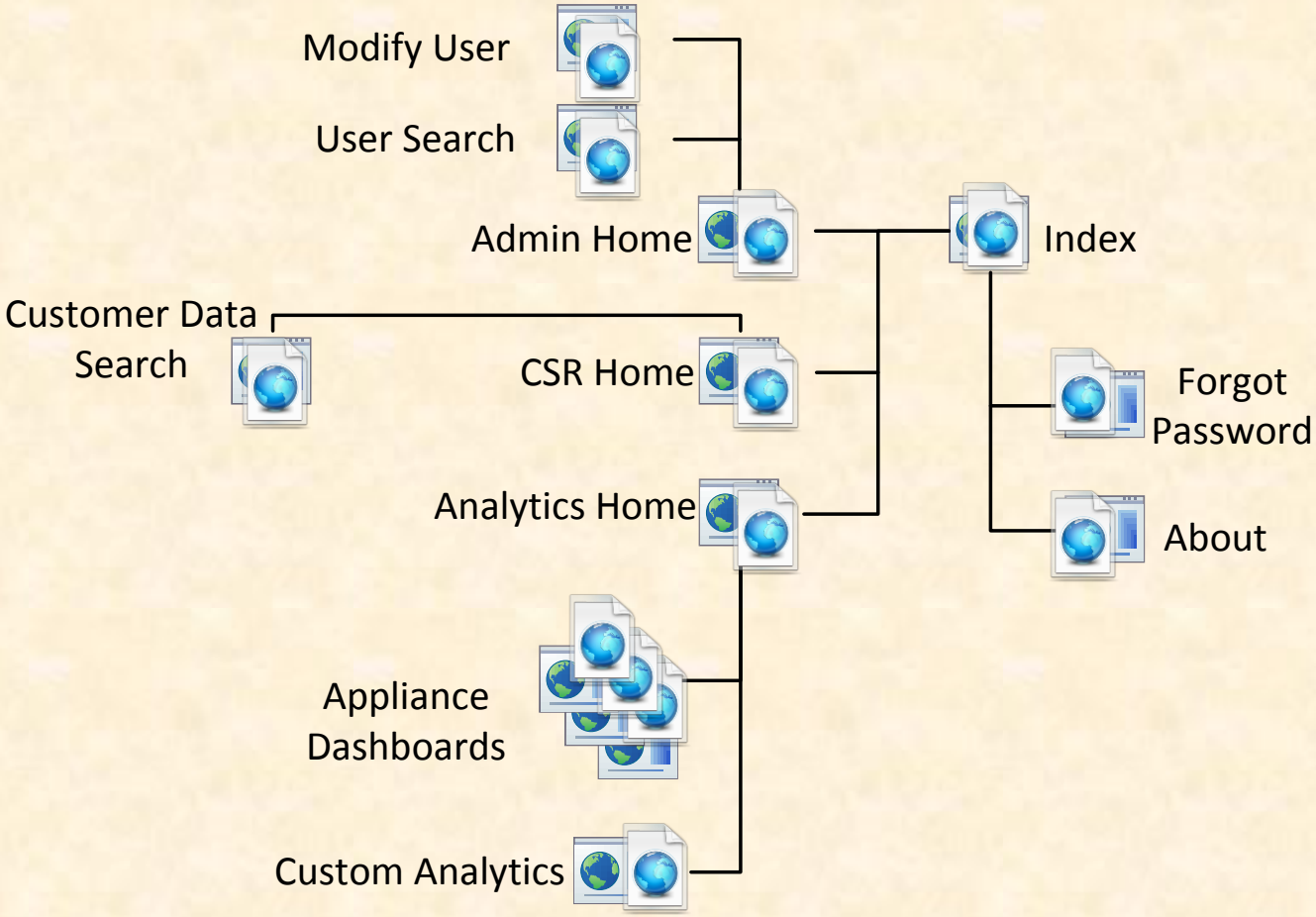
Technical Specifications

- Create JSON listener and parser for incoming JSON feed coming from appliances
- Create CRM listener and parser for incoming .CSV feed coming from customer data
- Store JSON and .CSV information in databases
- Create web interface to generate Excel or .PDF reports from information in the databases
- Also have web dashboard to view new data entering the databases

System Architecture



System Architecture: Web Interface



System Components

- Hardware Platforms
  - Linux server hosting website and database
  - Client computer
    - Desktop
    - Laptop
    - Mobile
- Software Platforms / Technologies
  - Apache web server
  - MySQL database
  - HTML and PHP for website

Testing

- Functional testing
  - Unit testing of components
  - Integration testing
  - System testing through use cases
- Non-functional testing
  - Accessibility testing using WAVE
  - Performance testing within predefined specifications
  - Security testing against cross-site scripting and SQL injection

Risks

- How do we utilize JSON?
  - None of the team has worked with this notation before
  - Working with the client to obtain example feeds
- How do we manage two parsers inserting into the same DB?
  - Programs will parse data in two formats and place in a SQL database
  - Planning to obtain example data and begin development early
- How do we program a background service?
  - The team lacks experience programming for this purpose
  - Begin lightweight prototyping of rudimentary tasks
- How do we minimize feature creep?
  - This project could easily grow outside of the capabilities of the team
  - Communicating with the client to define scope and reduce creep