MICHIGAN STATE UNIVERSITY

Project Plan

Medications Shortages Dashboard

The Capstone Experience

Team Spectrum Health

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From Students…
…to Professionals

Project Overview

- Spectrum Health – healthcare organization in Grand Rapids
- Pharmacists must be able to track medication shortages
- Currently no centralized system

Project Overview

- Solution: Medication Shortages Dashboard
  - Collects shortage and current inventory information
  - Each pharmacist has a unique watch list
  - Allows pharmacists to collaborate/discuss shortages

Functional Specifications

- Drug Information Collection
  - Import CSV file
- Shortage Information Collection
  - Automatically parse RSS feeds hourly
- Manual entry of shortage/drug information

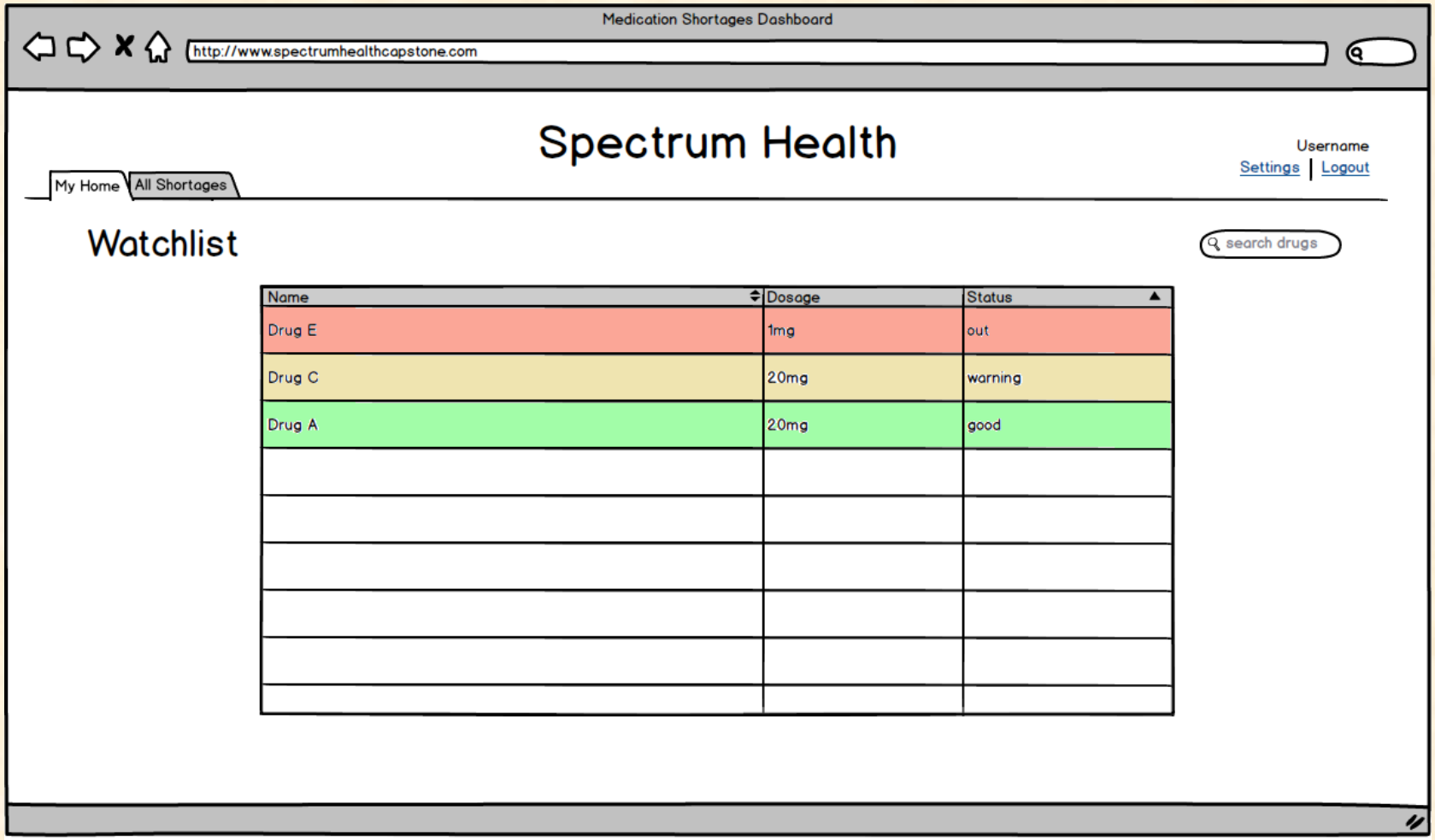
Functional Specifications

- Watch List
  - Each user gets personal drug watch list
- Drug Detail View
  - Users can comment on drug's detail view
  - Graph of drug's status history

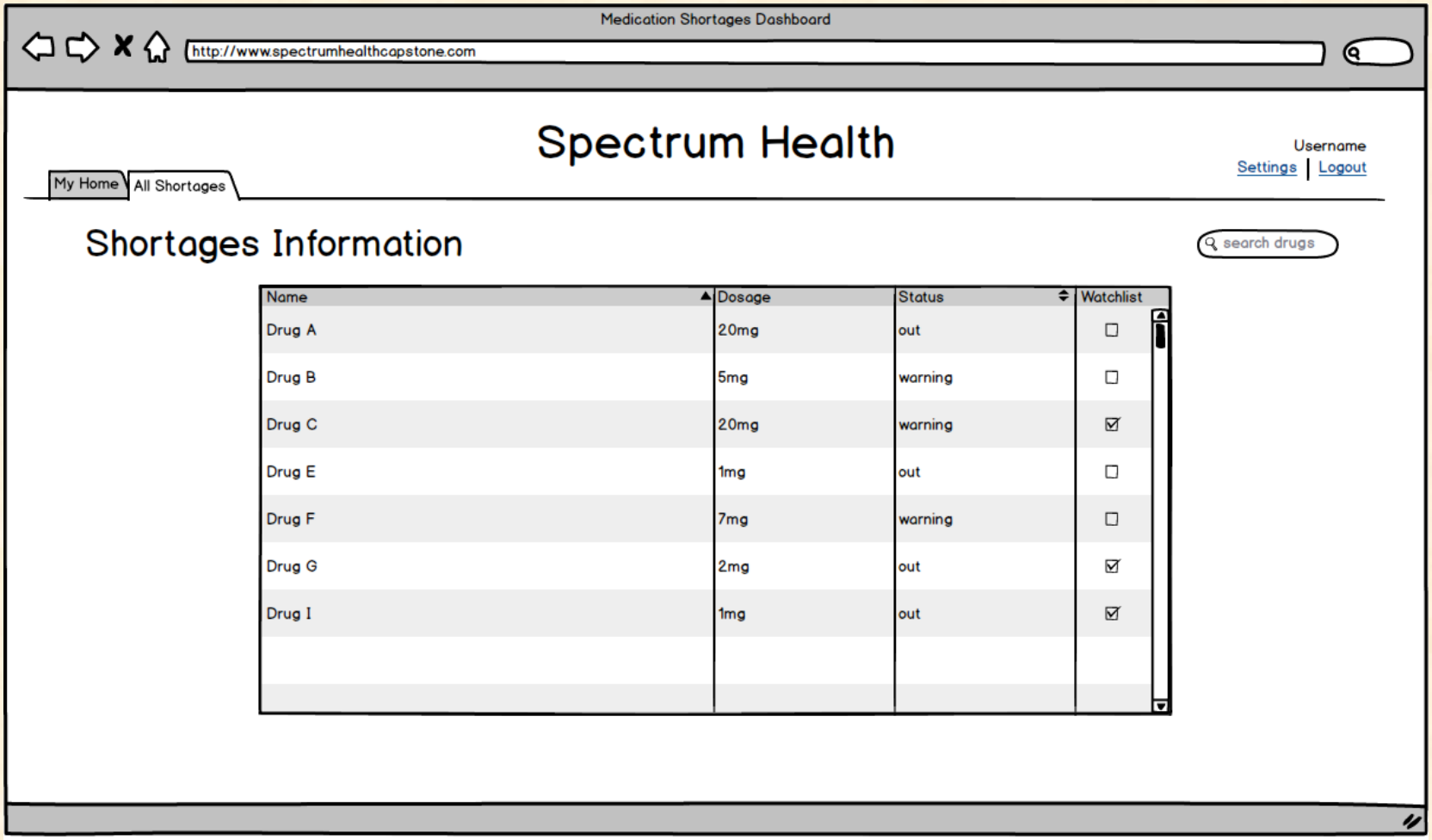
Design Specifications

- Shortages visible to all users
- Color-coded to indicate level of severity
- Four types of users
- Watch list is a customizable list of drugs

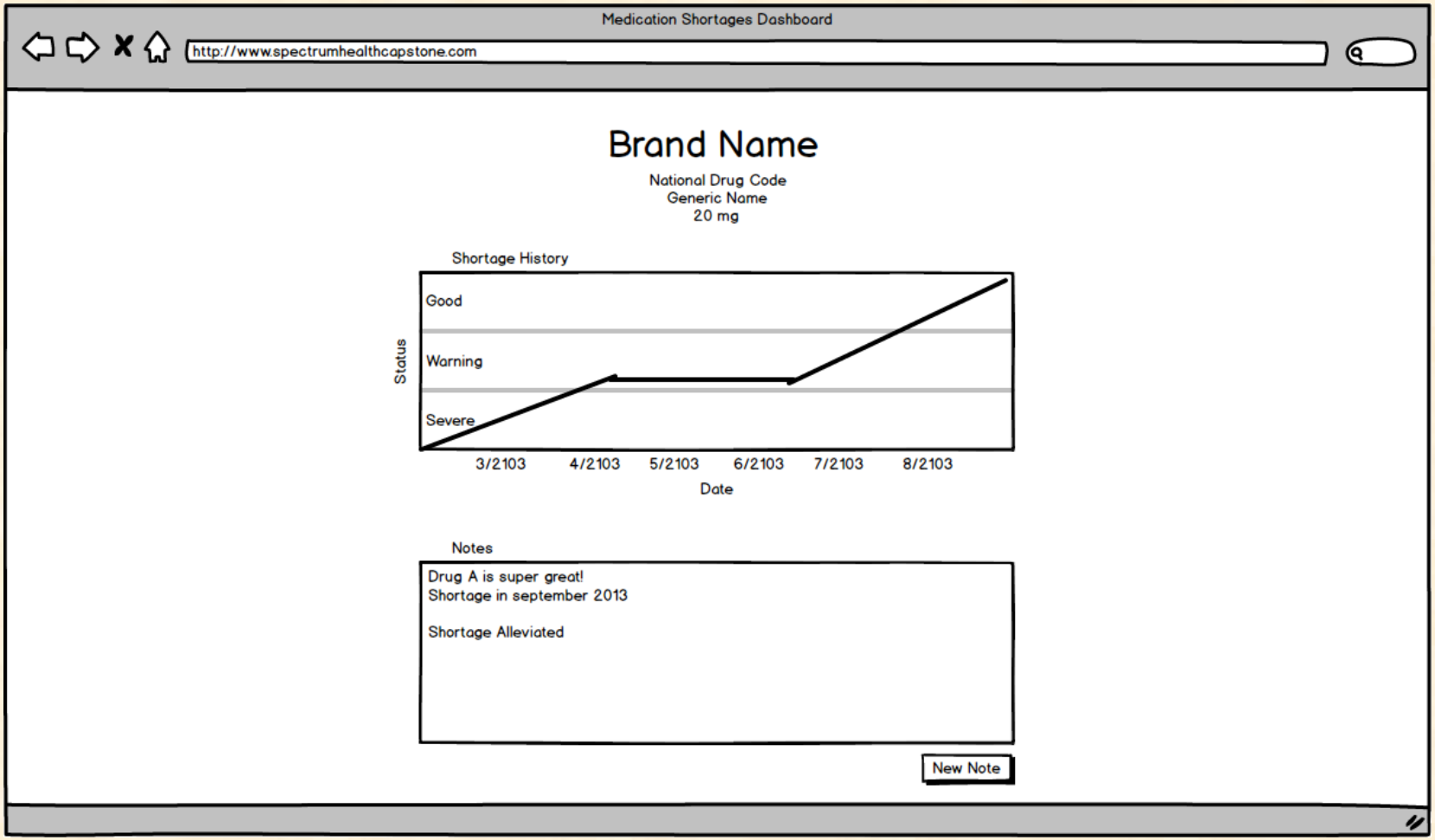
Screen Mockup: Watch list



Screen Mockup: All Drugs List



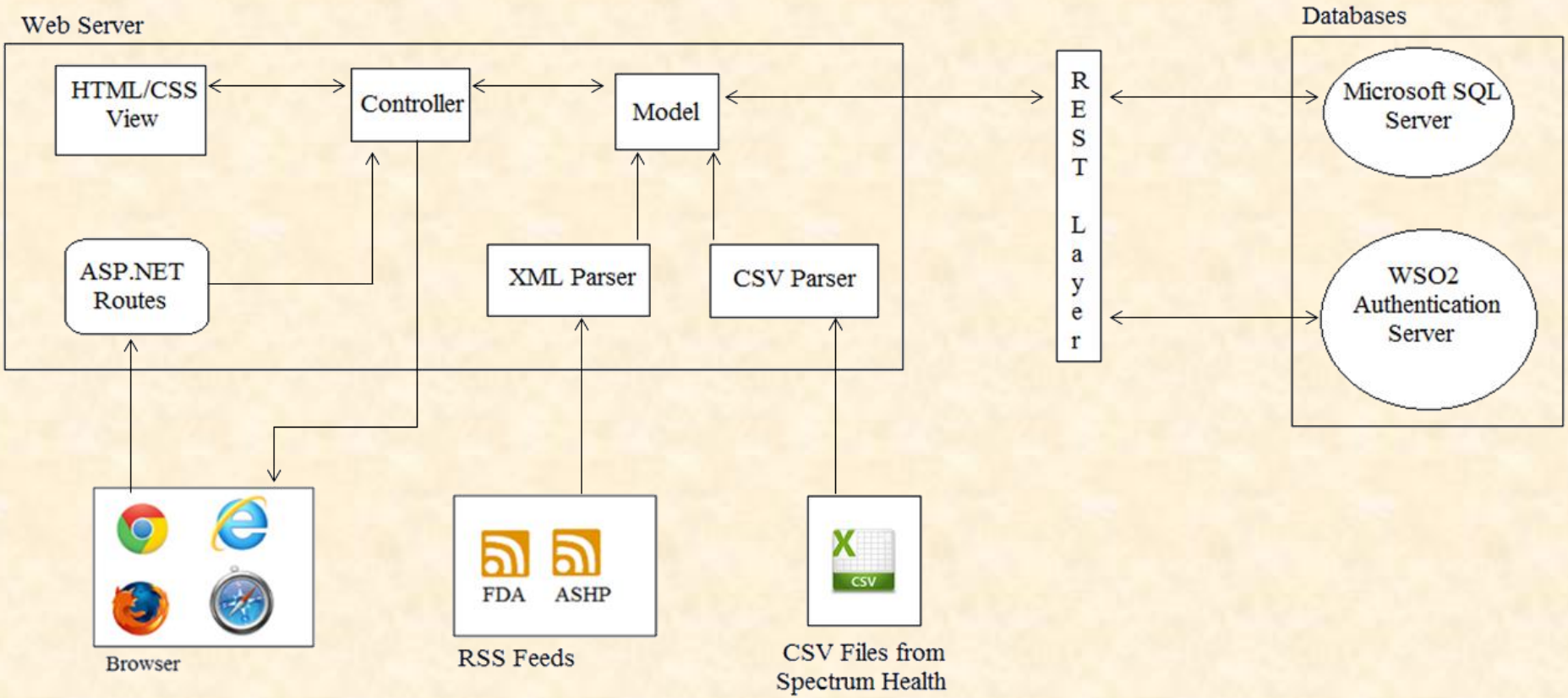
Screen Mockup: Login



Technical Specifications

- Built primarily with Microsoft technologies
  - ASP.NET, Windows Server, Microsoft SQL Server
- Typical MVC architecture
- RSS feeds from FDA/ASHP parsed hourly
  - using existing XML parsing library
- All interactions with database through REST layer

System Architecture



System Components

- Hardware Platforms
  - Server OS: Windows Server 2008
  - Development machine OS: Windows 7 and 8
- Software Platforms / Technologies
  - Visual Studio 2012 Express for Web
  - ASP.NET 4.5 with C#
  - Private repository on GitHub
  - Microsoft Unit Testing Framework

Testing

- Unit Testing
  - Microsoft Unit Testing Framework
  - 80% code coverage
- Manual Exploratory Testing

Risks

- Unsure how to use Microsoft Server 2008
  - Nobody has experience with Microsoft Server 2008
  - We will learn how to use Microsoft Server 2008
- Creating timed script
  - Shortage information must be collected hourly
  - Stack Overflow
- Getting website online
  - How do we actually get it online?
  - Various tutorials online

Summary

- Web application built on ASP.NET
- Collects and aggregates information for pharmacists
- Automatic and manual data entry