Project Plan

Spectrum Health Symptom Checker

The Capstone Experience

Team Spectrum Health

Chris McGrath
Jose Guadalupe Hernandez
Josh Miles
Morgan Muyskens
Silas Brumwell

Department of Computer Science and Engineering
Michigan State University

Fall 2017
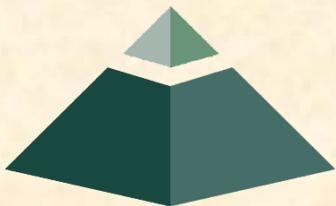
From Students…
…to Professionals

Functional Specifications

- Symptom Checker
  - Users describe their symptoms (runny nose, cough, rash, joint swelling, etc)
  - User's input is processed with NLP then mapped to condition and services from Spectrum Health are recommended
   - E-visit, MedNow, Appointment scheduling, Urgent Care & Emergency

# Functional Specifications

- Pay My Bill
  - Users are able to view and pay medical bills
    - Payment processing is done through a 3rd party provider
    - Secured over HTTPS connection
  - Contact Us
    - Provides users with contact options such as Phone, US Mail, and Fax
  - Careers
   - Allows users to apply for careers at Spectrum Health

Screen Mockup: iOS Application
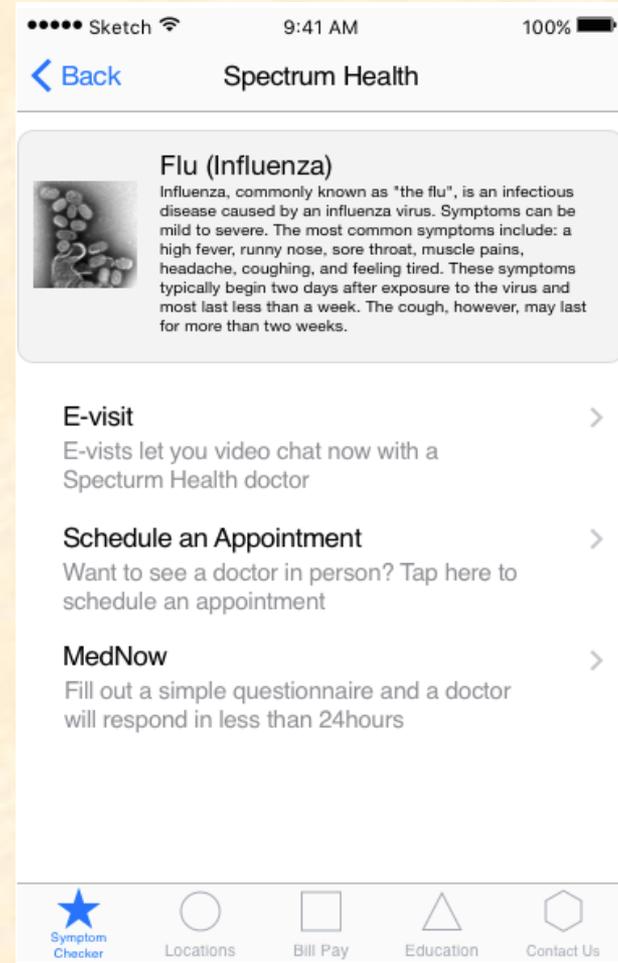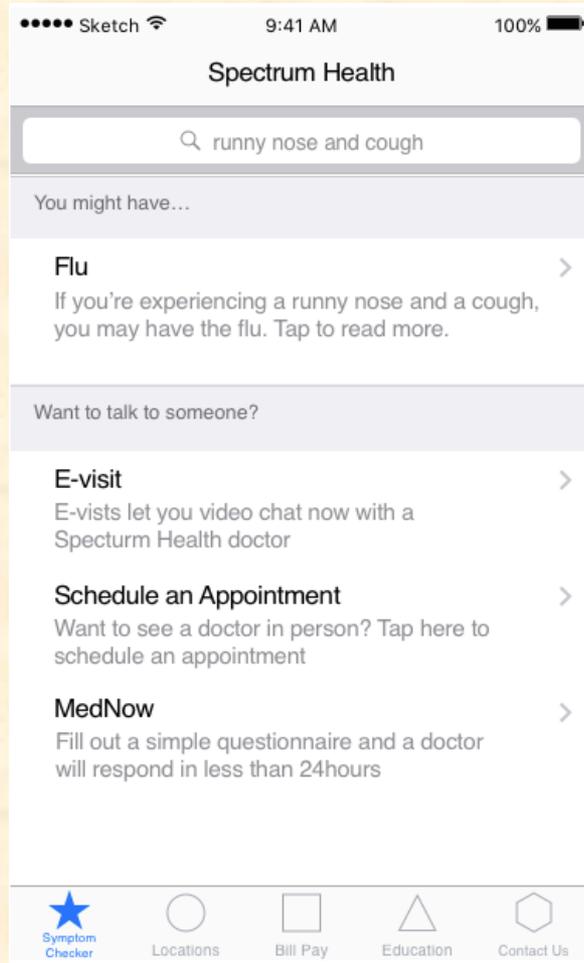
Screen Mockup: iOS Application
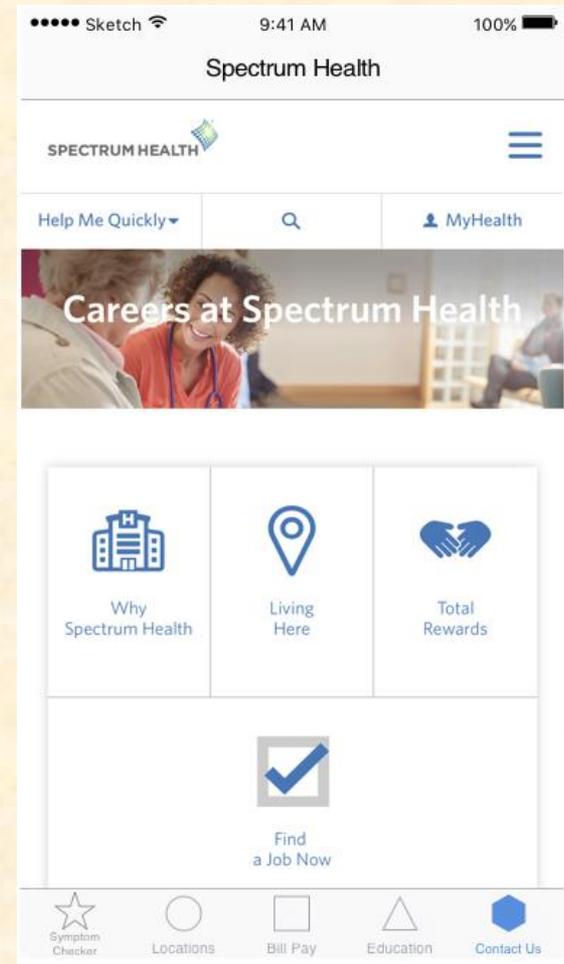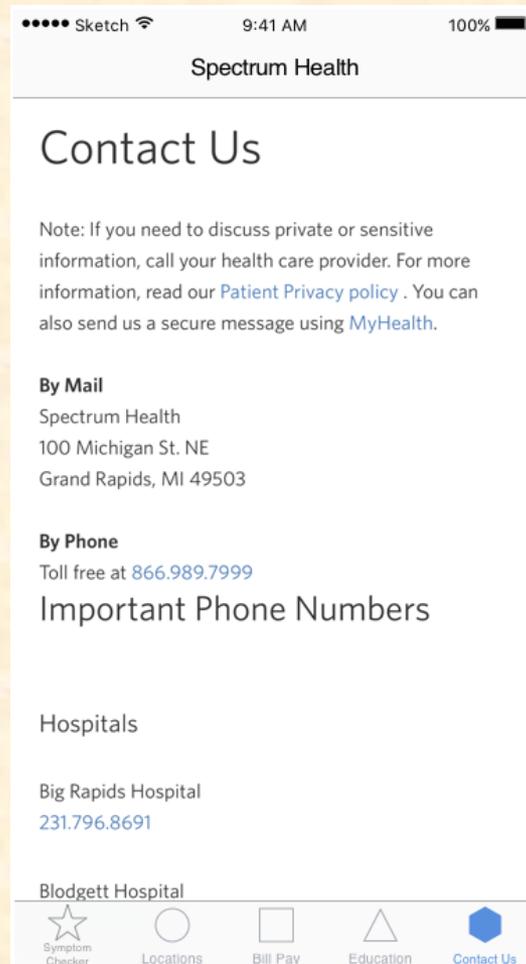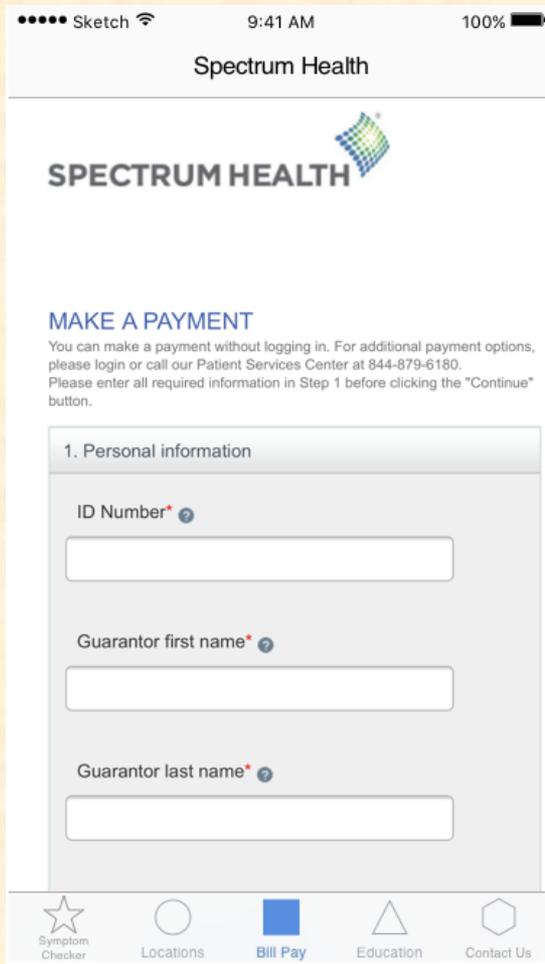
Screen Mockup: Android Application
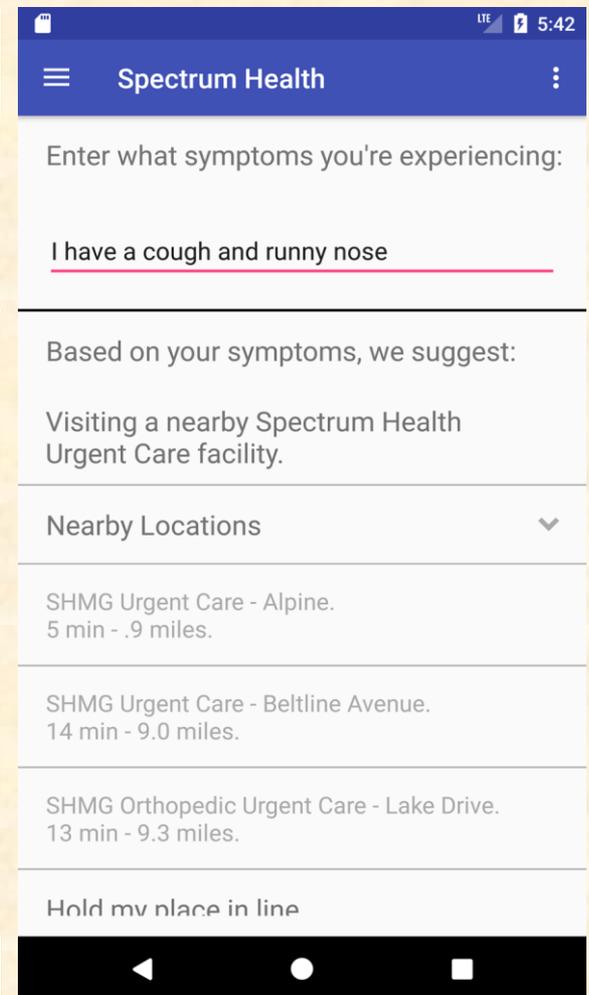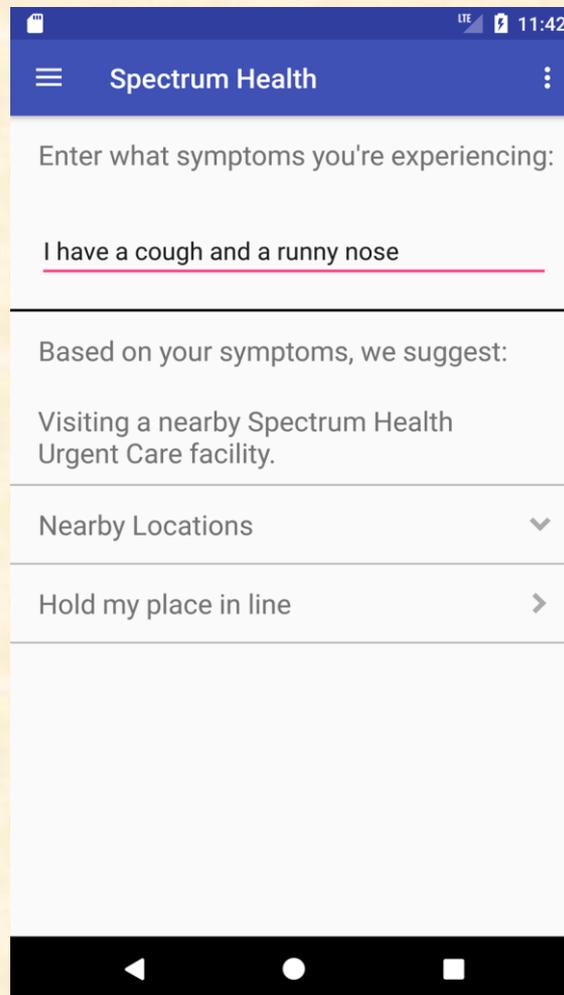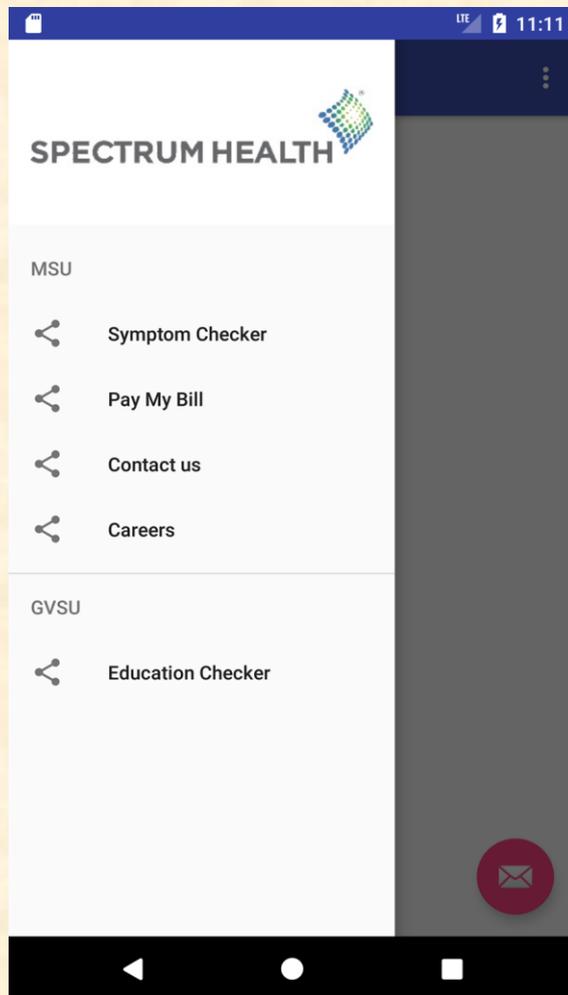
Screen Mockup: Web Portal (Desktop)

Screen Mockup: Web Portal (Mobile)

Technical Specifications

- Front-End
  - iOS SDK (Swift)
  - Android SDK (Java)
  - Web-based administrative portal
    - HTML5, CSS3, ASP.Net Core 2.0
- Back-End
  - Net Core MVC (C#)
  - Entity Framework Core
  - Microsoft SQL Server

System Architecture
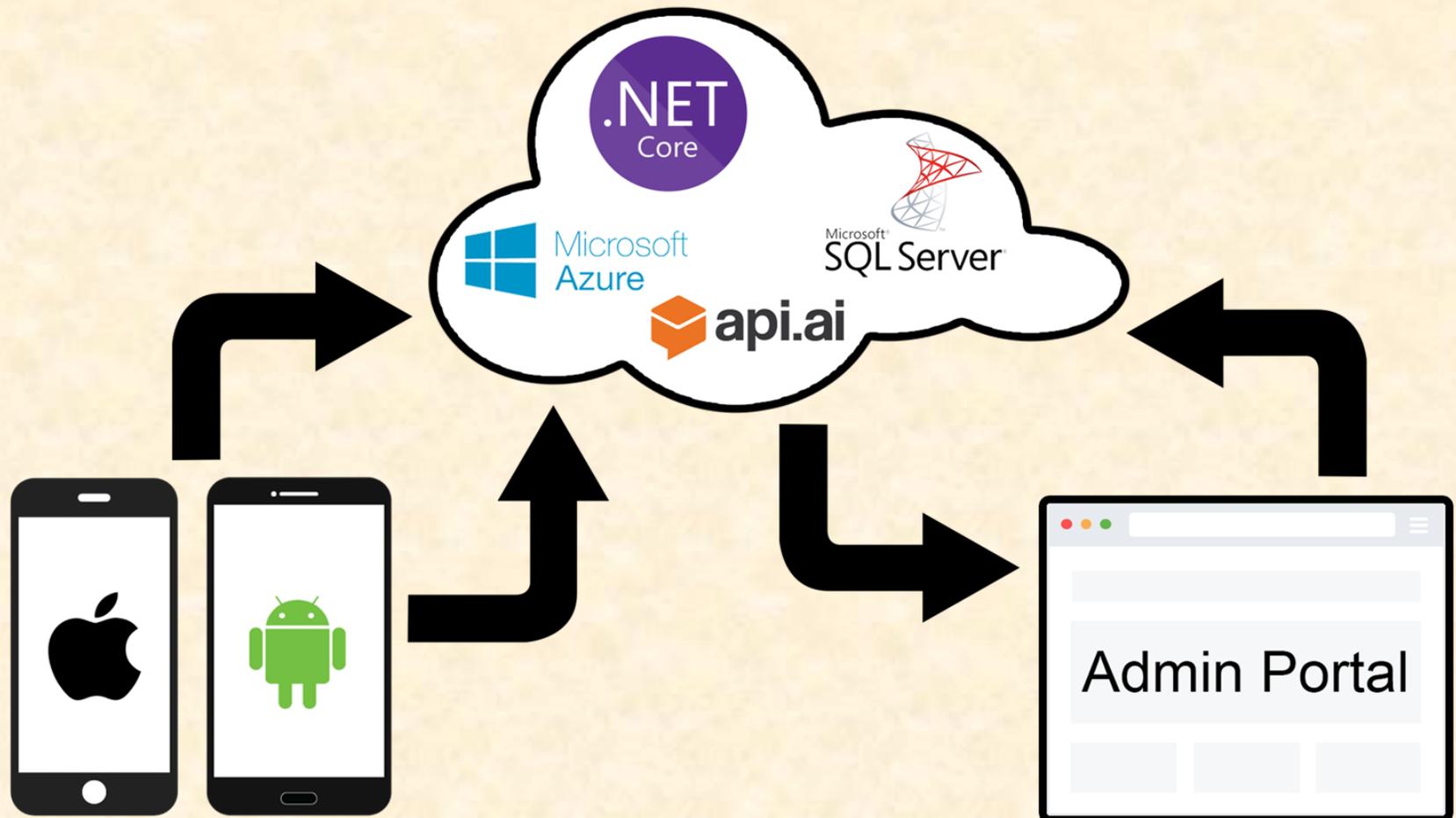
System Components

- Hardware Platforms
 - iPhone 5 - iPhone X
  - Android devices 4 years old
  - Desktop and Mobile (Web)
- Software Platforms / Technologies
  - iOS 10.3+
  - Android 4.4 (KitKat) - 8.0 (Oreo)
  - Modern web browsers
    - IE 11, Edge, Chrome, Safari, and Firefox

Testing

- iOS Testing
  - iOS Unit testing and UI testing done with Xcode.
  - Test builds deployed to actual devices with TestFlight
- Android Testing
  - Tests created with Android Testing Support Library.
    - Unit tests built with JUnit and Mockito framework
    - Integration tests built using JUnit with Espresso
- .Net Core Testing
  - Testing done using XUnit and Postman

Risks

- Symptom Mapping/Accuracy
  - Implement a NLP system to take symptoms and map them to a Spectrum Health service as fast as possible with accuracy.
  - A member of our team has done research on algorithms, and has contact with professors in the fields of algorithms and ML.

Risks

- User Testing
    - We will conduct user testing to field test input methods for symptoms.
    - Most of the team has experience creating mobile applications and they are bringing forward UX knowledge from previous jobs.

Questions?

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