

MICHIGAN STATE

U N I V E R S I T Y

Project Plan

Mobile Appointment Check-In And Payment

The Capstone Experience

Team Spectrum Health

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Spring 2015



*From Students...
...to Professionals*

Functional Specifications

- Current method of checking in is inefficient and inconvenient
 - Excessive waiting and paperwork
- The application provides the capability to:
 - Alert user they may check-in upon arrival
 - Check-in through mobile device
 - Fill out/verify necessary information
 - Pay through mobile device
 - View map of where your appointment is

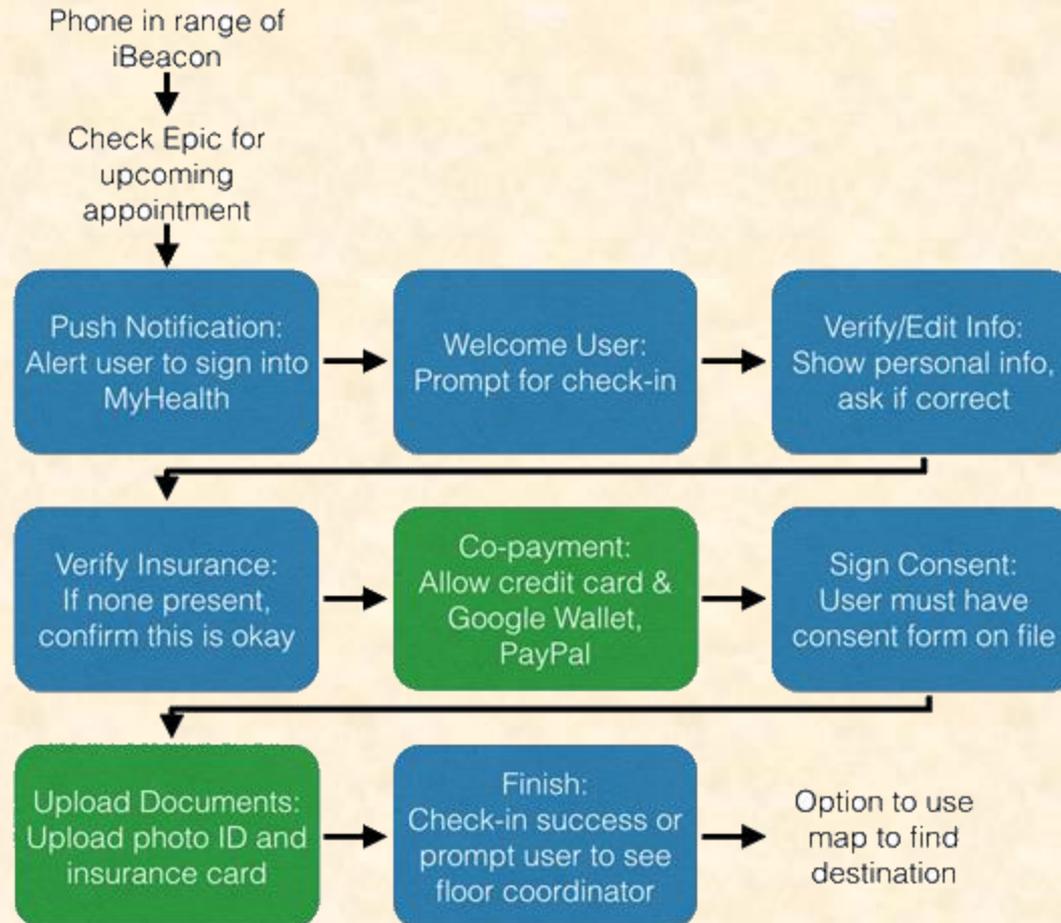


Design Specifications

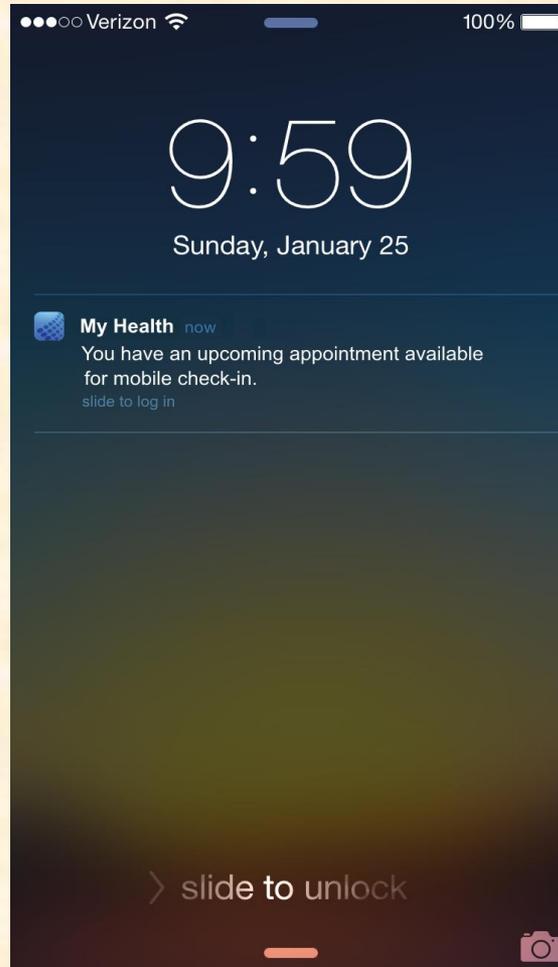
- iBeacon alert will check Epic to determine if the user has a relevant appointment
- Once alerted, the user will login to their MyHealth app and verify personal information (pulled from Epic as well)
- The user can then use PayPal, Apple Pay, or Google Wallet to process their co-payment
- An appropriate map will be queried from a database and presented to the user



Process Flow Diagram



Screen Mockup: Notification

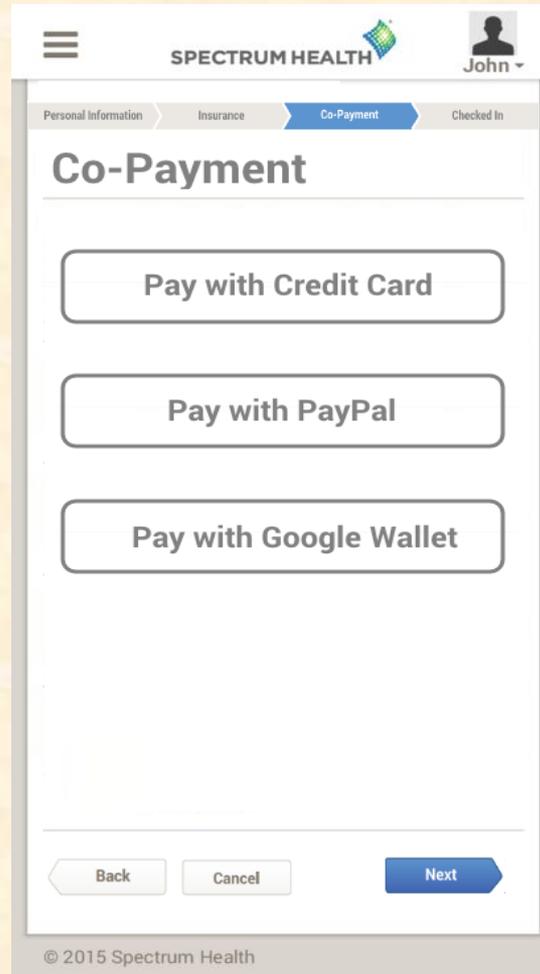


Screen Mockup: Validate Information

The mockup shows a mobile application interface for Spectrum Health. At the top, there is a hamburger menu icon, the 'SPECTRUM HEALTH' logo, and a user profile icon labeled 'John'. Below this is a navigation bar with four tabs: 'Personal Information' (active), 'Insurance', 'Co-Payment', and 'Checked In'. The main content area is titled 'Personal Information' and contains the following text: 'Name: John Doe' and 'Address: 123 Nowhere Dr. Middleof, NW 99999'. Below the address is a confirmation question: 'Is this information correct?'. There are two buttons: a light gray 'Edit' button and a blue 'Yes' button with a right-pointing arrow. At the bottom of the screen, there are three buttons: a light gray 'Back' button with a left-pointing arrow, a light gray 'Cancel' button, and a blue 'Next' button with a right-pointing arrow. The footer of the screen contains the copyright notice '© 2015 Spectrum Health'.



Screen Mockup: Payment

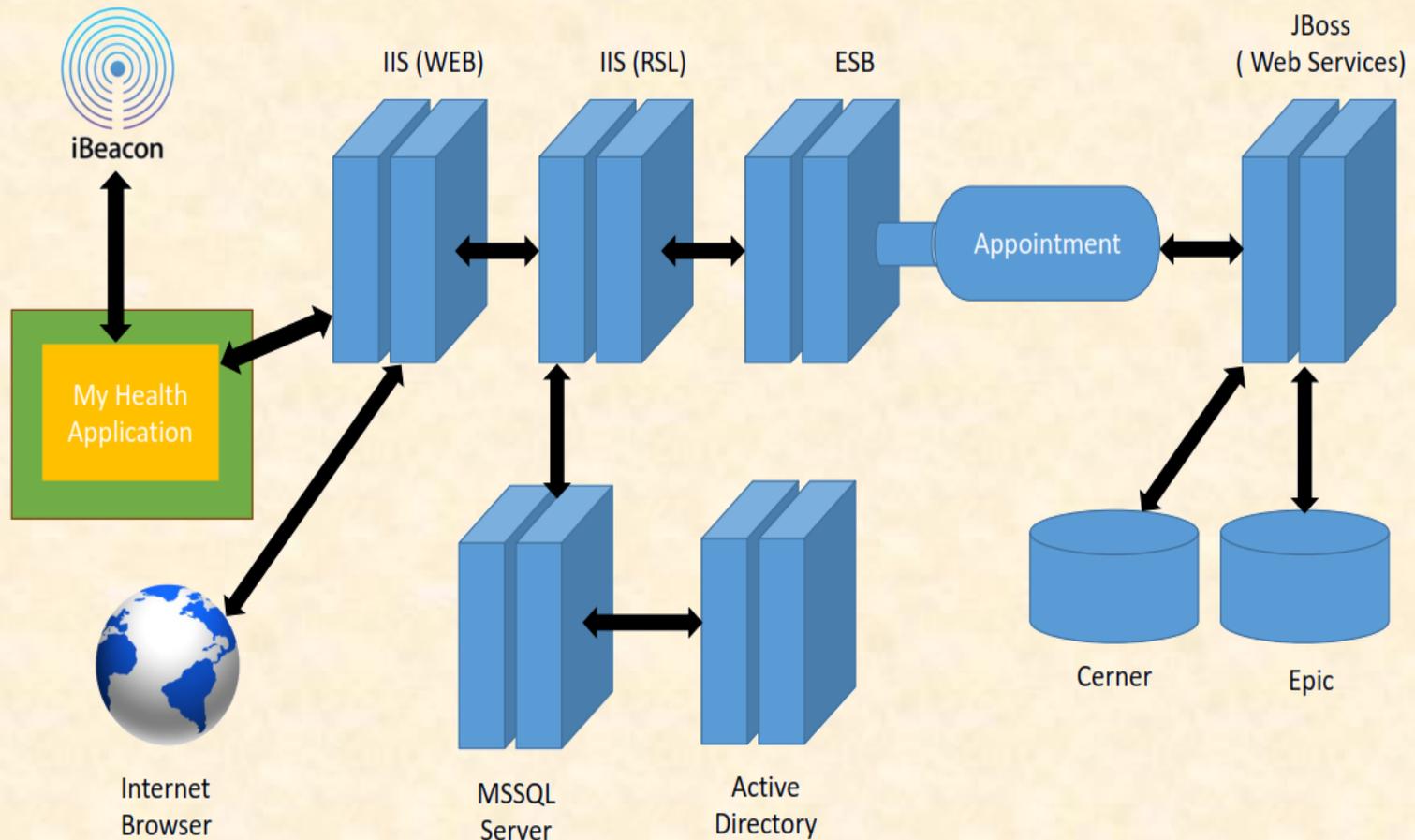


Technical Specifications

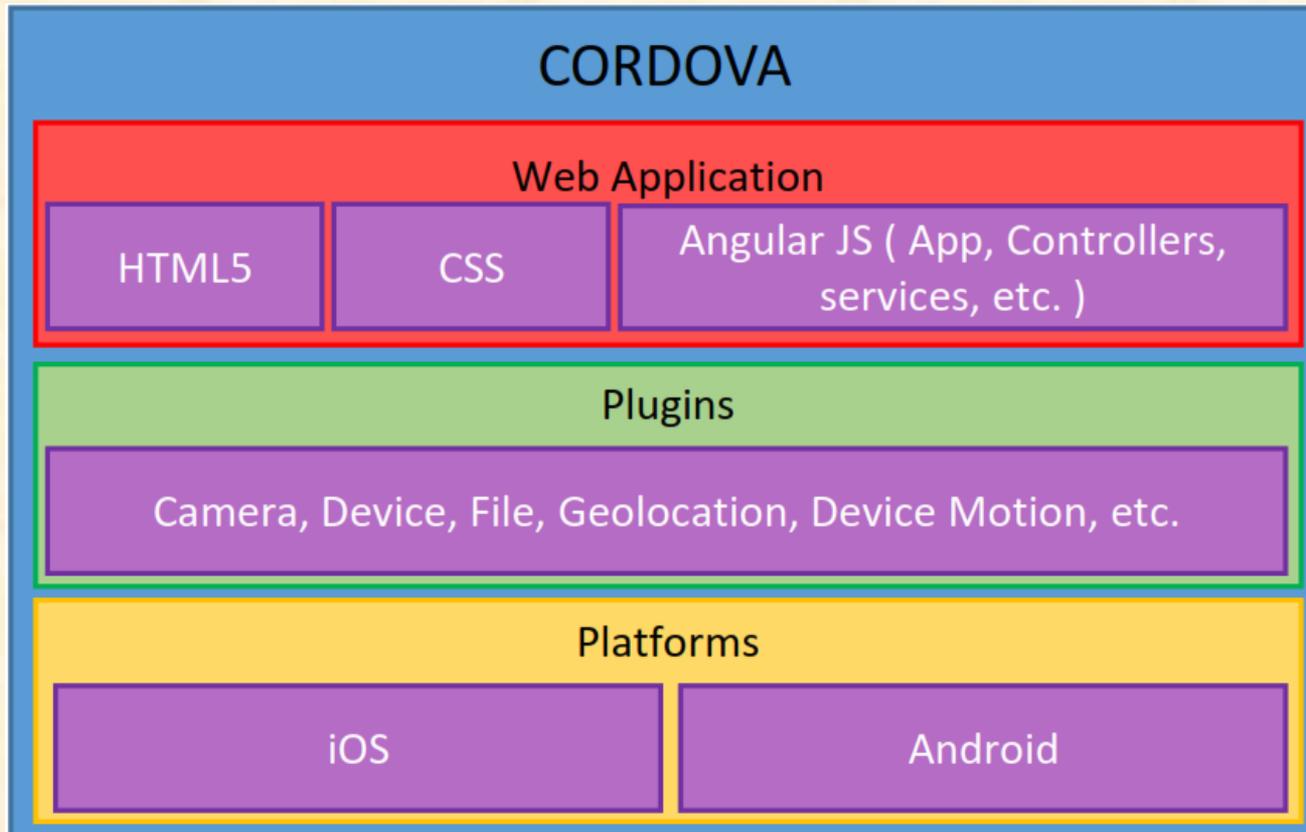
- Epic Systems
 - A healthcare software company responsible for storage of medical records and personal information
- Apache Cordova (PhoneGap)
 - Allows HTML, JavaScript, and C Sharp code to compile across many different platforms
- iBeacon Cordova Plugin
 - Includes monitoring and ranging support
- Payment Plugin/SDKs



System Architecture



System Architecture



System Components

- Hardware Platforms
 - Red Hat Linux Operating System
 - Microsoft Internet Information Services (IIS) 7.0
 - Cordova
 - JBoss Application Server
- Software Platforms / Technologies
 - Microsoft Visual Studio 2013 Ultimate
 - ASP.Net Framework
 - Angular Javascript
 - iBeacon



Testing

- Visual Studio 2013 Ultimate embedded unit testing
 - Test small pieces of application
 - Do not require database or other parts of MyHealth
- SpecFlow plug-in integration testing
 - Test database updates
 - Test MyHealth application integration



Risks

- Payment Implementation
 - No team experience with mobile payment
 - Spectrum Health integration within company
- Security
 - Sensitive information displayed
- iBeacon
 - Unfamiliar technology
 - Uncertainty of whether appointment information can be retrieved
- Extra Features
 - Many optional features have been discussed

