Project Plan
Spectrum Health GO

The Capstone Experience

Team Spectrum Health

Collin Skonieski
Rachel Polus
Xin Zhao
Andrew Astakhov
Pierce Neal

Department of Computer Science and Engineering
Michigan State University
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Functional Specifications

• Mobile App for Real-Time Hospital Navigation
  ▪ Poster waypoints guide a user through routes
  ▪ Routes direct users between major locations
  ▪ Routes recalculate if user scans off-route waypoint

• Web App for Managing Waypoints and Routes
  ▪ Routes are all preconfigured
  ▪ Waypoints can be added and deleted
  ▪ Web app primarily used by administrative assistants and secretaries
Design Specifications

• QR codes on posters called waypoints
• App to navigate through Spectrum Health Facilities using waypoints, even without wi-fi
• Web application for staff to create new waypoints, track user routes
Screen Mockup: Android App
Screen Mockup: iOS App

From... East Wing Stairwell
To... Main Lobby

Go Upstairs Step 1 of 6

From... Main Lobby
To... Room C114

Waypoint Recognized!
Updating location to:
Main Lobby

Walk Down East Hall Step 2 of 6
Screen Mockup: Web App

SPECTRUM HEALTH

SpectrumGO Management Portal

- Lobby
- Operating Room
- Nursing Ward

- Manage Waypoint
- Add a Waypoint
- Manage Routes
- View Reports
Screen Mockup: Web App

SPECTRUM HEALTH

SpectrumGO LOBBY Waypoint

Paths

- To Operating Room
  - Directions: Turn left. Walk forward until
  - Angle: 90
  - Update

- To Nursing Ward
  - Update

- To Cardiology
  - Directions: Turn right. Walk forward an
  - Angle: 90
  - Update

- To Pharmacy
  - Directions: Take the staircase on your
  - Angle: 45
  - Update

Add Delete
Technical Specifications

• SQL database on Microsoft Azure to store waypoints and routes
• Barcode detection with Mobile Vision API to scan QR codes (Android)
• Retrofit and Alamofire for HTTP requests from mobile devices
System Architecture

![Diagram showing system architecture with components like Azure, Web Application with ASP.NET and REST API, SQL Database, iOS Application with Alamofire, and Android with Retrofit.]
System Components

• Hardware Platforms
  ▪ Android Phones
  ▪ Apple iOS phones

• Software Platforms / Technologies
  ▪ Android SDK (Java)
  ▪ iOS SDK (Swift)
  ▪ HTML5 / CSS
  ▪ .NET Core 2.0 MVC (C#)
  ▪ Microsoft SQL / Azure
Risks

• Risk 1
  ▪ AR arrow will be difficult to implement and not compatible with all devices
  ▪ Develop a simpler but functional solution

• Risk 2
  ▪ Integration of database with web and mobile applications
  ▪ Research integration techniques

• Risk 3
  ▪ QR code and .pdf generation
  ▪ Research APIs and Tutorials, clear libraries with client

• Risk 4
  ▪ Database download size could be too large for mobile app
  ▪ Allow user to download only the current facility
Questions?