

**MICHIGAN STATE**  

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**U N I V E R S I T Y**

# Project Plan

## Spectrum Health Virtual Reality Experience

### The Capstone Experience

#### Team Spectrum Health

Jeremy Du

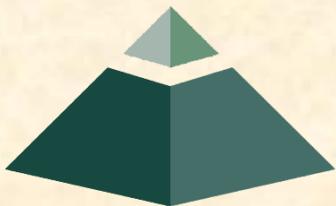
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*From Students...  
...to Professionals*

# Functional Specifications

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- Web-based VR tour of Spectrum Health facilities
- For patients and visitors curious about room layout and procedures
- Allows for 360° viewings of rooms and guided video
- Viewings will give detailed information on machines in the room



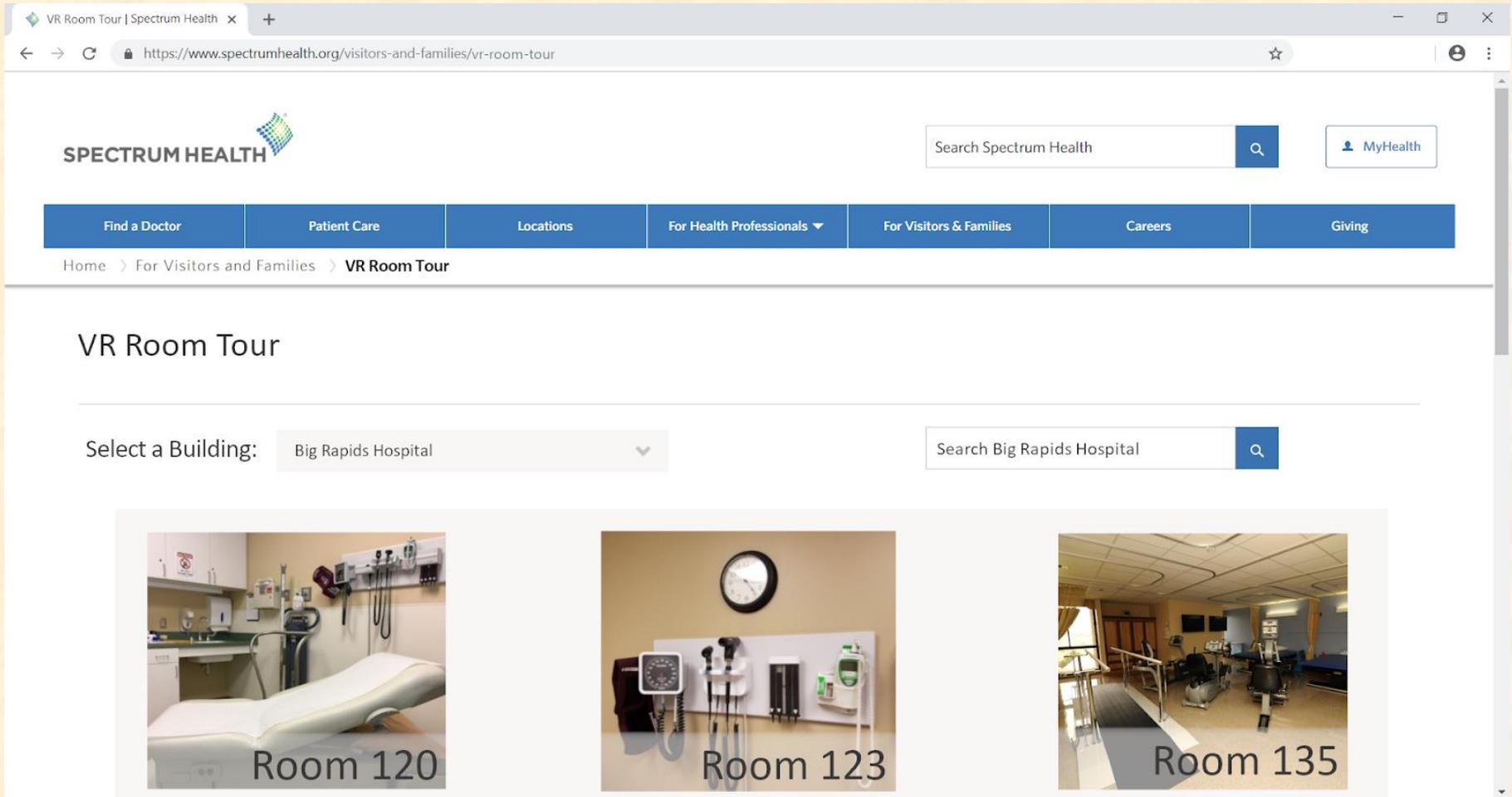
# Design Specifications

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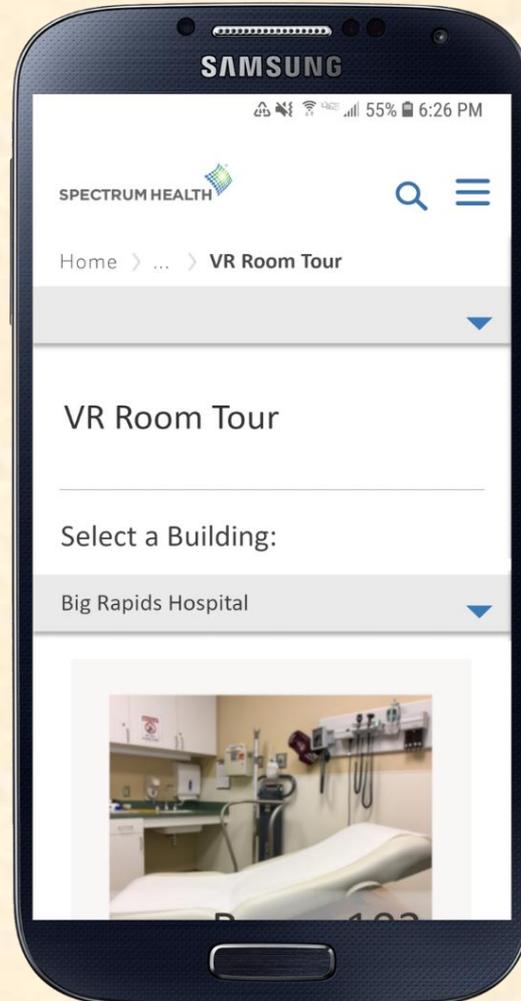
- Viewable on any computing device with web
- Mobile can use gyroscope to view rooms
- Optional VR support through A-Frame
- Admin access for new content uploads
- 2D to 3D image conversion for easy content creation



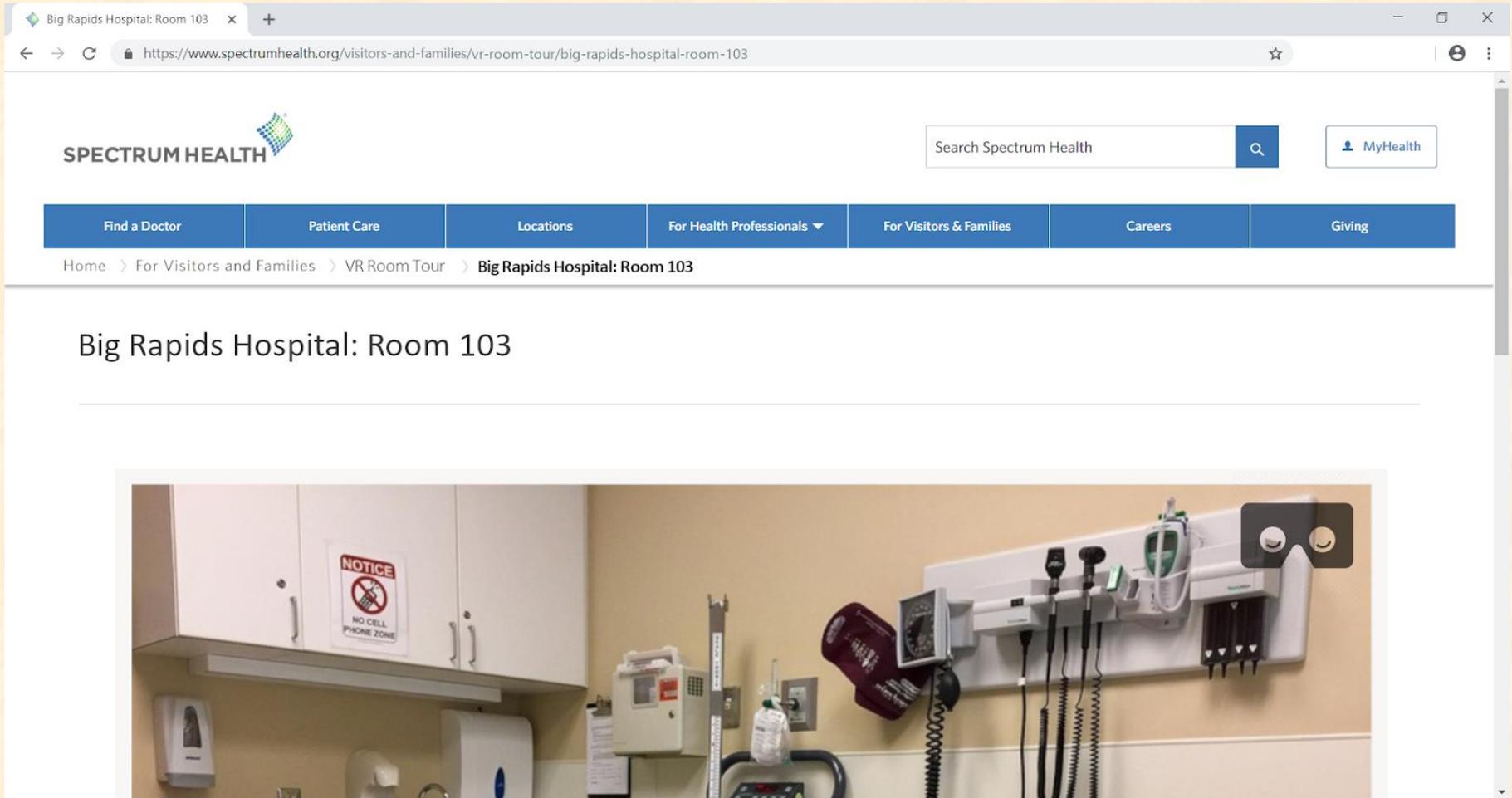
# Screen Mockup: Desktop Home



# Screen Mockup: Mobile Home



# Screen Mockup: Web VR Page



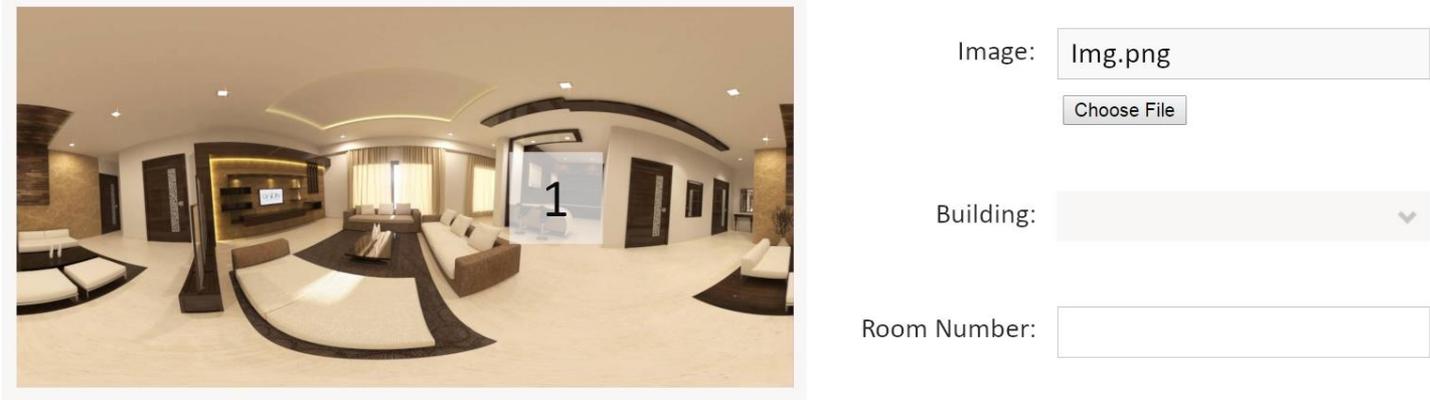
# Screen Mockup: Admin Access

Admin Access | Spectrum Health x +

https://www.spectrumhealth.org/vr-admin-access

SPECTRUM HEALTH Logout

## VR Administrator Access



The form contains a preview image of a VR environment, a text box for description, and input fields for image, building, and room number.

Image:  Choose File

Building:

Room Number:

Text Box 1:  ⊖



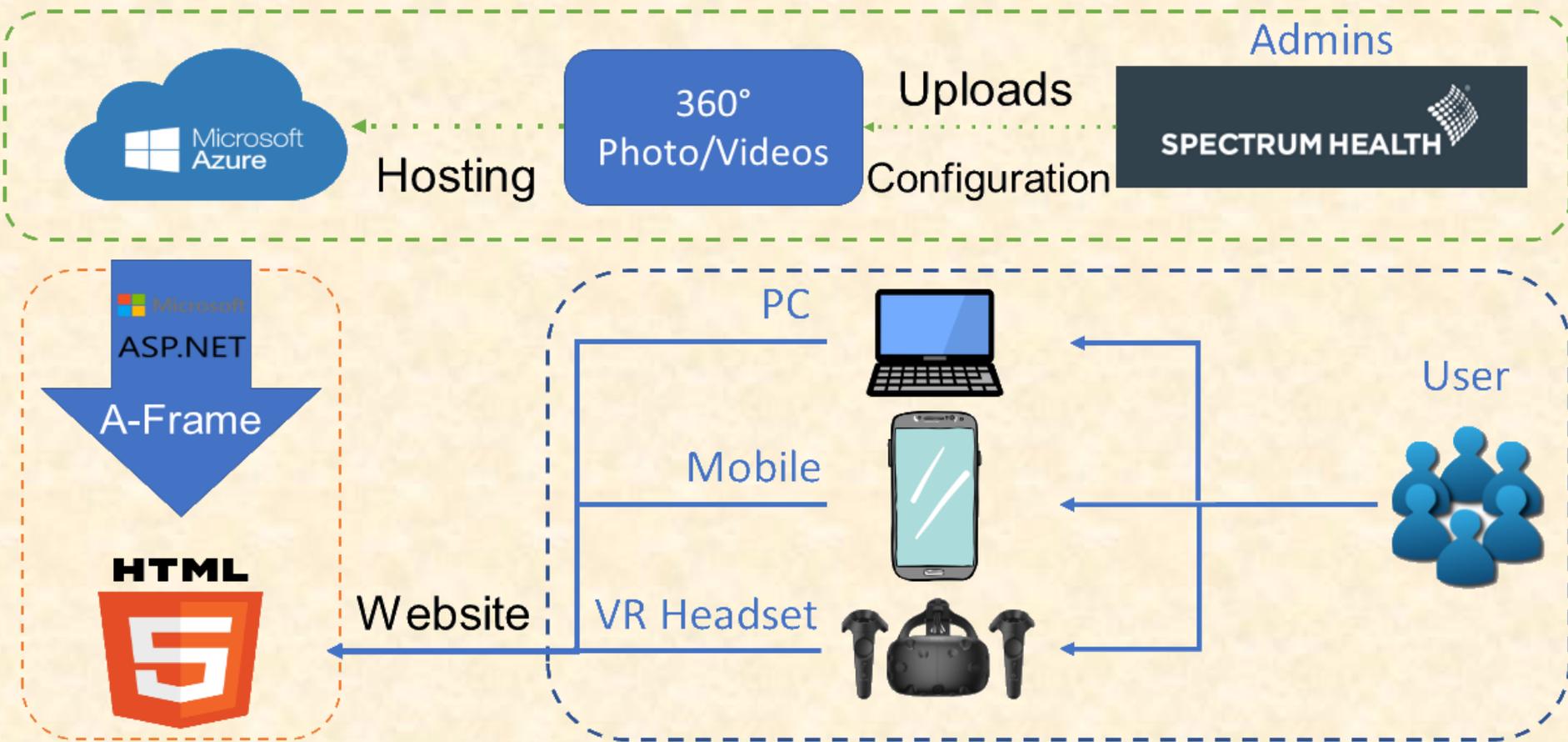
# Technical Specifications

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- HTML/CSS/JavaScript
- A-Frame for 360° viewing
- ASP.NET Core (C#)
- Entity Framework Core
- Microsoft Azure Team Services
- GIT Repository



# System Architecture



# System Components

- Hardware Platforms
  - Computer (Google Chrome Browser)
  - Mobile (Google Chrome Browser)
  - Oculus Rift VR headset with controllers
- Software Platforms / Technologies
  - HTML/CSS/JavaScript
  - A-Frame
  - Visual Studio 2017
  - Microsoft Azure Team Services



# Risks

- Risk 1 (Low)
  - Git pull and branching requests
  - Close contact with Spectrum Health employees
- Risk 2 (Medium)
  - Limited A-Frame documentation
  - Prototyping and asking Spectrum Health contacts
- Risk 3 (Medium)
  - Admin texture coordinates
  - Creating small proof of concepts
- Risk 4 (High)
  - Hit box conversion
  - Prototyping formulas for accuracy



# Questions?

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