

MICHIGAN STATE

U N I V E R S I T Y

Alpha Presentation

Symptom Checker

The Capstone Experience

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Fall 2017



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

Project Overview

- 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

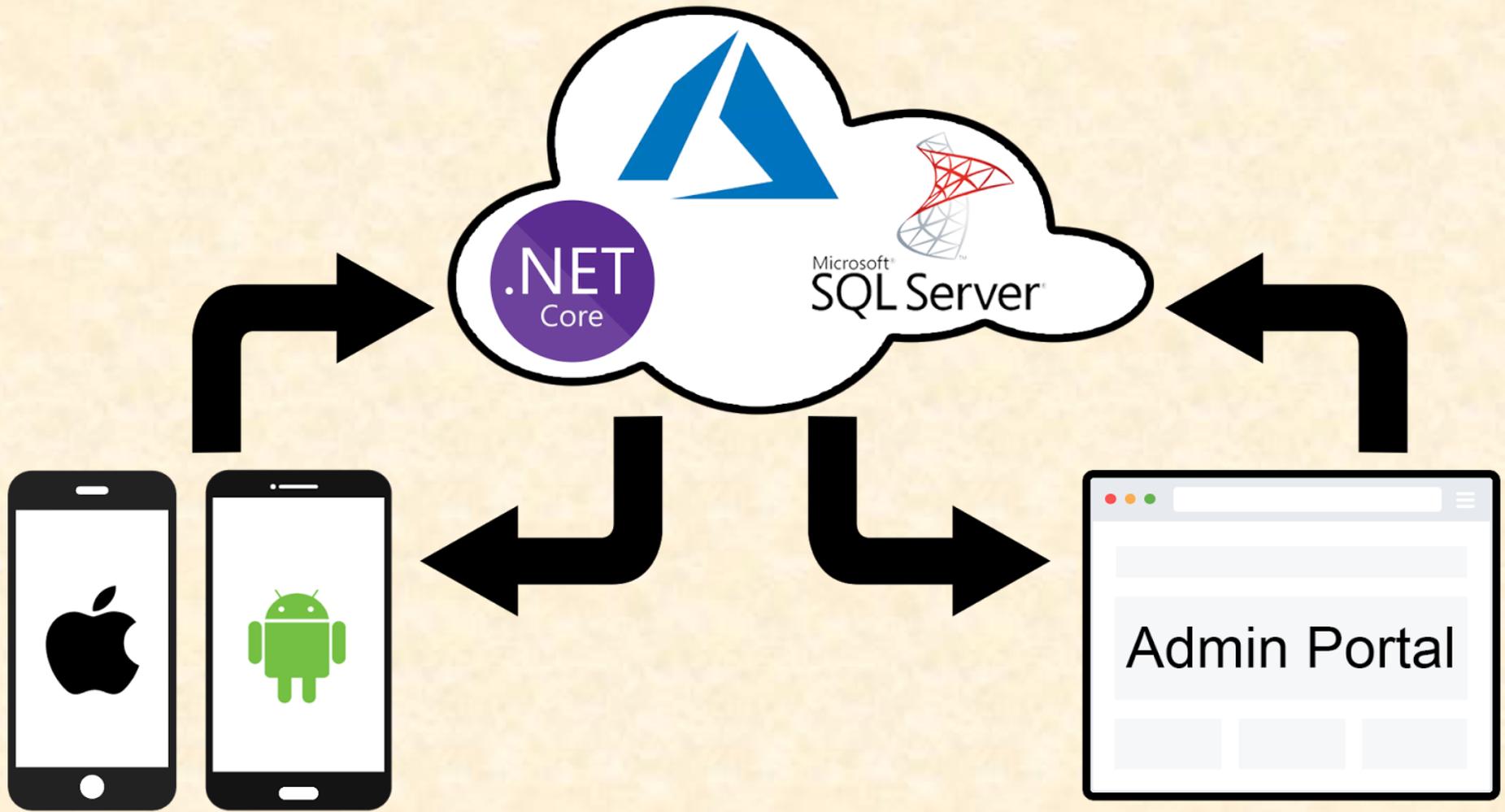


Project Overview

- 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



System Architecture



Admin Portal

Diagnosis Routing Admin Home Conditions

Conditions

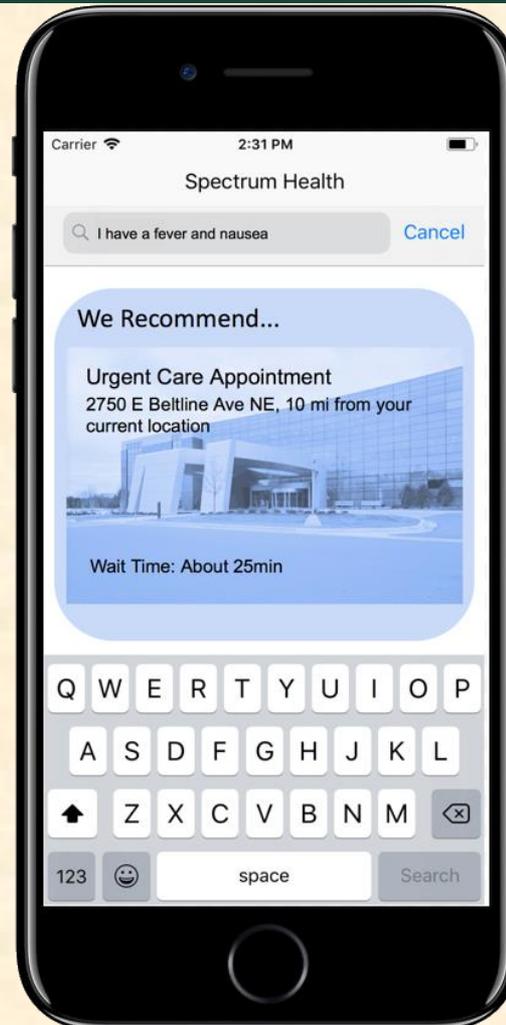
[Create New](#)

Name	Service	Synonyms	
Acne	MedNow	blackheads, pimples, pustules, rosacea, whiteheads, zits, pizza-face, skin inflammation	Delete
Allergies	MedNow	hay fever, aversion, hypersensitivity, sensitivity, susceptibility, vulnerability, allergic reaction	Delete
Back Pain	MedNow	sore back, stiff back, lower back pain	Delete
Birth Control	MedNow	the pill, contraceptive, morning after pill, estrogen, progesterone	Delete
Bites and Stings	MedNow	bug bite, bee sting, snake bite	Delete
Joint Sprain	Urgent Care	sprain, strain, twisted ankle, strained wrist, sprained wrist	Delete
Cardiac Arrest	Emergency Department	heart attack, bad ticker, chest pain, heartburn	Delete

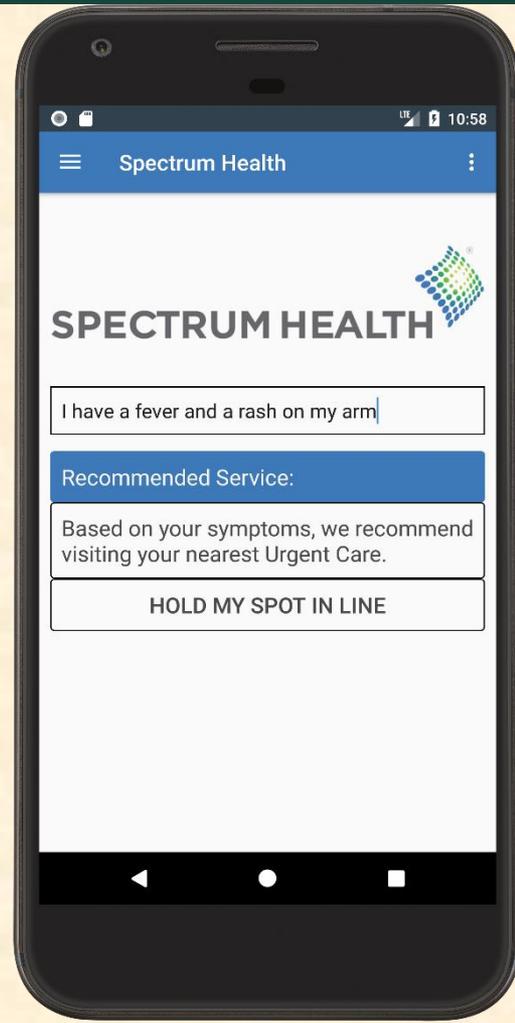
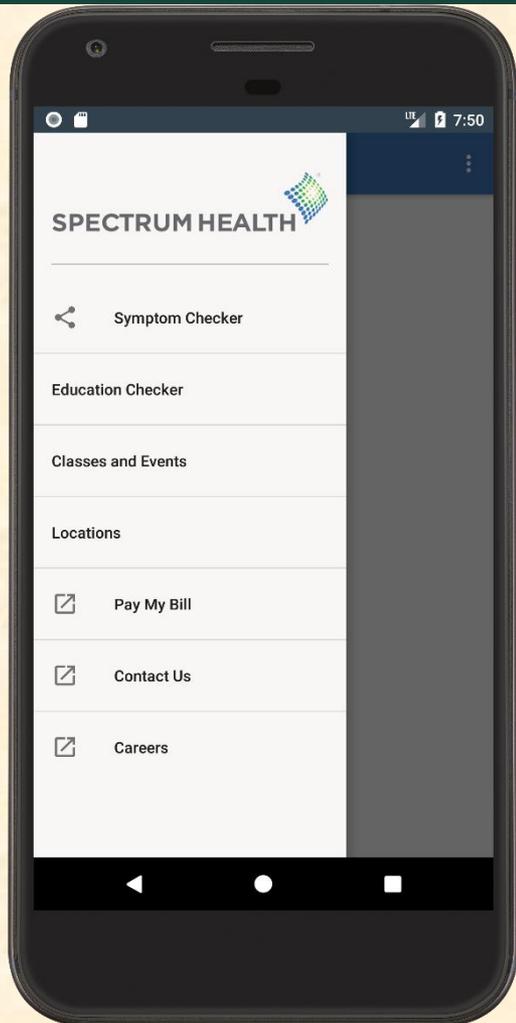
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iOS Application



Android Application



What's left to do?

- Increase symptoms to condition accuracy
 - Implement Term Frequency - Inverse Document Frequency (TF-IDF)
 - Obtain larger set of training data
 - Implement Levenshtein Distance for robustness
- Next in line
 - Allow user to reserve a spot in line at recommended facility
- Unit Test
 - Implement unit tests for algorithm and API



Questions?

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