Alpha Presentation
Symptom Checker
The Capstone Experience

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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

.NET Core

Microsoft SQL Server

Admin Portal

Apple

Android

[Diagram showing integration of .NET Core, SQL Server, and mobile devices with an admin portal]
Admin Portal

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