CWRU Baseball Alexa Skill

BY MARK GROSS, STEVEN BARKER, AND GAVIN MARKOWITZ

Project Motivation

- Alexa can get info from many professional sports teams
  - Cannot get information for many college sports teams
- Make access to CWRU baseball stats and game information faster and easier
- Use Alexa to access the CWRU sports website containing game, player, and team information
- Get up to date information

Major Design Decisions

- Used Python as primary coding language.
  - AWS allows for easy importing of Python scripts to create new Alexa skills
  - Python has great string handling and access to many useful libraries for parsing information in HTML (such as BeautifulSoup)
- Selected Alexa for our voice assistant technology
  - Alexa is the most widely used voice assistant in the home
  - AWS allows easy and free development and publication of new Skills
- Takes data live from website instead of calling from a database
  - Ensures data is always up to date
  - Allows us to call current scores, games, etc from website

Technologies Deployed

- Our Alexa Skill has 4 Main Parts:
  - Alexa Interaction Model
    - Developed with provided Alexa Developer Console
    - defines key words and accepted phrases
    - receives voice input and determines key values
  - Receiver
    - receives keywords Alexa has found and is responsible for determining which data should be fetched from website
  - Fetch
    - a collection of classes and methods to be called by Receiver to collect requested data from the website
    - Uses BeautifulSoup Library
  - Response
    - receives fetched data and formulates a response based on data received

Lessons Learned

- Web scraping with BeautifulSoup is tedious
  - Relies on exactly how table is laid out
  - Some elements of the table are NOT laid out with web scraping in mind
- Testing code requires complete coverage of all fetch methods
  - Only by testing all data fetched did we find some values behaving strangely
- Alexa needs VERY specific phrases to understand and pull keywords
  - Makes it difficult with synonyms and tenses
  - words like "the"
- Alexa doesn't do well with input names
  - chose to use player numbers as identifiers instead

Our Demo

- Still have issue importing our Python to Amazon Web Services

- Show our App in 2 Parts:
  - Alexa
    - takes input and returns keywords it would send to our code
  - Our code
    - put in string that Alexa would have sent it
    - print some output that would be sent back to Alexa