UNIVERSITY OF SUSSEX

Department of Informatics
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Ava, Question-Answering Bot

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Overview

Using **natural language processing** techniques, this project produces a question-answering bot which can answer simple natural language questions pertaining to information contained within the Spotify music library database.

Scenario

User: What is Cardi's latest song?

Ava: Let me check that for you...

...I believe it is 'Please Me' by Cardi B & Bruno Mars

System Evaluation Qs:

- Is the response factual? (unit testing)
- Does the response satisfy the intent of the user's question? (user testing)

Method

In the case of the example above, Ava, the Q&A bot, would parse the text inputted by the user and perform the following tasks in order to retrieve a response:

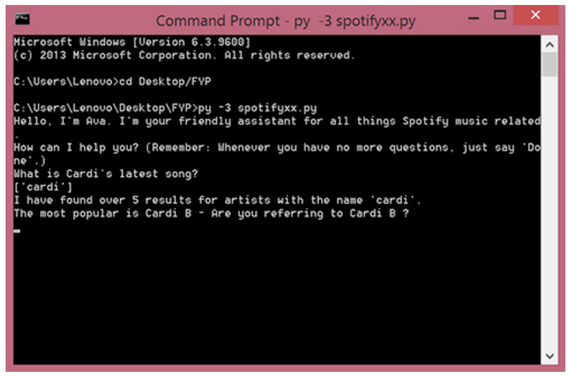
- **Extract noun phrase** "Cardi" with part-of-speech tag 'NNP' (proper noun), highlighting it as a named entity
- **Classify named entity** as name of an artist using training dataset and identification of use of possessive noun "Cardi's" (using *.endswith("'s")* method)
- **Recognise keyword** "latest" as being in relation to a "song"
- **Conduct search** on latests song by artists with "Cardi" in their name
  - *In the event that multiple artists have this in their name, the bot would ask the user a clarification question such as "Are you referring to Cardi B?" to confirm.*

Spotify

Spotipy is a lightweight Python library for the Spotify Web API which provides full access to all of the music data provided by the Spotify platform such as artist and track information, etc.

TextBlob

TextBlob is a Python library which provides a simple API for performing natural language processing tasks such as part-of-speech tagging, noun phrase extraction, and more.



Implementation screenshot

Primary Objective

Using Python to build a bot which uses named entity recognition and linking to identify relevant parts of natural language text-based input in order to retrieve accurate data as a response.

python