Project Progress Report

Wordle Game Strategy

CS 410, Fall 2022

1. Which tasks have been completed?
    - The POS Tagging and Analysis
        - Successfully use metapy with the perceptron part-of-speech (POS) tagger to tag the 2,315 possible solution words and 12,972 allowable guess words. An interesting finding is that 63.0% of the possible words are tagged 'NN', which represents a singular noun in the Penn Treebank schema, whereas only 32.5% of allowable words have the 'NN' tag. This insight could provide a significant edge for the strategy tool.
    - Design the Matrix Operations based Game Strategy Tool
        - Successfully encode words as 5x26 matrices with matrix operations to efficiently validate guesses and pattern match with the vocabulary. Results have green positions (correct letter in correct position) represented by 1's in the diagonal and yellow positions (correct letter in incorrect position) represented by 1's in the off diagonal.
2. Which tasks are pending?
    - TF-IDF Scoring and Analysis
    - Replicate Core Game Functionality
    - Implement the Game Strategy Tool
    - Testing
    - Evaluation
3. Are you facing any challenges?
    - TF-IDF Scoring and Analysis
        - The challenge is selecting an appropriate corpus.
    - Replicate Core Game Functionality
        - Attempting to use ipywidgets in a Google Colab environment to provide an interactive user experience has proved challenging. The Wordle game board is rendered using matplotlib and then displayed via an ipywidgets Output() object when the user inputs a new guess word. The gameboard plot would not display nor update properly and took substantial troubleshooting to resolve satisfactorily.