AbbVie – NLP Ops Engineer
Technical exercise

Instructions

Thank you for your interest in our NLP Ops Engineer position! To demonstrate coding ability, please do the following exercise. Spend no more than a couple of hours on it – anything you don't complete, simply be ready to discuss what you would have done and why. To submit, please email your code (or a link to it) to jon.stevens@abbvie.com within 5 days of receipt. If you are selected for a panel interview, then please be ready to present your approach to this exercise and discuss with the panel.

Exercise

Implement the following task using clean, production-grade Python code. Create a Python class that can do the following:

1. Given (1) a word or multi-word phrase and (2) a text document, search that document for any variant of that word/phrase (uppercase, lowercase, title case or sentence case) and return where (in terms of character indices) each occurrence is in the input document.
   Example: Given the phrase "back pain" and the text, "Back pain in adolescents is an under-studied condition", return the character span (0, 9)
2. Given a list of multiple words/phrases and a single document, if all of the supplied words/phrases occur, then return the indices where each of the supplied terms occur; else, return an empty result.
   Example: Given the phrase list ["back pain", "adolescents"], and the text, "Back pain in adolescents is an under-studied condition", return the list [(0, 9), (13, 24)]

Requirements

- **Choose data structures and/or algorithms that will optimize efficiency**! Please be ready to justify your choices if you are interviewed.
- Write a simple unit test to show that your code works.