BIS 420 PROGRAMMING FOR DATA SCIENCE

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CHAPTER 10 EXERCISE 11.10
ILLINOIS STATE UNIVERSITY

Two words are “rotate pairs” if you can rotate one of them and get the other (see rotate_word in Exercise 8.12). Write a program that reads a wordlist and finds all the rotate pairs. Solution: http: //thinkpython. com/ code/ rotate_ pairs. py .

```
from __future__ import print_function, division


def rotate_letter(letter, shift):
    if letter.islower():
        start = ord('a')
    elif letter.isupper():
        start = ord('A')
    else:
        return letter
    return chr(start + (ord(letter) - start + shift) % 26)


def rotate_word(word, shift):
    return ''.join(rotate_letter(c, shift) for c in word)


def find_rotate_pairs(word_list):
    rotate_pairs = []
    word_set = set(word_list)
```

```
    for word in word_list:
        for shift in range(1, 26):
            rotated = rotate_word(word, shift)
            if rotated in word_set:
                rotate_pairs.append((word, rotated))

    return rotate_pairs

if __name__ == '__main__':
    with open('/Users/prajaktapohare/Library/CloudStorage/OneDrive-ILStateUniversity/BIS420/Week 11/words.txt') as f:
        word_list = [line.strip() for line in f]

    pairs = find_rotate_pairs(word_list)
    for pair in pairs:
        print(pair)
```

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