

Tuesday Nov 12, 2024

In-class Handout

COSC 101C Intro to Computing I

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## Frequency

Complete the program in `freq.py`. It contains a function `calcFreq` which takes a name of a plain text file as a parameter and returns a dictionary encoding the frequency of each word in the file. Note, words are space separated characters and you should lowercase the string. In a `main` function print each word and it's frequency. For example, the file `tinytext.txt` inside the data folder contains:

```
I like green eggs and ham
Green eggs and ham I like
The cat and the cow jumped over the moon
```

`freq` should return `{'i': 2, 'like': 2, 'green': 2, 'eggs': 2, 'and': 3, 'ham': 2, 'the': 3, 'cat': 1, 'cow': 1, 'jumped': 1, 'over': 1, 'moon': 1}` and your main would output:

```
i 2
like 2
green 2
eggs 2
and 3
ham 2
the 3
cat 1
cow 1
jumped 1
over 1
moon 1
```

## Spelling Bee

Here you will complete an implementation of The New York Times Spelling Bee. Namely, you will add three functions: `turn`, `isPangram`, and `getScore` to the `bee.py` program.

The rules of spelling bee are simple:

- There are 6 letters and one additional letter called center that appears in the center of the board
- The aim is to use the letters to create valid English words
- Valid guesses must include the center letter

- Valid guesses must contain at least four letters
- Letters can be used more than once
- Valid guesses must be comprised of only the 7 letters
- Four-letter words are worth one point each
- Longer words earn one point per letter (e.g., a six-letter word is 6 points)
- Each puzzle contains at least one “pangram” which uses every letter at least once. A pangram is worth an additional seven points

The aim of this is to get you reading and adding to an existing code base. Please look at the existing functions and get a sense for what they do. As you can see in `main`, the game is centered on turns, where a player gives a guess. Your `turn` function should handle this, ensuring that the guess is valid (see above). The remaining two functions, `isPangram` and `getScore` determine whether a valid guess is a pangram and the score of a valid guess respectively. Buzz!