

Prerequisite Self-Assessment for Data Structures Module

A successful applicant should be able to solve all these problems in a few hours.

- 1) `fizzbuzz(start, finish)` - Write a function that prints numbers from `start` to `finish`. Replace multiples of 3 with "Fizz", multiples of 5 with "Buzz", and multiples of both with "FizzBuzz".

```
>>> fizzbuzz(1, 10)
1
2
Fizz
4
Buzz
Fizz
7
8
Fizz
FizzBuzz
```

- 2) `is_anagram(word1, word2)` - Write a function that compares two strings and returns a boolean denoting whether they are anagrams.

```
>>> is_anagram('rat', 'tar')
True
>>> is_anagram('rat', 'hat')
False
```

- 3) `count_letters(file_name)` - write a function that reads in a file, and returns a dictionary of `letter:count` pairs for every character in that dictionary.

Example file `frost.txt`:

```
Fire and Ice

Some say the world will end in fire,
Some say in ice.
From what I've tasted of desire
I hold with those who favor fire.
But if it had to perish twice,
I think I know enough of hate
To say that for destruction ice
Is also great
And would suffice.

-Robert Frost
```

Example output:

```
>>> count_letters('frost.txt')
{'f': 12, 'i': 23, 'r': 14, 'e': 23, ' ': 45, 'a': 13, 'n': 9, 'd': 10, 'c': 6,
'\n': 12, 's': 14, 'o': 20, 'm': 3, 'y': 3, 't': 20, 'h': 12, 'w': 8, 'l': 6, ',': 2,
'.': 3, '"': 1, 'v': 2, 'b': 2, 'u': 5, 'p': 1, 'k': 2, 'g': 2, '-': 1}
```