Assignment 5 Report

Tan Yee Jian

November 2, 2020

Contents

The code for this report is getting longer and I hope that it means you are getting more comfortable with writing Python code! However when it comes to code, we usually prefer short and idiomatic code, rather than long and elaborate ones.

If *really* need be, please break down your code into separate functions with nice names, which improves readability by a lot.

1 Q1 Decipher

1. Remember the handy trick of checking if a key exists in a dictionary: `if key in dict`. Do not assume only alphabets (or any other combination) are the only ones covered in the `guide` dictionary!

2. Some noteworthy ways to get a translation that are more Pythonic:

```
guide = {'a':'1', 'b':'2'} # yada yada
ans = ''
# method 1
for char in msg:
    ans += guide[char] if char in guide else char
# method 2
# joining up elements (translated characters) in list with empty strings
ans = ''.join([guide[char] if char in guide else char])
```

```
# method 3
# .get(elem, fallback) returns fallback if elem is not in the target dictionary
for char in msg:
    ans += guide.get(char, char)
```

2 Q2 Map (File I/O)

1. When you are checking for treasure, you will sometimes spill out of the map size. Do not hardcode the size to prevent that! In fact, adjust your boundaries to `range(1, row-1)` and `range(1, col-1)` for example. (Think in terms of the map why this works!)

3 Q3 `is_ancestor` and `is_related`

1. One cool trick is that two people are related if and only if then their topmost ancestors must be the same. Thus you only need to check if their topmost ancestors (by using while loops or recursion) are the same.