

PS4-notebook

September 29, 2016

0.1 Notebook setup

```
In [1]: # always do this first!
        %load_ext autoreload
        %autoreload 2
```

The autoreload extension is already loaded. To reload it, use:

```
%reload_ext autoreload
```

```
In [4]: # unzip the words.txt file.  You only need to do this once
import os
if not os.path.exists('words.txt'):
    os.system('unzip words.txt.zip')
    print('Unzipped')
else:
    print('words.txt is present')
```

words.txt is present

```
In [5]: %run ps4.py
```

Loading word list from file...
55900 words loaded.

0.1.1 Problem 1.

Below cell: code to test `apply_shift()` while you are writing it.

Example from PS4 assignment:

```
>>> apply_shift('This is a test.', 8)
'Apq hq hiham a.'
```

```
In [3]: import ps4
```

```
ps4.apply_shift('This is a test.', 8)
```

```
Loading word list from file...
55900 words loaded.
```

```
Out[3]: 'Apq hq hiham a.'
```

```
In [ ]:
```

```
In [6]: # problem 3
        # Note: I use a fancy trick here of working with strings as lists so I can
        # You could also use arrays to do this.
        # Explain this in a recitation!

        ps4.apply_shifts("Do Androids Dream of Electric Sheep?", [(0,6), (3, 18),
        # should print 'JufYkaolfapxQdrnzmasmRyrpfdvpmEurrb?'
```

```
Loading word list from file...
55900 words loaded.
```

```
Out[6]: 'JufYkaolfapxQdrnzmasmRyrpfdvpmEurrb?'
```

```
In [ ]:
```

My working area

```
In [70]: print(sorted(ps4.build_encoder(3).items()))
```

```
[(' ', 'c'), ('A', 'D'), ('B', 'E'), ('C', 'F'), ('D', 'G'), ('E', 'H'), ('F', 'I')]
```

```
In [71]: print(sorted(ps4.build_decoder(3).items()))
```

```
Loading word list from file...
55900 words loaded.
```

```
[(' ', 'x'), ('A', 'Y'), ('B', 'Z'), ('C', ' '), ('D', 'A'), ('E', 'B'), ('F', 'C')]
```

```
In [76]: print(ps4.apply_coder('Hello, world!', ps4.build_encoder(3)))
        print(ps4.apply_coder("Koor,czruog!", ps4.build_decoder(3)))
```

```
Koor,czruog!
Hello, world!
```