

Week 7 Lab Assignment Goals

- Build your own [Mad Libs](#) generator using the Natural Language Toolkit (NLTK)

Step 0 : Create a GitHub repository

- Go to <https://classroom.github.com/assignment-invitations/455b7583b3b3da4a87f1c18c41018943>
- Accept the assignment invite and clone the assignment repository onto your machine
- Open a Terminal window or command prompt and 'cd' to the cloned directory

Step 1 : Download and install the Natural Language Toolkit (NLTK)

- Follow the instructions given [here](#) to install NLTK
- To verify that it installed, run the Python interpreter and type:

```
import nltk
```
- There should be no errors
- Now, download the following two NLTK modules from the interpreter, that will allow us to do the functionalities we require:

```
nltk.download('punkt')  
nltk.download('maxent_treebank_pos_tagger')
```

Step 2 : Understand basic NLTK functionality

- NLTK is a Python module that provides easy-to-use text processing libraries
- To see NLTK in action, try out the [‘Tokenize and tag some text’](#) exercise
- As you can see,
 - `word_tokenize()` splits sentences into a list of *word tokens*, and
 - `pos_tag()` assigns [part of speech](#) tags to each word.
- In this week’s lab, you will use the `word_tokenize()` and `pos_tag()` functions to create your own Mad Libs generator

Step 3 : NLTK for Mad Libs

Write a program lab7.py that

- Reads the text file ‘gutenberg.txt’
- Creates a list of nouns and a list of adjectives present in this file using NLTK
 - Hint 1: nouns are tagged NN, NNS, NNP, and NNPS by `pos_tag()`
 - Hint 2: adjectives are tagged JJ, JJR, and JJS by `pos_tag()`
- Prints both lists. You should see the following output:

```
Nouns: ['nothing', 'VERY', 'Alice', 'think', 'VERY', 'way',  
       'Rabbit', 'dear', 'Oh', 'dear', 'afterwards', 'time', ''],  
       'Rabbit', 'TOOK', 'WATCH', 'OUT', 'OF', 'ITS', 'WAISTCOAT-POCKET',  
       'Alice', 'feet', 'mind', 'rabbit', 'waistcoat-pocket', 'watch',  
       'curiosity', 'field', 'time', 'hedge']  
Adjectives: ['remarkable', "'Oh'", 'late', 'natural', 'large',  
            'rabbit-hole']
```

Step 4 : Mad Libs

Modify lab7.py to:

- *Randomly* choose two nouns and two adjectives for replacement. Your output should be something like this:
Selected Nouns: ['time', 'WATCH']
Selected Adjectives ['natural', 'late']
- Prompt the user for alternative nouns and adjectives
 - Hint: Make use of the tagmap dictionary to prompt the user about the part of speech they need to enter
 - Note: Make sure that you do not prompt the user for different occurrences of the same word (what Python data structure can you use for this?)
- Replace the chosen nouns and adjectives with the user-entered words
- Print out the modified version of 'gutenberg.txt'
 - Hint: Refer to the join() function to make a string from a list of words.
- Your output should look like this (without the bold formatting):

```
Selected Nouns: ['time', 'hedge']
```

```
Selected Adjectives ['natural', 'much']
```

```
Please enter an adjective:
```

```
witty
```

```
Please enter a noun:
```

```
classroom
```

```
Please enter an adjective:
```

```
odd
```

```
Please enter a noun:
```

```
elf
```

```
***** OLD TEXT *****
```

```
There was nothing so VERY remarkable in that ; nor did Alice think
it so VERY much out of the way to hear the Rabbit say to itself ,
'Oh dear ! Oh dear ! I shall be late ! ' ( when she thought it over
afterwards , it occurred to her that she ought to have wondered at
this , but at the time it all seemed quite natural ) ; but when the
Rabbit actually TOOK A WATCH OUT OF ITS WAISTCOAT-POCKET , and
looked at it , and then hurried on , Alice started to her feet ,
for it flashed across her mind that she had never before seen a
rabbit with either a waistcoat-pocket , or a watch to take out of
it , and burning with curiosity , she ran across the field after it
, and fortunately was just in time to see it pop down a large
rabbit-hole under the hedge .
```

```
***** NEW TEXT *****
```

```
There was nothing so VERY remarkable in that ; nor did Alice think
it so VERY witty out of the way to hear the Rabbit say to itself ,
'Oh dear ! Oh dear ! I shall be late ! ' ( when she thought it over
afterwards , it occurred to her that she ought to have wondered at
this , but at the classroom it all seemed quite odd ) ; but when
```

the Rabbit actually TOOK A WATCH OUT OF ITS WAISTCOAT-POCKET , and looked at it , and then hurried on , Alice started to her feet , for it flashed across her mind that she had never before seen a rabbit with either a waistcoat-pocket , or a watch to take out of it , and burning with curiosity , she ran across the field after it , and fortunately was just in time to see it pop down a large rabbit-hole under the **elf** .

Step 5 : Commit code to GitHub

- Commit and push all your code to GitHub