Introduction to Python — Lesson Plans

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- Log on, go to pythonanywhere.com, sign up for an account
- Go to the “Files” tab and create new file called [something].py
- What we’re going to do today is create a spell check program that can take in a sentence, paragraph, or even an essay and output the words that you spelled wrong, along with suggestions for each one
  - Point is to
    - (1) introduce you to some programming basics, and Python syntax
    - (2) show you how powerful Python can be — we can write something pretty complex in 16 lines of code
    - (3) work on a real-world project, not some contrived example — the spell checker in Microsoft Word or Google Chrome is pretty similar to this

- Introduction to print(…) statements
  - Strings — single or double quotes
  - Numbers
  - Math
  - Lists — [a, b, c, d] — objects themselves can be any of the things we talked about
- Introduction to variables
  - Places where we can store data and then use that data later on in our program

- Now we’re going to split up the overall task into five steps
  - Find a list of all of the words in the English language — https://git.io/v1INE

```
import urllib.request

# Load a list of all of the words in the English language.
```

```
file = urllib.request.urlopen('https://raw.githubusercontent.com/
gtmtg/computing-club/master/words.txt')
english = file.read().decode('utf8').splitlines()
```

- Ask the user to input the text they want us to spell check.

```
text = input('Enter your text here: ')
```

- Split the user's text into a **list** of words.

```
import re

filtered = re.sub('[^a-zA-Z ]', '', text.lower())
words = filtered.split()
```

- For each word, check if it's properly spelled.

```
mistakes = []

for word in words:
     if word not in english:
         mistakes.append(word)
```

- Print each spelling mistake.

(1)

```
print()
print(mistakes)
```

(2)

```
print()
for mistake in mistakes:
    print(mistake)
```

(3)

```
import difflib

print()
for mistake in mistakes:
    alternatives = difflib.get_close_matches(mistake, english)
    print(mistake + ' -> Did you mean ' + ', '.join(alternatives)
+ '?')
```