

# CAIS 117: Intro to Programming with Python

Fall 2023

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## Homework 07: Simple Predictions

*Homework is DUE before class on the day indicated on the course schedule.*

**This is a pair assignment.** *You should complete it and submit it with a partner.*

### Learning Objectives:

- Practice using lists and dictionaries

### Part 1 - coding

Your submission will be auto graded for correctness and graded by hand for appropriate commenting, structure, etc. (see rubric below). **For the auto grader, it's important that your input goes in the prescribed order, and your output is formatted exactly like the examples below.** Remember to check the results of the auto grader tests to help debug your program.

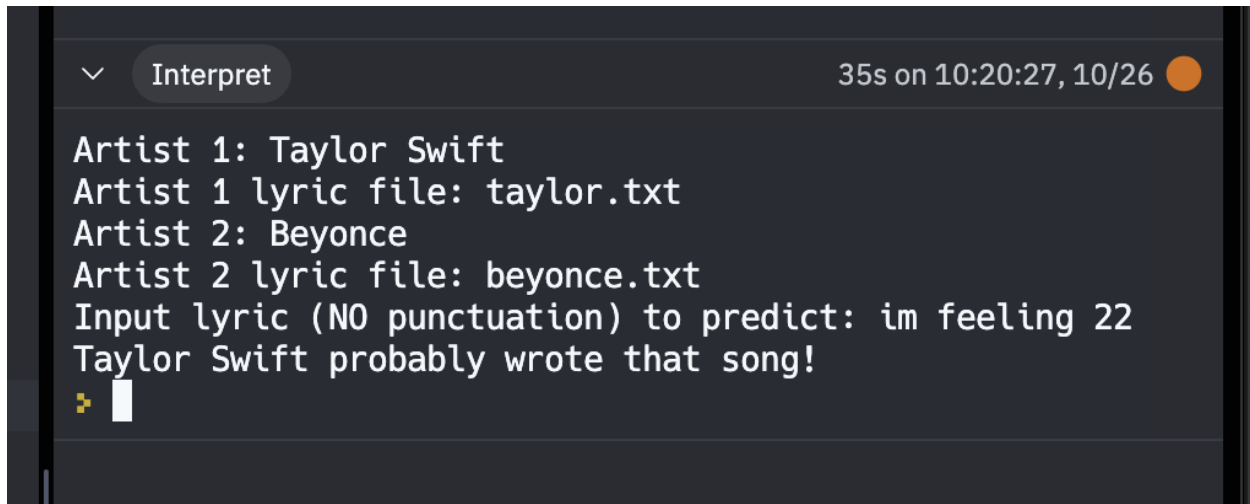
Your solution to this assignment should be modular. Unlike past assignments, you will not be told exactly what functions to write, instead you will decide the best way to break up your solution into specific functions (tasks). Remember to use appropriate documentation.

For this assignment you will write a very simple natural language processing program that will:

- Ask the user for 2 artists and the filename for each artist's lyrics.
- Use the `get_lyrics()` function provided in the starter code to read the artist's lyrics into lists. (You are provided the following text files to work with: `taylor.txt`, `beyonce.txt`, `billie.txt`, `cardi.txt`, `dua.txt`)
- Create a word count dictionary for each artist. The word count dictionary should have a key for each word that shows up in an artist's lyrics, and the value for each key should be the number of times that word shows up.
  - For example, if the input were:
    - "Taylor Swift"
    - `taylor.txt`

- And taylor.txt contained: “it feels like a perfect night to dress up like hipsters and make fun of our exes ah ah ah ah it feels like a perfect night for breakfast at midnight to fall in love with strangers ah ah ah ah”
- Taylor’s word count dictionary would be:
  - {“it”:2, “feels”:2, “like”:3, “a”:2, “perfect”:2, “night”:2, “to”:2, “dress”:1, “up”:1, “hipsters”:1, “and”:1, “make”:1, “fun”:1, “of”:1, “our”:1, “exes”:1, “ah”:8, “for”:1, “breakfast”:1, “at”:1, “midnight”:1, “fall”:1, “in”:1, “love”:1, “with”:1, “strangers”:1}
- After the dictionaries are complete, the program should ask the user for a lyric. It will take that lyric and predict which artist sang it by summing how many times each individual word in the lyric is used by each artist. The artist with the higher sum is the prediction.
- Keep in mind your program should work with any artists and files of lyrics.

Here is what your program’s interface should look like:



```
Interpret 35s on 10:20:27, 10/26
Artist 1: Taylor Swift
Artist 1 lyric file: taylor.txt
Artist 2: Beyonce
Artist 2 lyric file: beyonce.txt
Input lyric (NO punctuation) to predict: im feeling 22
Taylor Swift probably wrote that song!
```

```
Interpret 58s on 10:21:06, 10/26
Artist 1: Taylor
Artist 1 lyric file: taylor.txt
Artist 2: Dua Lipa
Artist 2 lyric file: dua.txt
Input lyric (NO punctuation) to predict: i got new rules
Dua Lipa probably wrote that song!
```

## Reflection

In a word document please answer the following questions with your partner:

- What part of this assignment was trickiest for you and your partner?
- How did you tackle that tricky part?
- What did each partner contribute to the final product?

## Submission

Submit your assignment on repl.it (as a group). In addition, save your reflection as a PDF and submit it on PLATO (as a group).

## Rubric

Function		
	Passes auto grader tests	0 - 10
Commenting		
	Appropriate header with names, date, program description	0 - 2
	Code is well documented, but not over documented	0 - 2
Structure		
	Problem is broken into reasonable chunks	0 - 2
	Variable names are descriptive	0 - 2
	Functions are used appropriately	0 - 2
Reflection		
	All questions answered thoughtfully	0 - 5