[redacted]

Due date: 05/05/2021 11:59 pm

Total Points: 40 pts

Decipher (Edited)

***This version is for students who do not have completed lexer and parser.**

***You need to submit Python files (decipher.py and main.py) on the GitHub classroom.**

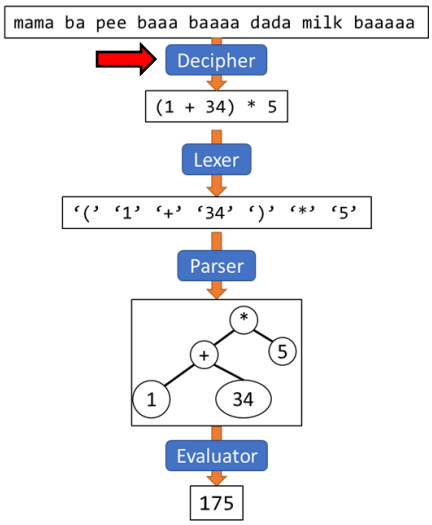
***You need to include your name as a comment in decipher.py.**

***You also need to submit a screenshot of your GitHub repository on Blackboard.**

***While working on the project, read this document THOROUGHLY.**

Project Description

In this project, you need to implement a decipher part of a baby language interpreter. The decipher needs to convert a baby expression to a source code as shown below.



The baby expression includes baby words, and the words correspond to specific characters. The relationship between baby words and characters is shown in the below table.

Baby Word	Character
pee	+
gah	-
milk	*
heh	/
mama	(
dada	)
b	0
ba	1
baa	2
baaa	3

baaaa	4
baaaaa	5
baaaaaa	6
baaaaaaa	7
baaaaaaaa	8
baaaaaaaaa	9

**** In a baby expression, when digit-baby words have white spaces between them such as "baa ba" and "baaa ba baaa", they will correspond to a single number with multiple digits like "31" and "313".***

Project Guideline

In this project, you will write decipher module (`decipher.py`). And in the module, you will define a function called `decipher`. The basic structure of the function is given below.

```
def decipher(babyExp):
    srcCode = ""

    ##main part##

    return srcCode
```

decipher.py

In the function, `babyExp` is a string of a baby expression, and `srcCode` is a string of characters corresponding to baby words of `babyExp`.

You will implement `##main part##` of the function that converts `babyExp` to `srcCode`. For example, when `babyExp` is "baa ba", the function will convert it to `srcCode` which is "21".

Then, you will modify `main.py` with decipher module and decipher function like the below to complete our baby language interpreter program.

```
# import lexer
# import parserr
# import evaluator
import decipher

print("\nHello baby language.\nEnter baby exp and see what you get.")

while True:
    babyExp = input(">>> ")
    if babyExp == "poopoo":
        break
    srcCode = decipher.decipher(babyExp)
    print("Interpreted as: ", srcCode)
    # tokSeq = lexer.tokenize(srcCode)
    # rootNode = parserr.parse(tokSeq)
    # result = evaluator.evaluate(rootNode)
    # print("The result is: ", result)

print("Now it is time to go poo poo.")
```

main.py

Test Cases

After running `main.py`, you can try the below test cases to see whether the decipher module is written well. The test cases (baby expressions) are noted by the bold texts. *Note that your decipher should work even when a baby expression does not have any whitespaces.*

```
Hello baby language.
Enter baby exp and see what you get.

>>> babapeebaaaaa
Interpreted as:  11+5

>>> baaaaab
Interpreted as:  50

>>> gahbaaaba
Interpreted as:  -31

>>> baaaaa milk mamababaa gah baaaaa dada
Interpreted as:  5*(12-5)

>>> baaaaa gah ba baaa heh baa bapeebaa ba milk baaaaaa
Interpreted as:  5-13/21+21*6

>>> mama mama baaaaaba gah baaaa dada milk baaa dada
Interpreted as:  ((51-4)*3)

>>> poopoo
Now it is time to go poo poo.
```

Submission Guideline

1. You need to submit `decipher.py` and the changed `main.py` to the GitHub classroom.
    a. DO NOT compress them as a ZIP file.
    b. DO NOT forget to include your name in python files as a comment.
2. You also need to submit a screenshot of your repository of GitHub classroom on Blackboard.
    a. Make sure that the screenshot shows all python files (decipher.py, lexer.py, parserr.py, evaluator.py, and main.py) in your repository.
3. After you submit them, DOUBLE-CHECK whether you've submitted the correct files on GitHub classroom and Blackboard.