Numerology

:

You have been hired as a consultant. The client is a certified Numerologist and needs Python programs to assist in doing readings. This lab assignment will reinforce the concepts of functions, String manipulation functions, If Statements and loops constructs. Create a class that will perform all the required calculations.

Here is an overview of Numerology: Numerology is the science of numbers. It has been around for over 2,500 years. You take a birthday, which yields three numbers and a name, which provides another three numbers. With those six numbers you can insights on whom a person is and find out ways to improve your life, or so the belief goes.

The output will be six numbers. Since the art of numerology is based off the numbers derived from a person's birth date and name code needs to be written to compute these numbers.

- The Birthday Number, Life Path Number and the Attitude Number are computed from the inputted Birth Date.
- The Soul Number, Personality Number and Power Name Number are derived from the Inputted name.

You will have to code TWO Python source files:

1. **Numerology.py** that has the class in it and these function (coding details provided below):
    - _init__(sName, sDOB)
    - getName() – returns the subjects name
    - getBirthdate() – returns the subjects Date of Birth
    - getAttitude() – returns the computed attitude number
    - getBirthDay() – returns the computed birthday number
    - getLifePath() – returns the computed life path number
    - getPersonality() – returns the computed personality number
    - getPowerName () – returns the computed power name number
    - getSoul() – returns the computed soul number
2. **Use Numerology.py** that will prompt for the user name and birthday and then use the Numerology class to get the computed numbers:
    - The two things that are needed to perform a reading is a person's birth date in mm-dd-yyyy format and birth name. The inputted date should be tested to verify that it is entered as a full 8 digit date with dashes or slashes (- or /) as separators.
    - The inputted name should be populated and not empty.
    - Call the Numerology class' __init__ and each function to get the calculated results
    - Output each of the findings to the screen.

<u>Numbers Derived From Birth Date:</u>

Life Path Number: Is computed by taking all the digits in the inputted birth date and adding them together. The Life Path Number is supposed to denote what a person is to be or perform in this life. For example:

> **03-15-1996** would need to be computed: **0+3+1+5+1+9+9+6 = 34**
>
> **34** would then be reduced again by **3+4 = 7** and 7 would be the Life Path Number
>
> **Note**: You must reduce every number in numerology down to a single digit. It is recommended that you write a method that will accept in a number as a parameter and you write code to reduce the number down to a single digit which the function will return as it's result. Keep in mind a number may need to be reduced more than once. The function needs to return back a single digit between 1 and 9. Do you think this method should be a made public or private?

Birth Day Number: Is simply the extraction of the day from the birth date. You can assume you are entering the date in USA format (mm-dd-yyyy). The Birth Day Number is supposed to contribute to finding the match of your soul mate. For example:

> **03-29-1971** would be computed: **2+9 = 11**
> **11** would then be reduced again by **1+1 = 2** and 2 would be the Birth Day Number.

Attitude Number: Is simply the addition of the birth month and the birth day from the birth date. You can assume you are entering the date in USA format (mm-dd-yyyy). The Attitude Number is supposed to determine a person's attitude that will reinforce or detract from a person's life path number. For example:

> **04-04-2001** would be computed: **0+4+0+4 = 8** This is the Attitude number.
>
> In this example no further reduction is needed: the number is a single digit between 1 and 9.

<u>Numbers Derived From Birth Name:</u>
To perform these computations you must first convert the letters to a corresponding number. Here is a conversion grid:

A, J, S	1
B, K, T	2
C, L, U	3
D, M, V	4
E, N, W	5
F, O, X	6
G, P, Y	7
H, Q, Z	8
I, R	9

Note: Only convert characters A – Z. If the character to be evaluated is not between A and Z you will need to use a 0 (zero) for that character. It is recommended that you convert the value to either lower case or upper case to reduce the coding of both lower and upper case values.

For example: **Brian Candido** would compute to **29915 3154946**

```
  91   1  9 6
BRIAN CANDIDO
29  5 3 54 4
```

Soul Number: Is computed by taking all the vowels (A,E,I,O,U) in the inputted birth name adding them together. The Soul Number is supposed to denote what a person feels on the inside. For example:

> **I A A I O** are the vowels in **Brian Candido** would be computed as: **9+1+1+9+6 = 26**
>
> **26** would then be reduced again by **2+6 = 8** and 8 would be the Soul Number

Personality Number: Is computed by taking all the consonants (letters that are <u>not</u> A,E,I,O,U) in the inputted birth name adding them together. The Personality Number is supposed to denote how a person portrays themselves to the outside world. For example:

> **B R N C N D D** are the consonants in **Brian Candido** would be computed as: **2+9+5+3+5+4+4 = 32**
>
> **32** would then be reduced again by **3+2 = 5** and 5 would be the Personality Number.

Power Name Number: Is computed by adding the Soul Number and the Personality Number together. The Power Name Number is supposed to denote how the Soul and Personality Numbers interact for a person. For example:

> **8 (Soul) + 5 (Personality)** = **13** reduced would be **4** which is the power name number.

Hints:

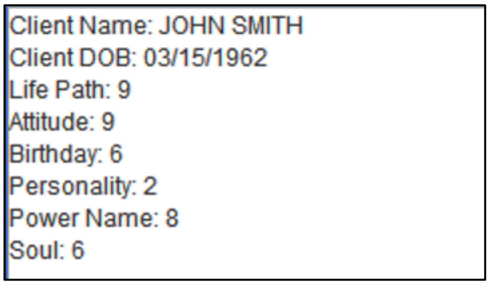
- This project will need two classes.
- You must code a class called Numerology.py that will do all the calculations.
- Think very carefully about the structure of the class and especially the functions.
- Determine how the functions will take in the data to calculate and more importantly determine how the methods will return the different numerology numbers.
- Some functions should be public so the test class can use them and others should be private that only the Numerology class can access.
- Remember this mantra: Design carefully, write once and use many times!

Testing Plan/Sample Output

Testing Plan:

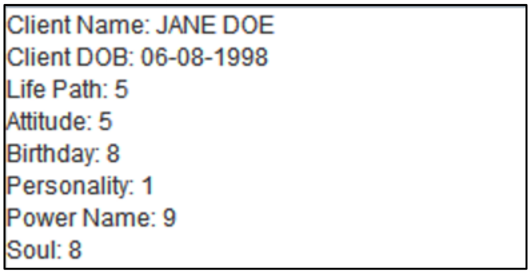
Output should be:

```
Test Name: John Smith
Test DOB: 03/15/1962
Life Path Number:        9
Birth Day Number:        6
Attitude Day Number:     9
Soul Number:             6
Personality Number:      2
Power Name Number:       8
```



```
Client Name: JOHN SMITH
Client DOB: 03/15/1962
Life Path: 9
Attitude: 9
Birthday: 6
Personality: 2
Power Name: 8
Soul: 6
```

```
Test Name: Jane Doe
Test DOB: 06/08/1998
Life Path Number:        5
Birth Day Number:        8
Attitude Day Number:     5
Soul Number:             8
Personality Number:      1
Power Name Number:       9
```



```
Client Name: JANE DOE
Client DOB: 06-08-1998
Life Path: 5
Attitude: 5
Birthday: 8
Personality: 1
Power Name: 9
Soul: 8
```

Grading Rubric

Criteria	Meets (100%)	Somewhat (50%)	Not Present (0%)
Two source files are present: **Numerology.py with the class coded as per the instructions.** **Use Numerology.py that prompts for input and uses the Numerology class.** 60 points	Two source files are present and coded to match the instructions.	Two source files are present and somewhat coded to match the instructions.	One source file is present with no class specifications.
Numerology Calculations are correct and outputted 30 points	All calculations are correct.	Most of the calculation are correct.	None of the calculations are correct.
Numerology class is coded efficiently and concise with public and private functions (encapsulation) 10 points	The class is coded with no redundancy and private and public functions are correctly coded.	The class is coded with some redundancy and/or private and public functions are incorrectly coded.	The class is coded with redundancy and no private and public functions differentiation.