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## The Barnum-Forer Horoscope

9 points

### Introduction

You are a group of psychological researchers and you are designing an experiment to verify the existence of the Barnum-Forer effect via an a experiment.

The Barnum-Forer effect says that when there is a set of generic sentences presented to individuals, they feel that the sentence fits perfectly to his or her personality and has been redacted specifically for him/her. To conduct this experiment you will provide sentences to each participant as a kind of "horoscope", but instead of using just the date of birth you will consider the name of the subject as well.

To implement the Barnum-Forer Horoscope we will first take the date of birth in format DDMMYY. For instance, February 9th of 2019 will be represented as the string "090219". To this number, we will add all the individual digits:  $0+9+0+2+1+9$ . The result of the operation 21 will be processed again to add all the digits. The algorithm will keep adding all the digits until only a single digit is returned. In this case  $2+1=3$  so the final result of the operation with the date of birth in this example would be 3. Then we will take the name of the subject and will convert each character into its ASCII code, sum all the values and proceed as before. Adding all the numbers repeatedly until we obtain a single number.

For instance, if the name is "Sofia" we will convert each character to its ASCII code:

S -> 83, o -> 111, f -> 102, i -> 105, a -> 97. We will sum  $83 + 111 + 102 + 105 + 97 = 498$ . Then  $4+9+8 = 21$ . And finally,  $2 + 1 = 3$ .

To finish with the algorithm, we will take the first number that we obtained from the date of birth and the digit computed from the name and concatenate both.

In this example the result of concatenating both numbers is "33". We then keep doing the same sum of digits until we finish with a single-digit:  $3+3 = 6$

Six is the final number that we will use to look into a table of strings. This string is the output that we will give to the subjects of the experiment.

The table with each number and the associated sentence is the following:

- 1 -> "You tend to be critical of yourself."

- 2 -> "You have a great deal of unused capacity which you have not turned to your advantage."
- 3 -> "While you have some personality weaknesses, you are generally able to compensate for them."
- 4 -> "At times you are extroverted, affable, sociable, while at other times you are introverted, wary, reserved."
- 5 -> "Disciplined and self-controlled outside, you tend to be worrisome and insecure inside."
- 6 -> "At times you have serious doubts as to whether you have made the right decision or done the right thing."
- 7 -> "You prefer a certain amount of change and variety and become dissatisfied when hemmed in by restrictions and limitations."
- 8 -> "You pride yourself as an independent thinker and do not accept others' statements without satisfactory proof."
- 9 -> "You have found it unwise to be too frank in revealing yourself to others."

Write a program that given two different inputs (a data in format DDMMYY, only numbers) and a name (only ASCII characters), computes the previously described algorithm and outputs the string associated to the horoscope.

### Example 1

#### Input

090219

Sofia

#### Output

At times you have serious doubts as to whether you have made the right decision or done the right thing.

## Example 2

### Input

020207

Amy Jo Lucy Sue

### Output

Disciplined and self-controlled outside, you tend to be worrisome and insecure inside.