

You cant use any inbuilt functions of Python

Learn if and for loop yourself.

1. Unitary Sum of Digits

Write a program that takes an integer as input and calculates the sum of its digits using a loop. The program should repeatedly sum the digits until a single digit is obtained. Do not use Python's built-in functions for string manipulation.

Here's an example to illustrate how the program works:

Input:

- Suppose the user inputs the number '942'.

Step-by-Step Execution:

1. First Iteration:

- Initial 'n': 942
- Sum of digits:
 - $9 + 4 + 2 = 15$
- Update 'n': 15 (since 942 is not a single digit)

2. Second Iteration:

- New 'n': 15
- Sum of digits:
 - $1 + 5 = 6$
- Update 'n': 6 (since 15 is not a single digit)

3. Result:

- Now 'n' is 6, which is a single digit.
- The digital root of '942' is 6.

Output:

Enter an integer: 942

The Unitary Sum of Digits of 942 is: 6

2. String Compression

Implement a basic string compression algorithm where consecutive identical characters in a string are replaced by the character followed by the count of repetitions. For example, the input "aaabbc" should be compressed to "a3b2c1". Do not use Python's built-in functions for string manipulation.