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Kaprekar number

OVERVIEW

6174 is called Kaprekar number. The number has a very interesting feature explained below:

- (Step 1) Take any four digit number (At Least two digits should be different) ● (Step 2) Arrange the digits in ascending and descending order to get two new four digit numbers. Let's call them ASC and DESC
- (Step 3) Now subtract the smaller number (ASC) from bigger number (DESC)
- Repeat the loop from Step 2

Start with any number, and this will end in looping with 6174, The Kaprekar Number

EXPLANATION

Let's take an example of 1234

1. 4321 - 1234 = 3087
2. 8730 - 0378 = 8352
3. 8532 - 2358 = **6174**

SPECIFICATIONS

The starting four digit number should have at least two different digits, Else ASC and DESC will be the same, resulting in 0. Thus, breaking the recursion.

PROBLEM

For any given four digit number (n), return the number of recursion steps required to reach Kaprekar number. Return -1, if the kaprekar number cannot be reached.

QUESTIONS

- What is the modulo operator in python? How does it handle fraction numbers?

- Is there a 3-digit equivalent of Kaprekar number? 5-digit equivalent? Explain an algorithmic approach to find these.

SUBMISSION

- Upload the code to your private github repository.
- PDF with answers to the embedded question.

EXTRA

6174 is also Harshad number. A number is called Harshad number if it is divisible by the sum of the constituent digits. 6174 is divisible by 6+1+7+4=18. Write a function that takes any number as input and returns whether it is a Harshad number.