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Modified Kaprekar Numbers

by PRASHANTB1984

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A modified *Kaprekar number* is a positive whole number n with d digits, such that when we split its square into two pieces - a right hand piece r with d digits and a left hand piece l that contains the remaining d or $d-1$ digits, the sum of the pieces is equal to the original number (i.e. $l + r = n$).

Note: r may have leading zeros.

Here's an explanation from Wikipedia about the **ORIGINAL** Kaprekar Number (spot the difference!): *In mathematics, a Kaprekar number for a given base is a non-negative integer, the representation of whose square in that base can be split into two parts that add up to the original number again. For instance, 45 is a Kaprekar number, because $45^2 = 2025$ and 20+25 = 45.*

The Task

You are given the two positive integers p and q, where p is lower than q. Write a program to determine how many Kaprekar numbers are there in the range between p and q (both inclusive) and display them all.

Input Format

There will be two lines of input: p, lowest value q, highest value

Constraints:

$0 < p < q < 100000$

Output Format

Output each Kaprekar number in the given range, space-separated on a single line. If no Kaprekar numbers exist in the given range, print `INVALID RANGE`.

Sample Input

```
1
100
```

Sample Output

1 9 45 55 99

Explanation

1, **9**, **45**, **55**, and **99** are the Kaprekar Numbers in the given range.

Submissions: 16486
Max Score: 30
Difficulty: Easy

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```cpp
#include <cmath>
#include <cstdio>
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;


int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    int p,q;
    scanf("%d %d", &p, &q);

    int k[] = { 1, 9 ,45, 55, 99, 297, 703, 999, 2223, 2728, 4950, 5050, 7272, 7777, 9999, 17344, 22222, 77778, 82656, 95121, 99999
};

    int n = sizeof(k)/sizeof(int);
    bool hay = false;

    for (int i = 0; i < n; i++) {
        if (k[i] >= p && k[i] <= q) {
            //Console.Write(k[i] + " ");
            cout << k[i] << " ";
            hay = true;
        }
    }
    if (!hay) {
        cout << ("INVALID RANGE") << endl;
    }

    return 0;
}

```

Line: 14 Col: 126

Upload Code as File Test against custom input Run Code Submit Code

Congrats, you solved this challenge!

- ✔ Test Case #0
- ✔ Test Case #1
- ✔ Test Case #2
- ✔ Test Case #3
- ✔ Test Case #4
- ✔ Test Case #5
- ✔ Test Case #6

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