PREPARE NEW CERTIFY COMPETE Search 210554M_CSE_21

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Recursive Digit Sum

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Status: Accepted

✓	Test Case #0	✓	Test Case #1	✓	Test Case #2
✓	Test Case #3	✓	Test Case #4	✓	Test Case #5
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✓	Test Case #9	✓	Test Case #10	✓	Test Case #11

Submitted Code

Language: C++

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```cpp
#include <bits/stdc++.h>

using namespace std;

string ltrim(const string &);
string rtrim(const string &);
vector<string> split(const string &);

/*
 * Complete the 'superDigit' function below.
 *
 * The function is expected to return an INTEGER.
 * The function accepts following parameters:
 *  1. STRING n
 *  2. INTEGER k
 */

int superDigit(string n, int k) {
    // calculate the sum of digits in the string
    long int sum = 0;
    for (char c: n){
        sum += c - '0';
    }
    // multiplying the sum by k
    sum *= k;
    // checking if the sum is one digit
    if (sum < 10) {
        return sum;
    }
    // calculate the sum of dsigits recursively until it's single digit
    return superDigit(to_string(sum), 1);
}
```

```

int main()
{
    ofstream fout(getenv("OUTPUT_PATH"));

    string first_multiple_input_temp;
    getline(cin, first_multiple_input_temp);

    vector<string> first_multiple_input = split(rtrim(first_multiple_input_temp));

    string n = first_multiple_input[0];

    int k = stoi(first_multiple_input[1]);

    int result = superDigit(n, k);

    fout << result << "\n";

    fout.close();

    return 0;
}

string ltrim(const string &str) {
    string s(str);

    s.erase(
        s.begin(),
        find_if(s.begin(), s.end(), not1(ptr_fun<int, int>(isspace)))
    );

    return s;
}

string rtrim(const string &str) {
    string s(str);

    s.erase(
        find_if(s.rbegin(), s.rend(), not1(ptr_fun<int, int>(isspace))).base(),
        s.end()
    );

    return s;
}

vector<string> split(const string &str) {
    vector<string> tokens;

    string::size_type start = 0;
    string::size_type end = 0;

    while ((end = str.find(" ", start)) != string::npos) {
        tokens.push_back(str.substr(start, end - start));

        start = end + 1;
    }

    tokens.push_back(str.substr(start));

    return tokens;
}

```