Marwadi University	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**	
Sem : 5	**Name :Pushti Depani**	
Day : 22	**Date : 08/11/2022**	**Enrollment No: 92000133018**

CP Club 365Days Challenge

Date – 08/11/2022

Programming language – only C language

Problem Statement

Code must be in C language only

Question for Semester – 3

https://www.hackerrank.com/challenges/frequency-of-digits-1/problem?isFullScreen=true

Question for Semester – 5

https://www.hackerrank.com/challenges/recursive-digit-sum/problem?isFullScreen=true

Your Code:

```c
#include <assert.h>
#include <ctype.h>
#include <limits.h>
#include <math.h>
#include <stdbool.h>
#include <stddef.h>
#include <stdint.h>
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

char* readline();
char* ltrim(char*);
char* rtrim(char*);
char** split_string(char*);

int parse_int(char*);
```

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```c
/*
 * 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(char* n, int k) {
    int a;
    a=k%9;
    int sum=0;
    if(a == 0)
        return 9;
    else
    {
        for(int i=0;n[i] != '\0';i++)
            sum=(sum+n[i]-48)%9;
        if((sum*k)%9 == 0)
            return 9;
        else
            return (sum*k)%9;
    }
}

int main()
{
    FILE* fptr = fopen(getenv("OUTPUT_PATH"), "w");

    char** first_multiple_input = split_string(rtrim(readline()));

    char* n = *(first_multiple_input + 0);

    int k = parse_int(*(first_multiple_input + 1));

    int result = superDigit(n, k);

    fprintf(fptr, "%d\n", result);
```

```
    fclose(fptr);

    return 0;
}

char* readline() {
    size_t alloc_length = 1024;
    size_t data_length = 0;

    char* data = malloc(alloc_length);

    while (true) {
        char* cursor = data + data_length;
        char* line = fgets(cursor, alloc_length - data_length, stdin);

        if (!line) {
            break;
        }

        data_length += strlen(cursor);

        if (data_length < alloc_length - 1 || data[data_length - 1] == '\n') {
            break;
        }

        alloc_length <<= 1;

        data = realloc(data, alloc_length);

        if (!data) {
            data = '\0';

            break;
        }
    }

    if (data[data_length - 1] == '\n') {
        data[data_length - 1] = '\0';
```

```
        data = realloc(data, data_length);

        if (!data) {
            data = '\0';
        }
    } else {
        data = realloc(data, data_length + 1);

        if (!data) {
            data = '\0';
        } else {
            data[data_length] = '\0';
        }
    }

    return data;
}

char* ltrim(char* str) {
    if (!str) {
        return '\0';
    }

    if (!*str) {
        return str;
    }

    while (*str != '\0' && isspace(*str)) {
        str++;
    }

    return str;
}

char* rtrim(char* str) {
    if (!str) {
        return '\0';
    }

    if (!*str) {
```

```
        return str;
    }

    char* end = str + strlen(str) - 1;

    while (end >= str && isspace(*end)) {
        end--;
    }

    *(end + 1) = '\0';

    return str;
}

char** split_string(char* str) {
    char** splits = NULL;
    char* token = strtok(str, " ");

    int spaces = 0;

    while (token) {
        splits = realloc(splits, sizeof(char*) * ++spaces);

        if (!splits) {
            return splits;
        }

        splits[spaces - 1] = token;

        token = strtok(NULL, " ");
    }

    return splits;
}

int parse_int(char* str) {
    char* endptr;
    int value = strtol(str, &endptr, 10);

    if (endptr == str || *endptr != '\0') {
```

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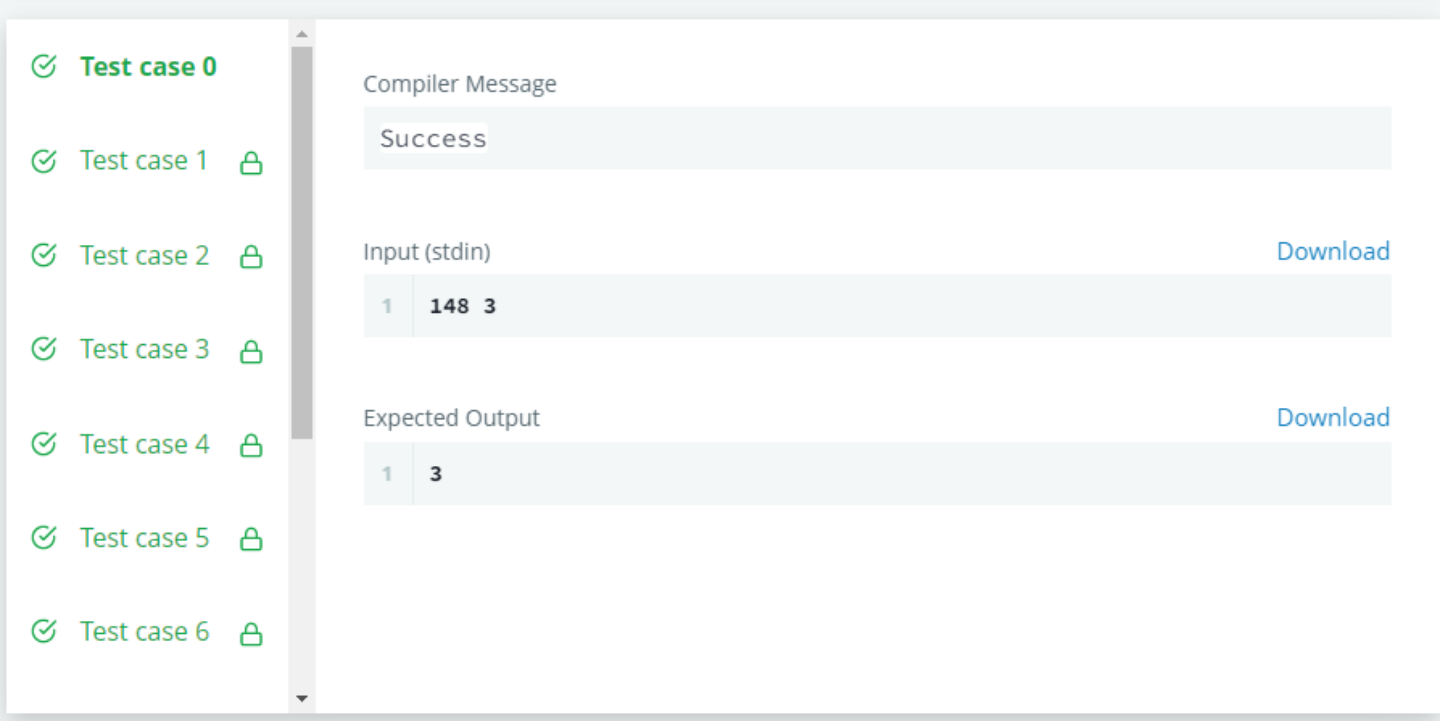
```
        exit(EXIT_FAILURE);
    }

    return value;
}
```

Output (Screen Shot):



Understanding about problem:

Learned about how to do recursive digit sum. Firstly find the super digit and then find the sum of it. Then split the digit and do their sum and the last ans would be the ans obtained.

Note: If you can't understand the problem, feel free to contact us and we'll help you. Please don't copy and paste from anywhere.

ALL THE BEST

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Team CP Club