

Homework #1

Due date: 18: 00, October 3th, Monday, 2016

Problem statement

Given a six-digit integer $n = d_5 \dots d_2 d_1 d_0$ where each d_i is a decimal digit, your job is to calculate the following two sums:

$$d_5 + d_5 d_4 + \dots + d_5 \dots d_1 d_0 \quad // \text{ sum 1}$$

$$d_0 + d_1 d_0 + \dots + d_5 \dots d_1 d_0 \quad // \text{ sum 2}$$

For example, if $n = 123456$, then your program should output the following two equations:

$$1 + 12 + 123 + 1234 + 12345 + 123456 = 137171$$

$$6 + 56 + 456 + 3456 + 23456 + 123456 = 150886$$

Requirements

1. Write a C program that is capable of handling input.
2. See the sample run below for the required output format.
3. Your program should be capable of checking if the input is a six-digit integer.
4. **Plagiarism is not allowed!**

Submission

Be sure to upload your source code to E3 by the due date and name your file as “xxxxxxx_hw1.c”, where xxxxxxx is your student ID.

Sample run

Enter a 6-digit integer: 12345

Your input is not a 6-digit integer. Exit

Enter a 6-digit integer: 123456

1 + 12 + 123 + 1234 + 12345 + 123456 = 137171

6 + 56 + 456 + 3456 + 23456 + 123456 = 150886

Enter a 6-digit integer: 684684

$$6 + 68 + 684 + 6846 + 68468 + 684684 = 760756$$

$$4 + 84 + 684 + 4684 + 84684 + 684684 = 774824$$

Enter a 6-digit integer: 500505

$$5 + 50 + 500 + 5005 + 50050 + 500505 = 556115$$

$$5 + 05 + 505 + 0505 + 00505 + 500505 = 502030$$

Enter a 6-digit integer: ^z

Hint

Use the division(/) and modulus(%) operators to separate the numbers.