

C Language Programming: Homework #5

Assigned on 11/22/2016(Thursday), Due on 11/29/2016(Thursday)

Description:

1. Compute $(g+g)\%n$ and $g\times g\%n$ when g and n are unsigned integers?
2. Let g, h, n be unsigned integers, define $x \equiv g^h \pmod n$, where x is the remainder of g^h divided by n . This problem asks you to write a fast program to compute x with given g, h , and n . You have to consider if the temporary results you compute can be stored in the variables of type *unsigned int*. Some of the sample inputs for g, h , and n are as follows: 2, 7, 127 | 3, 4, 7 | 22, 1234567, 4097 | 25, 4194303, 32767 | 31, 67108863, 65535

注意大數問題!!!!我們一定會測，這是這次作業的重點
不會測g h n overflow的情況

Command Line:

輸入格式：

`./hw5_1 (0 for add, 1 for multiplication) g n`

Ex. `./hw5_1 0 3 4`

Output : ans = 2

`./hw5_2 g h n`

Ex. `./hw5_2 5 2 4`

Output : ans = 1

Score:

Hw5_1 : 40%(20% unsigned int範圍內運算, 20% overflow處理)

Hw5_2 : 40%(20% unsigned int範圍內運算, 20% overflow處理)

Report : 20%

範例answer :

2, 7, 127 => 1

3, 4, 7 => 4

22, 1234567, 4097 => 1863

25, 4194303, 32767 => 15625

31, 67108863, 65535 => 63421