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Report: HW5\_1

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Class:二乙

Description:

Because g n will less than 4294967295(2^32-1).So I declare unsigned long long variable“finish”. unsigned long long number is less than (2^64-1),so it can store(2^32-1)^2 at least. I can use if statement to prevent the answer overflow.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Code:

#include <stdio.h>

#include <stdlib.h>

int main(int argc, char\* argv[]){

unsigned int g = strtoul(argv[2],NULL,10);

unsigned int n = strtoul(argv[3],NULL,10);

unsigned long final1=0,final2=1;

int i;

if(\*argv[1]=='0')//add

{

for(i=1;i<=2;i++){final1+=g;if(final1>n)final1%=n;}

printf("ans=%u\n",final1);

}

else

if(\*argv[1]=='1')//mutiplication

{

for(i=1;i<=2;i++){final2\*=g;if(final2>n)final2%=n;}

printf("ans=%u\n",final2);

}

}

Compilation:

gcc -o hw5\_1 hw5\_1.c

Execution:

./hw5\_1 0 3 4

Output:

ans=2

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Report: HW5\_2

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Class:二乙

Description:

Because g h n will less than 4294967295(2^32-1).So I declare unsigned long long variable “finish”. unsigned long long number is less than (2^64-1),so it can store(2^32-1)^2 at least. I can use if statement to prevent the answer overflow. Every time after multiplication, it will judge if final>n. So the calculation progress won’t overflow.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Code:

#include <stdio.h>

#include <stdlib.h>

int main(int argc, char\* argv[]){

unsigned int g = strtoul(argv[1],NULL,10);

unsigned int h = strtoul(argv[2],NULL,10);

unsigned int n = strtoul(argv[3],NULL,10);

unsigned long int final=1;

int i;

for(i=0;i<h;i++){final\*=g;if(final>n)final%=n;}

printf("ans=%u\n",final);

}

Compilation:

gcc -o hw5\_2 hw5\_2.c

Execution:

./hw5\_2 5 2 4

Output:

ans=1