Homework 1A

2018312758
GUHO KIM

Problem explanation

- Problem: 3n+1
- Given an integer number n, we repeat the following process until x=1:
- If the number is odd, x is set to 3*x+1;
- Otherwise (even number), x is set to x/2;
- Then, we can count the number of elements until x=1 (including the initial x and x=1).
- For given X, and Y, print the maximum of the number of elements for X, X+1, X+2, …, Y
- $1 \leq X \leq Y \leq 10000$

Solution explanation

- We need to search from X to Y.
- If element is even then element = element/2. And else if element is odd then element = element*3+1.
- Every single time, I'll count.
- And I want to find the maximum of number of elements for X, X+1, …, Y. So if count_max < count then count_max=count.

```c
#include<stdio.h>
int main() {
    int x, y;
    int count = 0;
    int count_max = 0;
    int j;
    scanf("%d %d", &x, &y);

    for (int i = x; i <= y; i++) {
        j = i;
        count++;
        while (j!=1) {
            if (j % 2 == 0) {
                j /= 2;
                count++;
            }
            else {
                j = 3* j +1;
                count++;
            }
        }
        if (count_max < count)
            count_max = count;
        count = 0;
    }
    printf("%d %d %d", x, y, count_max);

    return 0;
}
```