1   A Magic Key and a Gift

An angel gave box with 'N' pearls in it and a magic key 'K' to a peasant. The angel asked the peasant to apply the key repeatedly till the box gets opened.

The box will get opened only when it becomes empty and the key performs a magic for each time the peasant applies it to the box. Each time when the key is used on the magic box, the following things happen:

(i) Pearls in the box will be grouped into 'G' groups such that each group contains exactly 'K' pearls.

(ii) The magic box piles up the pearls left ungrouped into a safety locker inside it.

(iii) After piling up, the box will contain lesser pearls equal to the number of groups 'G' formed in the current step.

When the box becomes empty the box opens with the pearls in the safety locker and given as gift to the peasant.

Given the number of pearls, 'N' and the key 'K', write a program to display the number pearls that got saved in the locker from the recent time to the initial time and the total number of pearls that is given as gift for the peasant.

For example, if 'N' is 200 and 'K' is 7, then the locker displays the number of pearls saved from recent time to the initial time as 404 and the peasant gets 8 pearls as his gift.

Input format:

First line contains the number of pearls 'N' in the magic box
Next line contains the key value 'K'

Output format:

In the frist line, print the number of pearls saved from recent time to the initial time in the same line continuously.
In the next line print the number of pearls given as gift for the peasant

Input/Output

Input	Output	COMMENTS
200 7	404 8	Input format: First line contains the number of pearls 'N' in the magic box Next line contains the key value 'K' Output format: In the frist line, print the number of pearls saved from recent time to the initial time in the same line continuously. In the next line print the number of pearls given as gift for the peasant
1555 3	2010121 7	

2 Monkey Jumps Till Zero or Loop

A big hall's floor is filled linearly with 'n' rectangular cardboards of same size 's'. Each cardboard is given an index 'i' indicating the position of it on the floor. The value of 'i' ranges from 1 to 'n'. And some integer 'p' is written on each cardboard. n-1 values written on the cardboard are continuous integers starting from some number 'm' and one of the value is repeated.

A monkey enters the hall and sits on the first cardboard and then it finds the difference 'd' between the numbers written on the cardboard on which it is sitting and the adjacent cardboard on the right side. Then it jumps to the 'dth' cardboard. It continues this either till the difference 'd' is zero or when it sits on the same cardboard which it has previously sat. If 'd' is zero then the monkey is happy and when the monkey has to sit on the cardboard on which it sat already it gets angry. In both the cases the monkey quits the hall.

Given n integers written on the cardboards arranged in the order from 1 to n, write a C program to print the numbers written on the cardboards on which the monkey sits. Also print either Happy or Angry based on the condition the monkey quits.

For example, given eight integers written on the cardboard as 34, 39, 33, 37, 37, 35, 38, 36 your program should print 34, 37, 39, 35, 33, and 37 and also print Happy. If six integers are written in the cardboard as 34, 36, 35, 35, 38, 37 then the monkey will sit on cardboard with numbers 34, 36, 34 sees that it has sat on the cardboard which it had sat already so gets angry. So print 34, 36, 34 and Angry.

Boundary Condition
n<20

Input Format:
First line contains the number of cardboards, n
Next line contains 'n' numbers written on the cardboard separated by a space

Output Format:
Print the numbers on the cardboard that the monkey sits in sequence separated by a space.
Print Happy or Angry based on the quit condition of monkey

Input/Output

Input	Output	Comments
8 34 39 33 37 37 35 38 36	34 37 39 35 33 37 **Happy**	Input Format: First line contains the number of cardboards, n Next line contains 'n' numbers written on the cardboard separated by a space Output Format: Print the numbers on the cardboard that the monkey sits in sequence separated by a space. Print Happy or Angry based on the quit condition of monkey

6 **34 36 35 35 38 37**	**34 36 34** **Angry**	