In Your Prime

Purpose : Backtracking

Due : April 14^{th}

Description

A prime sequence is a sequence of integers such that the sum of any adjacent pair of numbers is a prime. For example (12, 17, 14, 15, 16, 13) is a prime sequence since :

$$12 + 17 = 29;\ 17 + 14 = 31;\ 14 + 15 = 29;\ 15 + 16 = 31;\ 16 + 13 = 29;$$

and 29 and 31 are both prime numbers.

Input

Input will consist of a series of test cases entered from the keyboard. Each test case will consist of 2 integers m and n one line where $0 < m < n$ separated by a single space. You are to determine if there is a prime sequence using all the integers from m to n inclusive. The input will terminate with 0 0.

Output

Output will consist of one line for each input. The line will consist of the prime sequence if one exists or the phrase: No prime sequence exists. If more than 1 prime sequence exists list the one that occurs first in lexicographical order.

Sample Input

```
12 17
13 21
11 23
41 45
0 0
```

Corresponding Sample Output

```
12 17 14 15 16 13
15 14 17 20 21 16 13 18 19
11 12 17 14 15 16 13 18 19 22 21 20 23
No prime sequence exists
```

How the program will be graded :

Memo

What	pts	April 14^{th}
Name	1	
Time and Space analysis of each function. Note: main is a function.	16	
Clear box test plan.	14	

Source Code Document

What	pts	April 14^{th}
Name	1	
Description	2	
Style	10	
pre/post conditions	10	
Number of test cases passed by the autograder	60	