Cable Car
Problem ID: cablecar

At $3\,147.3$ meters high, Fansipan is the tallest mountain in the Indochina peninsula. To promote tourism, n stations were built on the mountain, numbered from 1 to n.

Two companies, Mobi and Vina are in charge of operating cable cars connecting the stations. Each of the two companies have k cable cars. The i-th cable car of Mobi connects two stations MS_i and ME_i. The i-th cable car of Vina connects two stations VS_i and VE_i.

Two stations are called connected by a company, iff we can go from one station to the other by using cable cars only of that company. To achieve peaceful cooperation, the two companies agreed with the following conditions:

- For every valid i, $MS_i < ME_i$ and $VS_i < VE_i$.
- All MS_i are unique, all ME_i are unique.
- All VS_i are unique, all VE_i are unique.
- For any $i \neq j$, if $MS_i < MS_j$, then $ME_i < ME_j$.
- For any $i \neq j$, if $VS_i < VS_j$, then $VE_i < VE_j$.
- No pair of stations is connected by both companies. In other words, for every pair of stations i and j, if i and j are connected by Mobi, they should not be connected by Vina, and vice versa.

Given n and k, your task is to check whether it is possible for Mobi and Vina to each operates k cable cars, satisfying all the above conditions.

Input

The input contains two integers n and k, separated by a single space $(1 \leq k < n \leq 100)$.

Output

For each test case, if it is not possible to satisfy all the conditions, print 'NO'. Otherwise, print 'YES', followed by $2 \cdot k$ lines. In the first k lines, the i-th line contains two integers MS_i and ME_i. In the last k lines, the i-th line contains two integers VS_i and VE_i.

Sample Input 1

```
3 1
```

Sample Output 1

```
YES
1 2
1 3
```

Sample Input 2

```
3 2
```

Sample Output 2

```
NO
```