1 The Problem

Given the set of integers from 1 to n, $P = \{\, 1, 2, ..., n-1, n \,\}$, a sequence of unique pairs, Q, can be generated:

$$Q = \{x_1, y_1\}, \{x_2, y_2\}, ..., \{x_N, y_N\}$$

where N is the total number of unique pairs in P, $x_i \leq x_{i+1}$, $y_i > x_i$ and $y_i < y_{i+1}$ if $x_i = x_{i+1}$. In other words, Q is ordered by x, then y.

The problem is to compute the kth element of Q given n and k where $0 < k \leq N$.

1.1 Example

Given $n = 4$ and $k = 5$:

$$P = \{\, 1, 2, 3, 4 \,\}$$
$$Q = \{1,2\}, \{1,3\}, \{1,4\}, \{2,3\}, \{\mathbf{2},\mathbf{4}\}, \{3,4\}$$

The solution is $\{2, 4\}$, which is the *5th element* of Q. Note that $\{2, 1\}$ is not in Q as it is the same pair as $\{1, 2\}$.

2 The Challenge

Write a program that takes a file path as its sole command line argument and prints the kth element of Q for each line in the file. Each input is of the form n k (n followed by a space followed by k) where $1 < n < 92,683$. Output should be of the form x_k y_k (x_k followed by a space followed by y_k).

2.1 Example

If the input file is:

```
4 5
8 2
9 6
```

your program should output:

```
2 4
1 3
1 7
```