

Problem name: Tolls
Input File: ToolsIn.txt

Each square of a 10x10 checkerboard has a toll associated with it that must be paid when you enter the square. You wish to travel from the bottom most row to the top most row and minimize the total of the tolls along the way. Write a program to output the row and column numbers of a route that minimizes the tolls. When making a move, the row number *must* increase by 1 and the column number can change by -1, 0, or +1. Tolls range from 0 to 9, and row 1 and column 1 is the lower left most square of the checkerboard.

		column									
		1	2	3	4	5	6	7	8	9	10
10		6	4	7	4	8	3	6	7	2	4
9		9	1	4	7	3	6	8	6	1	4
8		4	8	1	9	7	9	2	3	5	4
7		1	8	6	6	8	4	8	3	8	2
6		7	3	7	4	4	1	5	9	9	4
5		1	6	3	2	1	4	3	3	7	9
4		5	3	8	4	2	6	7	9	3	5
3		6	4	3	8	7	1	2	4	7	4
2		8	8	3	6	5	8	3	9	1	5
row 1		0	3	5	6	1	2	7	1	9	4

Inputs:

The tolls associated with each square of the checkerboard, one line per row. The first line of input is the tolls associated with row 10, the second line the tolls associated with row 9, etc. The tolls on a line will be separated by a space.

Outputs:

The minimum total toll followed by 10 lines that give the row and column numbers of the minimum toll path through the checkerboard. Each square's location will be on a separate line, with the row number preceding the column number. There will be a space between each row and column number.

Sample Input:

6 4 7 4 8 3 6 7 2 4
9 1 4 7 3 6 8 6 1 4
4 8 1 9 7 9 2 3 5 4
1 8 6 6 8 4 8 3 8 2
7 3 7 4 4 1 5 9 9 4
1 6 3 2 1 4 3 3 7 9
5 3 8 4 2 6 7 9 3 5
6 4 3 8 7 1 2 4 7 4
8 8 3 6 5 8 3 9 1 5
0 3 5 6 1 2 7 1 9 4

Sample Output:

23
1 8
2 7
3 6
4 5
5 5
6 6
7 7
8 8
9 9
10 9