Problem G. Travelling Salesman Problem

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	64 mebibytes

Teacher Mai is in a maze with n rows and m columns. There is a non-negative number in each cell. Teacher Mai wants to walk from the top left corner $(1, 1)$ to the bottom right corner (n, m). He can choose one direction and walk to this adjacent cell. However, he can't go out of the maze, and he can't visit a cell more than once.

Teacher Mai wants to maximize the sum of numbers in his path. And you need to print this path.

Input

First line of the input contains one integer T ($1 \le T \le 130$) — number of test cases.

For each test case, the first line contains two numbers n and m ($1 \le n, m \le 100$, $n \cdot m \ge 2$).

In following n lines, each line contains m numbers. The j-th number in the i-th line means the number in the cell (i, j). Every number in the cell is not more than 10^4.

Output

For each test case, in the first line, you should print the maximum sum.

In the next line you should print a string consisting of '`L`','`R`','`U`' and '`D`', which represents the path you find. If you are in the cell (x, y), '`L`' means you walk to cell $(x, y-1)$, '`R`' means you walk to cell $(x, y+1)$, '`U`' means you walk to cell $(x-1, y)$, '`D`' means you walk to cell $(x+1, y)$.

Examples

standard input	standard output
1 3 3 2 3 3 3 3 3 3 3 2	25 RRDLLDRR