```c
#include <stdio.h>

int main(){
    int n, i, j, tmp, p = 0;
    char ch;
    scanf("%d", &n);
    int a[n][n];

    // Read in the matrix
    for(i = 0; i < n; i++)
        for(j = 0; j < n; j++)
            scanf("%d", &a[i][j]);

    // Simply keep track of total amount of clockwise rotation
    // p = 0: no rotation
    // p = 1: 90 degrees clockwise
    // p = 2: 180 degrees clockwise
    // p = 3: 270 degrees clockwise
    while((ch = getchar()) != 'X'){
        if(ch == 'L')
            p--;
        if(ch == 'R')
            p++;
        if(p < 0) p = 3;
        if(p > 3) p = 0;
    }

    // Print the matrix after spinning it clockwise once
    for(i = 0; i < n; i++){
        for(j = 0; j < n; j++){
            printf("%d", a[n - j - 1][i]);
            if(j < n - 1) printf(" "); // No trailing spaces
        }
        if(i < n) printf("\n"); // No trailing newlines
    }

    // Print the matrix after following instructions
    for(i = 0; i < n; i++){
        for(j = 0; j < n; j++){
            switch(p){
                case 0: tmp = a[i][j]; break;
                case 1: tmp = a[n - j - 1][i]; break;
                case 2: tmp = a[n - i - 1][n - j - 1]; break;
                case 3: tmp = a[j][n - 1 - i]; break;
            }
            printf("%d", tmp);
            if(j < n - 1) printf(" "); // No trailing spaces
        }
        if(i < n - 1) printf("\n"); // No trailing newlines
    }

    return 0;
}
```