First 12(r,c) popped from stack:

r: 6, c: 4

r: 6, c: 3

r: 6, c: 5

r: 7, c: 5

r: 8, c: 5

r: 8, c: 6

r: 8, c: 7

r: 8, c: 8

r: 7, c: 8

r: 6, c: 6

r: 5, c: 4

r: 4, c: 4

First 12(r,c) popped from queue:

r: 6, c: 4

r: 5, c: 4

r: 6, c: 5

r: 6, c: 3

r: 4, c: 4

r: 6, c: 6

r: 7, c: 5

r: 3, c: 4

r: 4, c: 5

r: 8, c: 5

r: 2, c: 4

r: 4, c: 6

Notice that the stack change the columns first whereas the queue change the rows first. This is because stack pop out an element at the end, where queue pop out an element in its front.