

① Print matrix spirally

X Y A

M B C

P Q R

$\Rightarrow X Y A C R Q P M B$

int left = 0, right = m[0].length, top = 0, bottom = m.length,
row = 0, col = 0;

while (left < right && top < bottom) {

 while (^{col} $j < right$) {

 print(m[row][col]);

 col++;

 } col--; top++; row++;

 while (row < bottom) { print(m[row][col]); row++; }

 row--; right--; col--;

 while (col >= left) { print(m[row][col]); col--; }

 col++; bottom--; row--;

 while (row >= top) { print(m[row][col]); ~~row--~~; }

 row++; left++; col++;

}