

top  $\rightarrow$  1 2 3 4  
 5 6 7 8  
 9 10 11 12  
 down  $\rightarrow$  13 14 15 16  
 $\uparrow$   $\uparrow$   
 left right

direction. dir  $\rightarrow$  0  $\rightarrow$   
 -1 1  $\downarrow$   
 -1 2  $\leftarrow$   
 -1 3  $\uparrow$

while (top <= down && left <= right) {

if (dir == 0) {

for (int i = left to right) {

print(a[top][i]);  
top++;

}

else if (dir == 1) {

for (i = top to down) {

print(a[i][right]);

}

right--;

else if (dir == 2) {

for (i = right to left) {

print(a[down][i]);

}

down--;

}

```
else if (dir == 3) {
```

```
    for (j = down to top
```

```
        print (arr[j][left])
```

```
    }
```

```
    left += 1
```

```
}
```

```
dir = (dir + 1) % 4;
```

```
}
```