

```

1 // Sort only boundary elements of a 2d array
2
3 import java.util.Arrays;
4 import java.util.Scanner;
5
6 public class boundarySort {
7     public static void main(String[] args) {
8         Scanner sc = new Scanner(System.in);
9         System.out.println("Enter number of rows: ");
10        int r = sc.nextInt();
11        System.out.println("Enter number of coln: ");
12        int c = sc.nextInt();
13        System.out.println("Enter " + (r * c) + " elements: ");
14        int[][] arr = new int[r][c];
15        // Store boundary elements of arr in a new 1d array
16        int[] boundary = new int[(r * c) - (r - 2) * (c - 2)];
17        int count = 0;
18        for (int i = 0; i < r; i++) {
19            for (int j = 0; j < c; j++) {
20                arr[i][j] = sc.nextInt();
21                if (i == 0 || j == 0 || i == (r - 1) || j == (c - 1)) {
22                    boundary[count] = arr[i][j];
23                    ++count;
24                }
25            }
26        }
27        sc.close();
28        // Sort the 1d array using selection sort
29        int min, temp;
30        for (int i = 0; i < boundary.length; i++) {
31            min = i;
32            for (int j = i + 1; j < boundary.length; j++) {
33                if (boundary[j] < boundary[min])
34                    min = j;
35            }
36            temp = boundary[i];
37            boundary[i] = boundary[min];
38            boundary[min] = temp;
39        }
40        // Put the sorted elements back in 2d array
41        count = 0;
42        for (int i = 0; i < c; i++) {
43            arr[0][i] = boundary[count];
44            ++count;
45        }
46        for (int i = 1; i < r; i++) {
47            arr[i][c - 1] = boundary[count];
48            ++count;
49        }
50        for (int i = c - 2; i >= 0; i--) {
51            arr[r - 1][i] = boundary[count];
52            ++count;
53        }
54        for (int i = r - 2; i >= 1; i--) {
55            arr[i][0] = boundary[count];
56            ++count;
57        }
58        for (int i = 0; i < r; i++) {
59            System.out.println(Arrays.toString(arr[i]));
60        }
61    }
62 }
63 /**
64  * Variable      Data      Table
65  * r, c          int       Store rows and columns for 2d array
66  * arr           int[][]   Store 2D array
67  * boundary      int[]     Extract and store boundary elements in 1d array
68  * count, i, j   int       Iterators
69  * min, temp     int       Used in sorting
70  */

```