

Week 09 : Programming Assignment 2

Due on 2025-03-27, 23:59 IST

A program needs to be developed which can **mirror reflect** any 5×5 2D character array into its side-by-side **reflection**. Write suitable code to achieve this transformation as shown below:

INPUT:

OOXOO
OOXOO
XXXOO
OOOOO
XOABC

OUTPUT:

OOXOO
OOXOO
OOXXX
OOOOO
CBAOX

Note the following points carefully:

- 1. Here, instead of X and O any character may be present.
- 2. The input and output array size must be of dimension 5×5 and nothing else.
- 3. Only side-by-side reflection should be performed i.e. ABC || CBA.

Private Test cases used for evaluation

Test Case 1

Input	Expected Output	Actual Output	Status
OOXOO OOXOO OOXOO OOXOO OOXOO	OOXOO\n OOXOO\n OOXOO\n OOXOO\n OOXOO	OOXOO\n OOXOO\n OOXOO\n OOXOO\n OOXOO\n	Passed

The due date for submitting this assignment has passed.
1 out of 1 tests passed.
You scored 100.0/100.

Assignment submitted on 2025-03-25, 21:13 IST

Your last recorded submission was :

```
1 import java.util.Scanner;
2 public class Question92{
3     public static void main(String args[]){
4         Scanner sc = new Scanner(System.in);
5         char[][] matrix = new char[5][5];
6
7         // Input 5x5 2D Array using Scanner Class
8         for (int i = 0; i < 5; i++) {
9             String row = sc.next();
10            for (int j = 0; j < 5; j++) {
11                matrix[i][j] = row.charAt(j);
12            }
13        }
14
15        // Perform the reflection operation
16        for (int i = 0; i < 5; i++) {
17            for (int j = 0; j < 5 / 2; j++) {
18                char temp = matrix[i][j];
19                matrix[i][j] = matrix[i][5 - j - 1];
20                matrix[i][5 - j - 1] = temp;
21            }
22        }
23
24        // Output 5x5 2D Reflection Array
25        for (int i = 0; i < 5; i++) {
26            for (int j = 0; j < 5; j++) {
27                System.out.print(matrix[i][j]);
28            }
29            System.out.println();
30        }
31    } // The main() method ends here
32 } // The main class end
```

Sample solutions (Provided by instructor)

```
1 import java.util.Scanner;
2 public class Question92{
3     public static void main(String args[]){
4         Scanner sc = new Scanner(System.in);
5         // Declaring 5x5 2D char array to store input
6         char original[][]= new char[5][5];
7
8         // Declaring 5x5 2D char array to store reflection
9         char reflection[][]= new char[5][5];
10
11        // Input 2D Array using Scanner Class
12        for(int line=0;line<5;line++){
13            String input = sc.nextLine();
14            char seq[] = input.toCharArray();
15            if(seq.length==5){
16                for(int i=0;i<5;i++){
17                    original[line][i]=seq[i];
18                }
19            }
20        }
21
22        // Performing the reflection operation
23        for(int i=0; i<5;i++){
24            for(int j=0; j<5;j++){
25                reflection[i][j]=original[i][4-j];
26            }
27        }
28
29        // Output the 2D Reflection Array
30        for(int i=0; i<5;i++){
31            for(int j=0; j<5;j++){
32                System.out.print(reflection[i][j]);
33            }
34            System.out.println();
35        }
36    } // The main() method ends here
37 } // The main class end
```