Ex. No : 2(b) Date :	Row and Column Transformation Technique

AIM:

To implement a program for encryption and decryption by using row and column transformation technique.

ALGORITHM:

1. Consider the plain text hello world, and let us apply the simple columnar transposition technique as shown below

h	e	l	l
o	w	o	r
l	d		

2. The plain text characters are placed horizontally and the cipher text is created with vertical format as: **holewdlo lr**.
3. Now, the receiver has to use the same table to decrypt the cipher text to plain text.

PROGRAM:

TransCipher.java

```
import java.util.*;
class TransCipher {
   public static void main(String args[]) {
      Scanner sc = new Scanner(System.in);
      System.out.println("Enter the plain text");
      String pl = sc.nextLine();
      sc.close();
      String s = "";
      int start = 0;
      for (int i = 0; i < pl.length(); i++) {
         if (pl.charAt(i) == ' ') {
            s = s + pl.substring(start, i);
            start = i + 1;
         }
      }
      s = s + pl.substring(start);
```

```
        System.out.print(s);
        System.out.println();
        // end of space deletion

        int k = s.length();
        int l = 0;
        int col = 4;
        int row = s.length() / col;
        char ch[][] = new char[row][col];
        for (int i = 0; i < row; i++) {
            for (int j = 0; j < col; j++) {
                if (l < k) {
                    ch[i][j] = s.charAt(l);
                    l++;
                } else {
                    ch[i][j] = '#';
                }
            }
        }
        // arranged in matrix

        char trans[][] = new char[col][row];
        for (int i = 0; i < row; i++) {
            for (int j = 0; j < col; j++) {
                trans[j][i] = ch[i][j];
            }
        }

        for (int i = 0; i < col; i++) {
            for (int j = 0; j < row; j++) {
                System.out.print(trans[i][j]);
            }
        }
        // display
        System.out.println();
    }
}
```

OUTPUT:

Enter the plain text
Security Lab
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RESULT:

Thus the java program for Row and Column Transposition Technique has been implemented and the output verified successfully.