

## PROGRAM:

*railFenceCipher.java*

```
class railfenceCipherHelper
{
    int depth;
    String encode(String msg, int depth) throws Exception
    {
        int r = depth;
        int l = msg.length();
        int c = l / depth;
        int k = 0;
        char mat[][] = new char[r][c];
        String enc = "";
        for (int i = 0; i < c; i++)
        {
            for (int j = 0; j < r; j++)
            {
                if (k != l)
                {
                    mat[j][i] = msg.charAt(k++);
                }
                else
                {
                    mat[j][i] = 'X';
                }
            }
        }
        for (int i = 0; i < r; i++)
        {
            for (int j = 0; j < c; j++)
            {
                enc += mat[i][j];
            }
        }
    }
}
```

```

        return enc;
    }
    String decode(String encmsg, int depth) throws Exception
    {
        int r = depth;
        int l = encmsg.length();
        int c = l / depth; int k = 0;
        char mat[][] = new char[r][c];
        String dec = "";
        for (int i = 0; i < r; i++)
        {
            for (int j = 0; j < c; j++)
            {
                mat[i][j] = encmsg.charAt(k++);
            }
        }
        for (int i = 0; i < c; i++)
        {
            for (int j = 0; j < r; j++)
            {
                dec += mat[j][i];
            }
        }
        return dec;
    }
}
class railFenceCipher
{
    public static void main(String[] args) throws java.lang.Exception
    {
        railfenceCipherHelper rf = new railfenceCipherHelper();
        String msg, enc, dec;
        msg = "HelloWorld";
        int depth = 2;
        enc = rf.encode(msg,depth);
    }
}

```

```
        dec = rf.decode(enc, depth);
        System.out.println("Simulating Railfence Cipher\n ");
        System.out.println("Input Message: " + msg);
        System.out.println("Encrypted Message: " + enc);
        System.out.printf("Decrypted Message: " + dec);
    }
}
```

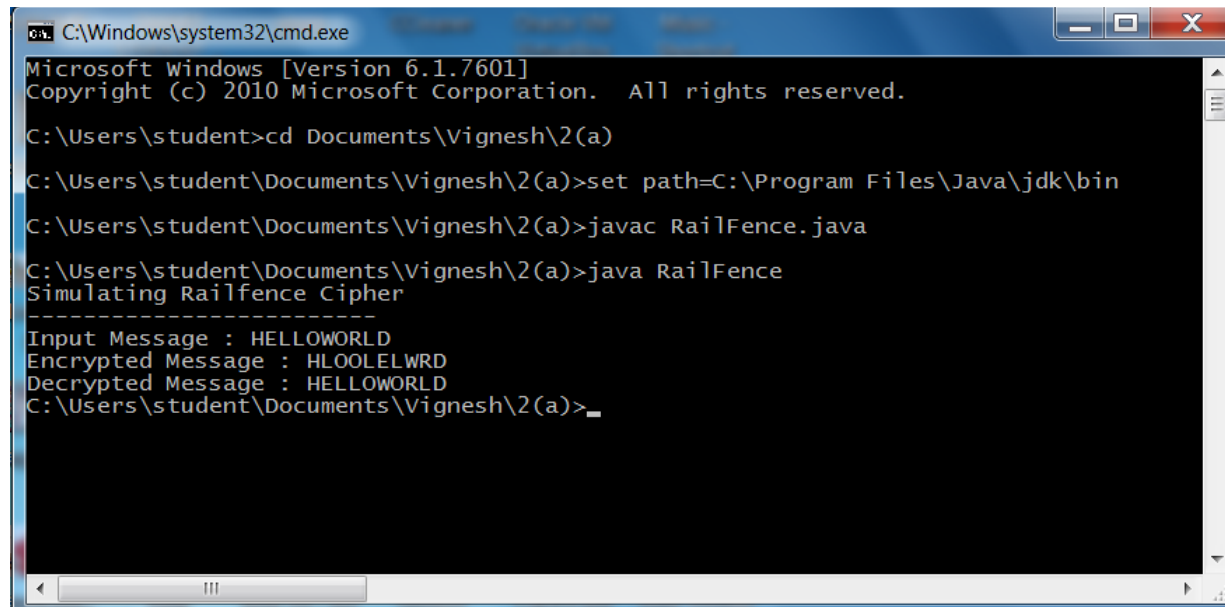
**Output:**

Simulating Railfence Cipher

Input Message: HELLOWORLD

Encrypted Message: HLOOLELWRD

Decrypted Message: HELLOWORLD



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
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C:\Users\student>cd Documents\Vignesh\2(a)
C:\Users\student\Documents\Vignesh\2(a)>set path=C:\Program Files\Java\jdk\bin
C:\Users\student\Documents\Vignesh\2(a)>javac RailFence.java
C:\Users\student\Documents\Vignesh\2(a)>java RailFence
Simulating Railfence Cipher
-----
Input Message : HELLOWORLD
Encrypted Message : HLOOLELWRD
Decrypted Message : HELLOWORLD
C:\Users\student\Documents\Vignesh\2(a)>_
```

**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();
}
}

```

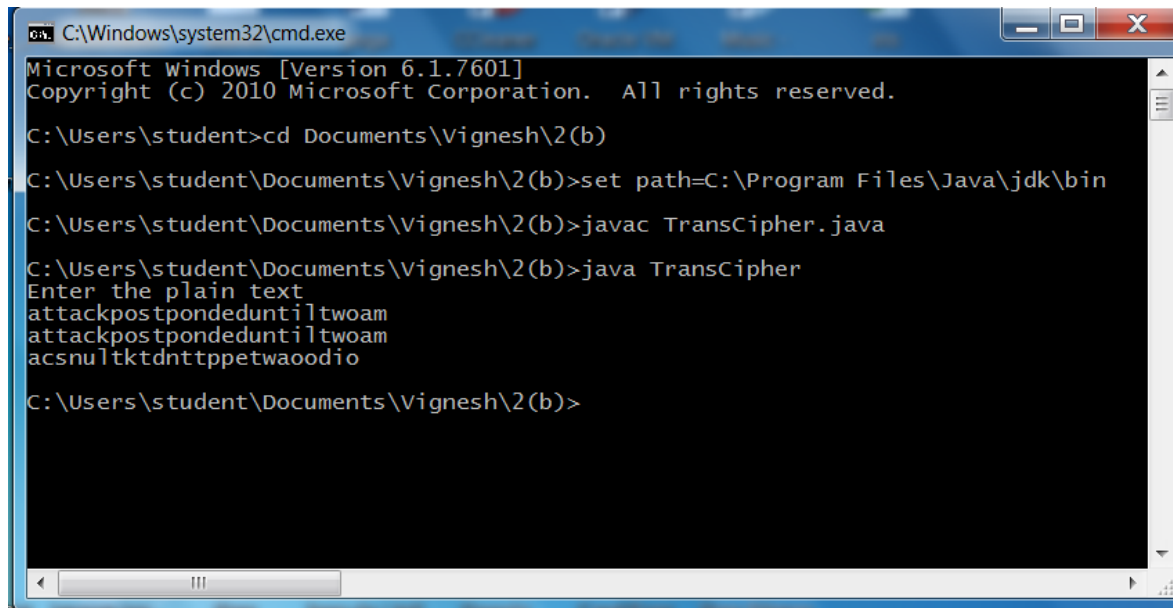
## Output:

Enter the plain text

attackpostponeduntiltwoam

attackpostponeduntiltwoam

acsnulkttdnttpetwaoodio



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
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C:\Users\student>cd Documents\Vignesh\2(b)
C:\Users\student\Documents\Vignesh\2(b)>set path=C:\Program Files\Java\jdk\bin
C:\Users\student\Documents\Vignesh\2(b)>javac TransCipher.java
C:\Users\student\Documents\Vignesh\2(b)>java TransCipher
Enter the plain text
attackpostponeduntiltwoam
attackpostponeduntiltwoam
acsnulkttdnttpetwaoodio
C:\Users\student\Documents\Vignesh\2(b)>
```