Implement the Rail fence Cipher technique

AIM:

To implement Rail fence cipher technique on the user input message.

ALGORITHM:

1. Initialize the Playfair key matrix based on the provided key, handling duplicates and 'J' substitution.
2. Preprocess the plaintext, removing non-alphabetic characters, converting to uppercase, and adding 'X' between consecutive identical characters.
3. Implement a method to retrieve the row and column positions of characters within the key matrix.
4. Encrypt the plaintext by iterating through character pairs, applying Playfair Cipher rules based on character positions, and constructing the ciphertext.
5. Accept user input for the key and plaintext, instantiate the Playfair Cipher, encrypt the plaintext, and output the ciphertext.

PROGRAM:

```
import java.util.*;
public class Main
{
public static void main(String[] args) {
Scanner sc=new Scanner(System.in);
String s=sc.nextLine();
int depth=sc.nextInt();
char [][] arr=new char[depth][s.length()];
for(int m=0;m<depth;m++)
{
Arrays.fill(arr[m],'\n');
}
int i=0,j=0,c=0,d=1;

while(c<s.length())
{
if(i==0)
d=1;
if(i==depth-1)
d=-1;

if(d==1)
{
```
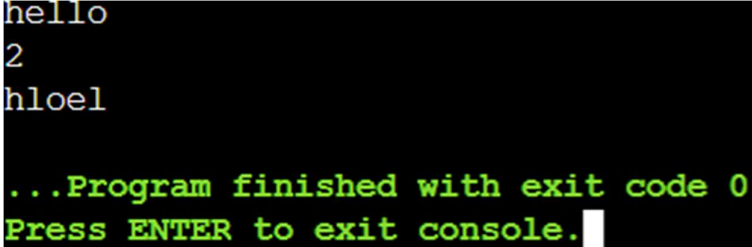
```
arr[i][j]=s.charAt(c);
i++;
j++;
c++;
}
if(d==-1)
{
arr[i][j]=s.charAt(c);
i--;
j++;
c++;
}
}
for(int k=0;k<depth;k++)
{
for(int l=0;l<s.length();l++)
{
if(arr[k][l]!='\n')
System.out.print(arr[k][l]);
}
}
}
}
```

OUTPUT:

```
hello
2
hloel

...Program finished with exit code 0
Press ENTER to exit console.
```

RESULT: