

HILL CIPHER USING JAVA:

```
import java.util.*;

public class hill_cipher
{
    static int n;
    static int[][] key_matrix;
    static int[] pt_matrix;
    static int[] ct_matrix;

    public static void main(String[] args)
    {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the size of plain text:");
        n=sc.nextInt();
        key_matrix=new int[n][n];
        pt_matrix=new int[n];
        ct_matrix=new int[n];
        System.out.println("Enter the plain text:");
        String pt=sc.next().toUpperCase();
        System.out.println("Enter the key(Size should be"+" "+n*n+""):");
        String key=sc.next().toUpperCase();
        performHillCipher(pt,key);
    }

    static void performHillCipher(String pt,String key)
    {
        keyMatrix(key);
        for(int i=0;i<n;i++)
```

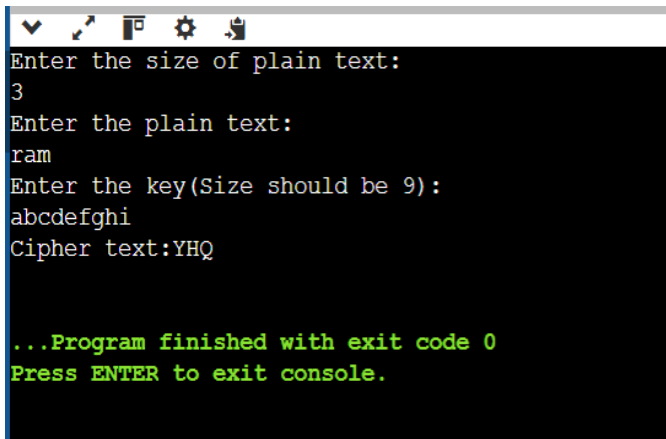
```

{
    pt_matrix[i]=(pt.charAt(i))%65;
}
encryption(pt_matrix,key_matrix);
String ct="";
for(int i=0;i<n;i++)
{
    ct+=(char)(ct_matrix[i]+65);
}
System.out.println("Cipher text:"+ct);
}
static void keyMatrix(String key)
{
    int k=0;
    for(int i=0;i<n;i++)
    {
        for(int j=0;j<n;j++)
        {
            key_matrix[i][j]=(key.charAt(k)) % 65;
            k++;
        }
    }
}
static void encryption(int pt_matrix[],int key_matrix[][])
{
    for(int i=0;i<n;i++)

```

```
{
    ct_matrix[i]=0;
    for(int j=0;j<n;j++)
    {
        ct_matrix[i]+=key_matrix[i][j]*pt_matrix[j];
    }
    ct_matrix[i]=ct_matrix[i]%26;
}
}
```

OUTPUT:



```
Enter the size of plain text:
3
Enter the plain text:
ram
Enter the key(Size should be 9):
abcdefghi
Cipher text:YHQ

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