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: