Information Security

Practical-5: Hill cipher

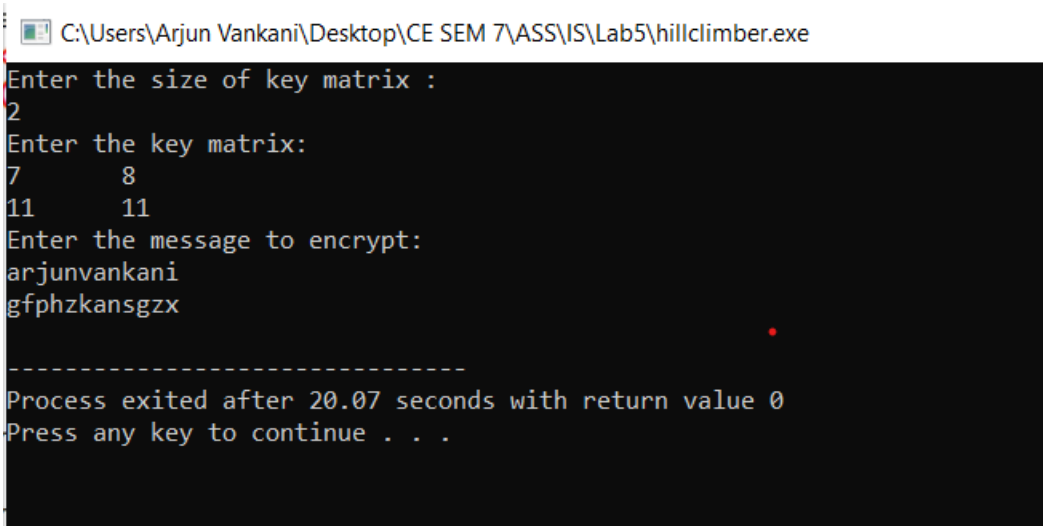
CODE:

```
#include<iostream>
#include<vector>
using namespace std;
int main(){
   int x,y,i,j,k,n;
   cout<<"Enter the size of key matrix :\n";
   cin>>n;
   cout<<"Enter the key matrix: \n";
   int a[n][n];
   for(i=0;i<n;i++){
      for(j=0;j<n;j++){
         cin>>a[i][j];
      }
   }
   cout<<"Enter the message to encrypt: \n";
   string s;
   cin>>s;
   int temp = (n-s.size()%n)%n;
```

```
  for(i=0;i<temp;i++){
     s+='x';
  }
  k=0;
  string ans="";
  while(k<s.size()){
     for(i=0;i<n;i++){
        int sum = 0;
        int temp = k;
        for(j=0;j<n;j++){
           sum += (a[i][j]%26*(s[temp++]-'a')%26)%26;
           sum = sum%26;
        }
        ans+=(sum+'a');
     }
     k+=n;
  }
  cout<<ans<<'\n';

  return 0;
}
```

Output:


C:\Users\Arjun Vankani\Desktop\CE SEM 7\ASS\IS\Lab5\hillclimber.exe
Enter the size of key matrix :
2
Enter the key matrix:
7 8
11 11
Enter the message to encrypt:
arjunvankani
gfphzkansgzx

Process exited after 20.07 seconds with return value 0
Press any key to continue . . .