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# IS Exp2 - Implementation of rail fence transposition technique

**Encryption –**
**Code :-**

```
#include<bits/stdc++.h>
using namespace std;
int main(){
    int t,n,m,i,j,k,sum=0;
    string s;
    cout<<"Enter the message"<<'\n';
    cin>>s;
    cout<<"Enter key"<<'\n';
    cin>>n;
    vector<vector<char>> a(n,vector<char>(s.size(),' '));
    j=0;
    int flag=0;
    for(i=0;i<s.size();i++){
        a[j][i] = s[i];
         if(j==n-1){
            flag=1;
        }
        else if(j==0)
            flag=0;

        if(flag==0){
            j++;
        }
        else j--;
    }
    cout<<"Encrypted message : ";
    for(i=0;i<n;i++){
        for(j=0;j<s.size();j++){
            if(a[i][j]!=' ')
                cout<<a[i][j];
        }
    }
    cout<<'\n';
    return 0;
}
```

**Output :-**

```
Enter the message
mohanpatil
Enter key
4
Encrypted message : maopthnial
```

**Decryption –**
**Code :-**

```
#include<bits/stdc++.h>
using namespace std;
int main(){
    int t,n,m,i,j,k,sum=0;
    string s;
    cout<<"Enter the message to decrypt"<<'\n';
    cin>>s;
```

```
cout<<"Enter key"<<'\n';
```

```
    cin>>n;

    vector<vector<char>> a(n,vector<char>(s.size(),' '));
    j=0;
    int flag=0;
    for(i=0;i<s.size();i++){
        a[j][i] = '0';
        if(j==n-1){
            flag=1;
        }
        else if(j==0)
            flag=0;

        if(flag==0){
            j++;
        }
        else j--;
    }
    int temp =0;
    for(i=0;i<n;i++){
        for(j=0;j<s.size();j++){
                if(a[i][j]=='0')
                    a[i][j]= s[temp++];
        }
    }
    flag=0;
    j=0;
    cout<<"Decrypted message : ";
    for(i=0;i<s.size();i++){
        cout<<a[j][i];
        if(j==n-1){
            flag=1;
        }
        else if(j==0)
            flag=0;

        if(flag==0){
            j++;
        }
        else j--;
    }
    cout<<'\n';
    return 0;
}
```

**Output :-**

```
Enter the message to decrypt
maopthnial
Enter key
4
Decrypted message : mohanpatil
```