

# Cryptography and Network Security

Name: Piyush Mhaske  
PRN : 2019BTECS00089

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## Assignment 1

### Objective :

Caesar Cipher Encryption

### Theory:

Caesar Cipher is a substitution technique. The earliest known use of a substitution cipher, and the simplest, was by Julius Caesar. The Caesar cipher involves replacing each letter of the alphabet with the letter standing three places further down the alphabet. It consists of a input and Shift.

**Input** is the string or the sentence which is to be encrypted.

**Shift** is the number by which letter need to be shifted

### Code Snapshots :

```
// code by PiyushMhaske
#include <bits/stdc++.h>
#include <fstream>
#include <cstdlib>
#define ll long long
#define ull unsigned long long
#define pb emplace_back
#define pop_back
#define vi vector<ll>
#define vii vector<vector<ll>>
using namespace std;
void file(){
    ios_base::sync_with_stdio(false);
    cin.tie(NULL);}
ll M = 1e9 + 7;
string caesarCipherEnc(string input, int shift){
```

```

    for(int i=0;i<input.size();i++){
        char num = input[i] - 'a';

        input[i] = 'a' + (num + shift)%26;
    }
    return input;
}
int main()
{
    file();
    string input;
    cin>>input;

    int shift;
    cin>>shift;

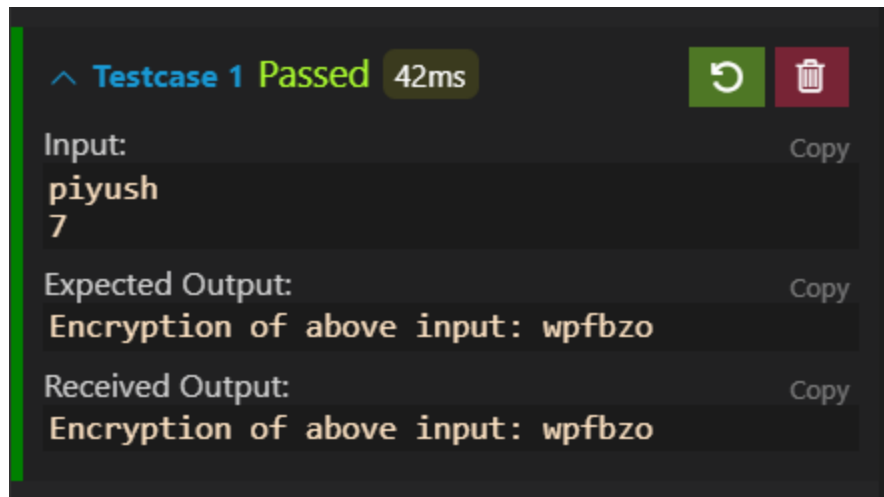
    // encrypt
    string ans = caeserCipherEnc(input,shift);
    cout<<"Encryption of above input: ";
    cout<<ans<<"\n";

    return 0;
}

```

## Output:

Testcase1:



Testcase 2:

```
^ Testcase 1 Passed 43ms
Input:
thisisthekey
7
Expected Output:
Encryption of above input: aopzpzao!rlf
Received Output:
Encryption of above input: aopzpzao!rlf
```

Testcase 3:

```
^ Testcase 2 Passed 45ms
Input:
assignment
7
Expected Output:
Encryption of above input: hzzpnutlua
Received Output:
Encryption of above input: hzzpnutlua
```

### Conclusion :

Caesar Cipher is simple substitution technique. The key can be deciphered easily, thus makes it less secure.